

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

Please Read
Application And
Notes, If Any,
Attached

BUILDING INSPECTION

PERMIT

Permit Number: 070294

PERMIT ISSUED

APR 18 2007

This is to certify that UNUM LIFE INSURANCE COMPANY OF AMERICA/Verizon W

has permission to Install wireless equipment with antenna on roof

AT 102 HUTCHINS DR

240 A00200

provided that the person or persons performing or supervising this work shall comply with all of the provisions of the Statutes of the State and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and when permit is procured before this building or part thereof is leased or closed-in. 24 HOUR NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS

Fire Dept. _____

Health Dept. _____

Appeal Board _____

Other _____

Department Name

Jeannie Bouke 4/17/07
Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

City of Portland, Maine - Building or Use Permit Application

389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 07-0294		Issue Date:		CBL: 240 A002001	
Location of Construction: 102 HUTCHINS DR		Owner Name: UNUM LIFE INSURANCE COMP		Owner Address: 2211 CONGRESS ST	
Business Name:		Contractor Name: Verizon Wireless		Contractor Address: 400 Friberg Parkway Westborough	
Lessee/Buyer's Name		Phone:		Permit Type: Alterations - Commercial	
Past Use: Commercial / UNUM		Proposed Use: Commercial / UNUM Install wireless equipment with antenna on roof		Zone: I-M	
Proposed Project Description: Install wireless equipment with antenna on roof		Permit Fee: \$190.00		Cost of Work: \$16,800.00	
		CEO District: 3		INSPECTION: Use Group: <i>Antenna/equipment</i> Type: <i>IBC-2003</i> Signature: <i>JMB</i> 4/17/07	
		FIRE DEPT: <input type="checkbox"/> Approved <input type="checkbox"/> Denied		PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.): Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Signature: _____ Date: _____	
Permit Taken By: dmartin		Date Applied For: 03/21/2007		Zoning Approval	
<ol style="list-style-type: none">This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.Building permits do not include plumbing, septic or electrical work.Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..		Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input checked="" type="checkbox"/> Site Plan <i>Exemption Attached</i> Major <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>3/23/07</i>		Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: _____	
		Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>S</i>			

PERMIT ISSUED

APR 18 2007

CITY OF PORTLAND

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT

ADDRESS

DATE

PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE

DATE

PHONE

City of Portland, Maine - Building or Use Permit

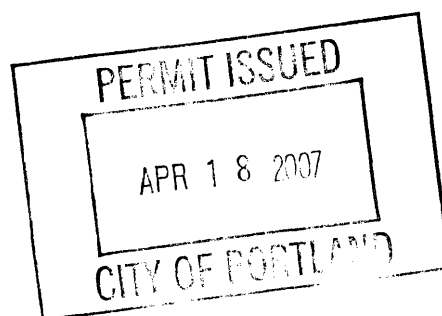
389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 07-0294	Date Applied For: 03/21/2007	CBL: 240 A002001
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Location of Construction: 102 HUTCHINS DR	Owner Name: UNUM LIFE INSURANCE COMP	Owner Address: 2211 CONGRESS ST	Phone:
Business Name:	Contractor Name: Verizon Wireless	Contractor Address: 400 Friberg Parkway Westborough	Phone
Lessee/Buyer's Name	Phone:	Permit Type: Radio/Telecommunications Equipment	

Proposed Use: Commercial / UNUM Install wireless equipment with antenna on roof	Proposed Project Description: Install wireless equipment with antenna on roof
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Dept: Zoning Note:	Status: Approved	Reviewer: Marge Schmuckal	Approval Date: 03/23/2007 Ok to Issue: <input checked="" type="checkbox"/>
Dept: Building Note:	Status: Approved	Reviewer: Residential Plan Revie	Approval Date: Ok to Issue: <input type="checkbox"/>





