



September 19 2014

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Street
New Britain, CT 06051

Regarding : Notice of Exempt Modification – Addition of 3 radio heads previously approved

Property Address: 459 Burr Road Southbury, CT (the “Property”)

Applicant: New Cingular Wireless PC, LLC (“AT&T”)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 149 foot Monopole (“tower”) location on the Property. AT&T’s facility consist of nine (9) wireless telecommunications antenna at 147 feet. The tower is owned by American Tower. The Council approved the previous application on July 6th 2012 reference number EM-AT&T-130-120622. This application (attached) granted AT&T the use of 6 radio heads at this location. The approval expired one year from the issue date. During that time AT&T made the changes to the site per the approval but only installed three(3) of the six (6) radio heads that they received approval. AT&T would now like to install the additional three(3) radio heads that were originally approved under EM-AT&T-130-120622..

Please accept this application as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A.§ 16-50j-72 (b)(2). In accordance with R.C.S.A.§ 16-50j-73, a copy of this letter is being sent to the Mark. D Cody, Zoning Enforcement Officer, Town of Southbury. A copy of this letter is also being sent to American Tower, the owner of the structure that AT&T is located.

The planned modifications to AT&T’s facility fall squarely within those activities explicitly provided for in R.C.S.A.§ 16-50j-72 (b)(2).

1. The planned modifications will not result in an increase in the height of the existing structure. AT&T’s additional, previously approved 3 radio heads will be installed at 147 foot level of the 149 foot monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore will not require an extension of the site boundary
3. The proposed modification will not increase the noise level at the facility by six decibel or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. An RF emissions calculation (attached) for AT&T’s modified facility was provided in the application which led to the July 6th 2012 Decision.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications (please see attached structural analysis completed by FDH Engineering on May7th 2012

For the foregoing reasons AT&T respectfully request that the proposed addition of 3 radio heads previously approved be allowed within the exempt modifications under R.C.S.A. § 16-50j-72 (b)(2).

Sincerely,



David P. Cooper
Director of Site Acquisition
Empire Telecom

CC: Mark. D Cody, Zoning Enforcement Officer, Town of Southbury, American Tower
CT2126 file

16 Esquire Road, Billerica, MA 01862 Mobile: 617-639-4908 Email: dcooper@empiretelecomm.com



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

July 6, 2012

Eric Dahl
Nexlink Global Services
55 Lynn Road
Ivoryton, CT 06442

RE: **EM-AT&T-130-120622** – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 459 Burr Road, Southbury, Connecticut.

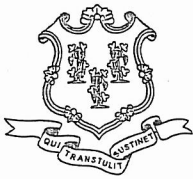
Dear Mr. Dahl:

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:

- The coax lines and TMAs be installed in accordance with the recommendations made in the Structural Analysis Report prepared by FDH Engineering dated May 7, 2012 and stamped by Christopher Murphy; and
- Following the installation of the proposed equipment, AT&T shall provide documentation certifying that the installation complied with the engineer's recommendation.
- 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 June 19, 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.





STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
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June 22, 2012

The Honorable Ed Edelson
First Selectman
Town of Southbury
Town Hall
501 Main Street South
Southbury, CT 06488-2295

RE: **EM-AT&T-130-120622** – AT&T Mobility notice of intent to modify an existing telecommunications facility located at 459 Burr Road, Southbury, Connecticut.

Dear First Selectman Edelson:

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 July 6, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts
Executive Director

LR/cm

Enclosure: Notice of Intent

c: Mark D. Cody, Zoning Enforcement Officer, Town of Southbury

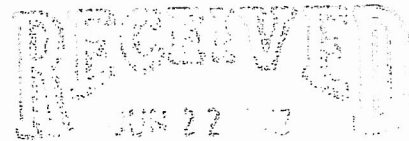


June 19, 2012

VIA OVERNIGHT DELIVERY

Ms. Linda Roberts, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: AT&T Mobility – Notice of Exempt Modification
459 Burr Road, Southbury, CT



CONNECTICUT
SITING COUNCIL

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of AT&T Mobility (“AT&T”). AT&T is enhancing the capabilities of its wireless system in Connecticut by implementing LTE technology. In order to do so, AT&T will modify antenna and equipment configurations at a number of existing sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which 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 First Selectman of Southbury.

