

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

March 17, 2022

Denise Sabo Northeast Site Solutions 54 Main Street, Unit 3 Sturbridge, MA 01566 denise@northeastsitesolutions.com

RE:

TS-DISH-038-211202 - Dish Wireless LLC request for an order to approve tower sharing at an existing telecommunications facility located at 143R Old Blue Hills Road, Durham, Connecticut.

Dear Ms. Sabo:

The Connecticut Siting Council (Council) is in receipt of your correspondence of March 11, 2022 submitted in response to the Council's January 7, 2022 notification of an incomplete request for tower sharing with regard to the above-referenced matter.

The submission renders the request for tower sharing 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/IN/emr

From: Denise Sabo <denise@northeastsitesolutions.com>

Sent: Friday, March 11, 2022 12:42 PM

To: Nwankwo, Ifeanyi < Ifeanyi.Nwankwo@ct.gov>

Cc: CSC-DL Siting Council <Siting.Council@ct.gov>; Victoria Masse

<victoria@northeastsitesolutions.com>

Subject: RE: 806364 - Crown/DISH - FW: Council Incomplete Letter for TS-DISH-038-211202

(143R Old Blue Hills Road, Durham)

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, Ifeanyi

Please find the attached revised EME for 143R Old Blue Hills Rd, Durham.

Thank you Denise



RADIO FREQUENCY EMISSIONS ANALYSIS REPORT EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS (Revision #1)

Dish Wireless Existing Facility

Site ID: BOBDL00041A

806364
143 R Old Blue Hill Road
Durham, Connecticut 06422

March 9, 2022

EBI Project Number: 6221004809

Site Compliance Summary				
	PREDICTED ONLY	EXISTING + PREDICTED DISH CONTRIBUTION		
Compliance Status	NON COMPLIANT	COMPLIANT		
Site total MPE% of FCC general population allowable limit:	112.52%	20.4395%		



March 9, 2022

Dish Wireless

Emissions Analysis for Site: BOBDL00041A - 806364

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **143 R Old Blue Hill Road in Durham, Connecticut** for the purpose of determining whether the emissions from the
Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

This report includes two (2) separate evaluations of site compliance. The first analysis includes theoretical, worst-case calculations based upon information supplied by Dish and predicted emissions levels from other carriers collocated on the site, as reported to the Connecticut Siting Council (CSC). The second analysis includes the results of onsite RF emissions measurements collected at the site (to assess existing carrier contributions), plus the predicted worst-case emissions levels for the proposed Dish Wireless facility.

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 microwatts per square centimeter (μ W/cm²). The number of μ W/cm² 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 population 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 population 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 microwatts per square centimeter (μ W/cm²). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 μ W/cm² and 467 μ W/cm², respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 μ W/cm². 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.

CALCULATIONS

Calculations were done for the proposed Dish Wireless antenna facility located at 143 R Old Blue Hill Road in Durham, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 4 n7l channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 4 n70 channels (PCS Band 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation

are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

- 4) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 5) The antennas used in this modeling are the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz channel(s) in Sector A, the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz channel(s) in Sector B, the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 6) The antenna mounting height centerline of the proposed antennas is 34 feet above ground level (AGL).
- 7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 8) All calculations were done with respect to uncontrolled / general population threshold limits.

Dish Wireless Site Inventory and Power Data

Sector:	Α	Sector:	В	Sector:	С
Antenna #:	I	Antenna #:	I	Antenna #:	1
Make / Model:	JMA MX08FRO665- 20	Make / Model:	JMA MX08FRO665- 20	Make / Model:	JMA MX08FRO665- 20
Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz
Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd
Height (AGL):	34 feet	Height (AGL):	34 feet	Height (AGL):	34 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts	Total TX Power (W):	260 Watts
ERP (W):	3,065.51	ERP (W):	3,065.51	ERP (W):	3,065.51
Antenna A1 MPE %:	20.21%	Antenna BI MPE %:	20.21%	Antenna C1 MPE %:	20.21%

Site Composite MPE % (PREDICTIVE MODELING ONLY)			
Carrier	MPE %		
Dish Wireless (Max at Sector A):	20.21%		
T-Mobile	50.76%		
AT&T	8.83%		
Verizon	20.87%		
Town	4.03%		
Sprint	7.82%		
Site Total MPE %:	112.52%		