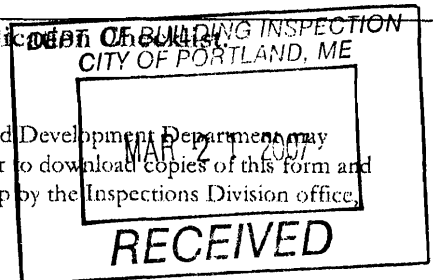
General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location/Address of Construction: 102 Hutchins Dr., Portland, ME 04102		
Total Square Footage of Proposed Structure 84,000 sf		Square Footage of Lot 237,402 sf
Tax Assessor's Chart, Block & Lot Chart# 240 Block# - A Lot# 2&3	Owner: UNUM Communications Facility	Telephone: (508) 330-3300
Lessee/Buyer's Name (If Applicable)	Applicant name, address & telephone: Verizon Wireless 400 Friberg Pkway Westborough, MA 01581	Cost Of Work: \$ 16,800 Fee: \$ 174.00 C of O Fee: \$
Current legal use (i.e. single family) <u>Office Building</u> If vacant, what was the previous use? <u>Office Building</u> Proposed Specific use: _____ Is property part of a subdivision? _____ If yes, please name _____ Project description: <u>Install wireless equipment in the existing UNUM building.</u>		
Contractor's name, address & telephone: Robert Hogan 400 Friberg Pkwy. Verizon Wireless, Westborough, MA 01581 Who should we contact when the permit is ready: <u>Chuck Webberly</u> Mailing address: _____ Phone: <u>617/489-7211</u> <u>Structure Consulting Group</u> <u>43 White St., Suite 4</u> <u>Belmont, MA 02478</u>		

Please submit all of the information outlined in the Commercial Application of Building Inspection, City of Portland, ME. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.



I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: Chuck Webberly

Date: 3/12/07

This is not a permit; you may not commence ANY work until the permit is issued.

Chuck Webberly - Authorized Agent for Verizon Wireless (617) 780-15746

Handwritten initials: JF 09/03



March 21, 2007
07017

Marge Schmuckal
Zoning Administrator
389 Congress Street
Portland, Maine 04101

sebagotechnics.com
One Chabot Street
P.O. Box 1339
Westbrook, Maine
04098-1339
Ph. 207-856-0277
Fax 856-2206

General Building Permit Application
Verizon Wireless, Unum

Dear Marge:

Enclosed please find the General Building Permit Application for the Verizon Wireless rooftop installation at the UNUM building off Hutchins Drive in Portland.

The project consists of two major components. The first is the installation of interior antennas and cables mounted to the existing suspended ceilings. The second element is the installation of antennas mounted to the existing mechanical equipment on the roof of the building. The roof mount will consist of a 4 inch galvanized steel pipe mast and antennas bolted to the existing mechanical platform. We anticipate that the mast will be approximately 10 feet long and weight approximately 100 pounds. The radio equipment that will provide the communications between the internal antennas and the external antennas will be located in the existing mechanical room where the required utility services exist for this installation. This is an unmanned facility and access to the facility will only be required for routine maintenance and service calls.

Enclosed is a check in the amount of \$174.00 to cover the General Building Permit Application fee. The applicant has estimated the cost for the project at \$16,800.00. Also enclosed, please find copies of the following material in support of the application:

- The Site Plan Exemption that has been granted by the City of Portland.
- Rooftop Site Plan showing the location of the external installation.
- Ceiling plan showing the internal antenna locations.
- Antenna cut sheets for the project.
- Proposed communication radio equipment for the project.

Should you have any questions regarding this application, please contact me. Also, please let us know when the building permit has been issued and we will have it picked up.

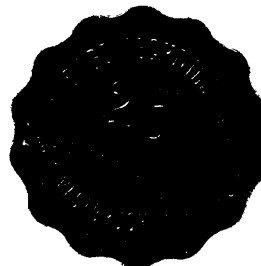
Sincerely,

SEBAGO TECHNICS, INC.

Anik Nadeau
Design Engineer

AN:an/kn
Enc.

cc: Chuck Webberly





APPLICATION FOR EXEMPTION FROM SITE PLAN REVIEW

VERIZON WIRELESS UNUM
Applicant

02/08/07
Application Date

400 FRIBERG PARKWAY, WESTBOROUGH, MA
Applicant's Mailing Address 01581

IN-BUILDING CELL SERVICE
Project Name/Description

Sebago Technics/Charlie Brown/207-856-0277
Consultant/Agent/Phone Number

102 HUTCHINS DR., PORTLAND, ME
Address of Proposed Site

CBL: 240-A-12

Description of Proposed Development:

ROOFTOP INSTALLATION OF VERIZON WIRELESS EQUIPMENT
ON THE EXISTING UNUM BUILDING.