AT&T plans to modify the existing facility at 459 Burr Road, Southbury owned by SBA Towers (coordinates 41°26’55.2”N, -73°10’57.44”W). Attached are drawings depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration. Also included are a power density calculation 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. The height of the overall structure will be unaffected. AT&T proposes to add three (3) new antennas, six (6) RRU’s and one (1) surge arrester. Additionally, AT&T will install one (1) fiber cable and two (2) DC control cables in a 3” flex conduit within the monopole.


2. The proposed changes will not extend the site boundaries. AT&T will install additional equipment in the existing equipment shelter. Thus, there will be no effect on the site compound.

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 in the attached power density calculations, AT&T's operations at the site will result in a power density of 1.49%; the combined site operations will result in a total power density of 11.72%.

Please feel free to call me with any questions or concerns regarding this matter. Thank you for your consideration.

Respectfully submitted,
AT&T Mobility

By: 
Eric Dahl, Consultant
55 Lynn Road
Ivoryton, CT 06442
edahl@comcast.net
860-227-1975

cc: Mr. Ed Edelson, First Selectman, Town of Southbury
Susan Cusato & Holly Hageman, Property Owners

Attachments



FDH Engineering, Inc., 6521 Meridien Drive Raleigh, NC 27616, Ph. 919.755.1012

**Structural Analysis for
SBA Network Services, Inc.**

149' Monopole Tower

**SBA Site Name: Southbury
SBA Site ID: CT13058-A
AT&T Site Name: Southbury
AT&T Site ID: CT2298**

FDH Project Number 12-04825E S2

Analysis Results

Tower Components	86.5%	Sufficient
Foundation	77.3%	Sufficient

Prepared By:

Daniel Struempf, EI
Project Engineer

Reviewed By:

Christopher M Murphy, PE
President
CT PE License No. 25842

FDH Engineering, Inc.
6521 Meridien Drive
Raleigh, NC 27616
(919) 755-1012
info@fdh-inc.com



51712

May 7, 2012

Prepared pursuant to TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and 2005 Connecticut Building Code

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EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Southbury, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads pursuant to the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, TIA/EIA-222-F* and 2005 Connecticut Building Code. Information pertaining to the existing/proposed antenna loading, current tower geometry, foundation dimensions, soil parameters, and member sizes was obtained from:

- Sabre Communications Corporation (Job No. 07-07055) Structural Design Report dated September 12, 2006
- FDH, Inc. (Job No. 08-07123T) TIA Inspection Report dated September 15, 2008
- JGI Eastern, Inc. (Project No. 06439G) Geotechnical Evaluation Report dated September 8, 2006
- Sabre Communications Corporation (Job No. 04-10247) Foundation Drawings dated November 25, 2003
- SBA Network Services, Inc.

The *basic design wind speed* per the *TIA/EIA-222-F* standards and 2005 Connecticut Building Code is 85 mph without ice and 38 mph with 3/4" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the existing and proposed antennas from AT&T in place at 147 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards and 2005 Connecticut Building Code provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Sabre Job No. 07-07055), the foundation should have the necessary capacity to support the existing and proposed loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e., the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the *TIA/EIA-222-F* standards and 2005 Connecticut Building Code are met with the existing and proposed loading in place, we have the following recommendations:

1. Proposed coax should be installed inside the monopole's shaft.
2. The existing TMAs should be installed directly behind the existing and proposed panel antennas.

