



STATE OF CONNECTICUT  
*CONNECTICUT SITING COUNCIL*

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**VIA ELECTRONIC MAIL**

December 30, 2022

Katie Adams  
SR Site Acquisition Specialist  
Network Building & Consulting  
100 Apollo Drive, Suite 303  
Chelmsford, MA 01824  
[kadams@nbcllc.com](mailto:kadams@nbcllc.com)

RE: **EM-AT&T-164-221013** – AT&T notice of intent to modify an existing telecommunications facility located at 50 Pine Lane, Windsor, Connecticut.

Dear Katie Adams:

The Connecticut Siting Council (Council) is in receipt of your correspondence of December 27, 2022 submitted in response to the Council's November 4, 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/ANM/emr

**From:** Katie Adams <[kadams@nbcllc.com](mailto:kadams@nbcllc.com)>  
**Sent:** Tuesday, December 27, 2022 3:07 PM  
**To:** Robidoux, Evan <[Evan.Robidoux@ct.gov](mailto:Evan.Robidoux@ct.gov)>  
**Cc:** CSC-DL Siting Council <[Siting.Council@ct.gov](mailto:Siting.Council@ct.gov)>  
**Subject:** RE: Council Extension Letter for EM-AT&T-164-221013 (50 Pine Lane, Windsor)

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 Afternoon,

Attached is the revised EME as requested.

Thank you,

**Katie Adams**

*SR Site Acquisition Specialist*

**NETWORK BUILDING + CONSULTING**

100 Apollo Drive | Suite 303 | Chelmsford, MA | 01824  
M 781-392-7547





December 21, 2022

Emissions Analysis for Site: **CTL01137– WINDSOR PINE LANE**

MobileComm Professionals, Inc was directed to analyze the proposed AT&T facility located at **50 PINE LANE, WINDSOR, CT 06095**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of milliwatts per square centimeter ( $\text{mW}/\text{cm}^2$ ) or microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\text{mW}/\text{cm}^2$  or  $\mu\text{W}/\text{cm}^2$  calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter ( $\text{mW}/\text{cm}^2$ ). The general population exposure limits for the 700 and 850 MHz Bands are approximately  $0.467 \text{ mW}/\text{cm}^2$  and  $0.567 \text{ mW}/\text{cm}^2$  respectively or  $466.667 \mu\text{W}/\text{cm}^2$  and  $566.667 \mu\text{W}/\text{cm}^2$  respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS), 2300 MHz (WCS), 3540 MHz (DoD Band) and 3840 MHz (C-Band) bands is  $1 \text{ mW}/\text{cm}^2$  or  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

## 1. Theoretical Calculations: Methods and Procedures

MobileComm Professionals, Inc has performed theoretical modeling of the site using a software tool, RoofMaster® Version 35.5.26.2022, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.

The following table details the antennas and operating parameters for the AT&T antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the ground.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.