Dish Wireless MPE % Per Sector (PREDICTIVE MODELING ONLY)					
Dish Wireless Sector A Total:	20.21%				
Dish Wireless Sector B Total:	20.21%				
Dish Wireless Sector C Total:	20.21%				
Site Total MPE % :	112.52%				

Site Composite MPE % (PREDICTIVE MODELING AND ONSITE RF MONITORING RESULTS)				
Carrier MPE %				
Dish Wireless (Max at Sector A):	20.21%			
Verizon/T- Mobile/AT&T/Sprint/Town	0.2295%			
Site Total MPE %:	20. 4395%			

Dish Wireless MPE % Per Sector (PREDICTIVE MODELING AND ONSITE MONITORING)				
Dish Wireless Sector A Total:	20.21%			
Dish Wireless Sector B Total:	20.21%			
Dish Wireless Sector C Total:	20.21%			
Site Total MPE % :	20.4395%			

Dish Wireless Maximum MPE Power Values (Sector A)							
Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	34.0	41.03	600 MHz n71	400	10.26%
Dish Wireless 1900 MHz n70	4	542.70	34.0	99.55	1900 MHz n70	1000	9.95%
						Total:	20.21%

^{*} NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

On-Site Measurements

EBI Consulting performed an RF emission survey on March 7, 2022 of the RF environment surrounding the existing facilities installed at this location. The facility consists of a lattice telecommunications tower. Access to the facility compound is restricted to authorized personnel and facility management.

To measure the RF emissions within the vicinity, EBI Consulting utilized a NARDA E Field Probe Model NARD-EA5091 Standard Shaped probe S/N 1049, Frequency Range 300 KHz-50 GHz with NARDA Electromagnetic Survey Meter Model NARD-NMB-550 S/N E-0541. Probe calibration was performed on July 24, 2021 with meter calibration performed on July 21, 2021.

An RF emissions survey was performed at the wireless telecommunications facility. This survey included walking around the structure and noting the maximum average spatial readings encountered. The maximum value of the average spatial readings of RF emissions encountered on the was 0.0459% of the Occupational standard (0.2295% of the FCC's General Population exposure limit). The survey results are summarized within Appendix A (EBI RF EME Field Form).

See Appendix B for the layout depicting the actual readings (% of the FCC MPE General Population standard limits) at various locations at the site. Various measurements were taken to indicate the RF emissions levels that can be encountered by an individual who gains access to areas directly adjacent to the structure.

Summary

While the worst-case theoretical calculations performed for this analysis yielded results that exceeded the allowable limits for general population exposure to RF emissions, on site measurements of existing carrier contributions, when added to the predicted emissions levels for the proposed Dish facility yielded results that are within allowable limits for general population exposure to RF emissions.

In our experience, the theoretical predicted levels of onsite carriers significantly overstate actual emissions; onsite measurements confirm that these predicted levels are not representative of onsite conditions. It should be noted that for each of the existing carriers, the bulk of the predicted RF emissions levels result from recently proposed 5G antennas that are "beamforming" antennas whose emissions patterns are dynamic (based upon user demand) and not static, as with the earlier generation of antennas. This is shown in Appendix C, taken from the CSC 01/21/22 Power Density Table for the site provided to EBI. As a result, the reported Effective Isotropically Radiated Power (EiRP) for these newer technology antennas result in elevated predicted RF emissions contributions that do not accurately account for the dynamic nature of these antenna radiation patterns. Therefore, the alternative methodology utilized here, involving the predicted Dish emissions to the onsite measured emissions, provides a more accurate assessment of RF compliance for this site.

In summary, based upon our onsite measurements, the anticipated maximum composite contributions from the Dish Wireless facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Sector	Power Density Value (%)
Sector A:	20.21%
Sector B:	20.21%
Sector C:	20.21%
Dish Wireless	
Maximum MPE %	20.21%
(Sector A):	
Site Total:	20.4395%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **19.445**% of the allowable FCC established general population limit sampled at the ground level. This is based upon predicted Dish Wireless contributions, added to onsite RF measurements completed for existing carriers on site.

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 well within the allowable 100% threshold standard per the federal government.