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from the layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

Table 1 - Appurtenance Loading

Existing Loading:

Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
147	(6) Powerwave 7770.00 (12) Powerwave LGP21401 TMAs (6) Powerwave LGP13519 TMAs	(12) 1-5/8"	AT&T	147	(1) 13' Low Profile Platform
138	(3) RFS APXVSP18-C-A20 (3) ALU 1900 MHz RRUs (3) ALU 800 MHz RRUs (3) ALU 800 MHz Filters (4) RFS ACU-A20-N RETs (3) RFS APXV18-209014	(3) 1-1/4"	Sprint	138	(1) 12.5' Low Profile Platform
127.5	(6) RFS APX16DWV-16DWVS-A20 (3) RFS ATMPP1412D-1CWA Twin PCS TMAs (3) RFS ATMAA1412D-1A20 Twin AWS TMAs (3) Remec S20057A1 TMAs	(18) 1-5/8"	T-Mobile	127.5	(1) 13' Low Profile Platform

Proposed Loading:

Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
147	(6) Powerwave 7770.00 (3) KMW AM-X-CD-16-65-00T (6) Powerwave LGP21401 TMAs (6) Powerwave LGP13519 Diplexers	(12) 1-5/8" (1) 0.394" Fiber (2) 0.774" Power	AT&T	147	(1) 13' Low Profile Platform
145	(6) Ericsson RRUS-11 RRUs (1) Raycap DC6-48-60-18-8F Surge Arrestor			145	(1) Andrew MTC3335 Collar Mount

RESULTS

The following yield strength of steel for individual members was used for analysis:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Base Plate	60 ksi
Anchor Bolts	75 ksi

Table 3 displays the summary of the ratio (as a percentage) of force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. *Note: Capacities up to 105% are considered acceptable.* **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information

Table 3 - Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass/Fail
L1	149 - 97.5	Pole	TP31.58x20.25x0.1875	86.5	Pass
L2	97.5 - 48	Pole	TP42.1x30.325x0.3125	73.1	Pass
L3	48 - 0	Pole	TP52.03x40.3195x0.3125	86.5	Pass
		Anchor Bolts	(12) 2.25" Ø w/ BC = 58.25"	80.5	Pass
		Base Plate	56" square PL x 2.75" thk.	62.9	Pass

Table 4 - Maximum Base Reactions

Base Reactions	Current Analysis (TIA/EIA-222-F)	Original Design (ANSI/TIA-222-G)
Axial	28 k	41 k
Shear	22 k	29 k
Moment	2,319 k-ft	3,000 k-ft

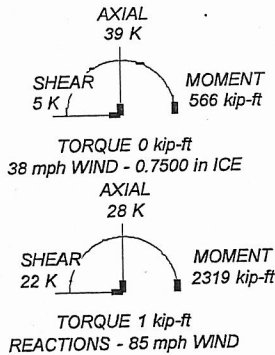
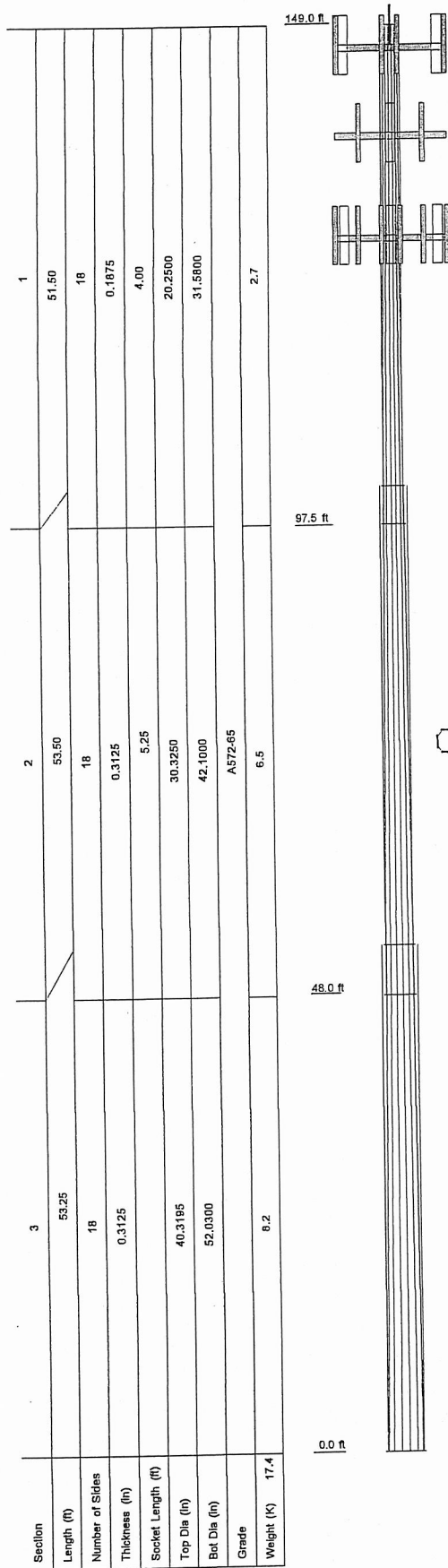
GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

