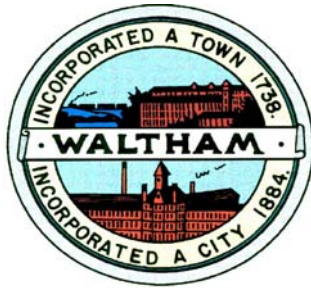


The City of Waltham



*Invites
Interested Parties
To propose the best offer and or bid
For the service or product herewith described:*

Aruba AP 105 Wireless Access Point with Ceiling Rails and Remote

The bid opening will be held: Wednesday May 23, 2012 at 1:00Pm

Phone: 781-314-3244, Fax: 781-314-3245

Table of Contents:

- **Invitation to Bid**
- **Intent of the Project**
- **Agreement**
- **Instructions**
- **General Conditions**
- **Specifications**
- **Compliance**
- **Bid Price**

Invitation to Bid

The City of Waltham

Purchasing Department

REQUEST FOR BID (RFB)

Under the rules of M.G.L. Chapter 30B, the Chief Procurement Officer of the City of Waltham Purchasing Department hereby requests sealed bids for:

Aruba AP 105 Wireless Access Point

Price Proposals will be received at the office of the Purchasing Agent, City Hall, 610 Main Street, Waltham MA 02452, until,

Wednesday May 23, 2012 at 1:00 pm

At which time and place the bids will be publicly opened and read.

Specifications and information available on line by visiting the Waltham Purchasing Department web site at www.city.waltham.ma.us/open-bids

BIDS MUST BE SIGNED AND ENCLOSED IN A SEALED ENVELOPE AND MARKED:

BID FOR: Aruba AP 105

If the Bidder is a corporation, state your correct corporate name and State of incorporation. If Bidder is a partnership, state names and addresses of partners. If Bidder is a trust or other legal entity, state correct names and addresses of trustees or names and address of those legally authorized to bid and enter into contracts.

EXCEPTION OR ALTERNATES TO SPECIFICATIONS, TERMS OF SALE, AND DISCOUNTS AVAILABLE, MUST BE INCLUDED IN THE BID PRIOR TO OPENING DATE.

Intent of Project

**The School Department of the City of Waltham wishes to purchase 81 Aruba AP 105
Wireless Access Point with 81 Ceiling Rail Kits and 5 remotes**

AGREEMENT

CITY OF WALTHAM

ARTICLE 1. This agreement, made this _____ day of _____, 2012 by and between the CITY OF WALTHAM, party of the first part, hereinafter called the CITY, by its MAYOR, and

_____ hereinafter called the CONTRACTOR.

ARTICLE 2. Witnesseth, that the parties to this agreement, each in consideration of the agreement on the part of the others herein contained, do hereby agree, the CITY OF WALTHAM for itself, and said contractor for his heirs, executors, administrators and assigns as follows:

To furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished (except as otherwise specified) and deliver in and about the project and to do and perform all work in strict conformity with the provisions of this Contract and of the Notice to Bidders, bid, Project Manual, and Drawings hereto annexed. The said Notice to Bidders, bid, Project Manual, and Drawings are hereby made a part of this contract as fully and to the same effect as if the same had been set forth at length and incorporated in the contracts.

ARTICLE 3. In consideration of the foregoing premises the CITY agrees to pay and the CONTRACTOR agrees to receive as full compensation for everything furnished and done by the CONTRACTOR under this contract, including all work required by not included in the items herein mentioned, and also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work specified, and for well and faithfully completing the work, and the whole thereof, as herein provided, such prices as are set forth in the accompanying bid.

This Agreement entered into as of the day and year first written above.

CITY OF WALTHAM, MASSACHUSETTS

FOR THE CITY

Jeannette A. McCarthy, MAYOR,
City of Waltham
Date: _____

John B. Cervone, City Solicitor
Date: _____

APPROVED AS TO FORM ONLY

Susan Nicholson, School Superintendent
Date: _____

Joseph Pedulla, Purchasing Agent
Date: _____

Paul Centofanti, Auditor
Date: _____

I CERTIFY THAT SUFFICIENT FUNDS
ARE AVAILABLE FOR THIS CONTRACT

FOR THE COMPANY

CONTRACTOR (Signature),
Date: _____

Company

Address

Instructions

INSTRUCTIONS FOR BIDDERS

1. **READ ALL DOCUMENTS.**

Bidders should familiarize themselves with all the documents contained herein; it is mandatory that all Bids be in compliance with all the provisions contained in said documents.