APPENDICES

Appendix A: EBI RF-EME Field Form

Appendix B: Monitoring Plan Layout with RF Measurement Results

Appendix C: CSC Power Density Table for the site (01.21.22 data version)

Appendix D: Site Photos

EBI RF EME FIELD FORM FOR TOWER

Surveyor Name	Jacob McAlister	EBI#	6221004809
Survey Date	March 7, 2022	Client Site #	BOBDL00041A
		Client Site Name	806364
Client		Is Site Controlled?	Yes
Other Carriers Onsite?	Yes	How Many Other Carriers?	4
Address	143 R Old Blue Hill Road	Other Carrier	T-Mobile
City	Durham	Other Carrier	Sprint
State	Connecticut	Other Carrier	Verizon
Zip	06422	Other Carrier	AT&T
Scope of Work	Pre-Construction		

Final Report Should Be Named As Follows:

BOBDL00041A_MPE_Report_3.9.22

Antennas					
	<u>Antenna</u>	Frequency (MHz)	Z (feet)	Make/Model	Azimuth (°)
	A1				
	A2				
	A3				
	A4				
	B1				
	B2				
5	B3				
OWE	B4				
-	C1				
	C2				
	C3				
	C4				
	D1				
	D2				
	D3				
	D4				
	Notes -			_	

		T-Mol	bile Antennas	S	
	<u>Antenna</u>	Frequency (MHz)	Z (feet)	Make/Model	Azimuth (°)
	A1	L19/L21/U21	73	Ericsson / AIR 32 B2a/B66Aa	a
	A2		73	Ericsson / AIR21 B4A B2P_	T-MOBILE
	A3	L41/N41	73	Ericsson / AIR6449 B41	
	A4	L6/L7	73	/ APXVAARR24_43-U-NA20	_TMOBILE
	B1	L19/L21/U21	73	Ericsson / AIR 32 B2a/B66Aa	a
	B2		73	Ericsson / AIR21 B4A B2P_	T-MOBILE
Ŀ	В3	L41/N41	73	Ericsson / AIR6449 B41	
Tower	B4	L6/L7	73	/ APXVAARR24_43-U-NA20	_TMOBILE
ř	C1	L19/L21/U21	73	Ericsson / AIR 32 B2a/B66Aa	a
	C2		73	Ericsson / AIR21 B4A B2P_	T-MOBILE
	C3	L41/N41	73	Ericsson / AIR6449 B41	
	C4	L6/L7	73	/ APXVAARR24_43-U-NA20	_TMOBILE

EBI RF EME FIELD FORM FOR TOWER

MONITOR INFORMATION

PROBE INFORMATION

Monitor Model #	NARD-NBM-550	Probe Model #	NARD-EA5091
Monitor Serial #	E-0541	Probe Serial #	1049
Calibration Date	07/21/21	Calibration Date	07/24/21
Next Recommended Calibration Date	07/21/23	Next Recommended Calibration Date	07/24/23

CLIMATE INFORMATION

Temperature (°F)	55
Sunny / Overcast / Cloudy	Overcast
No Wind / Mild Breeze / Windy	Mild Breeze
Rainy / Drizzle / Foggy / Snowy	Clear
Other Weather Factors that May Influence Readings	N/A

ACCESS INFORMATION

Type of Facility	Monopole
Property Owner / Contact Information	Crown Castle
Who Manages Access (e.g. security, landlord, no one)	No one
How is Access Managed? (e.g. lock, sign-in)	Lock
Ease of Access, In General (e.g. ease of breaching any access physical controls)	Locked Gate, Drive up to compound.

SIGNAGE INFORMATION

Describe All <u>Existing</u> Signage	Two At&T yellow caution signs at bottom of tower.
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NON-PANEL ANTENNA / BARRIER INVENTORY

Antenna Type (Microwave / Yagi / Patch / Omni / Other)	Carrier	Z (feet)	Azimuth (°)
Whip		50	
Yagi?		50	
Barrier Description and Location (if applicable)			•

^{*} mark locations of all antennas and barriers on site plan.

