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@ct.gov
www.ct.gov/csc

May 29, 2012

Jennifer Young Gaudet
HPC Wireless Services
46 Mill Plain Road, Floor 2
Danbury, CT 06811

RE: **EM-CING-011-120511** - New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 28 Brewer Drive, Bloomfield, Connecticut.

Dear Ms. Gaudet:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions.

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated May 9, 2012. 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 an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

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 this facility 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. Thank you for your attention and cooperation.

Very truly yours,

Linda Roberts

Linda Roberts
Executive Director

LR/cm

c: The Honorable Sydney Schulman, Mayor, Town of Bloomfield
Louie Chapman, Jr., Town Manager, Town of Bloomfield
Thomas B. Hooper, Director of Planning, Town of Bloomfield

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
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www.ct.gov/csc

May 11, 2012

The Honorable Sydney Schulman
Mayor
Town of Bloomfield
Town Hall
800 Bloomfield Avenue
P. O. Box 337
Bloomfield, CT 06002-0337

RE: **EM-CING-011-120511** - New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 28 Brewer Drive, Bloomfield, Connecticut.

Dear Mayor Schulman:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

If you have any questions or comments regarding this proposal, please call me or inform the Council by May 25, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts

Linda Roberts
Executive Director

LR/cm

Enclosure: Notice of Intent

c: Louie Chapman, Jr., Town Manager, Town of Bloomfield
Thomas B. Hooper, Director of Planning, Town of Bloomfield

HPC Wireless Services
46 Mill Plain Rd.
Floor 2
Danbury, CT, 06811
P.: 203.797.1112

EM-CING-011-120511

HPC WIRELESS SERVICES

May 9, 2012

ORIGINAL

RECEIVED
MAY 11 2012
CONNECTICUT
SITING COUNCIL

VIA OVERNIGHT COURIER

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Linda Roberts, Executive Director

Re: New Cingular Wireless PCS, LLC – exempt modification
28 Brewer Drive, Bloomfield, Connecticut

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of New Cingular Wireless PCS, LLC ("AT&T"). AT&T is making modifications to certain existing sites in its Connecticut system in order to implement LTE technology. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction that constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the Mayor of the Town of Bloomfield.

AT&T plans to modify the existing wireless communications facility owned by Crown Castle and located at 28 Brewer Drive in the Town of Bloomfield (coordinates 41°-50'-66" N, 72°-44'-28.26" W). Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration. Also included is a power density report reflecting the modification to AT&T's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. AT&T will add three (3) LTE antennas to the six (6) antennas at a center line of approximately 100' on the existing platform and six (6) RRHs (remote radio heads) and a

surge arrestor on mounts at the base of the platform. AT&T also will replace three (3) GSM antennas, relocate three (3) UMTS antennas, add 6 TMAs and rotate the platform to accommodate a change in azimuth. AT&T will also place a DC power and fiber run from the equipment to the antennas along the existing coaxial cable run. The proposed modifications will not extend the height of the approximately 100' structure.

2. The proposed changes will not extend the site boundaries. AT&T will install related equipment within its existing shelter and will mount a GPS antenna to the shelter. These changes will be within the existing compound and will have no effect on the site boundaries.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached report prepared by C Squared Systems, LLC, AT&T's operations at the site will result in a power density of approximately 4.08%; the combined site operations will result in a total power density of approximately 49.83%.

Please feel free to contact me by phone at (860) 798-7454 or by e-mail at jgaudet@hpcwireless.com with questions concerning this matter. Thank you for your consideration.