APPENDIX



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	149	1900 Mhz RRU	138
13 Low Profile Mount	147	1900 Mhz RRU	138
(2) 7770.00 w/Mount Pipe	147	800 Mhz RRU	138
(2) 7770.00 w/Mount Pipe	147	800 Mhz RRU	138
(2) 7770.00 w/Mount Pipe	147	800 Mhz RRU	138
AM-X-CD-16-65-00T-RET w/Mount Pipe	147	800 Mhz Filter	138
AM-X-CD-16-65-00T-RET w/Mount Pipe	147	800 Mhz Filter	138
AM-X-CD-16-65-00T-RET w/Mount Pipe	147	800 Mhz Filter	138
AM-X-CD-16-65-00T-RET w/Mount Pipe	147	ACU-A20-N RET	138
AM-X-CD-16-65-00T-RET w/Mount Pipe	147	ACU-A20-N RET	138
(2) LGP21401 TMA	147	(2) ACU-A20-N RET	138
(2) LGP21401 TMA	147	(2) RFS APX16DWW-16DWWV-A20 w/ Mount Pipe	127.5
(2) LGP21401 TMA	147	RFS-ATMPP1412D-1CWA Twin PCS	127.5
(2) LGP13519 Diplexers	147	RFS-ATMAA1412D-1A20 Twin AWS	127.5
(2) LGP13519 Diplexers	147	RFS-ATMAA1412D-1A20 Twin AWS	127.5
(2) LGP13519 Diplexers	147	RFS-ATMAA1412D-1A20 Twin AWS	127.5
Empty Pipe Mount	147	Remec S20057A1	127.5
Empty Pipe Mount	147	(2) RFS APX16DWW-16DWWV-A20 w/ Mount Pipe	127.5
Empty Pipe Mount	147	13 Low Profile Mount	127.5
(2) RRUS-11	145	RFS APXV18-209014-C w/ Mount Pipe	127.5
(2) RRUS-11	145	RFS APXV18-209014-C w/ Mount Pipe	127.5
(2) RRUS-11	145	RFS APXV18-209014-C w/ Mount Pipe	127.5
DC6-48-6D-18-BF Surge Arrestor	145	Remec S20057A1	127.5
Andrew MTC Collar Mount	145	Remec S20057A1	127.5
12.5 Low Platform Mount	138	RFS APXV18-209014-C w/ Mount Pipe	127.5
(3) Empty Pipe Mount	138	(2) RFS APX16DWW-16DWWV-A20 w/ Mount Pipe	127.5
(3) Empty Pipe Mount	138	RFS-ATMPP1412D-1CWA Twin PCS	127.5
(3) Empty Pipe Mount	138	RFS-ATMPP1412D-1CWA Twin PCS	127.5
APXVSP18-C-A20 w/Mount Pipe	138	RFS-ATMPP1412D-1CWA Twin PCS	127.5
APXVSP18-C-A20 w/Mount Pipe	138	1900 Mhz RRU	138
APXVSP18-C-A20 w/Mount Pipe	138		
1900 Mhz RRU	138		

