

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@po.state.ct.us

www.ct.gov/csc

Elizabeth H. Lankenau, AICP
Planner
Kise Straw & Kolodner Inc.
123 South Broad Street, Suite 1270
Philadelphia, PA 19109

RE: EM-CING-014-084-060602 - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 21 Acorn Road, Branford; and 10 Bona Street, Milford, Connecticut.

Dear Ms. Lankenau:

At a public meeting held on June 27, 2006, the Connecticut Siting Council (Council) acknowledged your notice to modify these existing telecommunications facilities, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated May 31, 2006 and additional information dated June 27, 2006, including the placement of all necessary equipment and shelters within the tower compounds. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to existing facility sites that would not increase tower heights, extend the boundaries of the tower sites, increase noise levels at the tower site boundaries by six decibels, and increase the total radio frequencies electromagnetic radiation power densities measured at the tower site boundaries to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. These facilities have also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on these towers.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to any of these facilities will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,
Handwritten signature of Pamela B. Katz
Pamela B. Katz, P.E.
Chairman

PBK/laf

c: See Attached List.



List Attachment.

- c: The Honorable Cheryl P. Morris, First Selectman, Town of Branford
- Justine K. Gillen, Zoning Enforcement Officer, Town of Branford
- Diana Ross, Inland Wetland Enforcement Officer, Town of Branford
- The Honorable James L. Richetelli, Jr., Mayor, City of Milford
- David Sulkis, City Planner, City of Milford
- Carlo Centore, Integrated Mobile Services, LLC
- Thomas J. Regan, Esq., Brown Rudnick Berlack Israels LLP
- Thomas F. Flynn III, Esq., Sprint Nextel Communications, Inc.
- Kenneth C. Baldwin, Esq., Robinson & Cole LLP
- Michele G. Briggs, Cingular Wireless PCS, LLC
- Christopher B. Fisher, Esq., Cuddy & Feder LLP
- Karen Couture, Site Acquisition Specialist

ORIGINAL

Kise Straw & Kolodner

Architects Planners Historians Archaeologists

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

EM-CING-014-084-060602

RECEIVED
JUN 02 2006
CONNECTICUT
SITING COUNCIL

31 May 2006

Ms. Pam Katz, Chairman, and
Members of the Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

**RE: Notice of Exempt Modification – Two (2) Existing Cingular
Telecommunications Tower Facilities**
Site 1: 21 Acorn Road, Branford, CT
Site 2: 10 Bona Road, Milford, CT

Dear Chairman Katz and Members of the Council:

Kise Straw & Kolodner Inc., in association with Network Building & Consulting, LLC, submits this notice of intent to modify two (2) existing telecommunications facilities. New Cingular Wireless PCS, LLC (“Cingular”) proposes to remove and replace telecommunications antennas and associated equipment located on an existing tower at the above-referenced locations. Cingular operates under licenses issued by the Federal Communications Commission (FCC) to provide cellular and PCS mobile telephone service in New Haven County, which includes the areas to be served by the proposed installation.

Please accept this letter as notification to the Council, pursuant to Regulations of Connecticut State Agencies (RCSA) Section 16-50j-73. This submission will demonstrate that the proposed changes fall within the limits of an exempt modification as described under the RCSA Section 16-50j-72(b)(2).

In accordance with RCSA Section 16-50j-73, the First Selectman of the Town of Branford and the Mayor of the City of Milford will receive notification of the work proposed at locations within their jurisdiction.

These proposals for modification include the following attachments:

- Project Location Map,
- Existing Site Plan,
- Tower Elevation,
- Equipment Specifications, and
- Structural Evaluation.

James Bennett Straw, AIA

Harvey D. Kolodner, MBA

James Nelson Kise, AIA/AICP/PP

Scott W. Killinger, AIA

John R. Gibbons, AIA/AICP

Philip E. Scott, EA

Suzanna Barucco

Katherine Bottom, LEED

LaVern Browne

Johnette Davies

Petar D. Glumac, Ph.D

Douglas S. Heckrotte, RA/LEED

Jody Holton, AICP

Marian Maxfield Hull, AICP/PP

Kise Straw & Kolodner Inc.
123 South Broad St.
Suite 1270
Philadelphia, PA 19109
(215) 790-1050 FAX (215) 790-0215
www.ksk1.com

Existing Facility at 21 Acorn Road

The Branford - Secondino facility is located at 21 Acorn Road, which lies approximately 1,300' south of Interstate Highway 95 (aka Governor John Davis Lodge Turnpike). Monopole coordinates are N 41°17'36" and W 72° 45'45".

The facility is controlled and operated by Cingular whose corporate office is located at 500 Enterprise Drive, Rocky Hill, CT 06067. The site hosts a 150' monopole tower and an equipment building that measures 25'8" x 11'8". Please refer to the attached *Existing Site Plan*.

Proposed Modifications at 21 Acorn Road

Cingular proposes to add one (1) new equipment cabinet (Ericsson RBS 3206) inside an existing building within the existing confines of the compound. In addition, Cingular will remove the existing antennas (DUO 4-7670) and replace them with a total of six (6) Powerwave #7770 antennas, located at an existing centerline height of approximately 105' above ground level. Cingular will remove the existing nine (9) coaxial cables and run twelve (12) new 1 5/8" diameter cables. Cingular will also remove the existing tower mounted amplifiers and affix twelve (12) new tower mounted amplifiers (LGP 214nn) to the structure at the same height as the antennas. Please refer to the attached *Tower Elevation* and *Equipment Specifications*.

In summary, the facility at 21 Acorn Road will receive a new equipment cabinet and the final antenna configuration will include:

- 6 antennas,
- 12 coaxial cables, and
- 12 tower mounted amplifiers.

The *Structural Evaluation*, which is attached to this Notice, demonstrates that the monopole will be structurally capable of supporting the proposed Cingular telecommunications equipment once the proposed modifications are complete.

Existing Facility at 10 Bona Street

The Milford - Bona Street facility is located at 10 Bona Street, which lies between Rosella Street and Ema Avenue, approximately 750' east of Interstate Highway 95 between Exits 35 and 36. Monopole coordinates are N 41°13'11.9" and W 73°04'40.2". Please refer to the attached *Project Location Map*.

The facility is controlled and operated by Cingular whose corporate office is located at 500 Enterprise Drive, Rocky Hill, CT 06067. The site hosts a 133' monopole tower and an existing shelter that measures 19' x 10'5". The perimeter of the compound, which measures 92' x 79', is surrounded by a chain link fence. Please refer to the attached *Existing Site Plan*.

measures 92' x 79', is surrounded by a chain link fence. Please refer to the attached *Existing Site Plan*.

Proposed Modifications at 10 Bona Street

As shown on the attached site plan and tower elevation, Cingular proposes to add one (1) new equipment cabinet (Ericsson RBS 3206) in an existing shelter within the existing confines of the compound. In addition, Cingular will remove the existing antennas (DUO 4-8670) and replace them with a total of six (6) Powerwave #7770 antennas, located at an existing centerline height of approximately 133' above ground level. Cingular will keep nine (9) 1 5/8" diameter coaxial cables and run three (3) new cables of the same dimension. Cingular will also remove the existing tower mounted amplifiers and affix twelve (12) new tower mounted amplifiers (LGP 214nn) to the structure at the same height as the antennas. Please refer to the attached *Tower Elevation* and *Equipment Specifications*.

In summary, the facility at 10 Bona Street will receive a new equipment cabinet and the final antenna configuration will include:

- 6 antennas,
- 12 coaxial cables, and
- 12 tower mounted amplifiers.

The *Structural Evaluation*, which is attached to this Notice, demonstrates that the monopole will be structurally capable of supporting the proposed Cingular telecommunications equipment once the proposed modifications are complete. Please note that Verizon Wireless telecommunications equipment is not currently installed on the tower; however, the structural analysis and the power density report account for the presence of this equipment.

Statutory Considerations

The planned changes to the Branford – Secondino Tower facility and the Milford – Bona Street facility fall within those activities explicitly provided for in RCSA Section 16-50j-72(b)(2). As such, the proposed work does not result in any substantial adverse environmental effect.

1. The proposed work does not affect the height of the structure.
2. The proposed changes do not affect the existing property boundaries. All proposed work will occur on the property controlled by Cingular.
3. The proposed work will not increase noise levels at the monopole site boundary by six (6) decibels or more.
4. Addition of the UMTS broadcasts will not increase the exposure to radio frequency electromagnetic energy, measured at the base of the tower, to or above

the standard adopted by the state of Connecticut and the FCC. The table below summarizes the cumulative results for a point of interest at the tower's base of the "worst-case" exposure calculations resulting from all carriers co-located on this tower. The calculations are in accordance with FCC Office of Engineering and Technology Bulletin No. 65 (1997), and for simplicity, an assumption is made that the antennas are all pointed down, thus focusing their energy at the tower's base.