Please Attach Sketch/Plan of Proposal/Development

Criteria for Exemptions:

See Section 14-523 (4) on back side of form

- a) Within Existing Structures; No New Buildings, Demolitions or Additions
- b) Footprint Increase Less Than 500 Sq. Ft.
- c) No New Curb Cuts, Driveways, Parking Areas
- d) Curbs and Sidewalks in Sound Condition/Comply with ADA

Applicant's Assessment
(Yes, No, N/A)

YES

YES

YES

N/A

Planning Office
Use Only

✓

✓

✓

✓

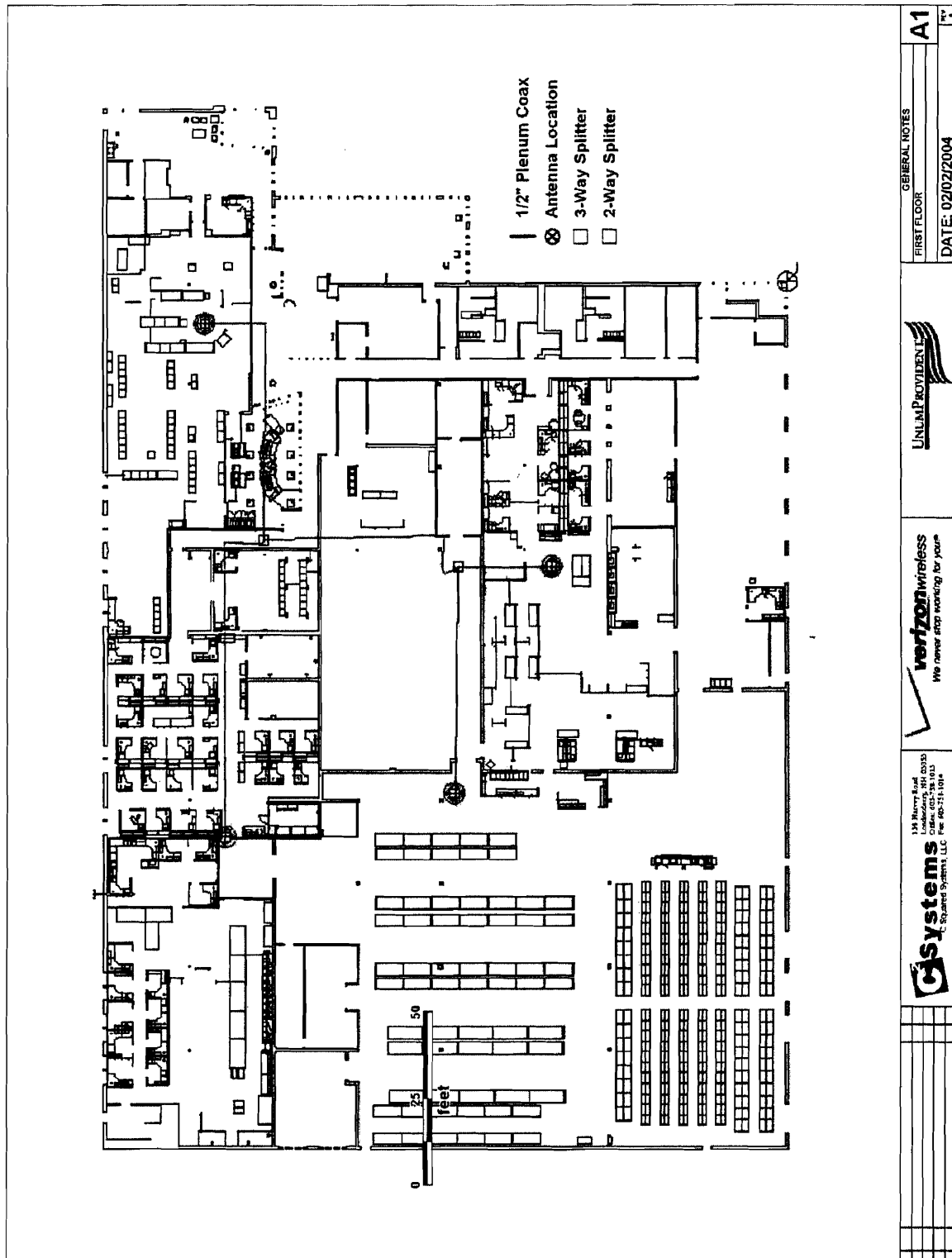


Figure 6: System Layout – First Floor