2. **FORMS AND ATTACHMENTS.**

Bids are to be completed on the forms provided ONLY and enclosed in a sealed envelope marked on the outside "BID (title)" and the name and address of bidder. Attachments submitted in addition to the Waltham Purchasing Department produced forms may not be considered.

3. **PRINTED OR TYPED RESPONSE.**

All information must be typewritten or printed in ink, including the price the bidder offers in the space as provided on the bid form.

4. **CORRECTIONS.**

Bids that are submitted containing cross outs, white outs or erasures, will be rejected.

All corrections or modifications to the original bid are to be submitted in a separate envelope, properly marked on the outside, "CORRECTION/ MODIFICATION TO BID (title)" and submitted prior to the bid opening.

ALL DOCUMENTS SUBMITTED WITH YOUR RESPONSE WILL BE INCORPORATED INTO THE CONTRACT.

5. **PRICE IS ALL INCLUSIVE.**

Bid prices shall encompass everything necessary for furnishing all items, materials, supplies or services as specified, and in accordance with the specifications, including proper packing, cost of delivery, and in the case of services, completion of same, as per specifications.

6. **PRICE DISCREPANCY.**

In the event of a discrepancy between the Unit Price and the Extension, the Unit Price shall prevail.

7. EXPLANATIONS, EXCEPTIONS

Explanations, exceptions or other information pertinent to the specifications may be made in writing and included in the same envelope with the bid.

8. BID DEPOSITS.

Bid deposits are to be made payable to the City of Waltham. In the event that the successful bidder fails to execute a Contract within (10) days of the receipt of said contract, such security shall be retained by the city as liquidated damages. Unsuccessful bidders' deposits will be returned immediately following the award to said successful bidder.

9. WITHDRAW.

A Bid may be withdrawn by written request prior to the schedule for the Bid Opening. No withdrawals are permitted after the bid opening date and time. Withdrawals after the bid opening date will cause the forfeit of the bid Deposit.

10. AWARD.

Bids will be awarded not later than (90) ninety days after the scheduled bid opening date, unless otherwise stated, in the specifications. Unless otherwise specified, bids will be evaluated on the basis of, completeness of your RFP response, responsiveness, responsibility, best price and experience.

11. AWARD CRITERIA.

Qualified and responsive proposals will be evaluated based on Price, Technical, and Compliance requirements:

12. DISCOUNTS.

Discounts for prompt payments will be considered when making awards.

13. TAX EXEMPT.

Purchases by the City of Waltham is exempt from any Federal, State or Massachusetts Municipal Sales and/or Excise Taxes.

14. SAMPLES.

The City of Waltham may require the submission of samples either before or after the awarding of a contract. Samples are to be submitted, at no charge to the City, so as to ascertain the product's suitability. If specifically stated in the Bid that samples are required, said samples must be submitted with the Bid prior to the Official Bid Opening. Failure to submit said samples would be cause for rejection of Bid. All samples must be

called for and picked up within (30) thirty days of award or said samples will be presumed abandoned and will be disposed of.

15. **ACTIVE VENDOR LIST.**

Vendors who wish to remain on the Active Bid List must either submit a Bid, No Bid, or a letter requesting same, no later than the Official Bid Opening. This is applicable to those vendors who have received the Invitation to Bid.

16. **FUNDS APPROPRIATION.**

THE CONTRACT OBLIGATION ON BEHALF OF THE CITY IS SUBJECT TO PRIOR APPROPRIATION OF MONIES FROM THE GOVERNMENTAL BODY AND AUTHORIZATION BY THE MAYOR.