## 2. Antenna Inventory & Power Data

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (°)	H B W (°)	Antenna Gain (dBd)	Antenna Aperture (ft)	#of Channels	Transmitter Power per Channel (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Calculated Power Density ( $\mu\text{W}/\text{cm}^2$ )	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated MPE%
A	1	AT&T	Quintel	QD6616-7	Panel	700	LTE(FN)	23	71	12.05	6	4	40.00	2286.23	3750.77	130.00	0.092525	466.67	0.019827
A	1	AT&T	Quintel	QD6616-7	Panel	700	LTE(B29)	23	71	12.05	6	2	40.00	1143.12	1875.38	130.00	0.042213	466.67	0.009046
A	1	AT&T	Quintel	QD6616-7	Panel	1900	LTE/5G	23	67	15.05	6	4	40.00	4561.63	7483.76	130.00	0.094686	1000.00	0.009469
A	1	AT&T	Quintel	QD6616-7	Panel	2100	LTE/5G	23	62	15.55	6	4	40.00	5118.23	8396.92	130.00	0.107179	1000.00	0.010718
A	2-1	AT&T	Ericsson	AIR 6419 B77G	Panel	3450	5G	23	11	23.5	2.55	1	54.22	12138.53	19914.34	131.75	0.003005	1000.00	0.000301
A	2-2	AT&T	Ericsson	AIR 6449 B77D	Panel	3840	5G	23	11	23.5	2.55	1	86.75	19421.64	31862.94	128.25	0.004240	1000.00	0.000424
A	3	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	23	74	11.85	6	4	40.00	2183.33	3581.95	130.00	0.007477	466.67	0.001602
A	3	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	23	63	12.45	6	4	40.00	2506.80	4112.63	130.00	0.004654	566.67	0.000821
A	3	AT&T	CCI	DMP65R-BU6D	Panel	2300	LTE	23	54	16.25	6	4	25.00	3758.37	6165.95	130.00	0.003013	1000.00	0.000301
B	4	AT&T	Quintel	QD8616-7	Panel	700	LTE(FN)	143	72	12.75	8	4	40.00	2686.09	4406.77	130.00	0.000006	466.67	0.000001
B	4	AT&T	Quintel	QD8616-7	Panel	700	LTE(B29)	143	72	12.75	8	2	40.00	1343.04	2203.38	130.00	0.000008	466.67	0.000002
B	4	AT&T	Quintel	QD8616-7	Panel	1900	LTE/5G	143	62	15.05	8	4	40.00	4561.63	7483.76	130.00	0.000012	1000.00	0.000001
B	4	AT&T	Quintel	QD8616-7	Panel	2100	LTE/5G	143	62	15.35	8	4	40.00	4887.87	8019.00	130.00	0.000002	1000.00	0.000000
B	5-1	AT&T	Ericsson	AIR 6419 B77G	Panel	3450	5G	143	11	23.5	2.55	1	54.22	12138.53	19914.34	131.75	0.000001	1000.00	0.000000
B	5-2	AT&T	Ericsson	AIR 6449 B77D	Panel	3840	5G	143	11	23.5	2.55	1	86.75	19421.64	31862.94	128.25	0.000002	1000.00	0.000000
B	6	AT&T	CCI	DMP65R-BU8D	Panel	700	LTE(B12)	143	75	12.95	8	4	40.00	2812.68	4614.45	130.00	0.000007	466.67	0.000002
B	6	AT&T	CCI	DMP65R-BU8D	Panel	850	5G	143	64	13.85	8	4	40.00	3460.35	5677.01	130.00	0.000001	566.67	0.000000
B	6	AT&T	CCI	DMP65R-BU8D	Panel	2300	LTE	143	64	15.95	8	4	25.00	3507.52	5754.40	130.00	0.000010	1000.00	0.000001
C	7	AT&T	Quintel	QD6616-7	Panel	700	LTE(FN)	263	71	12.05	6	4	40.00	2286.23	3750.77	130.00	0.000099	466.67	0.000021
C	7	AT&T	Quintel	QD6616-7	Panel	700	LTE(B29)	263	71	12.05	6	2	40.00	1143.12	1875.38	130.00	0.000102	466.67	0.000022
C	7	AT&T	Quintel	QD6616-7	Panel	1900	LTE/5G	263	67	15.05	6	4	40.00	4561.63	7483.76	130.00	0.000033	1000.00	0.000003
C	7	AT&T	Quintel	QD6616-7	Panel	2100	LTE/5G	263	62	15.55	6	4	40.00	5118.23	8396.92	130.00	0.000017	1000.00	0.000002
C	8-1	AT&T	Ericsson	AIR 6419 B77G	Panel	3450	5G	263	11	23.5	2.55	1	54.22	12138.53	19914.34	131.75	0.000027	1000.00	0.000003
C	8-2	AT&T	Ericsson	AIR 6449 B77D	Panel	3840	5G	263	11	23.5	2.55	1	86.75	19421.64	31862.94	128.25	0.000015	1000.00	0.000001
C	9	AT&T	CCI	DMP65R-BU6D	Panel	700	LTE(B12)	263	74	11.85	6	4	40.00	2183.33	3581.95	130.00	0.000200	466.67	0.000043
C	9	AT&T	CCI	DMP65R-BU6D	Panel	850	5G	263	63	12.45	6	4	40.00	2506.80	4112.63	130.00	0.000001	566.67	0.000000
C	9	AT&T	CCI	DMP65R-BU6D	Panel	2300	LTE	263	54	16.25	6	4	25.00	3758.37	6165.95	130.00	0.000033	1000.00	0.000003

**Table 2.1: Antenna Inventory & Power Data**

\*NOTE: 75% Duty Cycle and adjusted power reduction factor of 0.32 was applied to the AIR6449 & AIR6419 antennas per guidance from AT&T. Specifications were not available for the Ericsson AIR 6419 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6419 due to its similarity.