Branford – Secondino Facility

Site # 2014								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu\text{W}/\text{cm}^2$)	FCC Limit ($\mu\text{W}/\text{cm}^2$)	Percent of Limit (%)
Cingular UMTS	105	1935.0	1	500.0	820.0	16.3	1000	1.63%
Nextel	127	851.0	9	100.0	1476.0	20.1	567	3.54%
Cingular 800	105	880.0	20	250.0	8200.0	163.1	587	27.80%
Cingular 1900	105	1900.0	3	427.0	2100.8	41.8	1000	4.18%
Sprint	147	1900.0	11	122.0	2200.9	22.3	1000	2.23%
Verizon 800	116	880.0	19	100.0	3116.0	50.8	587	8.66%
Verizon 1900	116	1900.0	3	285.0	1402.2	22.9	1000	2.29%
AT&T	137	1900.0	16	250.0	6560.0	76.6	1000	7.66%
TOTAL								57.99%

Milford – Bona Street Facility

Site # 2082								
Carrier	Antenna Height (ft)	Freq. (MHz) For Limit	# of Channels	W ERP/Channel (ref 1/2-w dipole)	W EIRP/Sector	Power Density ($\mu\text{W}/\text{cm}^2$)	FCC Limit ($\mu\text{W}/\text{cm}^2$)	Percent of Limit (%)
Cingular UMTS	133	1935.0	1	500.0	820.0	10.2	1000	1.02%
Cingular 800	133	880.0	19	100.0	3116.0	38.6	587	6.58%
Verizon 800	93	850.0	9	200.0	2952.0	74.9	567	13.21%
TOTAL								20.81%

As the tables demonstrate, the cumulative worst-case exposure would be approximately 57.99% of the ANSI/IEEE standard for the Branford – Secondino site and 20.81% of the ANSI/IEEE standard for the Milford – Bona Street site, as calculated for mixed frequency sites. Total power density levels resulting from Cingular's use of the monopole facility would be within applicable standards.

For the foregoing reasons, Cingular respectfully submits that proposed changes at the Branford – Secondino site and the Milford – Bona Street site constitute an exempt modification under RCSA Section 16-50j-72(b)(2).

Please do not hesitate to call me at 215.790.1050 ext. 138 with questions concerning this notice. Thank you for your consideration of this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Elizabeth H. Lankenau", with a long horizontal flourish extending to the right.

Elizabeth H. Lankenau, AICP
Planner

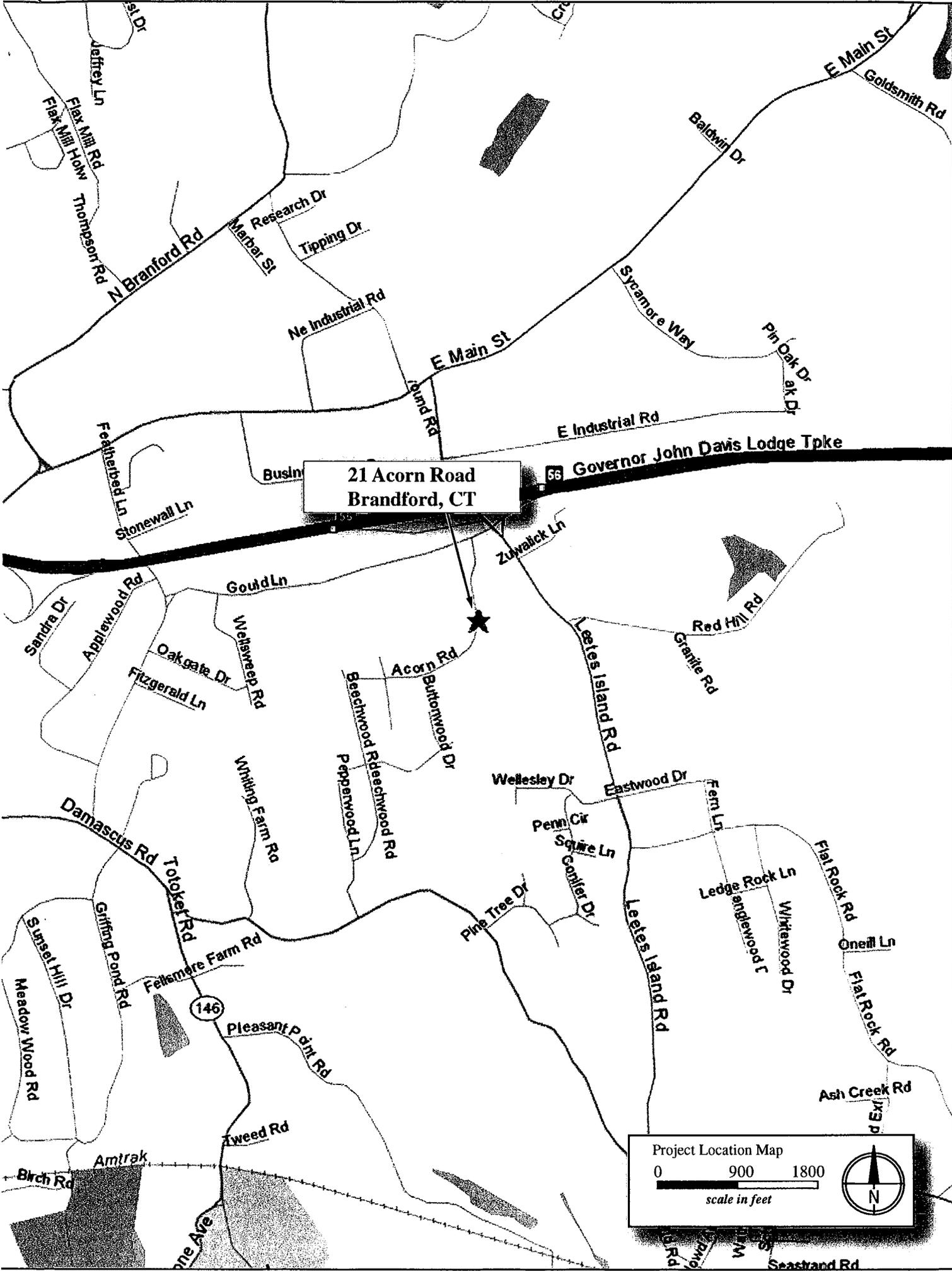
Attachments

cc: Honorable John E. Opie, First Selectman, Town of Branford
Honorable James L. Richetelli, Mayor, City of Milford

Attachments

21 Acorn Road, Branford, CT

- Project Location Map
- Existing Site Plan
- Tower Elevation
- New Equipment Specifications
- Existing Antenna Specification
- Structural Evaluation

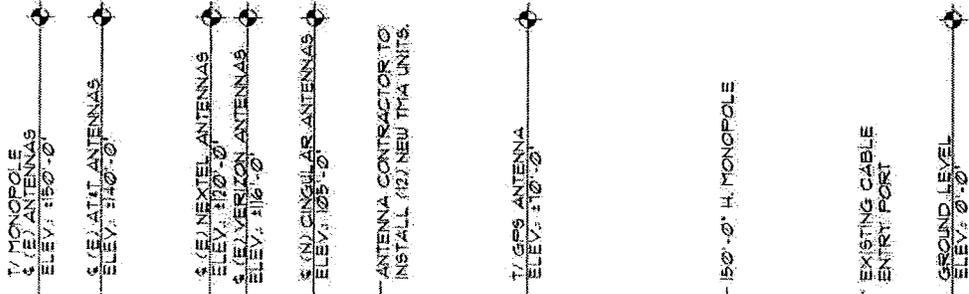


21 Acorn Road
Brandford, CT

Project Location Map

0 900 1800

scale in feet



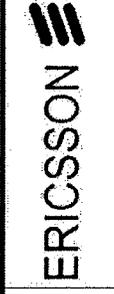
ANTENNA CONTRACTOR TO INSTALL (12) NEW TMA UNITS.

EXISTING ANTENNAS TO BE REMOVED AND REPLACED WITH (6) NEW ANTENNAS (2 PER SECTOR)

(E) (9) ANDREW COAX CABLES TO BE REPLACED WITH (12) (N) 1-3/4" COMMSCOPE COAX CABLES.