17. **THE AWARDING AUTHORITY RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS, OR ANY PART OF ANY BID, WHICH IN THE OPINION OF THE AWARDING AUTHORITY, IS IN THE BEST INTERESTS OF THE CITY OF WALTHAM.**

18. **THE TAX ATTESTATION CLAUSE, CERTIFICATION OF NON-COLLUSION AND THE CERTIFICATE OF VOTE AUTHORIZATION,** are required by statute and are an integral part of the Invitation for Bid and must be completed and signed by the person submitting the Bid, or by the person/persons who are officially authorized to do so. Failure to do so may disqualify the bid.

19. **STANDARD OF QUALITY.**

Where, in the specifications, one certain kind, type, catalog number, brand or manufacturer of material is named, it shall be regarded as the required standard of quality. Where two or more are named, these are presumed to be equal and the Bidder may select one or the other. If the Bidder proposes to offer a substitute as an equal, he shall so indicate on the Bid Form, the kind, type, catalog number, brand, or manufacturer of material that is offered as an equal, and describe where it differs from the specifications. Substituted items must be capable of performing all the functions and/or operational features described or indicated in the specifications. Failure to indicate the description of any substitute item on the Bid will be interpreted to mean that the Bidder will furnish the item or service as specified.

20. MODIFICATION.

No agreement, understanding, alteration or variation of the agreement, terms or provisions herein contained shall bind the parties, hereto unless made and executed in writing by the parties hereto.

21. ASSIGNMENT.

The final payment for work done under this Contract shall be made only after the Contractor has signed a statement under the penalty of perjury, certifying that he has completed the work described in the final estimate. Neither party hereto shall assign this Contract or sublet it in part or as a whole without the prior written consent of the other party hereto. The Contractor shall not assign any sum or sums due or becoming due to him hereunder without the prior written consent of the City.

22. DELIVERIES:

a) The Contractor shall pay all freight and delivery charges. The Waltham Purchasing Department does not pay for shipping and packaging expenses. Items must be delivered as stipulated in the specifications. All deliveries must be made to the inside of city buildings. Sidewalk deliveries will not be accepted. City personnel are not required to assist in the deliveries and contractors are cautioned to notify their shippers that adequate assistance must be provided at the point of delivery, when necessary.

b) All items of furniture must be delivered inside the building, set up, in place and ready for use. Deliveries are to be made between the hours of 8:30 a.m. and 3:00 p.m., Monday through Friday, except on holidays.

c) All damaged items, or items which do not comply with specifications will not be accepted and title therefore will not vest to the Waltham Purchasing Department until such items are accepted and signed for, in good order, by the receiving department.

d) The contractor must replace, without further cost to the Waltham Purchasing Department, such damaged or non-complying items before payment will be made.

23. LABELING.

All packages cartons or other containers must be clearly marked with (a) building and room destination; (b) description of contents of item number from specifications; (c) quantity; (d) City of Waltham Purchase Order Number and (e) Vendor's name and order number.

24. GUARANTEES.

Unless otherwise stipulated in the specifications, furniture, equipment and similar durable items shall be guaranteed by the contractor for a period of not less than one year from the date of delivery and acceptance by the receiving department. In addition, the manufacturer's guarantee shall be furnished. Any items provided under this contract which are or become defective during the guarantee period shall be replaced the contractor free of charge with the specific understanding that all replacements shall carry the same guarantee as the original equipment. The contractor shall make such replacement immediately upon receiving notice from the Purchasing Agent.

25. SINGLE VENDOR.

The Waltham Purchasing Department desires to award a single contract based on the Grand Total Price. However, where applicable, the City reserves the right to make multiple awards on a unit price basis if, in the opinion of the Waltham Purchasing Department, it is in the best interest of the Waltham Purchasing Department.

26. CHANGE ORDERS.

Change orders are not effective until, if, as and when signed by the Mayor and no work is to commence until the change orders are fully executed.

28. BID OPENING INCLEMENT WEATHER

If, at the time of the originally scheduled bid opening, City Hall is closed to inclement weather or another unforeseeable event, the bid opening will be extended until 2:00 PM on the next normal business day. Bids will be accepted until that date and time.

GENERAL CONDITIONS

GENERAL CONDITIONS

1. INFORMATION

All information shall come from the Office of the City Purchasing Agent. The Contractor shall inquire at this office for any information needed. Wherever the words "or equal as approved" are used, it is to be understood that the opinion of the City Purchasing Agent shall govern.