D1		
D2		
D3		
D4		
Notes -		

		Spri	nt Antennas		
	<u>Antenna</u>	Frequency (MHz)	Z (feet)	Make/Model	Azimuth (°)
	A1		89	commscope / NNVV-65B-R4	
	A2		89	rfs celwave / APXVTM14-ALU-I20	
	A3				
	A4				
	B1		89	commscope / NNVV-65B-R4	
	B2		89	rfs celwave / APXVTM14-ALU-I20	
<u>-</u>	B3				
Tower	B4				
ĭ [C1		89	commscope / NNVV-65B-R4	
	C2		89	rfs celwave / APXVTM14-ALU-I20	
	C3				
	C4				
	D1				
	D2				
	D3				
	D4				
	Notes -				

Verizon Antennas				
Antenna	Frequency (MHz)	Z (feet)	Make/Model	Azimuth (°)
A1		100	vzw / Sub6 Antenna - VZS01	
A2		100	antel / LPA-80080/6CF	
A3		100	antel / LPA-80080/6CF	
A4				
B1		100	vzw / Sub6 Antenna - VZS01	
B2		100	antel / LPA-80080/6CF	
B3		100	antel / LPA-80080/6CF	
B4				
C1		100	vzw / Sub6 Antenna - VZS01	
C2		100	antel / LPA-80080/6CF	
C3		100	antel / LPA-80080/6CF	
C4				
D1				
D2				
D3				_
D4				
Notes -				

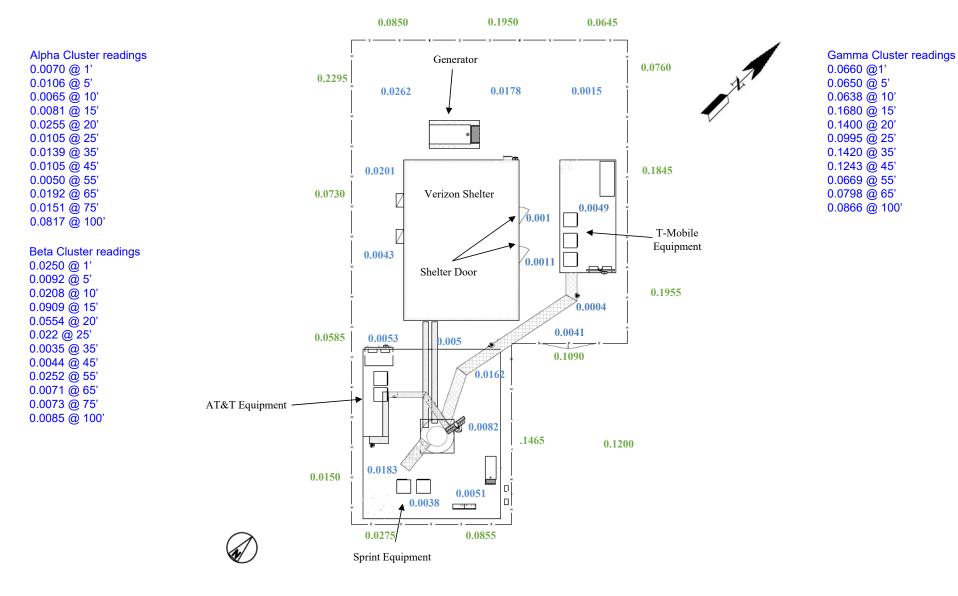
	AT8	&T Antennas		
<u>Antenna</u>	Frequency (MHz)	Z (feet)	Make/Model	Azimuth (°)
A1		116	andrew SBNHH-1D65A	
A2		116	kathrein / 80010964	
A3		116	andrew SBNHH-1D65A	
A4		116	kathrein / 80010964	
B1		116	andrew SBNHH-1D65A	
B2		116	kathrein / 80010964	