FINAL ANTENNA CONFIGURATION
(6) DIRECTIONAL ANTENNAS POWERWAVE # 7770
(12) 1-5/8" DIA. COAX CABLES
(12) TMAS

1 TOWER ELEVATION
 T = 90'-0"



2 05-10-06		ISSUED FOR CSC REVIEW	RR: JZ	JZ	SITE # 2014 SITE NAME BRANCO 21 ASBURN RD. BRANFORD, CT. 06405	DRAWING NUMBER 2014
1 03-21-06		SCOPING REVIEW	PH: JZ	JZ		
NO.	DATE	REVISION DESCRIPTION	BY	CHKD BY	CINGULAR WIRELESS	
					DRAWN BY: PH	
SCALE: 1" = 30'-0"				CHECKED BY: JZ		

3 Dimensions

This section describes the physical characteristics of the RBS: dimensions, weight, and color.

Table 1 The RBS Dimensions

Unit	Dimensions (mm)
Height	1626
Width	1300
Depth	710
Depth including door	926

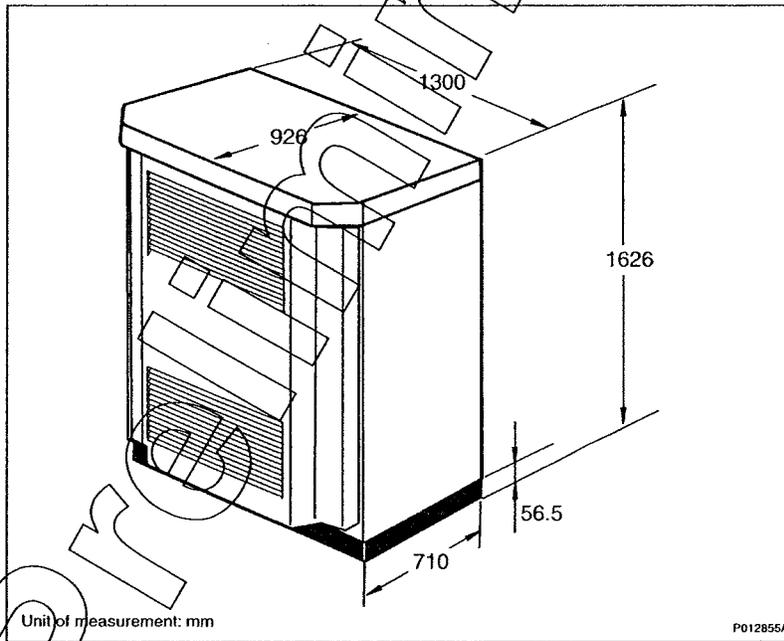


Figure 2 RBS 3106 Dimensions

The RBS weight is shown in the table below.

Table 2 The RBS Weight

Unit	Weight (kg)
RBS fully equipped excluding batteries	560
RBS fully equipped including batteries	850
RBS fully equipped including batteries and future expansion of hardware (not yet available)	875
Installation frame	12

The RBS color is shown in the table below.

Table 3 The RBS Color

Color	Color Standard
Grey	RAL 7035
Green	NCS 8010-G 10 Y

Preliminary

Dual Broadband Antenna

90° 1.4 m MET Antenna

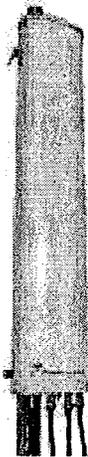
806-960/1710-2170 MHz

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.



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

806-960/1710-2170 MHz

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	30
Horizontal -3 dB beamwidth	$85 \pm 5^\circ$	$85 \pm 5^\circ$
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° MET	$> 17, 16, 15$ x=0, 4, 8° 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

Tower Mounted Amplifier

Dual Band 1900 MHz with 850 MHz Bypass

1900/850 MHz

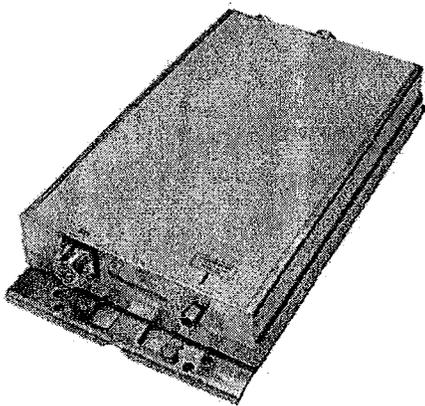
Part Number:
LGP 214nn

Up-link: 1850-1910 MHz
Down-link: 1930-1990 MHz
Bypass: 824-894 MHz

Gain: 12 dB
Noise Figure: < 1.7 dB

The Powerwave® TMA-DD 1900/850 is a dual band Tower Mounted Amplifier (TMA) to be installed near the antenna. Deployed in an AMPS, GSM, GPRS, EDGE and CDMA network it will increase capacity and coverage as well as extend the battery life time for the handsets. The TMA System will provide enhanced coverage and improved up-link signal quality. Appropriate for new rollouts by optimizing coverage with a reduced number of BTSs or as an upgrade to existing BTSs for enhancing the existing coverage.

Extended band TMA facilitates simplified logistics, especially when the frequency bands are scattered. The unit comprises of high Q band-pass filters, dual balanced low noise amplifiers with circuits for active bias, supervision, alarms and lightning protection circuit. The Powerwave patented design with all active components integrated within the filter body provides an extremely reliable, compact and lightweight TMA solution. The vented enclosure design is employed to prevent the effect of condensation, thereby guaranteeing long, reliable, maintenance-free service in all environmental conditions. These TMAs offer an easy to install, maintenance free, cost effective solution for coverage enhancement and increased quality in mobile communication networks.



Key Benefits:

- 850 MHz Bypass
- Improved Network Quality
- Increased Coverage
- State of the Art Performance
- Excellent Power Handling
- Low Tx Loss
- Exceptional Reliability

ANTENNA
SYSTEMS

BASE STATION
SYSTEMS

COVERAGE
SYSTEMS

Tower Mounted Amplifier

1900/850 MHz

Technical Specifications

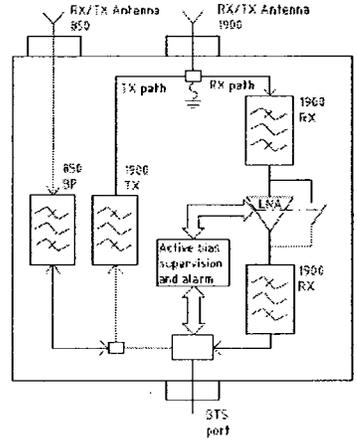
Product Number	LGP214nn	
850 MHz	Bypass (MHz)	824-894
	Return loss* (dB)	> 20
	Insertion loss* (dB)	< 0.3
1900 MHz		
Up-link	Frequency range, full band (60 MHz)	1850-1910
	Nominal gain (dB)	12
	Return loss* (dB)	> 20
	Noise figure* (dB)	< 1.7
	Output 3rd order Intercept Point* (dBm)	> +23
Down-link	Frequency range, full band (60 MHz)	1930-1990
	Insertion loss* (dB)	< 0.6
	Return loss* (dB)	> 20
Intermodulation	2 Tx@x43 dBm (dBc)	< -158
Alarm Functionality	Two levels, individually supervised LNAs	
Power Consumption	@12 VDC	1.2 W

* Typical

All specifications subject to change without notice. Please contact your Powerwave representative for complete performance data.

Mechanical Specifications

Size, W x H x D (without mounting plate)	235 x 366 x 66 mm (9.2 x 14.4 x 2.6 in)
Weight	6.4 kg (14.1 lbs)
Color	Off white (NCS 1502-R)
Housing	Aluminum
RF-connectors	DIN 7/16 female.
Mounting kit	Mounting kit for pole and wall is included
Temperature range	-40 °C to +65 °C (-40 °F to +149 °F)
MTBF	>1 million hours
Safety	UL 60 950
Ingress protection, IP 65	EN 60 529
Environmental	ETS 300 019
EMC	FCC Part 15



D031-08422 Rev. A Pg. 2 of 2

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



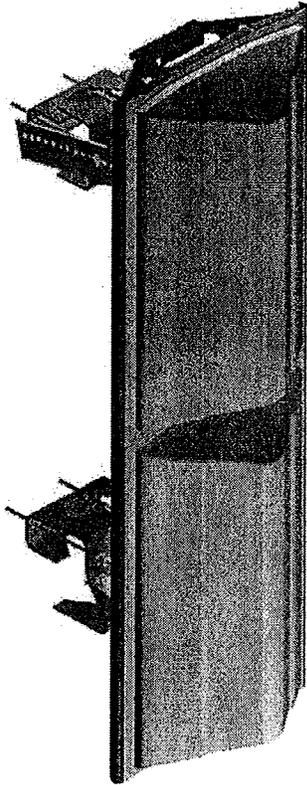
©Copyright 2006, Powerwave Technologies, Inc. All Rights reserved. Powerwave, Powerwave Technologies, The Power in Wireless and the Powerwave logo are registered trademarks of Powerwave Technologies, Inc.