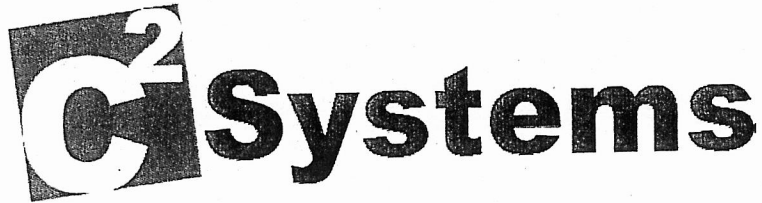
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

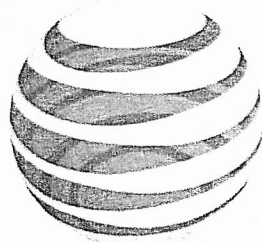
1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 86.5%

 Tower Analysis	FDH Engineering, Inc. 6521 Meridien Drive Raleigh, North Carolina Phone: (919) 755-1012 FAX: (919) 755-1031		Job: Southbury, CT13058-A Project: 12-04825E S2	
	Client: SBA	Drawn by: Daniel Struempfler	App'd:	
	Code: TIA/EIA-222-F	Date: 05/07/12	Scale: NTS	
	Path:	C:\Users\Randy.William\Desktop\Southbury S2\Southbury-CT, CT13058-A.dwg		
			Dwg No. E-1	



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

Calculated Radio Frequency Emissions



at&t

CT2298

(Southbury Burr Road)

459 Burr Road, Southbury, CT 06488

June 21, 2012

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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 459 Burr Road, Southbury, CT. The coordinates of the tower are 41-26-55.2 N, 73-10-57.44 W.

AT&T is proposing the following modifications:

- 1) Install three 700 MHz LTE antennas (one 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:

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

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
AT&T GSM	147	880	4	256	0.0197	0.5867	3.36%
AT&T GSM	147	1900	2	427	0.0142	1.0000	1.42%
AT&T UMTS	147	890	1	500	0.0083	0.5867	1.42%
T-Mobile GSM	127	1945	8	129	0.0230	1.0000	2.30%
T-Mobile UMTS	127	2100	2	730	0.0325	1.0000	3.25%
Sprint	137	1962.5	11	222	0.0467	1.0000	4.67%
AT&T UMTS	147	880	2	565	0.0019	0.5867	0.32%
AT&T UMTS	147	1900	2	875	0.0029	1.0000	0.29%
AT&T LTE	146	734	1	1313	0.0022	0.4893	0.45%
AT&T GSM	147	880	1	283	0.0005	0.5867	0.08%
AT&T GSM	147	1900	4	525	0.0035	1.0000	0.35%
						Total	11.72%

Table 1: Carrier Information ^{1 2 3}

¹ The existing CSC filing for AT&T 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 FDH Engineering, Inc Structural Analysis dated May 7, 2012.

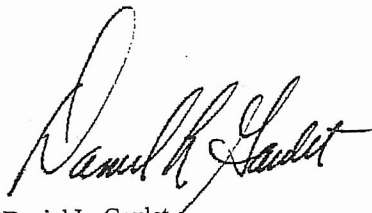
5. Conclusion

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 **11.72% 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.

A handwritten signature in black ink, appearing to read 'Daniel L. Goulet'.