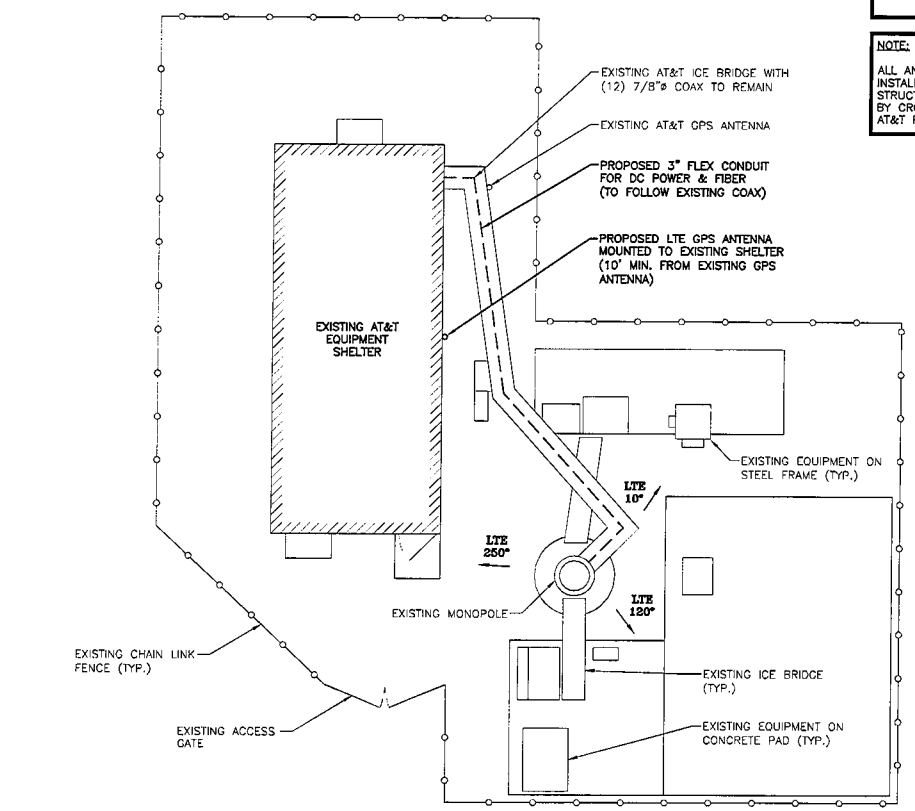
Respectfully yours,

Jennifer Young Gaudet

Jennifer Young Gaudet

Attachments

cc: Honorable Sydney Schulman, Mayor, Town of Bloomfield
Louie Chapman, Jr., Town Manager
(also underlying property owner)



COMPOUND PLAN

SCALE: 1/4"=1'-0"

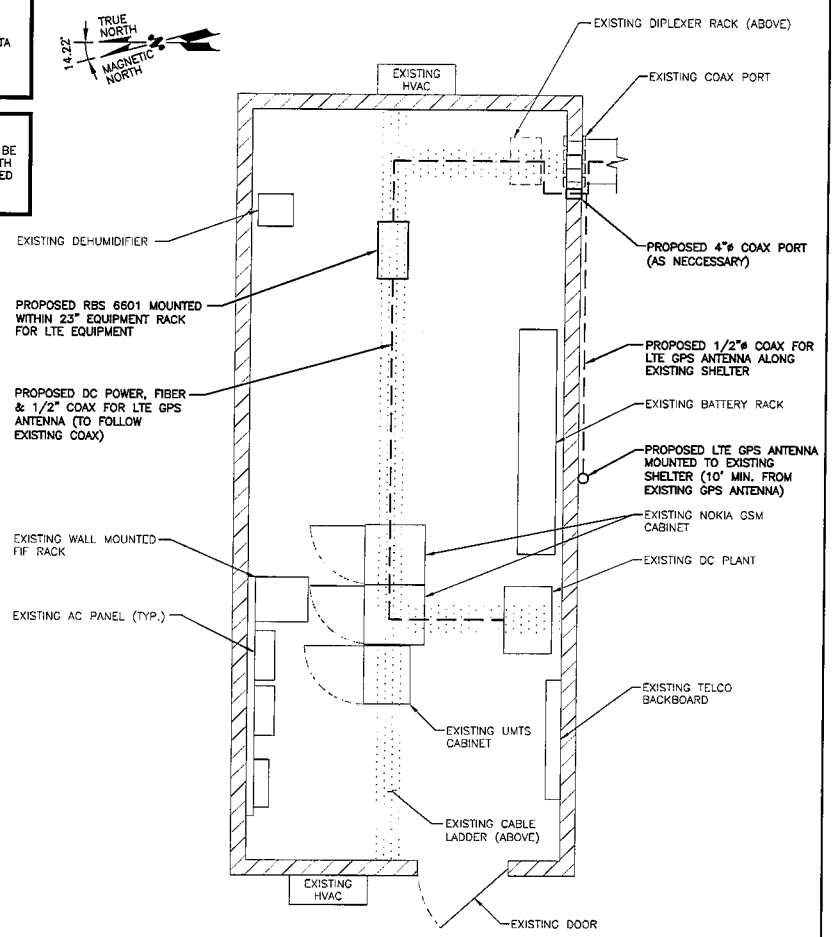
0 2'-0" 4'-0" 8'-0" 12'-0"

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.