COVERAGE AND CAPACITY	TECHNOLOGY LEADERSHIP	GLOBAL PARTNER	INTEGRATED SOLUTIONS	QUALITY AND RELIABILITY
-----------------------	-----------------------	----------------	----------------------	-------------------------



Directing our energies for you.

Dual Band Antenna DUO1417-8686



86 & 86 Azimuth Beams
15 & 7 Elevation Beams
14.0 & 16.0 dBi Gain

- PCS & Cellular in One Package
- Independent Control of Electrical Beam Downtilt
- High Power Handling Capability
- Anti-Corrosion Design for Superb IM Performance
- Available With Optional Internal Dual Band Combiner



Directing our energies for you.

Dual Band Antenna DUO1417- 8686

Electrical Specifications

Cellular

PCS

Frequency Range	806-900 MHz	1850-1990 MHz
Gain	14.0 dBi	16.0 dBi
Electrical Downtilt Options	0, 2, 4 or 6 Degrees	0 or 4 Degrees
VSWR	1.35:1 Maximum	1.35:1 Maximum
VSWR (with -i option)	1.40:1 Maximum	1.40:1 Maximum
Front-to-Back at Horizon	> 25 dB	> 30 dB
Upper Side Lobe Suppression	< -17 dB	< -18 dB
Elevation Beam (3-dB Points)	15 Degrees	7 Degrees
Azimuth Beam (3-dB Points)	86 Degrees	86 Degrees
Polarization	Vertical	Vertical
Impedance	50 Ohms	50 Ohms
Power Input Rating	500 CW	200 CW
Intermodulation Specification	<-110dBm at 2x10W	<-110dBm at 2x10W

Mechanical Specifications

Input Connectors (female)	Two Back Mounted 7/16 DIN (Silver Finish)
Antenna Dimensions	48.4 x 14 x 9 Inches (10.7" deep with option 'i')
Antenna Weight	20.3 lbs
Antenna Weight (w/opt. 'i')	32.0 lbs
Bracket Weight	10.5 lbs
Lightning Protection	Direct Ground
RF Distribution	Cellular: Silver Plated Brass PCS: Printed Microstrip Substrate
Radome	Ultra High-Strength Luran
Weatherability	UV Stabilized, ASTM D1925
Radome Water Absorption	ASTM D570, 0.45%
Environmental	MIL-STD-810E
Wind Survival	150 mph
Front Wind Load at 100 mph	124 lbs
Front Flat Plate Equivalent	2.54 sq-ft. (c=2)
Mounting Brackets	Fits 2.5 to 3 Inch Schedule 40 Pipe
Mechanical Downtilt Range	0-12 Degrees in 1 Degree Increments
Clamps/Bolts	Hot Dip Galvanized Steel/Stainless Steel

Ordering Information

<u>Model</u>	<u>Options</u>
DUO1417- 8686-xy	x=Electrical Downtilt at 800 MHz in Degrees (0, 2, 4 or 6)
	y=Electrical Downtilt at 1900 MHz in Degrees (0 or 4)
DUO1417-8686-xyi	i=Dual Band Combiner included as an internal device

1079 N. 204th Avenue
Elkhorn, NE 68022
Ph: 402-289-1888
Fax: 402-289-1861

SEMAAN ENGINEERING SOLUTIONS

**147 ft SUMMIT Monopole
Structural Analysis**

**Prepared for:
Global Signal
301 North Cattlemen Road, Suite 300
Sarasota, FL 34232**

**Site: 3017636 / CT03XC021
For Cingular
21 Acorn Road.
Branford, CT**



May 19, 2006

Mr. Louis Belizaire
Global Signal
301 North Cattlemen Road, Suite 300
Sarasota, FL 34232

Re: Site 3017636 / CT03XC021 – 21 Acorn Road. Branford, CT.

Dear Mr. Belizaire:

We have completed the structural analysis for the existing monopole, located at the above referenced site. The purpose of this analysis is to determine that the existing monopole design is in conformance with the TIA/EIA Rev F standard and local building codes for the proposed antennae loads installation. Refer to the Review and Recommendations section at the end of this report for the analysis results.

Description of Structure:

The structure is a 147 ft SUMMIT Monopole.

Refer to SUMMIT job #2737-97 dated September 29, 1997 for a detailed description of the structure.

Method of analysis:

The tower was analyzed using Semaan Engineering Solutions' software suite for communication structures. The structural analysis is performed using the SAPS finite element engine. The method is 3D, non-linear, which accounts for the second order geometric effects due to the displacements. It also treats guys as exact cable elements and therefore is ideal for guyed towers. The analysis was performed in conformance with **TIA/EIA Rev F and local building codes for a basic wind speed of 85 mph and 1/2" radial ice with reduced wind speed (fastest mile)**. This is in conformance with the IBC 2003: Section 1609.1.1, Exception (5) and Section 3108.4. Wind is applied to the structure, accessories and antennas.

Structure loading:

The following loads were used in the tower analysis:

Elev (ft)	Qty	Antennas	Mounts	Coax	Carrier
147.0	9	DB980H90E-XY	Low Profile Platform	(9) 1 5/8"	Sprint
140.0	6	Allgon 7250	(3) Standoff	(6) 1 5/8"	AT&T
130.0	12	ALP 9212	Low Profile Platform	(12) 1 5/8"	Nextel
116.0	12	DB844H90	Low Profile Platform	(12) 1 5/8"	Verizon

Proposed Loads:

Elev (ft)	Qty	Antennas	Mounts	Coax	Carrier
105.0	9	Allgon 7770	Low Profile Platform	(12) 1 1/4"	Cingular
	12	21401 TMA			

All new access holes shall be reinforced with welded rims that are compatible with the pole and to be sized and supplied by pole manufacturer.
All transmission lines are assumed running inside of pole shaft.

Results of Analysis:

Refer to the attached Computer Summary sheets for detailed analysis results.

Structure:

The existing monopole is structurally capable of supporting the existing and proposed antennas. The maximum structure usage is: 98.7%.

Foundation:

Pole Reactions	Original Design Reactions	Current Analysis Reactions	% Of Design
Moment (ft-kips)	2,616.00	2,663.46	101.8
Shear (kips)	25.00	24.69	98.7

The reactions calculated from the analysis slightly exceed the ones indicated on the original structural design. However, the excess amount is within acceptable engineering tolerances and therefore the foundation will not require modification.

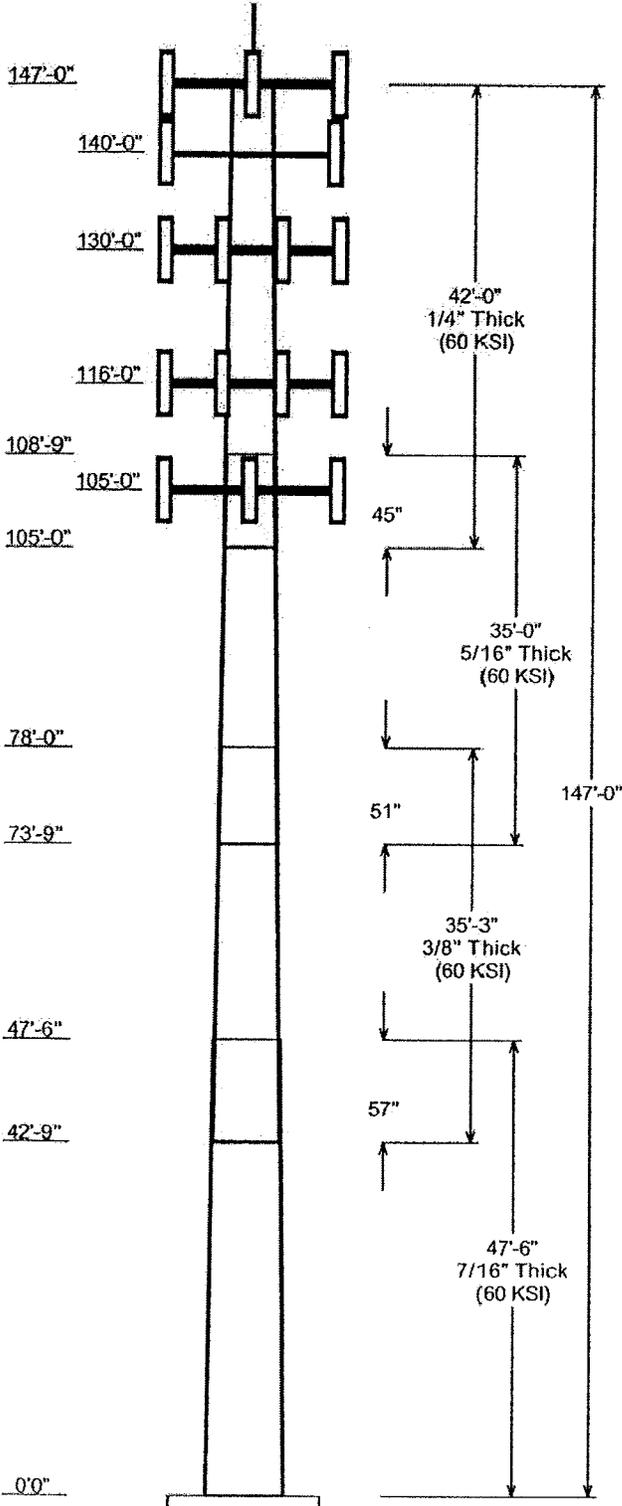
Review and Recommendations:

Based on the analysis results, the existing structure meets the requirements per the TIA/EIA Rev F standards for a basic wind speed of 85 mph and 1/2" radial ice with reduced wind speed. This wind speed is equivalent to a 105 mph 3-second gust.

SEMAAN ENGINEERING SOLUTIONS

1079 N.204th Avenue
 Elkhorn, NE 68022
 Phone: 402-289-1888
 Fax: 402-289-1861

Copyright Semaan Engineering Solutions, Inc.



Job Information			
Pole:	CT03XC021	Code:	TIA/EIA Rev F
Description:	Client: Global Signal		
Location:	3017636 - Branford, CT		
Shape:	18 Sides	Base Elev (ft):	0.00
Height:	147.00 (ft)	Taper:	0.170034(in/ft)

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom				
1	47.500	37.04	45.12	0.438	0.000	0.170034	60
2	35.250	32.60	38.60	0.375 Slip Joint	57.000	0.170034	60
3	35.000	28.00	33.95	0.313 Slip Joint	51.000	0.170034	60
4	42.000	22.00	29.14	0.250 Slip Joint	45.000	0.170034	60

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
147.000	153.000	1	Lightning Rod
147.000	147.000	1	Low Profile Platform
147.000	147.000	9	DB980H90E-XY
140.000	140.000	3	Standoff
140.000	140.000	6	Allgon 7250
130.000	130.000	1	Low Profile Platform
130.000	130.000	12	ALP 9212
116.000	116.000	1	Low Profile Platform
116.000	116.000	12	DB844H90
105.000	105.000	12	21401 TMA
105.000	105.000	9	Allgon 7770
105.000	105.000	1	Low Profile Platform

Linear Appurtenance			
Elev (ft) From	To	Description	Exposed To Wind
0.000	105.0	1 1/4" Coax	No
0.000	116.0	1 5/8" Coax	No
0.000	130.0	1 5/8" Coax	No
0.000	140.0	1 5/8" Coax	No
0.000	147.0	1 5/8" Coax	No

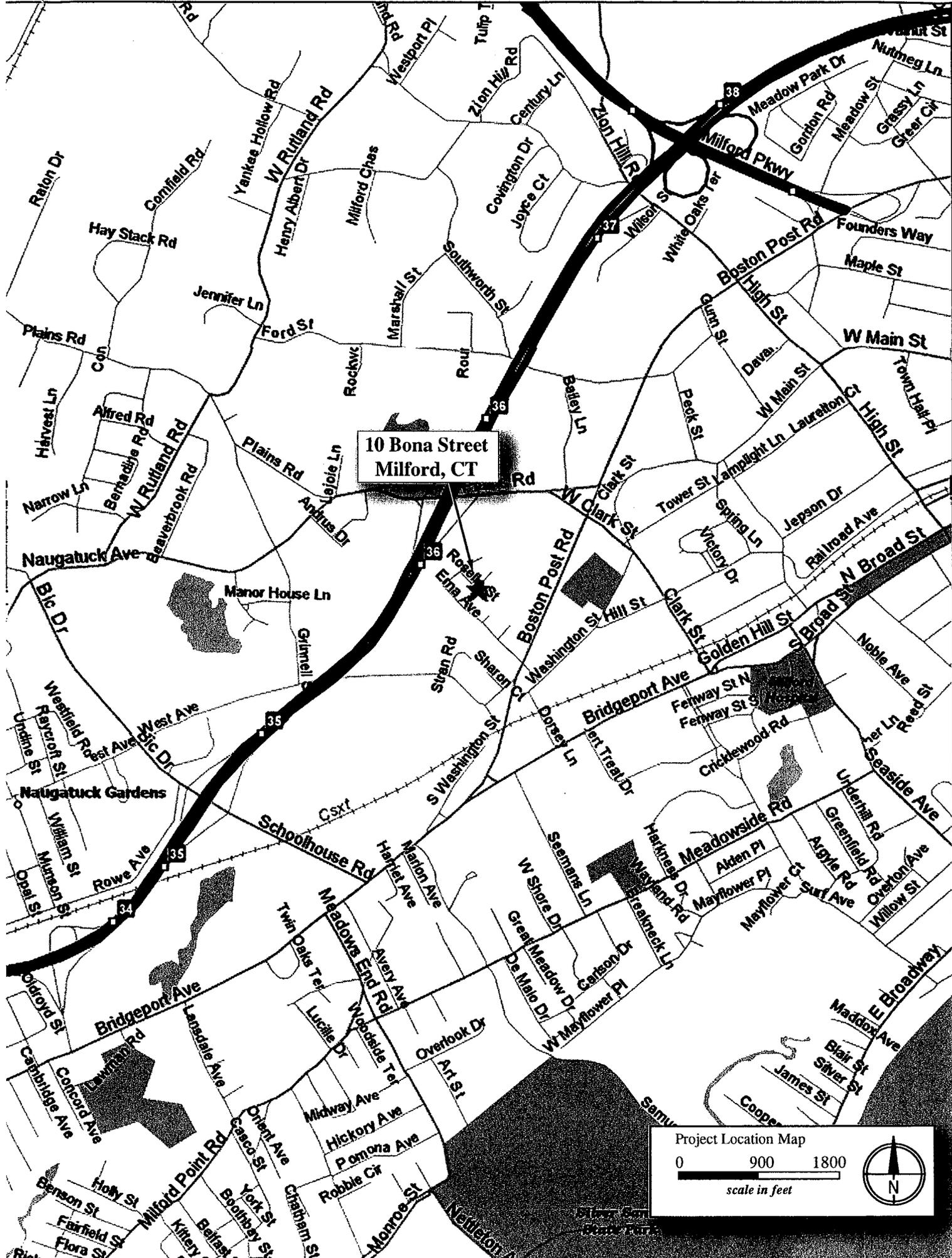
Load Cases	
No Ice	85.00 mph Wind with No Ice
Ice	73.61 mph Wind with Ice

Reactions			
Load Case	Moment (Kip-ft)	Shear (Kips)	Axial (Kips)
No Ice	2663.46	24.69	33.70
Ice	2245.28	20.19	41.38

Attachments

10 Bona Street, Milford, CT

- Project Location Map
- Existing Site Plan
- Tower Elevation
- New Equipment Specifications
- Existing Antenna Specification
- Structural Evaluation