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (°)	H B W (°)	Antenna Gain (dBd)	Antenna Aperture (ft)	#of Channels	Transmitter Power per Channel (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Calculated Power Density (μW/cm <sup>2</sup> )	Allowable MPE (μW/cm <sup>2</sup> )	Calculated MPE%
A	10	T-Mobile	Ericsson	AIR6449 LTE_B41	Panel	2500	LTE	0	12.5	22.65	2.75	1	40.67	7485.61	12280.81	109.00	0.289918	1000.00	0.028992
A	10	T-Mobile	Ericsson	AIR6449 NR_B41	Panel	2500	5G	0	12.5	22.65	2.75	1	67.78	12476.02	20468.02	109.00	0.572263	1000.00	0.057226
A	11	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	LTE	0	69	13.25	8	2	30.00	1130.19	1854.18	109.00	0.039262	400.00	0.009816
A	11	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	5G	0	69	13.25	8	1	80.00	1506.92	2472.24	109.00	0.052855	400.00	0.013214
A	11	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	700	LTE	0	64	13.65	8	2	30.00	1239.23	2033.06	109.00	0.038960	466.67	0.008348
A	12	T-Mobile	RFS	VV-65R-V1	Panel	1900	GSM	0	65	15.55	5	4	30.00	3838.67	6297.69	109.00	0.046318	1000.00	0.004632
A	12	T-Mobile	RFS	VV-65R-V1	Panel	1900	LTE	0	65	15.55	5	2	60.00	3838.67	6297.69	109.00	0.046318	1000.00	0.004632
A	12	T-Mobile	RFS	VV-65R-V1	Panel	2100	LTE	0	66	16.05	5	2	60.00	4307.06	7066.12	109.00	0.055936	1000.00	0.005594
B	13	T-Mobile	Ericsson	AIR6449 LTE_B41	Panel	2500	LTE	120	12.5	22.65	2.75	1	40.67	7485.61	12280.81	109.00	0.000142	1000.00	0.000014
B	13	T-Mobile	Ericsson	AIR6449 NR_B41	Panel	2500	5G	120	12.5	22.65	2.75	1	67.78	12476.02	20468.02	109.00	0.000279	1000.00	0.000028
B	14	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	LTE	120	69	13.25	8	2	30.00	1130.19	1854.18	109.00	0.000025	400.00	0.000006
B	14	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	5G	120	69	13.25	8	1	80.00	1506.92	2472.24	109.00	0.000044	400.00	0.000011
B	14	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	700	LTE	120	64	13.65	8	2	30.00	1239.23	2033.06	109.00	0.000019	466.67	0.000004
B	15	T-Mobile	RFS	VV-65R-V1	Panel	1900	GSM	120	65	15.55	5	4	30.00	3838.67	6297.69	109.00	0.000055	1000.00	0.000006
B	15	T-Mobile	RFS	VV-65R-V1	Panel	1900	LTE	120	65	15.55	5	2	60.00	3838.67	6297.69	109.00	0.000055	1000.00	0.000006
B	15	T-Mobile	RFS	VV-65R-V1	Panel	2100	LTE	120	66	16.05	5	2	60.00	4307.06	7066.12	109.00	0.000049	1000.00	0.000005
C	16	T-Mobile	Ericsson	AIR6449 LTE_B41	Panel	2500	LTE	240	12.5	22.65	2.75	1	40.67	7485.61	12280.81	109.00	0.000556	1000.00	0.000056
C	16	T-Mobile	Ericsson	AIR6449 NR_B41	Panel	2500	5G	240	12.5	22.65	2.75	1	67.78	12476.02	20468.02	109.00	0.000869	1000.00	0.000087
C	17	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	LTE	240	69	13.25	8	2	30.00	1130.19	1854.18	109.00	0.000017	400.00	0.000004
C	17	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	600	5G	240	69	13.25	8	1	80.00	1506.92	2472.24	109.00	0.000031	400.00	0.000008
C	17	T-Mobile	RFS	APXVAARR24_43-U-NA20	Panel	700	LTE	240	64	13.65	8	2	30.00	1239.23	2033.06	109.00	0.000085	466.67	0.000018
C	18	T-Mobile	RFS	VV-65R-V1	Panel	1900	GSM	240	65	15.55	5	4	30.00	3838.67	6297.69	109.00	0.000025	1000.00	0.000002
C	18	T-Mobile	RFS	VV-65R-V1	Panel	1900	LTE	240	65	15.55	5	2	60.00	3838.67	6297.69	109.00	0.000025	1000.00	0.000002
C	18	T-Mobile	RFS	VV-65R-V1	Panel	2100	LTE	240	66	16.05	5	2	60.00	4307.06	7066.12	109.00	0.000031	1000.00	0.000003

**Table 2.2: Antenna Inventory & Power Data**

\*NOTE: 75% Duty Cycle and adjusted power reduction factor of 0.32 was applied to the AIR6449 & AIR6419 antennas per guidance from AT&T. Specifications were not available for the Ericsson AIR 6419 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6419 due to its similarity.

