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
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

December 19, 2022

Hollis M. Redding
SAI Communications, LLC
12 Industrial Way
Salem, NH 03079
hredding@saigrp.com

RE: **EM-AT&T-062-220912** – New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 2675 Benham Street, Hamden, Connecticut.

Dear Hollis Redding:

The Connecticut Siting Council (Council) is in receipt of your correspondence of December 16, 2022 submitted in response to the Council's September 27, 2022 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/RDM/emr

emr

From: Hollis Redding <HRedding@saigrp.com>
Sent: Friday, December 16, 2022 7:03 AM
To: Robidoux, Evan <Evan.Robidoux@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: RE: Council Incomplete Letter for EM-AT&T-062-220912 (265 Benham Street, Hamden)

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Good morning,

Attached please find the revised RF Emissions Report per the incomplete letter of September 27, 2022. Please let me know if this deems the exempt mod complete or if additional information is needed. Thank you.
I apologize for the inconvenience and the added work to the Council. Have a great weekend. Hollis

Hollis M. Redding
Site Acquisition Specialist
860-834-6964
hredding@saigrp.com

December 16, 2022

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

Re: Request for second extension of time per the
Incomplete Letter EM-AT&T-062-220912
New Cingular Wireless PCS LLC ("AT&T") Site CT2040
265 Benham Street, Hamden, CT 06514

Dear Ms. Bachman:

Enclosed please find a revised RF Emissions report per the incomplete letter dated September 27, 2022. Thank you. Please let me know if this deems the exempt mod complete or if further information is needed.

Please let me know if you have any questions. I appreciate your time & patience.

Sincerely,

Hollis M. Redding

Hollis M. Redding
SAI Communications, LLC
Mobile: 860-834-6964
hredding@saigrp.com

Enclosure

SAI Group
12 Industrial Way
Salem, NH 03079
(603) 421-0470
www.saigrp.com

Radio Frequency Exposure Theoretical Study

Prepared For:

AT&T Mobility

Site Name:	Hamden Benham St
FA#:	10035317
Site ID:	CT2040
Address:	265 Benham Street, Hamden, CT 06514

Prepared by: **SAI Group**
12 Industrial Way
Salem, NH 03079
(603) 421-0470

Date of Report: December 08, 2022

Statement of Compliance

AT&T's proposed antenna installation along with other existing antennas is calculated to be within *13.19%* of FCC Standard for General Public/Uncontrolled Maximum Permissible Exposure (MPE).

Table of Contents

1 General Summary

SAI Group was contracted by AT&T Mobility to conduct a Radio Frequency (RF) Analysis for a wireless facility located at 265 Benham Street, Hamden, CT to determine whether the radio facility is in compliance with Federal Communications Commission (FCC) regulations and standards regarding RF exposure.

RF exposure is calculated in accordance with FCC's suggested prediction methods.

2 Site Compliance Summary

Compliance Summary (General Public Limit)	
Site Compliance	Yes
Maximum Calculated %MPE at 0-6' Ground Level (Cumulative)	13.19% at about 170ft South-East from Site.

3 RF Design Specifications

Table below shows the technical data used for the calculation of cumulative %MPE results.