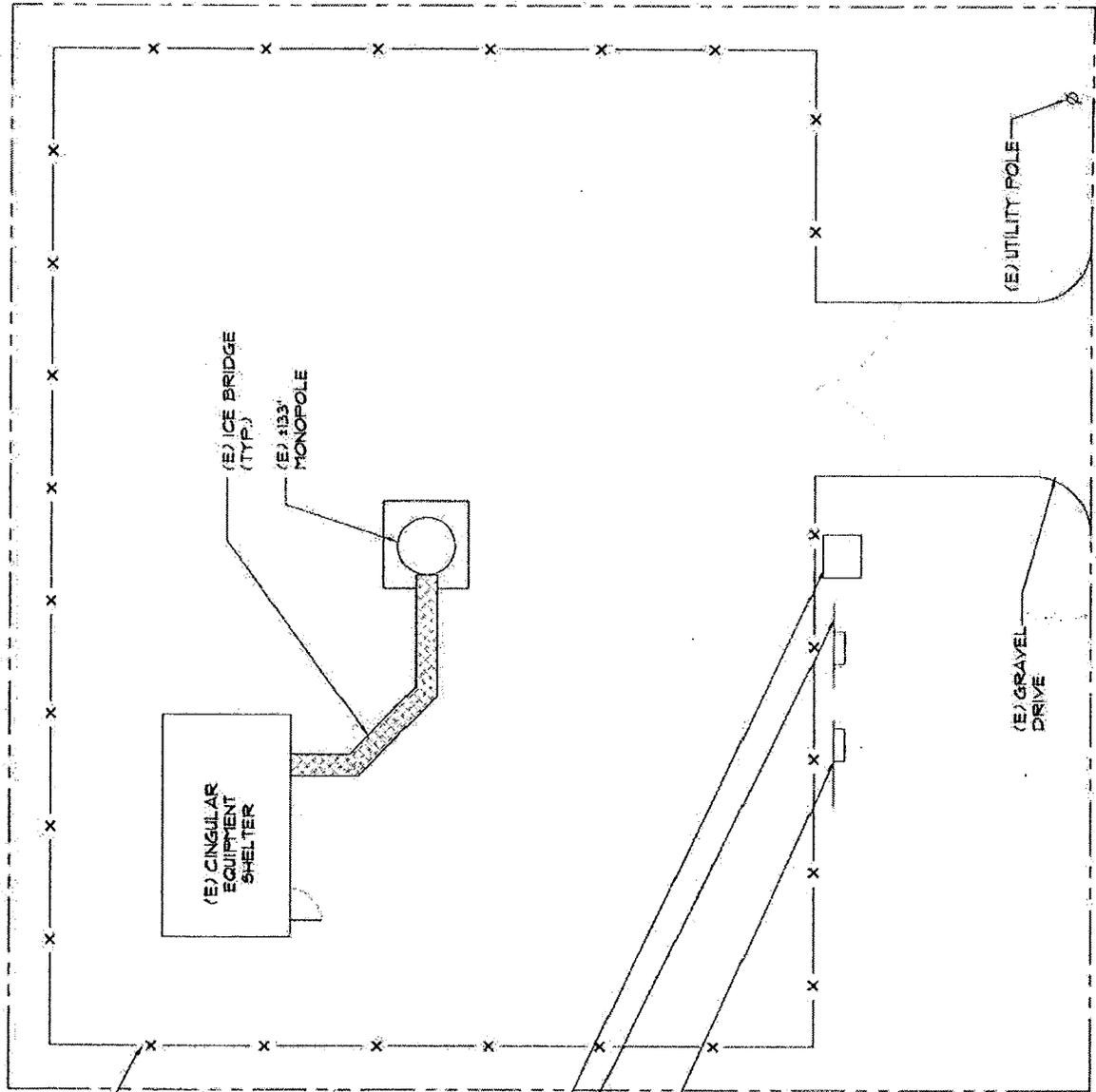


10 Bona Street
Milford, CT

Project Location Map

0 900 1800

scale in feet



(E) 19'x92' LEASE
ARE WITH FENCED
COMPOUND

(E) PROPERTY
LINE

(E) TRANSFORMER

(E) 8'-0" WIDE POWER
SUPPORT FRAME

(E) 8'-0" WIDE
TELEPHONE
SUPPORT FRAME

(E) GRAVEL
DRIVE

BONA STREET

(E) UTILITY POLE

(E) ICE BRIDGE
(TYP.)

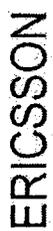
(E) 4133'
MONOPOLE

(E) CINGULAR
EQUIPMENT
SHELTER



NORTH

1 EXISTING SITE PLAN
1/8" = 1'-0"



CH2MHILL
888 WEST BRYAN MAWR
CHICAGO, ILLINOIS 60681

CINGULAR WIRELESS	
PROJECT	P. 2082
SITE NAME	MULFORD - BONA STREET
SITE NO.	10 BONA STREET, MULFORD CT, 06460
NO.	1
DATE	12-12-06
ISSUED FOR	ISSUED FOR CSC SUBMITTAL
REVISION DESCRIPTION	RR 12 12
BY	BY CHR/APPD
DRAWN BY	RR
CHECKED BY	12
SCALE	1/16" = 1'-0"
REV.	0
	2082

TOP OF MONOPOLE/
 (6) CINGULAR ANTENNAS
 ELEV. 133'-0" A.G.L.

EXISTING ANTENNAS TO
 BE REMOVED AND
 REPLACED
 WITH (6) NEW ANTENNAS
 (2 PER SECTOR)
 ANTENNA CONTRACTOR
 TO INSTALL (12) NEW TMA
 UNITS.

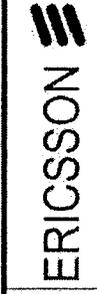
(5) MONOPOLE

(5) (9) 1/2" ANDREW COAX TO
 REMAIN
 ADD (3) (N) 1/2" ANDREW
 COAX CABLES.

GRADE
 ELEV. 0'-0"

FINAL ANTENNA CONFIGURATION
 (6) DIRECTIONAL ANTENNAS POWERWAVE # 7770
 (12) 1-5/8" DIA. COAX CABLES
 (12) TMAS

1 MONOPOLE ELEVATION
 1'-00'-0"



NO.		DATE	REVISION DESCRIPTION	BY	CHECKED BY	SCALE
2	05-10-08		ISSUED FOR DSC SUBMITTAL	RR JZ JZ	ST JCH/APPD	1" = 30'-0"
DRAWN BY: RR						
DRAWING NUMBER: 2082						
REV						
0						

CINGULAR WIRELESS
 SITE # 2082
 SITE NAME WILFORD - ROMA STREET
 10 ROMA STREET, WILFORD, CT, 06460

3 Dimensions

This section describes the physical characteristics of the RBS: dimensions, weight, and color.

Table 1 The RBS Dimensions

Unit	Dimensions (mm)
Height	1626
Width	1300
Depth	710
Depth including door	926

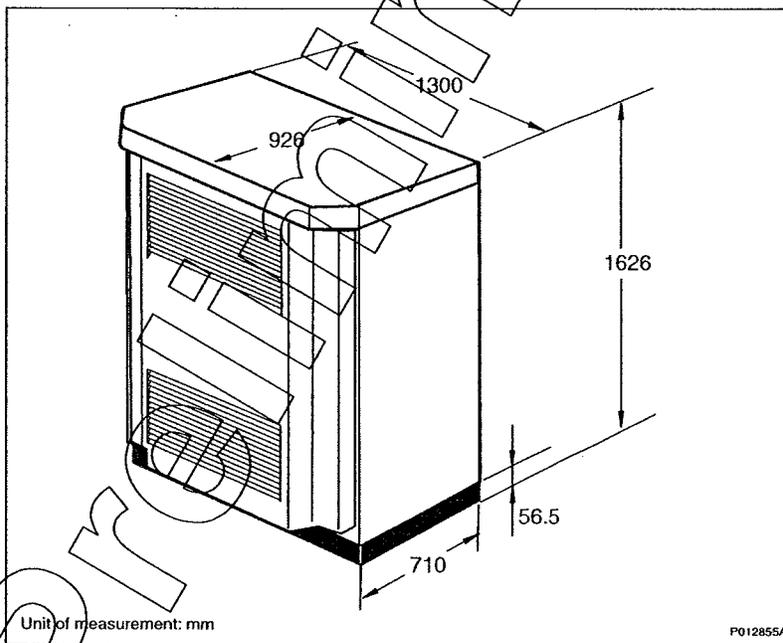


Figure 2 RBS 3106 Dimensions

The RBS weight is shown in the table below.

Table 2 The RBS Weight

Unit	Weight (kg)
RBS fully equipped excluding batteries	560
RBS fully equipped including batteries	850
RBS fully equipped including batteries and future expansion of hardware (not yet available)	875
Installation frame	12

The RBS color is shown in the table below.

Table 3 The RBS Color

Color	Color Standard
Grey	RAL 7035
Green	NCS 8010-G 10 Y

Preliminary

Dual Broadband Antenna

90° 1.4 m MET Antenna

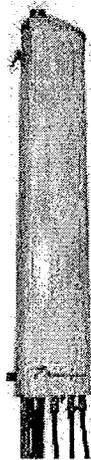
806-960/1710-2170 MHz

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.