2. SUITS

The Contractor shall assume defense of and shall indemnify and hold the City and its agents harmless from all suits and claims against the City and its sub-contractors arising from the use of any invention, patent right labor or employment, or from any act of omission or neglect of the City, its agents, employees or any subcontractor in performing the work, under this contract.

3. LAWS AND REGULATIONS

The Contractor shall conform to all the applicable rules, regulations, laws and ordinances of the City of Waltham, the Commonwealth of Massachusetts, the United States of America and all agencies having jurisdiction over this contract.

4. PROTECTION OF PROPERTY

The Contractor shall take all proper precautions to protect the City's property from damage and unnecessary inconvenience. Any City property damaged by the Contractor in carrying out the provisions of this contract shall be restored to its original condition, by and at the expense of the Contractor.

5. PROTECTION OF PERSONS

The Contractor shall take all proper precautions to protect persons from injury, unnecessary inconvenience, and shall be responsible for his failure to do so. The Contractor agrees to hold the City harmless from any and all liabilities of every nature and description, which may be suffered through bodily injury, including death, to any person, by reason of negligence of the Contractor, his agents or employees, or any subcontractor.

6. INSURANCE

A. **WORKMAN'S COMPENSATION:** The Contractor shall provide by insurance for the payment of compensation and furnishing of other benefits under Chapter 152 of the General Laws of the Commonwealth of Massachusetts to all persons to be

employed under this contract, the premiums for which shall be paid by the Contractor.

B. COMPREHENSIVE GENERAL LIABILITY

Bodily Injury:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate
Property Damage:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate

C. AUTOMOBILE (VEHICLE) LIABILITY

Bodily Injury	\$2,000,000 Each Occurrence
Property Damage	\$1,000,000 Aggregate

D. UMBRELLA POLICY

General liability	\$1,000,000
-------------------	-------------

Your bid response must include a Certificate of Insurance with the above limits as a minimum. In addition, the Certificate of Insurance must have the following text contained in the bottom left box of the Certificate: **"The City of Waltham is a named Additional Insured for all Insurance"**. The Certificate of Insurance must be mailed directly to:

Office of the Purchasing Agent
Purchasing Department
City of Waltham
610 Main Street
Waltham, MA 02452

7. PERSONNEL:

The Contractor shall employ a competent supervisor and all properly licensed personnel necessary to perform the services required in this contract. The City Purchasing Agent shall have the right to require the Contractor to remove and/or replace any of the personnel for nonperformance or for unprofessional behavior. The City Purchasing Agent may require the Contractor to submit a weekly performance record of the areas and of the work performed, on forms approved by the City Purchasing Agent. The Contractor or his supervisor shall be available to inspect such work as required by the City Purchasing Agent.

8. **MATERIALS**

The City or its Agent reserves the right to approve or reject any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any rejected supplies, materials or equipment, to the satisfaction of the City or its Agents.

9. **TERMINATION OF CONTRACT**

This contract may be terminated by the City upon deliverance to the Contractor of a five-day written notice of said termination.

10. **CONTRACT OBLIGATIONS**

Contract obligations on behalf of the City are subject to an annual appropriation to cover the contract obligation.

11. **BIDDER EXPERIENCE EVALUATION**

Each bidder shall submit with his bid, all the information relative to their experience and qualifications in performing the work required under this contract and shall have been in business for a minimum of five (5) years, in order for their bid to be considered.

15. **NOT-TO-EXCEED AMOUNT**

The bid amount proposed in your company's response is a "not-to- Exceed" amount unless the City makes changes, in writing, to the scope of work to be performed. The Change Order must be signed and approved by the City's Purchasing Agent, City Auditor, Law Department and the Mayor prior to the commencement of the change order work. No work is to begin until the proper approvals have been obtained. A change order will be priced at the unit price. Failure to comply with this procedure will result in the cancellation of the contract and the non-payment of services provided

16. **FINANCIAL STATEMENTS.**

The City may require, within five (5) days after the bid opening, a complete and detailed Financial Statement prepared by a Certified Public Account, to determine a bidder's financial stability.

