

TOWN OF FALMOUTH, MAINE

REQUEST FOR CONDITIONAL REZONING APPROVAL
TO INCREASE THE HEIGHT

OF AN EXISTING
TIER II PERSONAL WIRELESS SERVICE FACILITY
LOCATED AT
356 US RTE 1, FALMOUTH, ME

PROPOSAL BY
AT&T MOBILITY

EXHIBIT #12

ANTENNA
SPECIFICATIONS

Dual Broadband Antenna

90° 1.4 m MET Antenna

Part Number:
7770.00

Horizontal Beamwidth: 90°
Gain: 13.5/16 dBi

Electrical Downtilt: Adjustable
Connector Type: 7/16 female

The Powerwave dual band dual polarized broadband antenna has individual adjustable electrical downtilt per band (upgradeable to Remote Electrical Tilt (RET)). Four connector ports allow separate tilts on each frequency band and ensure the use of diversity concepts. The phase shifter technology, based on a patented sliding dielectric, minimizes intermodulation distortion and maximizes efficiency. The slant +/- 45° dual polarization system provides the independent fading signals needed for achieving top-quality coverage via diversity concepts. The Powerwave Broadband antenna design is based on a patented stacked aperture-coupled patch technology, which provides high isolation performance and a wide VSWR bandwidth. The antennas have superior radiation patterns due to a unique reflector design which provides a very small variation of the -3dB horizontal beam width over the frequency band as well as a high front-to-back ratio.

806-960/1710-2170 MHz



Key Benefits

- Excellent broad- and multi-band capabilities
- Polarization purity makes good diversity gain
- Excellent pattern performance and high gain over frequency
- High passive intermodulation performance
- Light, slim and robust design

Preliminary

ANTENNA
SYSTEMS

BASE STATION
SYSTEMS

COVERAGE
SYSTEMS

THE POWER IN WIRELESS®

 **Powerwave**
technologies

Dual Broadband Antenna

Electrical Specifications (Preliminary)

Frequency band (MHz)	806-960	1710-2170
Gain, ± 0.5 dB (dBi)	13.5	16.0
Polarization	Dual linear $\pm 45^\circ$	
Nominal Impedance (Ohm)	50	
VSWR	1.5:1	1.5:1
Isolation between inputs (dB)	30	30
Inter band isolation (dB)	40	40
Horizontal -3 dB beamwidth	$85 \pm 5^\circ$	$85 \pm 5^\circ$
Tracking, Horizontal plane, $\pm 60^\circ$ (dB)	< 2.0	< 2.0
Tracking, Horizontal plane, $\pm 60^\circ$ (dB)	< 2.0	< 2.0
Electrical downtilt range (adjustable)	0° to 10°	0° to 8°
Vertical -3 dB beamwidth	$14.3 \pm 2.0^\circ$	$6.6 \pm 1^\circ$
Sidelobe suppression, Vertical 1 st upper (dB)	$> 17, 16, 15$ $x=0, 5, 10^\circ$ MET	$> 17, 16, 15$ $x=0, 4, 8^\circ$ MET
Vertical beam squint	$< 0.8^\circ$	$< 0.5^\circ$
First null-fill (dB)	< -25	< -25
Front-to-back ratio (dB)	> 25	> 27
Front-to-back ratio, total power (dB)	> 20	> 23
IM3, 2Tx@43dBm (dBc)	< -153	< -153
IM3, 2Tx@43dBm (dBc)		< -153
IM7, 2Tx@43dBm (dBc)		< -160
Power Handling, Average per input (W)	400	250
Power Handling, Average total (W)	800	500

All specifications are subject to change without notice.
Contact your Powerwave representative for complete performance data.

Mechanical Specifications

Connector Type	4 x 7/16 DIN female
Connector Position	Bottom
Dimensions, HxWxD	1408mm x 280mm x 125mm (55"x11"x5")
Weight Including Brackets	15.8 kg (35 lbs)
Wind Load, Frontal, 42m/s Cd=1	435N (98 lbf)
Survival Wind Speed (m/s)	70 (156mph)
Lightning Protection	DC grounded
Radome Material	GRP
Radome Color	Light Gray
Mounting	Pre-mounted Standard Brackets
Packing Size	1550mm x 355mm x 255mm (61"x14"x10")

Corporate Headquarters
Powerwave Technologies, Inc.
1801 East St. Andrew Place
Santa Ana, CA 92705 USA
Tel: 714-466-1000
Fax: 714-466-5800
www.powerwave.com

Main European Office
Antennvägen 6
SE-187 80 Täby
Sweden
Tel: +46 8 540 822 00
Fax: +46 8 540 823 40

Main Asia Pacific Office
23 F Tai Yau Building
181 Johnston Road
Wanchai, Hong Kong
Tel: +852 2512 6123
Fax: +852 2575 4860



©Copyright March 2005, Powerwave Technologies, Inc. All Rights reserved. Powerwave, Powerwave Technologies, The Power in Wireless and the Powerwave logo are registered trademarks of Powerwave Technologies, Inc.

COVERAGE AND CAPACITY

TECHNOLOGY LEADERSHIP

GLOBAL PARTNER

INTEGRATED SOLUTIONS

QUALITY AND RELIABILITY