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

806-960/1710-2170 MHz

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	
VSWR		1.5:1
Isolation between inputs (dB)	30	
Isolation between inputs (dB)		30
Inter band isolation (dB)	40	
Horizontal -3 dB beamwidth	85 \pm 5°	85 \pm 5°
Tracking, Horizontal plane, $\pm 60^\circ$ (dB)	<2.0	
Tracking, Horizontal plane, $\pm 60^\circ$ (dB)		<2.0
Electrical downtilt range (adjustable)	0° to 10°	0° to 8°
Vertical -3 dB beamwidth	14.3 \pm 2.0°	6.6 \pm 1°
Sidelobe suppression, Vertical 1 st upper (dB)	>17, 16, 15 x=0, 5, 10° MET	> 17, 16, 15 x=0, 4, 8° MET
Vertical beam squint	<0.8°	<0.5°
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	
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.



D031-08208 Rev A

Tower Mounted Amplifier

Dual Band 1900 MHz with 850 MHz Bypass

1900/850 MHz

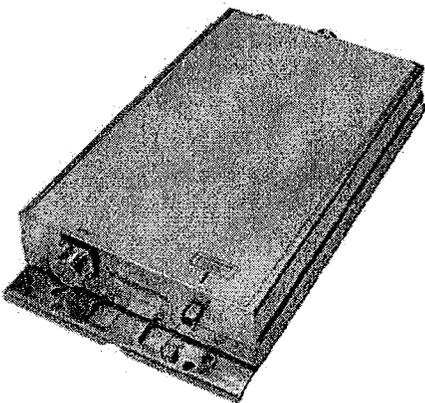
Part Number:
LGP 214nn

Up-link: 1850-1910 MHz
Down-link: 1930-1990 MHz
Bypass: 824-894 MHz

Gain: 12 dB
Noise Figure: < 1.7 dB

The Powerwave® TMA-DD 1900/850 is a dual band Tower Mounted Amplifier (TMA) to be installed near the antenna. Deployed in an AMPS, GSM, GPRS, EDGE and CDMA network it will increase capacity and coverage as well as extend the battery life time for the handsets. The TMA System will provide enhanced coverage and improved up-link signal quality. Appropriate for new rollouts by optimizing coverage with a reduced number of BTSs or as an upgrade to existing BTSs for enhancing the existing coverage.

Extended band TMA facilitates simplified logistics, especially when the frequency bands are scattered. The unit comprises of high Q band-pass filters, dual balanced low noise amplifiers with circuits for active bias, supervision, alarms and lightning protection circuit. The Powerwave patented design with all active components integrated within the filter body provides an extremely reliable, compact and lightweight TMA solution. The vented enclosure design is employed to prevent the effect of condensation, thereby guaranteeing long, reliable, maintenance-free service in all environmental conditions. These TMAs offer an easy to install, maintenance free, cost effective solution for coverage enhancement and increased quality in mobile communication networks.



Key Benefits:

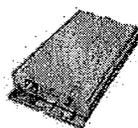
- 850 MHz Bypass
- Improved Network Quality
- Increased Coverage
- State of the Art Performance
- Excellent Power Handling
- Low Tx Loss
- Exceptional Reliability

ANTENNA
SYSTEMS

BASE STATION
SYSTEMS

COVERAGE
SYSTEMS

Tower Mounted Amplifier



1900/850 MHz

Technical Specifications

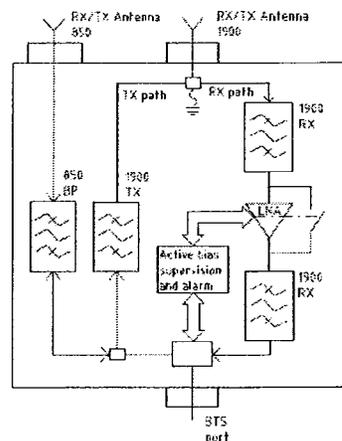
Product Number	LGP214mm	
850 MHz	Bypass (MHz)	824-894
	Return loss* (dB)	> 20
	Insertion loss* (dB)	< 0.3
1900 MHz		
Up-link	Frequency range, full band (60 MHz)	1850-1910
	Nominal gain (dB)	12
	Return loss* (dB)	> 20
	Noise figure* (dB)	< 1.7
	Output 3rd order Intercept Point* (dBm)	> +23
Down-link	Frequency range, full band (60 MHz)	1930-1990
	Insertion loss* (dB)	< 0.6
	Return loss* (dB)	> 20
Intermodulation	2 Tx@x43 dBm (dBc)	< -158
Alarm Functionality	Two levels, individually supervised LNAs	
Power Consumption	@12 VDC	1.2 W

* Typical

All specifications subject to change without notice. Please contact your Powerwave representative for complete performance data.

Mechanical Specifications

Size, W x H x D (without mounting plate)	235 x 366 x 66 mm (9.2 x 14.4 x 2.6 in)
Weight	6.4 kg (14.1 lbs)
Color	Off white (NCS 1502-R)
Housing	Aluminum
RF-connectors	DIN 7/16 female.
Mounting kit	Mounting kit for pole and wall is included
Temperature range	-40 °C to +65 °C (-40 °F to +149 °F)
MTBF	>1 million hours
Safety	UL 60 950
Ingress protection, IP 65	EN 60 529
Environmental	ETS 300 019
EMC	FCC Part 15



D031-08422 Rev. A Pg. 2 of 2

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



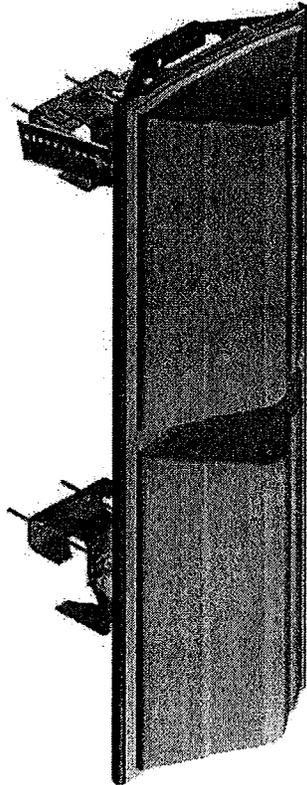
©Copyright 2006, Powerwave Technologies, Inc. All Rights reserved. Powerwave, Powerwave Technologies, The Power in Wireless and the Powerwave logo are registered trademarks of Powerwave Technologies, Inc.





Directing our energies for you.

Dual Band Antenna DUO1417-8686



86 & 86 Azimuth Beams
15 & 7 Elevation Beams
14.0 & 16.0 dBi Gain

- PCS & Cellular in One Package
- Independent Control of Electrical Beam Downtilt
- High Power Handling Capability
- Anti-Corrosion Design for Superb IM Performance
- Available With Optional Internal Dual Band Combiner



Directing our energies for you.

Dual Band Antenna DUO1417- 8686

Electrical Specifications

Cellular

PCS

Frequency Range	806-900 MHz	1850-1990 MHz
Gain	14.0 dBi	16.0 dBi
Electrical Downtilt Options	0, 2, 4 or 6 Degrees	0 or 4 Degrees
VSWR	1.35:1 Maximum	1.35:1 Maximum
VSWR (with -i option)	1.40:1 Maximum	1.40:1 Maximum
Front-to-Back at Horizon	> 25 dB	> 30 dB
Upper Side Lobe Suppression	< -17 dB	< -18 dB
Elevation Beam (3-dB Points)	15 Degrees	7 Degrees
Azimuth Beam (3-dB Points)	86 Degrees	86 Degrees
Polarization	Vertical	Vertical
Impedance	50 Ohms	50 Ohms
Power Input Rating	500 CW	200 CW
Intermodulation Specification	<-110dBm at 2x10W	<-110dBm at 2x10W

Mechanical Specifications

Input Connectors (female)	Two Back Mounted 7/16 DIN (Silver Finish)
Antenna Dimensions	48.4 x 14 x 9 Inches (10.7" deep with option 'i')
Antenna Weight	20.3 lbs
Antenna Weight (w/opt. 'i')	32.0 lbs
Bracket Weight	10.5 lbs
Lightning Protection	Direct Ground
RF Distribution	Cellular: Silver Plated Brass PCS: Printed Microstrip Substrate
Radome	Ultra High-Strength Luran
Weatherability	UV Stabilized, ASTM D1925
Radome Water Absorption	ASTM D570, 0.45%
Environmental	MIL-STD-810E
Wind Survival	150 mph
Front Wind Load at 100 mph	124 lbs
Front Flat Plate Equivalent	2.54 sq-ft. (c=2)
Mounting Brackets	Fits 2.5 to 3 Inch Schedule 40 Pipe
Mechanical Downtilt Range	0-12 Degrees in 1 Degree Increments
Clamps/Bolts	Hot Dip Galvanized Steel/Stainless Steel