Daniel L. Goulet
C Squared Systems, LLC

June 21, 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 Exposure⁴

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 Exposure⁵

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

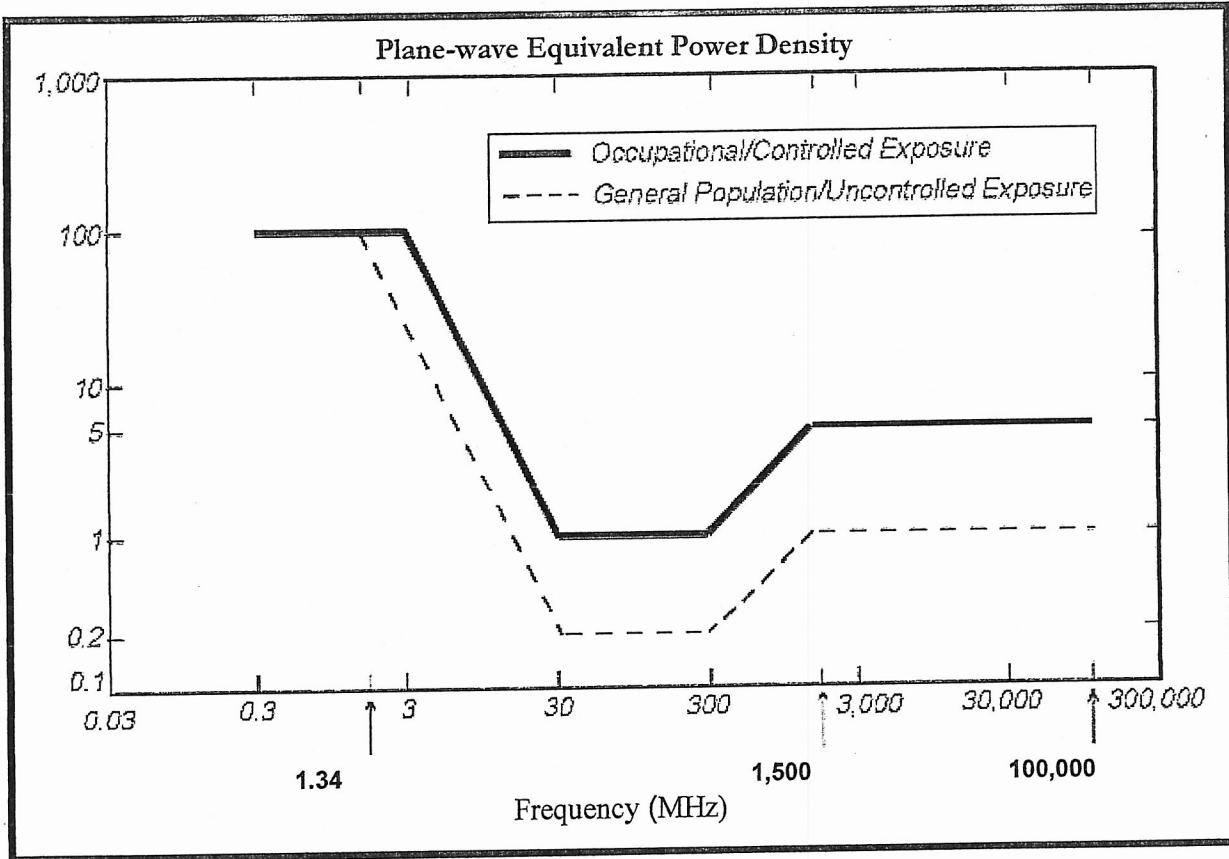
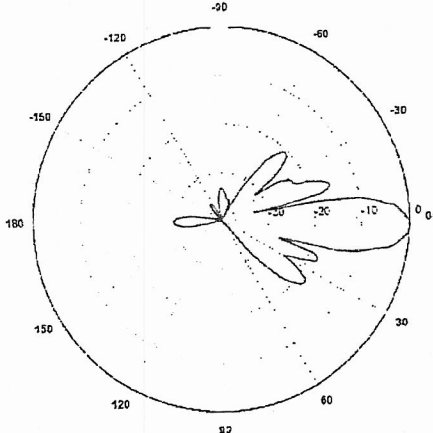
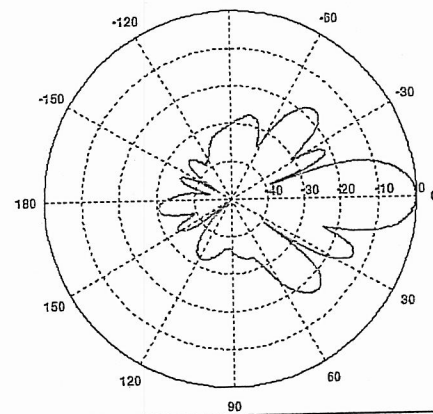
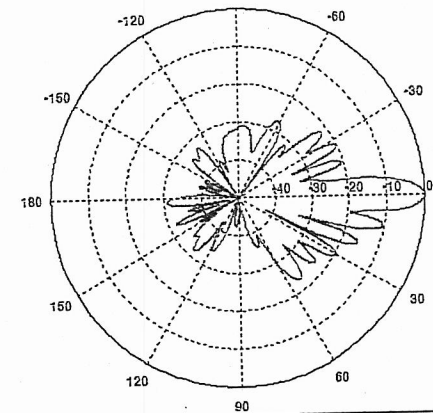
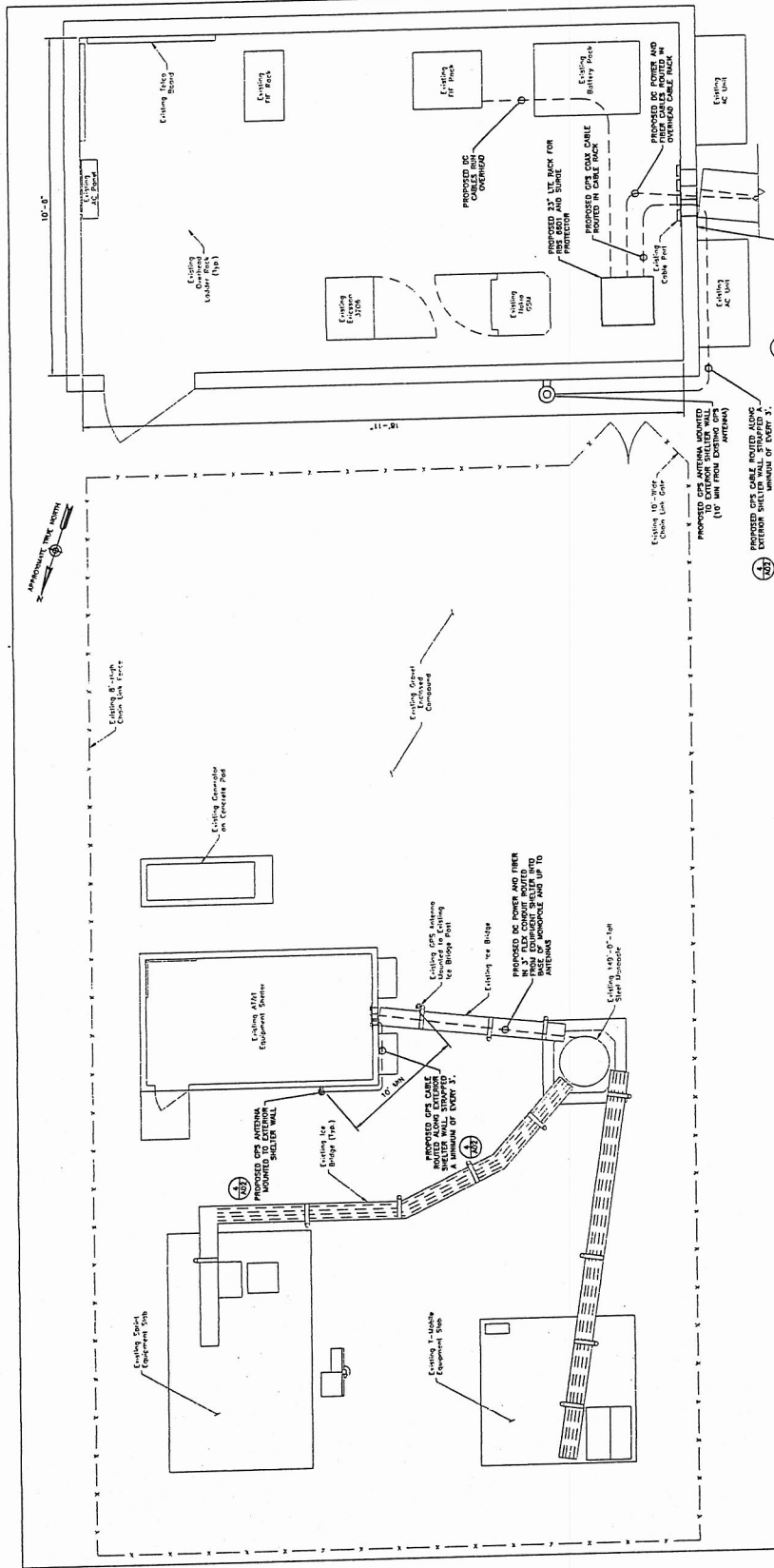