Inside Tower Co	Spatial Averages	
Location Reference	% Occupational MPE	% General Population MPE
Outside Compound gate	0.0218	0.1090
Inside Compound Gate	0.0041	0.0205
South of T-mobile Equipment	0.0004	0.0020
Verizon Shelter door (1)	0.0011	0.0055
Verizon Shelter door (2)	0.0010	0.0050
T-Mobile equipment concrete pad	0.0049	0.0245
North End of compound (1)	0.0015	0.0075
North End of compound (2)	0.0178	0.0890
North End of compound (3)	0.0262	0.1310
West of Verizon Shelter (1)	0.0201	0.1005
West of Verizon Shelter (2)	0.0043	0.0215
North of monopole concrete pad (1)	0.0053	0.0265
North of monopole concrete pad (2)	0.0050	0.0250
North of monopole concrete pad (3)	0.0162	0.0810
Mid monopole concrete pad	0.0082	0.0410
South of monopole concrete pad (1)	0.0051	0.0255
South of monopole concrete pad (2)	0.0038	0.0190
South of monopole concrete pad (3)	0.0183	0.0915
East Outside of Compound (1)	0.0391	0.1955
East Outside of Compound (2)	0.0369	0.1845
East Outside of Compound (3)	0.0152	0.0760
North Outside of Compound (1)	0.0129	0.0645
North Outside of Compound (2)	0.0390	0.1950
North Outside of Compound (3)	0.0170	0.0850
West Outside of Compound (1)	0.0459	0.2295
West Outside of Compound (2)	0.0146	0.0730
West Outside of Compound (3)	0.0117	0.0585
West Outside of Compound (4)	0.0030	0.0150
South Outside of Compound (1)	0.0055	0.0275
South Outside of Compound (2)	0.0171	0.0855
Outside of Compound (1)	0.0293	0.1465
Outside of Compound (2)	0.0240	0.1200

Transmitting Direction of Antennas up to 200'				
% FCC MPE	Spatial Averages			
Location Reference	% Occupational MPE	% General Population MPE		
Alpha Cluster 1'	0.0070	0.0350		
Alpha Cluster 5'	0.0106	0.0530		
Alpha Cluster 10'	0.0065	0.0325		
Alpha Cluster 15'	0.0081	0.0405		
Alpha Cluster 20'	0.0255	0.1275		
Alpha Cluster 25'	0.0105	0.0525		
Alpha Cluster 35'	0.0139	0.0695		
Alpha Cluster 45'	0.0105	0.0525		
Alpha Cluster 55'	0.0050	0.0250		
Alpha Cluster 65'	0.0192	0.0960		

er	В3	116	andrew SBNHH-1D65A	
Tower	B4	116	kathrein / 80010964	
Ĭ	C1	116	andrew SBNHH-1D65A	
	C2	116	kathrein / 80010964	
	C3	116	andrew SBNHH-1D65A	
	C4	116	kathrein / 80010964	
	D1			
	D2			
	D3			
	D4			
	Notes -	•		

Alpha Cluster 75'	0.0151	0.0755
Alpha Cluster 100'	0.0131	0.4085
Beta Cluster 1'	0.0250	0.4065
Beta Cluster 5'	0.00230	0.0460
Beta Cluster 3	0.0092	0.0460
Beta Cluster 15'	0.0208	0.1040 0.4545
Beta Cluster 20'	0.0554	0.2770
Beta Cluster 25'	0.0220	0.1100
Beta Cluster 35'	0.0035	0.0175
Beta Cluster 45'	0.0044	0.0220
Beta Cluster 55'	0.0252	0.1260
Beta Cluster 65'	0.0071	0.0355
Beta Cluster 75'	0.0073	0.0365
Beta Cluster 100'	0.0085	0.0425
Gamma Cluster 1'	0.0660	0.3300
Gamma Cluster 5'	0.0650	0.3250
Gamma Cluster 10'	0.0638	0.3190
Gamma Cluster 15'	0.1680	0.8400
Gamma Cluster 20'	0.1400	0.7000
Gamma Cluster 25'	0.0995	0.4975
Gamma Cluster 35'	0.1420	0.7100
Gamma Cluster 45'	0.1243	0.6215
Gamma Cluster 55'	0.0669	0.3345
Gamma Cluster 65'	0.0798	0.3990
Gamma Cluster 100'	0.0866	0.4330