EQUIPMENT PLAN

SCALE: 1/2"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

NEXLINK GLOBAL SERVICES
a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT#: 2A
WINDSOR, CT 06095

SITE NUMBER: CT1193
SITE NAME: BLOOMFIELD CEMETARY
CROWN SITE# 876329
28 BREWER DRIVE
BLOOMFIELD, CT 06002
HARTFORD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	04/24/12	ISSUED FOR CONSTRUCTION	DB	DC	DPH
0	04/05/12	ISSUED FOR REVIEW	DB	DC	DPH

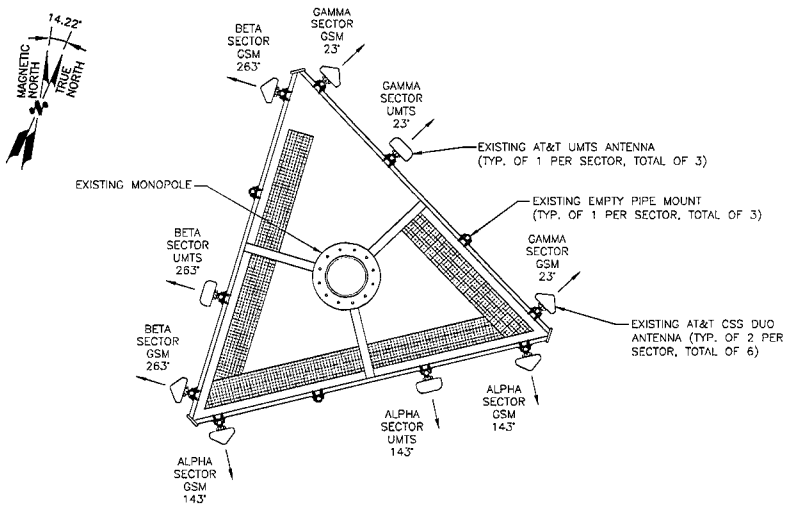
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: DB

DANIEL P. HAMM No. 24173 LICENSED PROFESSIONAL ENGINEER STATE OF CONNECTICUT

AT&T

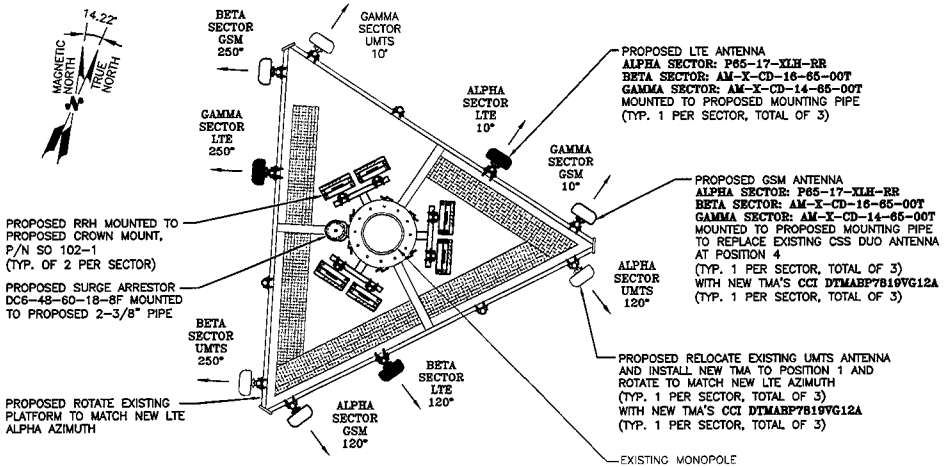
COMPOUND & EQUIPMENT PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
1193.01	A-1	1



EXISTING UMTS/GSM ANTENNA PLAN

SCALE: N.T.S.