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

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

<p>700 MHz</p> <p>Manufacturer: KMW Model #: AM-X-CD-16-65-00T-RET Frequency Band: 698-894 MHz Gain: 13.4 dBd Vertical Beamwidth: 12.3° Horizontal Beamwidth: 65° Polarization: Dual Slant ± 45° Size L x W x D: 72.0" x 11.8" x 5.9"</p>	
<p>850 MHz</p> <p>Manufacturer: Powerwave Model #: 7770 Frequency Band: 824-896 MHz Gain: 11.5 dBd Vertical Beamwidth: 15° Horizontal Beamwidth: 85° Polarization: Dual Linear ±45° Size L x W x D: 55.4" x 11.0" x 5.0"</p>	
<p>1900 MHz</p> <p>Manufacturer: Powerwave Model #: 7770 Frequency Band: 1850-1990 MHz Gain: 13.4 dBd Vertical Beamwidth: 7° Horizontal Beamwidth: 90° Polarization: Dual Linear ±45° Size L x W x D: 55.4" x 11.0" x 5.0"</p>	



SHELTER LAYOUT DETAIL
 SCALE: 3/4" = 1'-0" FOR 11'-0"
 0' 1' 2'

SITE PLAN
 SCALE: 1/4" = 1'-0" FOR 11'-0"
 0' 1' 2'

- NOTES:**
1. WORK SHOWN AS APPROXIMATE.
 2. MOUNT ALL ANTENNAS COAX, SURGE, AND SIGNAL IN THE SAME MANNER AS SHOWN.
 3. NOT ALL INFORMATION SHOWN FOR CLARITY.

 Dewberry Engineers Inc. 301 Main Street Southbury, CT 06488 PHONE: 860.339.8888 FAX: 860.339.8888		 COMMUNICATIONS 800 MARSHALL PIKE ROAD #1A WINDSOR, CT 06095	 500 ENTERPRISE DRIVE SUITE 2A ROCKY HILL, CT 06867	SOUTHURRY BURR ROAD SITE NO. CT2298 459 BURR ROAD SOUTHURRY, CT 06488				SITE PLAN & SHELTER LAYOUT	
				SHEET NO. 1 OF 1	DATE: 08/25/02 BY: CMC/APP CHECKED: CMC/APP DESIGNED: CMC/APP PROJECT: SOUTHURRY CLIENT: AT&T	DRAWN BY: CMC CHECKED BY: CMC	DRAWING NUMBER: A01	PROJECT NUMBER: 500-8347/30048417	REV: 1