Ant ID	Operator	Antenna Make	Antenna Model	Type	TX Freq (MHz)	Az (Deg)	Ant Gain (dBd)	Total ERP (Watts)	Z Rad Center (ft)
1	AT&T	KMW	EPBQ-654L8H6-L2	Panel	700	20	12.19	2649	70.00
1	AT&T	KMW	EPBQ-654L8H6-L2	Panel	1900	20	13.58	912	70.00
1	AT&T	KMW	EPBQ-654L8H6-L2	Panel	1900	20	13.58	912	70.00
1	AT&T	KMW	EPBQ-654L8H6-L2	Panel	2100	20	13.79	1915	70.00
1	AT&T	KMW	EPBQ-654L8H6-L2	Panel	1900	20	13.58	1824	70.00
1	AT&T	KMW	EPBQ-654L8H6-L2	Panel	2100	20	13.79	1915	70.00
2	AT&T	ERICSSON	AIR6419	Panel	3500	20	23.45	23990	71.58
3	AT&T	ERICSSON	AIR6449	Panel	3700	20	23.5	24268	67.83
4	AT&T	CCI	DMP65R-BU6DA	Panel	700	20	11.65	1170	70.00
4	AT&T	CCI	DMP65R-BU6DA	Panel	850	20	11.45	1000	70.00
4	AT&T	CCI	DMP65R-BU6DA	Panel	2300	20	15.25	3350	70.00
5	AT&T	KMW	EPBQ-654L8H6-L2	Panel	700	150	12.24	2680	70.00
5	AT&T	KMW	EPBQ-654L8H6-L2	Panel	1900	150	13.58	912	70.00
5	AT&T	KMW	EPBQ-654L8H6-L2	Panel	1900	150	13.58	912	70.00
5	AT&T	KMW	EPBQ-654L8H6-L2	Panel	2100	150	13.73	1888	70.00
5	AT&T	KMW	EPBQ-654L8H6-L2	Panel	1900	150	13.58	1824	70.00
5	AT&T	KMW	EPBQ-654L8H6-L2	Panel	2100	150	13.73	1888	70.00
6	AT&T	ERICSSON	AIR6419	Panel	3500	150	23.45	23990	71.58
7	AT&T	ERICSSON	AIR6449	Panel	3700	150	23.5	24268	67.83
8	AT&T	CCI	DMP65R-BU6DA	Panel	700	150	11.65	1170	70.00
8	AT&T	CCI	DMP65R-BU6DA	Panel	850	150	11.35	1000	70.00
8	AT&T	CCI	DMP65R-BU6DA	Panel	2300	150	15.25	3350	70.00
9	AT&T	KMW	EPBQ-654L8H6-L2	Panel	700	260	12.08	2583	70.00
9	AT&T	KMW	EPBQ-654L8H6-L2	Panel	1900	260	13.58	912	70.00
9	AT&T	KMW	EPBQ-654L8H6-L2	Panel	1900	260	13.58	912	70.00
9	AT&T	KMW	EPBQ-654L8H6-L2	Panel	2100	260	13.73	1888	70.00
9	AT&T	KMW	EPBQ-654L8H6-L2	Panel	1900	260	13.58	1824	70.00
9	AT&T	KMW	EPBQ-654L8H6-L2	Panel	2100	260	13.73	1888	70.00
10	AT&T	ERICSSON	AIR6419	Panel	3500	260	23.45	23990	71.58
11	AT&T	ERICSSON	AIR6449	Panel	3700	260	23.5	24268	67.83
12	AT&T	CCI	DMP65R-BU6DA	Panel	700	260	11.75	1197	70.00
12	AT&T	CCI	DMP65R-BU6DA	Panel	850	260	11.45	1000	70.00
12	AT&T	CCI	DMP65R-BU6DA	Panel	2300	260	14.95	3126	70.00
13	VZW	ANDREW	DB844G65ZAXY	Panel	850	30	13.5	1791	80.00
14	VZW	COMMSCOPE	NHH-65B-R2B	Panel	700	0	12.29	1355	80.00
14	VZW	COMMSCOPE	NHH-65B-R2B	Panel	1900	0	15.65	2938	80.00
14	VZW	COMMSCOPE	NHH-65B-R2B	Panel	2100	0	16.22	3350	80.00
15	VZW	COMMSCOPE	NHH-65B-R2B	Panel	850	0	12.7	1490	80.00
15	VZW	COMMSCOPE	NHH-65B-R2B	Panel	1900	0	15.65	2938	80.00
15	VZW	COMMSCOPE	NHH-65B-R2B	Panel	2100	0	16.22	3350	80.00
16	VZW	SAMSUNG	MT6407-77A	Panel	3700	0	23.45	26557	81.50
17	VZW	SAMSUNG	XXDWMM-12.5-65-8T	Panel	3550	0	10.55	227	78.00
18	VZW	ANDREW	DB844G65ZAXY	Panel	850	30	13.5	3582	80.00
19	VZW	RFS	APL866513	Panel	850	150	13.2	1671	80.00
20	VZW	COMMSCOPE	NHH-45B-R2B	Panel	700	120	13.98	2000	80.00
20	VZW	COMMSCOPE	NHH-45B-R2B	Panel	1900	120	17.35	4346	80.00
20	VZW	COMMSCOPE	NHH-45B-R2B	Panel	2100	120	17.84	4865	80.00
21	VZW	COMMSCOPE	NHH-45B-R2B	Panel	850	120	15.09	2583	80.00
21	VZW	COMMSCOPE	NHH-45B-R2B	Panel	1900	120	17.35	4346	80.00
21	VZW	COMMSCOPE	NHH-45B-R2B	Panel	2100	120	17.84	4865	80.00
22	VZW	SAMSUNG	MT6407-77A	Panel	3700	120	23.45	26557	81.50
23	VZW	SAMSUNG	XXDWMM-12.5-65-8T	Panel	3550	120	10.55	227	78.00