PROPOSED LTE ANTENNA PLAN

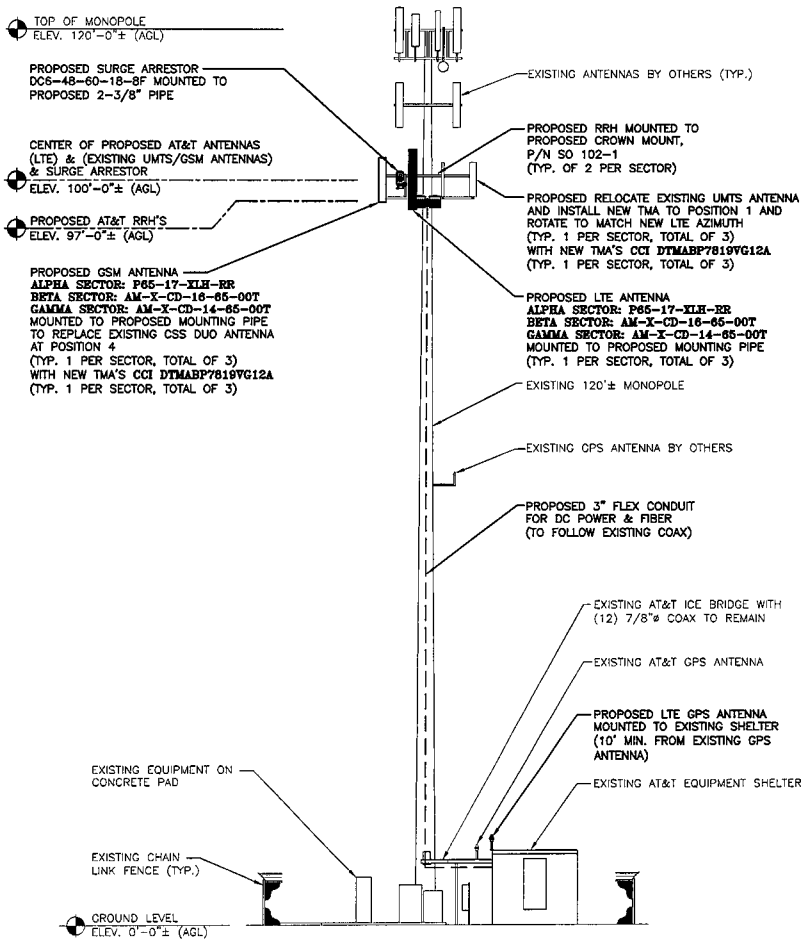
SCALE: N.T.S.

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.



EAST ELEVATION

SCALE: 1/8"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
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500 ENTERPRISE DRIVE, SUITE 3A
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NO.	DATE	REVISIONS	BY	CHK'D	APP'D
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SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: DB

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24175 · LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUT AND ELEVATION (LTE)

JOB NUMBER	DRAWING NUMBER	REV
1193.01	A-2	1

Pier Structural Engineering Corp.
55 Northfield Drive E, Suite 198
Waterloo, ON N2K 3T6
Tel: 519-885-3806
Fax: 519-886-0076
www.p-sec.ca

Specializing in Communication Tower Engineering

April 20, 2012

Eva Morales, Tower Structural Analyst
Crown Castle USA Inc.
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

Subject:	**Structural Analysis Report**	
Carrier Designation:	Carrier Co-Locate:	**AT&T Mobility**
	Carrier Site Number:	**CT1193**
	Carrier Site Name:	**Bloomfield-Sprint**
Crown Castle Designation:	Crown Castle BU Number:	**876329**
	Crown Castle Site Name:	**MTN. VIEW CEM. (FILLEY PARK)**
	Crown Castle JDE Job Number:	**183525**
	Crown Castle WO Number:	**484779**
Engineering Firm Designation:	P-SEC Project Number:	**6460**
Site Data:	**28 Brewer Dr., BLOOMFIELD, Hartford County, CT** **Latitude *41° 50' 6.57"*, Longitude *-72° 44' 28.2"*** **120-ft Monopole**	

Dear Eva Morales,

Pier Structural Engineering Corp. (P-SEC) is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 459650, in accordance with application 144814, revision 0.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

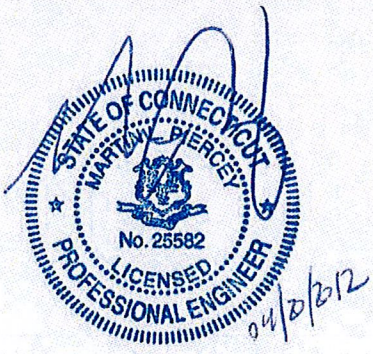
LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT state building code based upon a wind speed of 80 mph fastest mile.

We at P-SEC appreciate the opportunity of providing our continuing professional services to you and Crown Castle USA Inc. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Martin Piercey, P.E., P.Eng.
CT PE#25582



tnxTower Report - version 6.0.4.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 120-ft monopole originally designed by ROHN in October of 1996 for a wind speed of 85 mph per TIA/EIA-222-E. The tower was reinforced per Semaan drawings from 2003, Tower Reinforcement drawings of 2008, B&T drawings from 2008, GPD drawings from 2010.