Verizon Wireless – July 6, 2006

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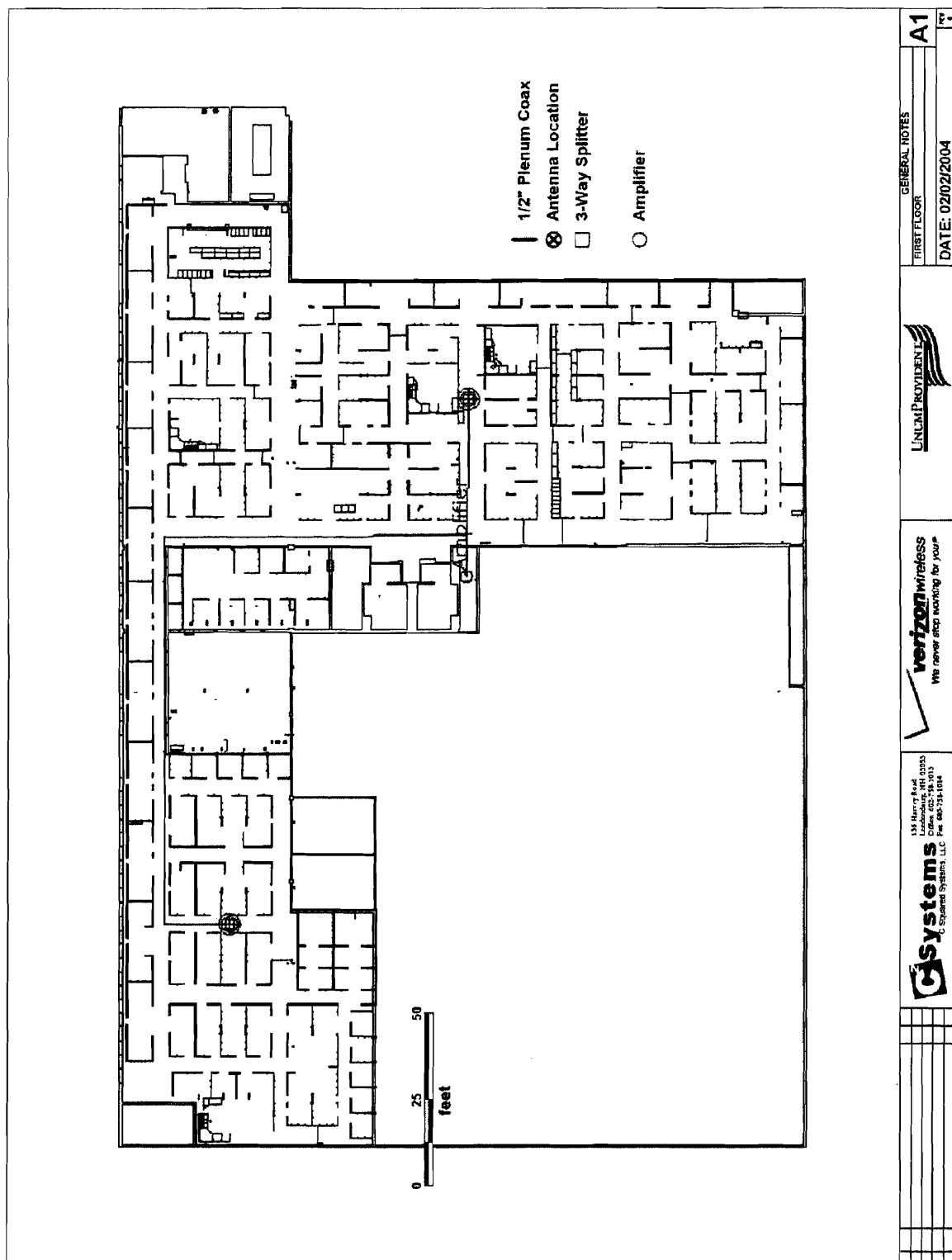


Figure 7: System Layout – Second Floor

Verizon Wireless – July 6, 2006

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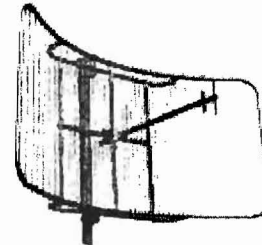
ATTACHMENT A: Donor Antennas

KATHREIN
SCALA DIVISION

PR-850 High-Gain Half-Parabolic Antenna

The Kathrein-Scala Parafactor® is a high-gain half-parabolic antenna used in broadcast and communications systems around the world.