24	VZW	RFS	APL866513	Panel	850	150	13.2	3343	80.00
25	VZW	ANDREW	DB844G65ZAXY	Panel	850	270	13.5	1791	80.00
26	VZW	COMMSCOPE	NHH-65B-R2B	Panel	700	220	12.29	1355	80.00
26	VZW	COMMSCOPE	NHH-65B-R2B	Panel	1900	220	15.65	2938	80.00
26	VZW	COMMSCOPE	NHH-65B-R2B	Panel	2100	220	16.22	3350	80.00
27	VZW	COMMSCOPE	NHH-65B-R2B	Panel	850	220	12.7	1490	80.00
27	VZW	COMMSCOPE	NHH-65B-R2B	Panel	1900	220	15.65	2938	80.00
27	VZW	COMMSCOPE	NHH-65B-R2B	Panel	2100	220	16.22	3350	80.00
28	VZW	SAMSUNG	MT6407-77A	Panel	3700	220	23.45	26557	81.50
29	VZW	SAMSUNG	XXDWMM-12.5-65-8T	Panel	3550	220	10.55	227	78.00
30	VZW	ANDREW	DB844G65ZAXY	Panel	850	270	13.5	3582	80.00
31	Unknown	GENERIC	MICROWAVE 2FT	Panel	11000	150	38.65	916	108.00
32	Unknown	GENERIC	PANEL 2FT	Panel	2300	260	11.88	77	107.00
33	Unknown	GENERIC	OMNI 9.5FT	DIPOLE	450	360	5.96	100	106.00
34	Unknown	COMMSCOPE	DB224A	DIPOLE	150	360	5.96	100	106.00
35	Unknown	GENERIC	PANEL 2FT	Panel	2300	20	11.88	77	104.00
36	Unknown	GENERIC	PANEL 2FT	Panel	2300	0	11.88	77	99.50
37	Unknown	COMMSCOPE	DB224A	DIPOLE	150	360	5.96	100	85.00

NOTE: The Z value indicates the distance of radiation center of the antenna height above the ground site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or calculated based on SAI Group experience. SAI Group has assumed transmission parameters for “Unknown” RF emitters based on either similar installations found at other radio communications sites or from the latest data available for the site. “Generic” antenna models have been used where existing antenna part numbers or radiation patterns are not available. The frequencies presented in this table may have been assumed in order to represent the approximate band of operation and to support a worst-case calculation of power density

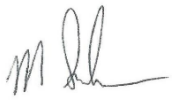
4 Conclusion

I certify to the best of my knowledge that the statements contained in this report are true and accurate. The theoretical computations contained are based on FCC recommended methods, with industry standard assumptions & formulas, and complies with FCC mandated Maximum Permissible RF Exposure requirements.

A comprehensive field survey was not performed prior to the generation of this report. If questions arise regarding the calculations herein, SAI Group recommends that a comprehensive field survey be performed to resolve any disputes.

Sanket Joshi
RF Engineer
SAI Group

December 08, 2022
Date



Matthew Smelcer
RF Engineering Manager

December 08, 2022
Date

Appendix A – FCC Rules and Regulations

In 1996, the Federal Communication Commission (FCC) adopted procedures and guidelines for evaluating of the effects of RF exposure. This guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following Tables and diagram:

Table 1. MPE Limits for General Population/ Uncontrolled Exposure

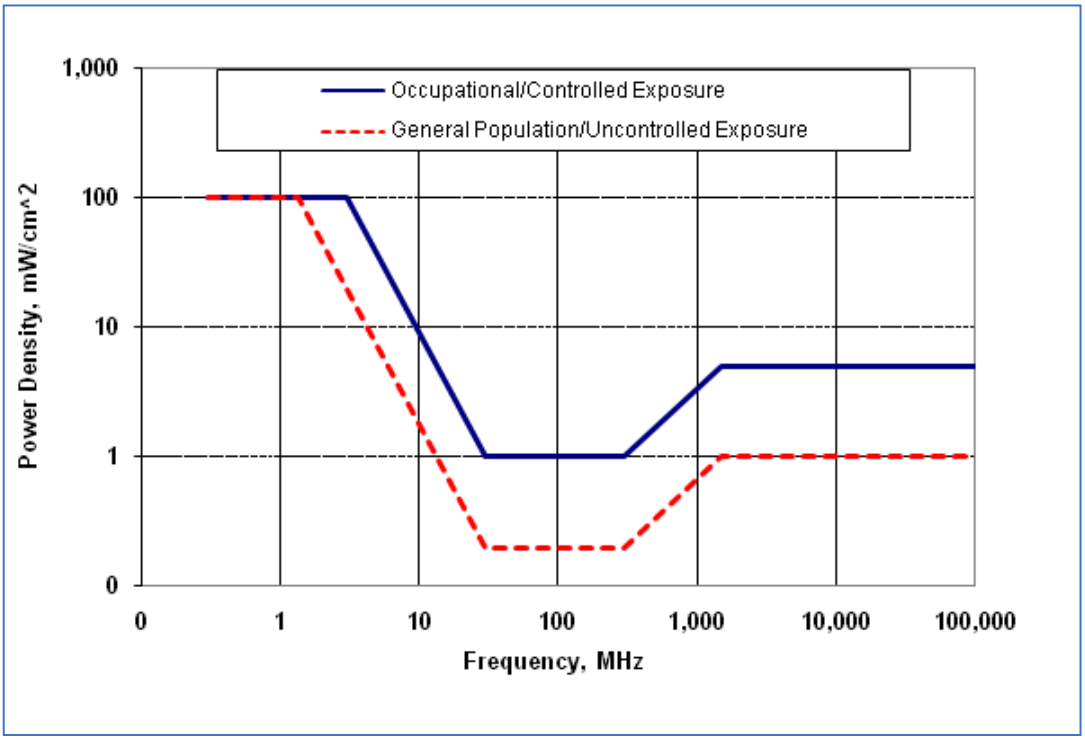
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time for $\|E\|^2$, $\|H\|^2$, or S (Minutes)
0.3 – 1.34	614	1.63	(100)*	30
1.34 -30	824/f	2.19/f	($180/f^2$)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	--	--	f/1500	30
1500– 100,000	--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

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 can't exercise control over their exposure. A site is evaluated with General Public limits if there is no access controls or no RF warning signage present.

Table 2. MPE Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time for $\|E\|^2$, $\|H\|^2$, 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	--	--	5.0	6
f = frequency in MHz		* = Plane wave equivalent power density		

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 such occupational/controlled limits apply provided he or she is made aware of the potential for exposure. Typical criteria to remediate controlled environment are restricted access to the areas where antennas are located along with appropriate RF warning signage. A site with Controlled environment is evaluated with Occupational limits.



Maximum Permissible Exposures. Occupational/Controlled and General Population/Uncontrolled MPE's are functions of frequency.

Appendix B – Calculations Methodology and Assumptions

SAI Group has performed theoretical analysis using Waterford Consultants' RoofMaster™ 2020 Version 30.5.26.2022 which uses a cylindrical model for very conservative power density calculations within the near field of the antenna where the antenna pattern has not truly formed yet. The Cylindrical Model is used to determine the spatially averaged power density in the near field directly in front of an antenna. In order to implement this model in all directions, the calculations utilize the antenna manufacturer horizontal pattern data. Additionally, the model also incorporates factors that reduce the power density by inverse square of horizontal and vertical distances beyond the near field region.

RoofMaster™ uses far field model to calculate the spatial peak power density. The RoofMaster™ implementation of this model incorporated manufacturer's horizontal and vertical pattern data to determine the power density in all directions.

The calculations are based on worst-case assumptions that, all antennas are always operating at full power.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized.

Appendix C – Informative References

The following references can be followed for further information about RF Health and Safety.

FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety

FCC OET Bulletin 56
https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf

FCC OET Bulletin 65
https://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet65/oet65.pdf

National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org

American National Standards Institute (ANSI)
http://www.ansi.org

Environmental Protection Agency (EPA)
https://www3.epa.gov/radtown/wireless-technology.html

National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/

Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/

International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org/