2) ANALYSIS CRITERIA

The following design parameters have been used in our analysis:

Design Standard:		TIA/EIA-222-F standard and 2005 CT state building code
County/State:		Hartford County, CT
Wind Speeds:	*CASE 1*	80.0 mph (fastest mile)
	CASE 2	28.1 mph (fastest mile) with 1" radial solid ice *(per ASCE7 ice map)*
	CASE 3	50.0 mph (fastest mile) for Serviceability
Allowable Stress:		Increased 1/3rd

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
99	100	2	kmw	AM-X-CD-14-65-00T-RET	2 1	3/4 3/8	1
		2	kmw c	AM-X-CD-16-65-00T-RET			
		2	powerwave	P65-17-XLH-RR			
		3	communication	DTMABP7819VG12A			
		1	raycap	DC6-48-60-18-8F			
97	97	6	ericsson	RRUS-11			
		3	--	Side Arm Mount [SO 102-1]			

Notes:
1) Proposed equipment

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
116	120	9	mla	ANTENNA	9	1-5/8	2
	119	6	ems wireless	RR90-17-00DP	6	1-5/8	1
	119	3	kathrein	840 10054	3 3 1	5/16 1/4 1/2	1
		3	samsung	WIMAX DAP HEAD			
	114	1	dragonwave	A-ANT-18G-1-C			
		1	dragonwave	A-ANT-18G-2-C			
		2	dragonwave	HORIZON COMPACT			
	116	1	--	Platform Mount [LP 502-1]	--	--	1
107	107	3	ems wireless	DR65-18-00DP	18	1-5/8	1
		3	rfs celwave	APX16DWV-16DWV-S-E-ACU			
		3	andrew	ONEBASE TWIN DUAL DUPLEX TMA			
		1	--	Platform Mount [LP 712-1]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
99	100	9	css	DUO1417-8686	--	--	3
		3	powerwave	7770.00	12	7/8	1
		6	powerwave	LGP13519			
	99	1	--	Platform Mount [LP 502-1]			
58	64	1	decibel	DB536	1	7/8	1
	58	1	--	Side Arm Mount [SO 701-1]			
48	49	1	unknown	GPS	1	1/2	1
	48	1	--	Side Arm Mount [SO 701-1]			

Notes:
1) Existing equipment
2) MLA equipment; not considered in analysis
3) Existing equipment to be replaced by proposed

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
120	120	12	--	ALP9212	12	1-5/8
		1	--	Cellular Platform		
100	100	12	--	ALP9212	12	1-5/8
		1	--	Cellular Platform		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Welti, P.E. dated 8/9/1996	1529722	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	ROHN, Proj. No. 34738SW dated 10/11/1996	1616549	CCISITES
4-TOWER MANUFACTURER DRAWINGS	ROHN, Proj. No. 34738SW dated 10/23/1996	2158527	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Semaan, Proj. No. Ct03XC076 dated 10/21/2003	1595477	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	TRI, Proj. No. 080063.01 dated 1/22/2008	2205450	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	B&T, Proj. No. 79582 dated 9/24/2008	2343687	CCISITES
4-POST-MODIFICATION INSPECTION	B&T, Proj. No. 79582 dated 11/3/2008	2343686	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, Proj. No. 2011111.27 dated 5/31/2011	2917489	CCISITES
APPLICATION	AT&T, Revison #0 dated 3/27/2012	144814	CCISITES

3.1) Analysis Method

tnxTower (6.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
5) The analysis and verification of the existing modification connection details is beyond the scope of this report. A review of those connection details was not provided in this analysis. We assume the channel intermediate and end connections, bridge stiffener welds, and anchor rods connections have been adequately designed to develop the forces created by the loading used in this analysis. We also assume that Crown Castle has approved and accepted the previously installed modifications.