	A	В	С	D	Е	F	G	Н	1	J	K
	Control Number	Site	Carrier		ERP/Ch (W)	Ant Ht	MHz	Power Density	S	%MPE	Site Total
2	Last updated 01/21/22	Powe	er Density Calcu	lations							
00	EM-T-Mobile-040-200818	Durham - 143R Old Blue Hills Road	T-Mobile	2	6413	73	2500	1.0275	1.0000	10.28%	
01	EM-T-Mobile-040-200818	Durham - 143R Old Blue Hills Road	T-Mobile	2	6413	73	2500	1.0275	1.0000	10.28%	
)2	EM-T-Mobile-040-200818	Durham - 143R Old Blue Hills Road	T-Mobile	2	1028	73	2100	0.1647	1.0000	1.65%	
03	EM-T-Mobile-040-200818	Durham - 143R Old Blue Hills Road	T-Mobile	2	2057	73	1900	0.3296	1.0000	3.30%	
04	EM-T-Mobile-040-200818	Durham - 143R Old Blue Hills Road	T-Mobile	2	2308	73	2100	0.3698	1.0000	3.70%	
05	EM-T-Mobile-040-200818	Durham - 143R Old Blue Hills Road	T-Mobile	2	592	73	600	0.0949	0.4000	2.37%	
06	EM-T-Mobile-040-200818	Durham - 143R Old Blue Hills Road	T-Mobile	1	1578	73	600	0.1264	0.4000	3.16%	
107	EM-T-Mobile-040-200818	Durham - 143R Old Blue Hills Road	T-Mobile	2	649	73	700	0.1040	0.4667	2.23%	
08	EM-T-Mobile-040-200818	Durham - 143R Old Blue Hills Road	T-Mobile	2	2204	73	1900	0.3531	1.0000	3.53%	
09	EM-T-Mobile-040-200818	Durham - 143R Old Blue Hills Road	T-Mobile	2	6413	73	2500	1.0275	1.0000	10.28%	
110	EM-CING-038-200911	Durham - 143R Old Blue Hills Road	AT&T-UMTS	1	7911	116	2100	0.2351	1.0000	2.35%	
111	EM-CING-038-200911	Durham - 143R Old Blue Hills Road	AT&T-LTE	1	2209	116	763	0.0657	0.5087	1.29%	
112	EM-CING-038-200911	Durham - 143R Old Blue Hills Road	AT&T-LTE	1	2631	116	850	0.0782	0.5667	1.38%	
413	EM-CING-038-200911	Durham - 143R Old Blue Hills Road	AT&T-LTE	1	2209	116	737	0.0657	0.4913	1.34%	
414	EM-CING-038-200911	Durham - 143R Old Blue Hills Road	AT&T-LTE	1	2685	116	2300	0.0798	1.0000	0.80%	
115	EM-CING-038-200911	Durham - 143R Old Blue Hills Road	AT&T-LTE	1	4657	116	1900	0.1384	1.0000	1.38%	
116	EM-CING-038-200911	Durham - 143R Old Blue Hills Road	AT&T-LTE	1	560	116	850	0.0166	0.5667	0.29%	
117	EM-VER-038-210720	Durham - 143r Old Blue Hills Road	Verizon	4	689	100	751	0.1122	0.5007	2.24%	
118	EM-VER-038-210720	Durham - 143r Old Blue Hills Road	Verizon	2	451	100	877	0.0367	0.5847	0.63%	
419	EM-VER-038-210720	Durham - 143r Old Blue Hills Road	Verizon	4	819	100	874	0.1333	0.5827	2.29%	
120	EM-VER-038-210720	Durham - 143r Old Blue Hills Road	Verizon	4	1557	100	1975	0.2535	1.0000	2.53%	
121	EM-VER-038-210720	Durham - 143r Old Blue Hills Road	Verizon	4	1563	100	2120	0.2545	1.0000	2.54%	
22	EM-VER-038-210720	Durham - 143r Old Blue Hills Road	Verizon	4	6531	100	3730	1.0632	1.0000	10.63%	
23	EM-AT&T-038-020626	Durham - 143R Old Blue Hills Road	Town	4	400	75	450	0.1209	0.3000	4.03%	
424	EM-AT&T-038-180924	Durham - 143R Old Blue Hills Road	Sprint	1	377	90	850	0.0192	0.5667	0.34%	
125	EM-AT&T-038-180924	Durham - 143R Old Blue Hills Road	Sprint	2	942	90	850	0.0960	0.5667	1.69%	
26	EM-AT&T-038-180924	Durham - 143R Old Blue Hills Road	Sprint	5	512	90	1900	0.1305	1.0000	1.30%	
127	EM-AT&T-038-180924	Durham - 143R Old Blue Hills Road	Sprint	2	1280	90	1900	0.1305	1.0000	1.30%	
428	EM-AT&T-038-180924	Durham - 143R Old Blue Hills Road	Sprint	8	778	90	2500	0.3172	1.0000	3.17%	92.30%
429			·								