17 BREACH OF CONTRACT/ NON PERFORMANCE

If the Contractor shall provide services in a manner, which is not to the satisfaction of the City, the City may request that the Contractor refurnish services at no additional cost to the City until approved by the City. If the Contractor shall fail to provide services, which are satisfactory to the City, the City in the alternative may make any reasonable purchase or Contract to purchase services in substitution for those due from the Contractor. The City may deduct the cost of any substitute Contract for nonperformance of services together with incidental and consequential damages from the Contract price and shall withhold such damages from sums due or to become due to the Contractor. If the damages sustained by the City exceed sums due or to become due, the Contractor shall pay the difference to the City upon demand. The Contractor shall not be liable for any damages sustained by the City due to the Contractor's failure to furnish services under the terms of this Contract if such failure is in fact caused by the occurrence of a contingency the nonoccurrence of which was a basic assumption under which this Contract was made, including a state of war, embargoes, expropriation of labor strike or any unanticipated federal, state or municipal governmental regulation of order, provided that the Contractor has notified the City in writing of such cause within seven (7) days after its occurrence.

18 RIGHT TO AUDIT

The City of Waltham has the right to review and audit documents related to this contract. This right extends to any subcontractor, supplier or other entity used by the prime contractor to fulfill the obligations under this contract.

19. CITY ORDINANCE. APPROVAL OF CONTRACTS BY MAYOR, SEC. 3-12 OF THE CITY ORDINANCES.

All contract made by any department, board or commission where the amount involved is two thousand dollars (\$2,000) or more shall be in writing, and no such contract shall be deemed to have been made or executed until the approval of the Mayor is affixed thereto. Any construction contract shall, and all other contracts may, where the contract exceed five thousand dollars (\$5,000) be required to be accompanied by a bond with sureties satisfactory to the Mayor.

Specifications

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

- 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

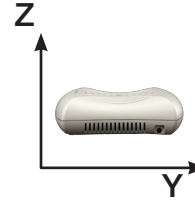


AP-104 AND AP-105 RF PERFORMANCE TABLE

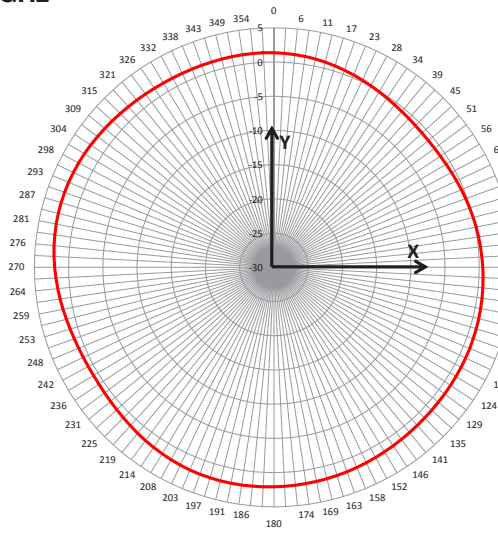
	Max tX Power per Active tX chain (dbm)	rX sensitivity (dbm)	Max tX Power per Active tX chain (dbm)	rX sensitivity (dbm)
	2.4 GHz		5 GHz	
802.11b				
1 Mbps	20	-96		
2 Mbps	20	-96		
5.5 Mbps	20	-94		
11 Mbps	20	-93		
802.11a/g				
6 Mbps	20	-96	20	-96
9 Mbps	20	-96	20	-96
12 Mbps	20	-96	20	-96
18 Mbps	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.