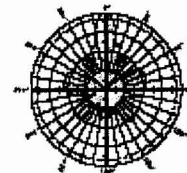
- High front-to-back ratio for point-to-point relay system applications, as well as GSM cellular repeaters and MAS and ISM systems.
- Fabricated from seamless drawn aluminum tubing and extruded pipe and heavy aluminum castings, gold anodized for corrosion protection, plus stainless steel hardware and fastenings. Foam-filled broadband feed assembly requires no pressurization and can be easily replaced if necessary.



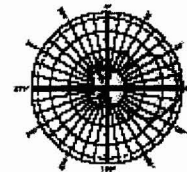
Specifications:

Frequency range	806-896 MHz (broadband)
Gain	16 dBd
Impedance	50 ohms
VSWR	$\leq 1.5:1$
Polarization	Horizontal or vertical
Front-to-back ratio	≥ 25 dB
Maximum input power	100 watts (at 50°C)
H-plane beamwidth	12 degrees (half-power)
E-plane beamwidth	24 degrees (half-power)
Connector	N female
Weight	38 lb (17.2 kg)
Dimensions	68 x 36 x 18 inches (1727 x 914 x 457 mm)
Equivalent flat plate area	6.35 ft ² (.595 m ²)
Wind survival rating*	100 mph (160 kph)
Shipping dimensions	40 x 36 x 7 inches (1016 x 914 x 178 mm)
Shipping weight	47 lb (21.3 kg)
Mounting	Mounting kits available for masts of 2.375 to 4.5 inches (60 to 114 mm) OD.

* Mechanical design is based on environmental conditions as stipulated in EIA-222-F (June 1996) and/or ETS 300 019-1-4 which include the static mechanical load imposed on an antenna by wind at maximum velocity. See the Engineering Section of the catalog for further details.



H-plane
Horizontal pattern - V-polarization
Vertical pattern - H-polarization



E-plane
Horizontal pattern - H-polarization
Vertical pattern - V-polarization

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Point to Point Antennas

Model No. A-18A24*-x

1900 MHz Planar Array

Electrical Specifications:

Frequency:	1850 - 1990 MHz
Gain:	20.0 dBi (17.9 dBd)
Azimuth Beamwidth:	14.2°
Elevation Beamwidth:	14.2°
Input Impedance:	50 ohms
VSWR:	< 1.5:1
Polarization:	Vertical or Horizontal
Electrical Down tilt:	0°
Front to Back Ratio:	> 33 dB
Sidelobe Level (elevation):	> -42 dB ($80^\circ \leq \theta \leq 100^\circ$)
Sidelobe Level (azimuth):	> -35 dB ($80^\circ \leq \theta \leq 100^\circ$)
Intermodulation:	> 147 dBc for 2 x 20 W carriers
Input Power:	100 W
Input Connector (*):	(N) N-Female or (E) 7/16-DIN Female

Mechanical Specifications:

Frontal Wind Load at 100mph (160 km/h; 45 m/s):	200 lbf (890 N)
Dimensions:	26 x 26 x 1.8 in (660 x 660 x 46 mm)
Weight:	Antenna: 18 lbs (8.2 kg)
Mounting Interface:	Pole 2.0 - 4.5 in (48 - 115 mm) dia **
Mounting Bracket (included):	(x) = (C) C-Mount or (U) U-Mount
C Mount Part Number:	505-126-5-001
Survival Wind Speed:	125 mph (201 km/h)
Operational Wind Speed:	60 mph (97 km/h)
Weight:	6 lbs (2.7 kg)
U Mount Part Number:	505-110-5-016
Survival Wind Speed:	125 mph (201 km/h)
Operational Wind Speed:	75 mph (121 km/h)
Weight:	13 lbs (5.9 kg)

© 2004 CSA Wireless reserves the right to modify or change the specifications shown above.