This analysis may be affected if any assumptions are not valid or have been made in error. P-SEC should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary) – LC7

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	120 - 90	Pole	P24x1/4	1	-7.14	589.19	73.0	Pass
L2	90 - 80	Pole	P24x3/8	2	-8.47	934.94	68.0	Pass
L3	80 - 68	Pole	MOD P24x0.6268	3			70.7*	Pass
L4	68 - 60	Pole	MOD P24x0.6547	4			94.1*	Pass
L5	60 - 45.25	Pole	MOD P30x0.5773	5			88.5*	Pass
L6	45.25 - 36.5	Pole	MOD P30x0.7319	6			73.9*	Pass
L7	36.5 - 30	Pole	MOD P30x0.8912	7			66.0*	Pass
L8	30 - 19	Pole	MOD P36x0.642	8			82.6*	Pass
L9	19 - 2	Pole	MOD P36x0.8204	9			77.1*	Pass
L10	2 - 0	Pole	MOD P36x0.9445	10			70.1*	Pass
							Summary	
						Pole (L1)	94.1	Pass
						RATING =	**94.1**	**Pass**

*see Appendix C for governing section capacity

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
2	Flange Bolts	90	37.7	Pass
2	Flange Plates	90	29.8	Pass
2	Flange Bridge Stiffeners	60	52.0	Pass
2	Flange Bridge Stiffeners	30	80.9	Pass
2	Anchor Rods	--	72.0	Pass
2	Base Plate	--	75.3	Pass
2	Base Foundation – Soil	--	68.9	Pass

Structure Rating (max from all components) =	94.1%

Notes: 1) See full member breakdown and section capacities in Appendix A.
2) See additional documentation in Appendix C for supporting calculations.
3) Stresses up to 105% (steel) and 110% (foundations) are within engineering tolerance and considered acceptable.

4.1) Recommendations

The existing 120-ft monopole located in Hartford County (MTN. VIEW CEM. (FILLEY PARK)), CT **is structurally acceptable** based on the TIA-222-F standard and 2005 CT state building code based upon a wind speed of 80 mph (fastest mile).

No modifications are required for the proposed loading.

Should you have any questions, please call us anytime at 519-885-3806.

encl.
876329-144814 SA Report-20120420.doc

C Squared Systems, LLC
65 Dartmouth Drive, Unit A3
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions

at&t

CT1193 – Bloomfield-Sprint

28 Brewer Drive, Bloomfield, CT 06002

(a.k.a. 30 Mountain Ave (Bloomfield Cemetery))

May 7, 2012

Table of Contents

List of Tables

List of Figures

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the monopole tower located at 28 Brewer Drive in Bloomfield, CT. The coordinates of the tower are 41-50-06.47 N, 72-44-28.28 W.

AT&T is proposing the following modifications:

1) Replace six of nine existing dual-band (850/1900 MHz) panel antennas with six multi-band (700/850/1900/2100 MHz) antennas (two per sector).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times EIRP}{4\pi \times R^2} \right) \text{x Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished modifications.

4. Calculation Results

Table 1 below outlines the power density information for the site. Because the proposed AT&T antennas are directional in nature, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical pattern of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	%MPE
Cingular GSM 1900	*100*	*1900*	*2*	*427*	*0.0307*	*1.0000*	*3.07%*
Cingular GSM 850	*100*	*880*	*4*	*296*	*0.0426*	*0.5867*	*7.26%*
Cingular UMTS	*100*	*880*	*1*	*500*	*0.0180*	*0.5867*	*3.06%*
T-Mobile GSM	107	1945	8	164	0.0412	1.0000	4.12%
T-Mobile UMTS	107	2100	2	770	0.0484	1.0000	4.84%
Verizon	87	1970	3	461	0.0657	1.0000	6.57%
Verizon	87	875	9	302	0.1291	0.5833	22.13%
Clearwire	120	2496	2	153	0.0076	1.0000	0.76%
Clearwire	116	23000	1	211	0.0056	1.0000	0.56%
Sprint	120	1957.5	11	122	0.0335	1.0000	3.35%
Town of Bloomfield	59	453.825	1	100	0.0103	0.3026	3.41%
AT&T UMTS	100	880	2	565	0.0041	0.5867	0.69%
AT&T UMTS	100	1900	2	875	0.0063	1.0000	0.63%
AT&T LTE	100	734	1	1615	0.0058	0.4893	1.19%
AT&T GSM	100	880	1	647	0.0023	0.5867	0.40%
AT&T GSM	100	1900	4	813	0.0117	1.0000	1.17%
						Total	**49.83%**

Table 1: Carrier Information[1] [2] [3]

[1] The existing CSC filing for Cingular should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for carriers other than AT&T was taken directly from the CSC database dated 3/29/2012. Please note that %MPE values listed are rounded to two decimal points. The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

[2] In the case where antenna models are not uniform across all 3 sectors for the same frequency band, the antenna model with the highest gain was used for the calculations to present a worse-case scenario.