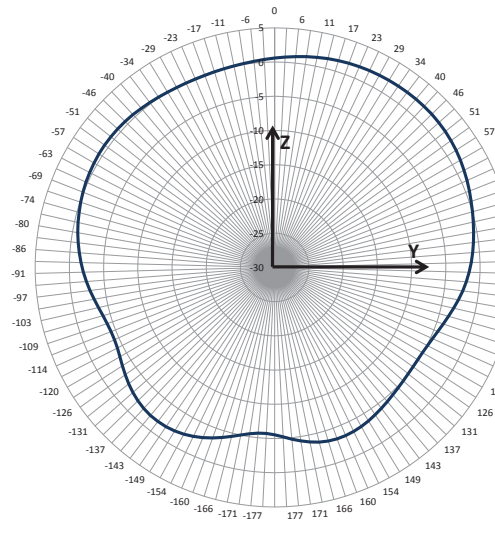
AP-105 ANTENNA PATTERN PLOTS



2.45 GHz

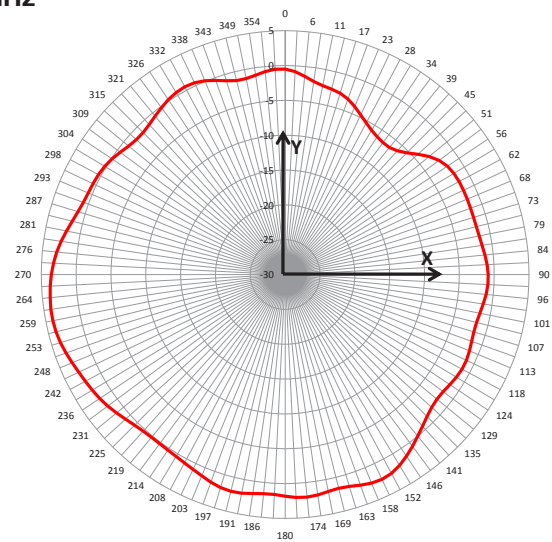


Horizontal (azimuth) plane

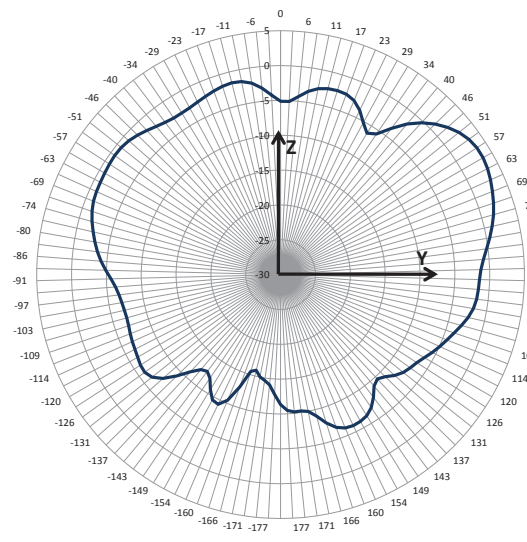


Vertical (elevation) plane

5.5 GHz



Horizontal (azimuth) plane



Vertical (elevation) plane

Ordering Information	
Part Number	Description
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



ARUBA RAP-2WG REMOTE ACCESS POINT

Ideal for small branch offices and home teleworkers, the single-radio 802.11b/g RAP-2WG Remote Access Point offers wired and wireless network access, zero-touch provisioning, identity-based access control, policy-based forwarding, air monitoring and wireless intrusion protection across the 2.4-GHz band. It also features two 10/100BASE-T Ethernet ports.

Centrally managed from an Aruba [Controller](#), the RAP-2WG provides the network administrator with unparalleled control over services and security.



APPLICATION

- Remote office, home office, retail branch, remote learning, and fixed telecommuter. Indoor applications.

WIRED OPERATING MODES

- 10/100 Ethernet
- User authentication - 802.1X, Captive Portal, Mac Authentication, or Open Access
- Policy based forwarding for local resource access

WIRELESS OPERATING MODES

- 802.11b/g WLAN or 802.11b/g Air Monitor

RF MANAGEMENT

- Automatic transmit power and channel management control with auto coverage hole correction via Adaptive Radio Management (ARM)

WIRELESS RADIO SPECIFICATIONS

- AP type: Single-radio, single-band
- Supported Frequency Bands (country-specific restrictions apply):
 - 2.400 - 2.4835 GHz
- Available Channels: Controller-managed, dependent upon regulatory domain
- Modulations:
 - 802.11b: Direct-Sequence Spread-Spectrum (DSSS)
 - 802.11g: Orthogonal Frequency Division Multiplexing (OFDM)
- Transmit Power: Configurable in increments of 0.5 dBm
- Association Rates (Mbps):
 - 802.11b: 1, 2, 5.5, 11 with automatic fallback
 - 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 with automatic fallback