** Mounting Extender Kit is available for up to 16-inch diameter pipe.
Part No. 505-157-5-001 (2 Foot Planar Array only)



C-Mount



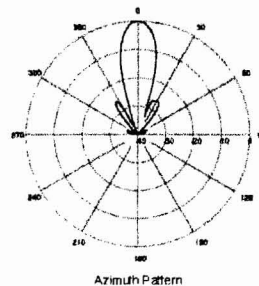
U-Mount

20.0 dBi

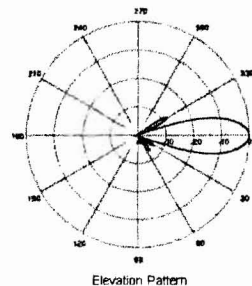
14.2° Az

V-Pol

Typical Radiation Patterns:



Azimuth Pattern



Elevation Pattern

Radiation patterns available from the CSA Wireless website at www.csa-wireless.com.

International Office:
Tel: +44 (0) 1634 715544 Fax: +44 (0) 1634 715742
e-mail: international.sales@csa-wireless.com

AC504

Americas Office:
Tel: +1 (828) 466-0412 Fax: +1 (828) 466-0413
e-mail: americas.sales@csa-wireless.com

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ATTACHMENT E: Cell Max Dual Band Antenna

new product announcement

Cell-Max™

Omnidirectional In-Building Antennas for Wireless Applications

Andrew Corporation's Cell-Max™ series of in-building antennas are a uniquely effective and unobtrusive solution to enhancing your in-building wireless coverage.

Cell-Max antennas feature a unique multi-banded design that allows a wide range of frequencies to be covered by one small antenna. Created primarily for office environments, Cell-Max antennas are also ideally suited to parking garages, airports, shopping malls, and other difficult coverage areas.

Designed for simple installation and minimal visual impact, Cell-Max antennas support both existing and future wireless applications, including 3G and 802.11b wireless LAN.

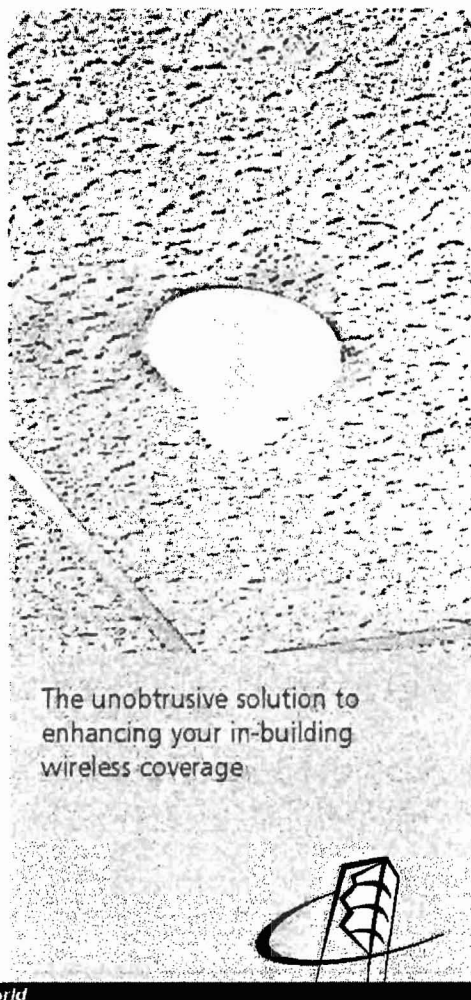
An integral low-loss coaxial cable pigtail eliminates connectors, reducing overall system cost as well as the losses associated with connector junctions.

By combining Cell-Max antennas with other in-building products such as the InCell™ fiber optic distributed antenna system, RADIAx® cable, indoor repeaters, coaxial taps, and accessories, Andrew can provide a complete solution to your internal wireless coverage needs.

Features

- Aesthetically pleasing: compact and visually unobtrusive
- Multi-banded to cover future 3G applications
- VSWR <1.6 or better across all bands
- Installs easily in minutes with standard tools
- Part of a complete system solution
- Omnidirectional pattern provides flexibility in mounting locations

ANDREW. Connecting the Wireless World



The unobtrusive solution to enhancing your in-building wireless coverage

Verizon Wireless – July 6, 2006

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