[3] Antenna height listed for AT&T is in reference to the P-SEC structural analysis report dated 4/20/2012.

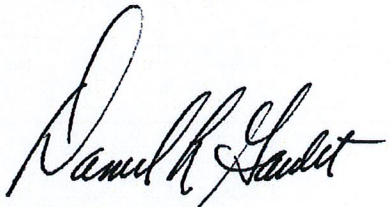
5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at ground level is **49.83% of the FCC limit**.

As noted previously, obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Daniel L. Goulet
C Squared Systems, LLC

May 7, 2012
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[4]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[5]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

[4] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[5] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

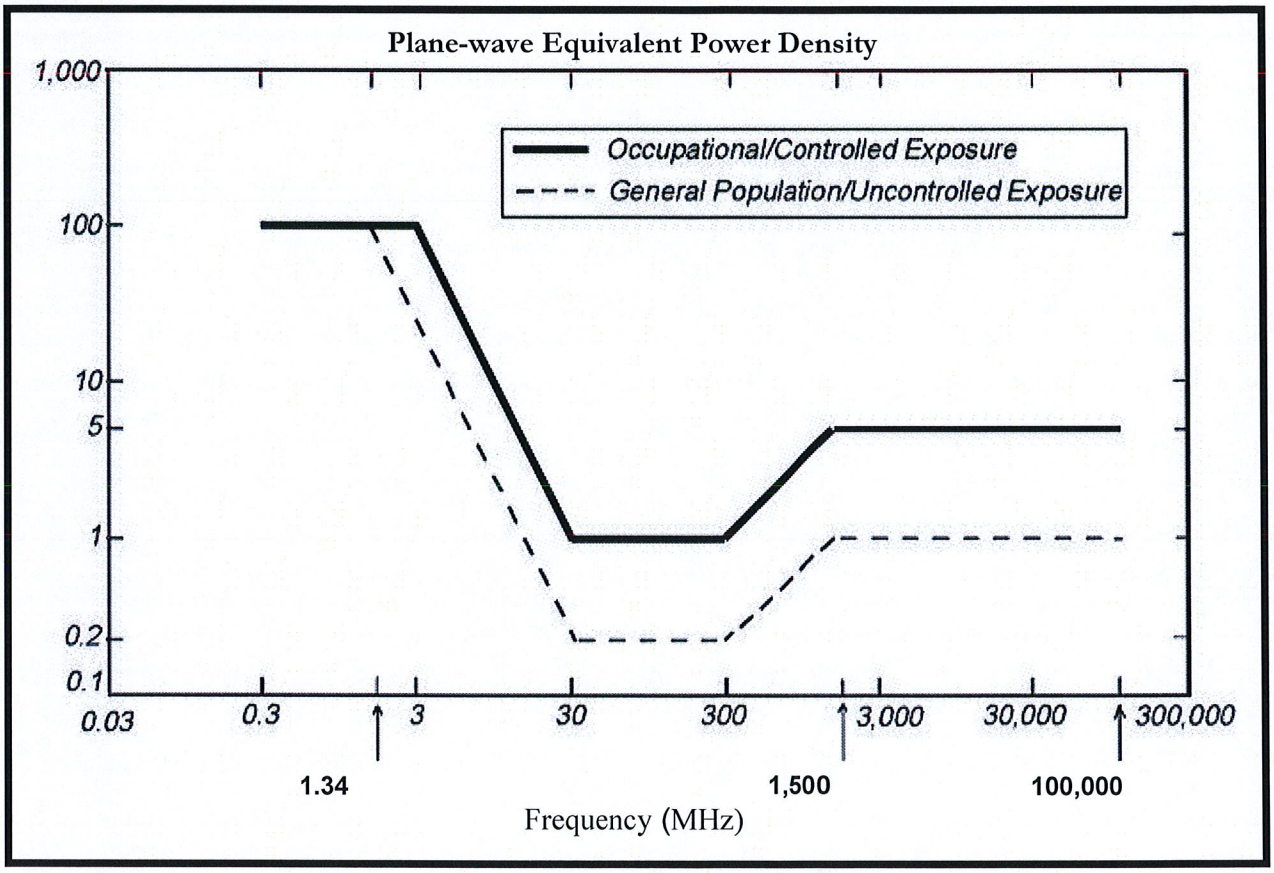
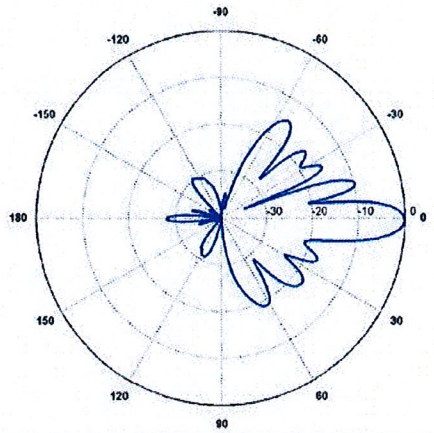