Sector	Ant ID	Operator	Antenna Mfg	Antenna Model	Antenna Type	FREQ. (MHz)	TECH.	AZ. (°)	H B W (°)	Antenna Gain (dBd)	Antenna Aperture (ft)	#of Channels	Transmitter Power per Channel (Watts)	Total ERP (Watts)	Total EIRP (Watts)	Height (ft)	Calculated Power Density (μW/cm <sup>2</sup> )	Allowable MPE (μW/cm <sup>2</sup> )	Calculated MPE%	
A	19	Dish	RFS	MX08FRO665-21	Panel	600	5G	0	68	11.45	6	4	30.00	1493.42	2450.09	98.00	0.129092	400.00	0.032273	
A	19	Dish	RFS	MX08FRO665-21	Panel	1900	5G	0	62	16.15	6	4	40.00	5876.52	9640.95	98.00	0.185049	1000.00	0.018505	
B	20	Dish	RFS	MX08FRO665-21	Panel	600	5G	120	68	11.45	6	4	30.00	1493.42	2450.09	98.00	0.000047	400.00	0.000012	
B	20	Dish	RFS	MX08FRO665-21	Panel	1900	5G	120	62	16.15	6	4	40.00	5876.52	9640.95	98.00	0.000100	1000.00	0.000010	
C	21	Dish	RFS	MX08FRO665-21	Panel	600	5G	240	68	11.45	6	4	30.00	1493.42	2450.09	98.00	0.000103	400.00	0.000026	
C	21	Dish	RFS	MX08FRO665-21	Panel	1900	5G	240	62	16.15	6	4	40.00	5876.52	9640.95	98.00	0.000033	1000.00	0.000003	
A	22	MetroPCS	RFI	BPA7496	Panel	700	LTE	340	180	8.85	5	1	60.00	365.85	600.00	119.00	0.009872	566.67	0.001742	
A	23	Other Carrier	Generic	Generic	Omni	850	LTE	360	360	3.36	12	1	60.00	422.82	693.67	147.00	0.002813	566.67	0.000496	
A	24	Other Carrier	Generic	Generic	Omni	850	LTE	360	360	3.36	12	1	60.00	422.82	693.67	141.25	0.002253	566.67	0.000398	
A	25	Other Carrier	Generic	Generic	Omni	850	LTE	360	360	3.36	12	1	60.00	422.82	693.67	141.25	0.002274	566.67	0.000401	
A	26	Other Carrier	Generic	Generic	Microwave	12400	Unknown	0	3	34.85	3	1	0.30	916.81	1503.56	141.25	0.000000	1000.00	0.000000	
A	27	Other Carrier	Generic	Generic	Yagi	850	LTE	360	46	8.85	1	1	25.00	191.91	314.73	85.00	0.001771	566.67	0.000313	
A	28	Other Carrier	Generic	Generic	Yagi	850	LTE	360	46	8.85	1	1	25.00	191.91	314.73	85.00	0.000589	566.67	0.000104	
A	29	Other Carrier	Generic	Generic	Yagi	850	LTE	360	46	8.85	1	1	25.00	191.91	314.73	83.00	0.000448	566.67	0.000079	
A	30	Other Carrier	Generic	Generic	Yagi	850	LTE	360	49	8.35	1	1	25.00	171.04	280.50	83.00	0.000512	566.67	0.000090	
																Calculated Power Density (μW/cm <sup>2</sup> )		1.839026	Calculated MPE%	0.2398

**Table 2.3: Antenna Inventory & Power Data**

*NOTE: 75% Duty Cycle and adjusted power reduction factor of 0.32 was applied to the AIR6449 & AIR6419 antennas per guidance from AT&T. Specifications were not available for the Ericsson AIR 6419 antenna. Per AT&T, specifications for the AIR 6449 antenna were used to model the 6419 due to its similarity.*



### 3. Compliance Summary

The theoretical calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated composite MPE value for this site assuming all carriers present is 0.2398% of the allowable FCC established general public limit sampled at the ground level.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were within the allowable 100% threshold standard per the federal government.