INTERFACES

- Network:
 - 2 x 10/100Base-T Ethernet (RJ45), auto-sensing link speed and MDI/MDX
- Antenna:
 - 1 x Antenna port RP-SMA
- Power:
 - 1 x DC power connector
- Other:
 - 1 x reset button (resets device to factory defaults)

POWER

- Adapter (included):
 - AC Input: 100-240V/0.3A
 - DC Output: 12V/1A
- Maximum Power Consumption: 6.5W

ANTENNA

- Type: Omni-directional, detachable
- Gain: 2.4 GHz-2.5 GHz / 1.5 dBi (nominal)

MOUNTING

- Desk-top
- Wall

MECHANICAL

- Dimensions/Weight (excluding antenna):
 - 2.8" x 3.9" x 1.0" (70 mm x 100 mm x 26 mm)
 - 0.2 pounds (90g)
- Dimensions/Weight (Shipping):
 - 6.5" x 10.2" x 2.4" (165 mm x 260 mm x 60 mm)
 - 0.88 pounds (400g)

ENVIRONMENTAL

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

REGULATORY

- FCC Part 15
- Industry Canada
- CE Mark
- UL/IEC/EN 60950-1:2001
- CB, cULus

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

ARUBA RAP-2WG ACCESS POINT

WARRANTY

- 1 Year parts/labor

ORDERING INFORMATION

Part number	Description
RAP-2WG-US	Aruba RAP-2WG with AC Power Adapter Kit - North America
RAP-2WG-EU	Aruba RAP-2WG with AC Power Adapter Kit - European Union
RAP-2WG	Aruba RAP-2WG with AC Power Adapter Kit - International

RF PERFORMANCE TABLE

	Max TX power (dBm)	RX Sensitivity (dBm)
802.11b 2.4GHz		
1Mbps	+18.0	-92.0
2Mbps	+18.0	-91.0
5.5Mbps	+18.0	-89.0
11Mbps	+18.0	-86.0
802.11g 2.4GHz		
6Mbps	+17.0	-89.0
9Mbps	+17.0	-88.0
12Mbps	+17.0	-86.0
18Mbps	+16.0	-84.0
24Mbps	+16.0	-81.0
36Mbps	+15.0	-77.0
48Mbps	+14.0	-73.0
54Mbps	+14.0	-70.0

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



WWW.ARUBANETWORKS.COM

1344 Crossman Avenue. Sunnyvale, CA 94089 | Tel. +1 408.227.4500 | Fax. +1 408.227.4550

Compliance

(Required Documents.)

Compliance

The compliance documents in this section must be completed, signed and returned **with your bid package.**

Purchasing Department

City of Waltham
610 Main Street
Waltham, MA 02452

Failure to submit the completed documents will cause the disqualification of the proposal.

Section Index

	Check when Complete
• Non-collusion form and Tax Compliance form.....	_____
• Corporation Identification Form.....	_____
• Certificate of Vote Authorization.....	_____
• Certificate of Insurance (showing all limits of WC &GL).....	_____
• Three (3) References.....	_____
• Debarment Certificate	_____

Your Company's Name: _____

Service or Product Bid _____

NOTE: Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

NON-COLLUSION FORM AND TAX COMPLIANCE FORM

CERTIFICATE OF NON-COLLUSION

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity or group of individuals. The undersigned certifies that no representations made by any City officials, employees, entity, or group of individuals other than the Purchasing Agent of the City of Waltham was relied upon in the making of this bid

_____, _____
(Signature of person signing bid or proposal) Date

(Name of business)

TAX COMPLIANCE CERTIFICATION

Pursuant to M.G.L. c. 62C, & 49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

_____, _____
Signature of person submitting bid or proposal Date

Name of business

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

CERTIFICATE OF VOTE OF AUTHORIZATION

Date:

I _____, Clerk of _____ hereby certify that at a meeting of the Board of Directors of said Corporation duly held on the _____ day of _____ at which time a quorum was present and voting throughout, the following vote was duly passed and is now in full force and effect:

VOTED: That _____ (*name*) is hereby authorized, directed and empowered for the name and on behalf of this Corporation to sign, seal with the corporate seat, execute, acknowledge and deliver all contracts and other obligations of this Corporation; the execution of any such contract to be valid and binding upon this Corporation for all purposes, and that this vote shall remain in full force and effect unless and until the same has been altered, amended or revoked by a subsequent vote of such directors and a certificate of such later vote attested by the Clerk of this Corporation.