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Data Sheets and Electrical Patterns

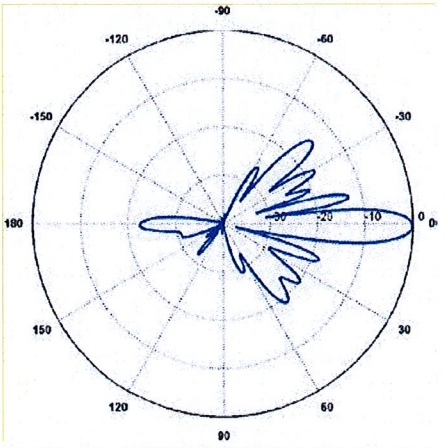
700 MHz

Manufacturer:	Powerwave
Model #:	P65-17-XLH-RR
Frequency Band:	698-806 MHz
Gain:	14.3 dBd
Vertical Beamwidth:	8.4°
Horizontal Beamwidth:	70°
Polarization:	Dual Linear ±45°
Size L x W x D:	96.0" x 12.0" x 6.0"



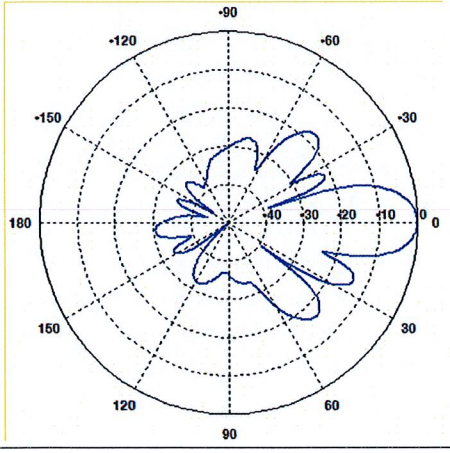
850 MHz GSM

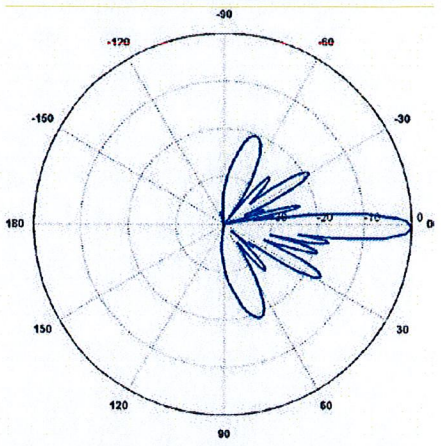
Manufacturer:	Powerwave
Model #:	P65-17-XLH-RR
Frequency Band:	806-894 MHz
Gain:	15.1 dBd
Vertical Beamwidth:	8.4°
Horizontal Beamwidth:	63°
Polarization:	Dual Linear ±45°
Size L x W x D:	96.0" x 12.0" x 6.0"



850 MHz UMTS

Manufacturer:	Powerwave
Model #:	7770.00
Frequency Band:	824-896 MHz
Gain:	11.5 dBd
Vertical Beamwidth:	15°
Horizontal Beamwidth:	82°
Polarization:	Dual Linear ±45°
Size L x W x D:	55.0" x 11.0" x 5.0"



1900 MHz GSM Manufacturer: KMW Model #: AM-X-CD-16-65-00T-RET Frequency Band: 1850-1990 MHz Gain: 15.3 dBd Vertical Beamwidth: 6° Horizontal Beamwidth: 67° Polarization: Dual Slant ±45° Size L x W x D: 72.0" x 11.8" x 5.9"	
1900 MHz UMTS Manufacturer: Powerwave Model #: 7770.00 Frequency Band: 1850-1990 MHz Gain: 13.4 dBd Vertical Beamwidth: 7° Horizontal Beamwidth: 86° Polarization: Dual Linear ±45° Size L x W x D: 55.0" x 11.0" x 5.0"