Ordering Information

<u>Model</u>	<u>Options</u>
DUO1417- 8686-xy	x=Electrical Downtilt at 800 MHz in Degrees (0, 2, 4 or 6)
	y=Electrical Downtilt at 1900 MHz in Degrees (0 or 4)
DUO1417-8686-xyi	i=Dual Band Combiner included as an internal device

CSS Antenna, Inc.
Tel:410-612-0080 Fax: 410-612-0336
www.cssantenna.com

1079 N. 204th Avenue
Elkhorn, NE 68022
Ph: 402-289-1888
Fax: 402-289-1861

SEMAAN ENGINEERING SOLUTIONS

**133 ft SUMMIT Monopole
Structural Analysis**

**Prepared for:
Global Signal
301 North Cattlemen Road, Suite 300
Sarasota, FL 34232**

**Site: / 3009902
Cingular
Milford, CT**



May 17, 2006

2082

Mr. Louis Belizaire
Global Signal
301 North Cattlemen Road, Suite 300
Sarasota, FL 34232

Re: Site Number 1 3009902 Milford, CT.

Dear Mr. Belizaire:

We have completed the structural analysis for the existing monopole, located at the above referenced site. The purpose of this analysis is to determine that the existing monopole design is in conformance with the TIA/EIA Rev F standard and local building codes for the proposed antennae loads installation. Refer to the Review and Recommendations section at the end of this report for the analysis results.

Description of Structure:

The structure is a 133 ft SUMMIT Monopole.

Refer to SUMMIT drawing 16109-R4 dated December 3, 2001 for a detailed description of the structure.

Method of analysis:

The tower was analyzed using Semaan Engineering Solutions' software suite for communication structures. The structural analysis is performed using the SAPS finite element engine. The method is 3D, non-linear, which accounts for the second order geometric effects due to the displacements. It also treats guys as exact cable elements and therefore is ideal for guyed towers. The analysis was performed in conformance with TIA/EIA Rev F and local building codes for a basic wind speed of 85 mph and 1/2" radial ice with reduced wind speed (fastest mile). This is in conformance with the IBC 2003: Section 1609.1.1, Exception (5) and Section 3108.4. Wind is applied to the structure, accessories and antennas.

Structure loading:

The following loads were used in the tower analysis:

Elev (ft)	Qty	Antennas	Mounts	Coax	Carrier
107.0	9	DB842H65E-XY	Low Profile Platform	(9) 1 5/8	Verizon

Proposed Loads:

Elev (ft)	Qty	Antennas	Mounts	Coax	Carrier
136.0	9	7770.00	Platform w/Rail	(12) 1 5/8	Cingular
	12	LGP 2140 TMA	Platform w/Rail		

**All new access holes shall be reinforced with welded rims that are compatible with the pole and to be sized and supplied by pole manufacturer.
All transmission lines are assumed running inside of pole shaft.**

Results of Analysis:

Refer to the attached Computer Summary sheets for detailed analysis results.

Structure:

The existing monopole is structurally capable of supporting the existing and proposed antennas. The maximum structure usage is: 60.6%.

Foundation:

Pole Reactions	Original Design Reactions	Current Analysis Reactions	% Of Design
Moment (ft-kips)	3,400.00	1,667.53	49.0
Shear (kips)	32.00	17.67	55.2

The analysis reactions are less than the design reactions therefore no foundation modifications are required.

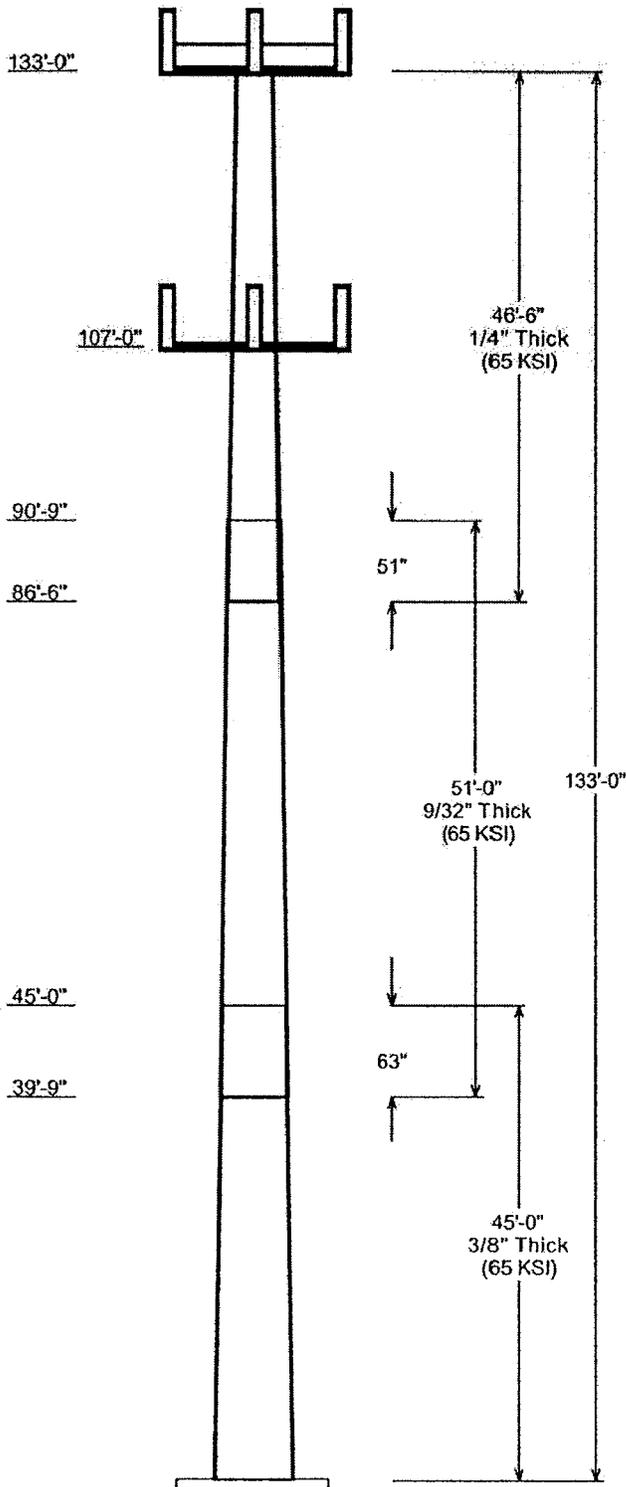
Review and Recommendations:

Based on the analysis results, the existing structure meets the requirements per the TIA/EIA Rev F standards for a basic wind speed of 85 mph and 1/2" radial ice with reduced wind speed.

SEMAAN ENGINEERING SOLUTIONS

1079 N.204th Avenue
 Elkhorn, NE 68022
 Phone: 402-289-1888
 Fax: 402-289-1861

Copyright Semaan Engineering Solutions, Inc



Job Information			
Pole :	3009902	Code:	TIA/EIA Rev F
Description :			
Client :	Global Signal		
Location :	- Milford, CT		
Shape :	18 Sides	Base Elev (ft):	0.00
Height :	133.00 (ft)	Taper:	0.196034(in/ft)

Sections Properties							
Shaft Section	Length (ft)	Diameter (In)		Thick (in)	Joint Type	Overlap Length (In)	Steel Taper Grade (in/ft) (ksi)
		Across Top	Flats Bottom				
1	45.000	40.18	49.01	0.375		0.000	0.196034 65
2	51.000	31.78	41.78	0.281	Slip Joint	63.000	0.196034 65
3	46.500	24.00	33.11	0.250	Slip Joint	51.000	0.196034 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
133.000	134.500	1	Platform w/Rail
133.000	133.000	12	LGP 2140 TMA
133.000	136.000	9	7770.00
107.000	107.000	1	Low Profile Platform
107.000	108.000	9	DB842H65E-XY

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
0.000	107.0	1 5/8 Coax	No
0.000	133.0	1 5/8 Coax	No

Load Cases	
No Ice	85.00 mph Wind with No Ice
Ice	73.61 mph Wind with Ice

Reactions			
Load Case	Moment (Kip-ft)	Shear (Kips)	Axial (Kips)
No Ice	1667.53	17.67	22.23
Ice	1362.07	14.13	27.40