I further certify that _____ is duly elected/appointed _____ of said corporation

SIGNED:

(Corporate Seal)

Clerk of the Corporation:

Print Name: _____

COMMONWEALTH OF MASSACHUSETTS

County of _____

Date:

Then personally appeared the above named and acknowledged the foregoing instrument to be their free act and deed before me, _____

Notary Public;

My Commission expires: _____

CORPORATION IDENTIFICATION

The bidder for the information of the Awarding Authority furnishes the following information.

If a Corporation:

Incorporated in what state _____

President _____

Treasurer _____

Secretary _____

Federal ID Number _____

If a foreign (out of State) Corporation – Are you registered to do business in Massachusetts?

Yes _____, No _____

If you are selected for this work you are required under M.G.L.ch. 30S, 39L to obtain from the Secretary of State, Foreign Corp. Section, State House, Boston, a certificate stating that you Corporation is registered, and furnish said certificate to the Awarding Authority prior to the award.

If a Partnership: (Name all partners)

Name of partner _____

Residence _____

Name of partner _____

Residence _____

If an Individual:

Name _____

Residence _____

If an Individual doing business under a firm's name:

Name of Firm _____

Name of Individual _____

Business Address _____

Residence _____

Date _____

Name of Bidder _____

By _____

Signature

Title

Business Address

(POST OFFICE BOX NUMBER NOT ACCEPTABLE)

City

State

Telephone Number

Today's Date

PROVIDE THREE (3) SERVICE APPROPRIATE REFERENCES

1. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

2. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

3. Company Name:

Address:

Contact Name:

Phone #

Type of service/product provided to this Company:

Dollar value of service provided to this Company:

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.

DEBARMENT CERTIFICATION

In connection with this bid and all procurement transactions, by signature thereon, the respondent certifies that neither the company nor its principals are suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts, procurement or non procurement programs from the Commonwealth of Massachusetts, the US Federal Government and /or the City of Waltham. "Principals" means officers, directors, owners, partners and persons having primary interest, management or supervisory responsibilities with the business entity. Vendors shall provide immediate written notification to the Purchasing Agent of the City of Waltham at any time during the period of the contract of prior to the contract award if the vendor learns of any changed condition with regards to the debarment of the company or its officers. This certification is a material representation of fact upon which reliance will be placed when making the business award. If at any time it is determined that the vendor knowingly misrepresented this certification, in addition to other legal remedies available to the City of Waltham, the contract will be cancelled and the award revoked.

Company Name _____

Address _____

City _____, State _____, Zip Code _____

Phone Number (____) _____

E-Mail Address _____

Signed by Authorized Company Representative:

Print name _____,

Date _____

BID PRICE FORM

(Follows)

PRICE SHEET

#	Part #	Description	Qty	Unit \$	Extended Cost
1	AP 105	Aruba AP 105 Wireless Access Point Dual Radio	81	\$	\$
2	AP 105 MNT - C	Aruba AP 105 Ceiling Rail Adapter Kit (Ceiling Mounting Brackets for Aps)	81	\$	\$
3	RAP -2WG-US	ARUBA RAP-2 WG Remote Access Point (Wireless 2x10/100 base-T) NA	5	\$	\$
4	LESS CREDIT ****	Trade In Place for 81 Older School Owned AP 61 Units	81	\$ ()	\$ ()
5		TOTAL NET COST	XXXXX	\$	\$

******** This is a "in place" buy back credit extended to the school department for the existing 81 Aruba AP 61 Units. The School requeststhat the units be abandoned in place. However, if the offering company wishes to remove them it can do so at its expenses.

Company's Name: _____

Authorized Signature: _____

Print Name: _____

Date: _____

