INFINIGY

Non-Ionizing Radiation Report

Compiled For: Sectorsite/PTI on behalf of Dish, AT&T and T-Mobile

Site Name: US-WA-LAKE FOREST PARK

Site ID: US-WA-1010

19701 47th Avenue NE, Lake Forest Park, WA 98155

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Latitude: 47-46-19.50 N; Longitude: 122-16-51.40 W

Structure Type: Tower

Report Date: November 7, 2022

Dish, AT&T, and T-Mobile antenna usage will not interfere with other existing adjacent or neighboring transmission reception signals in accordance with the proposed deployment plan

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1. Executive Summary:

Sectorsite/PTI on behalf of Dish, AT&T and T-Mobile has contracted Infinigy Solutions, LLC to determine whether the site US-WA-1010 - US-WA-Lake Forest Park located at 19701 47th Avenue NE in Lake Forest Park, WA Will Be Compliant with all Federal Communications Commission (FCC) rules and regulations for radio frequency (RF) exposure as indicated in **47CFR§1.1310**.

The report incorporates a theoretical RF field analysis in accordance with the FCC Rules and Regulations for all individuals classified as "Occupational or Controlled" and "General Public or Uncontrolled" (see Appendix A and B).

This document and the conclusions herein are based on information provided by Sectorsite/PTI on behalf of Dish, AT&T and T-Mobile.

As a result of the analysis, **Dish, AT&T, and T-Mobile Will Be Compliant with FCC rules.**

All Carriers, All Bands Cumulative Exposure %		
Uncontrolled / General Population	Exposure values at the site (mW/cm^2)	0.0860
	% Exposure	3.74 %
Controlled / Occupational	Exposure values at the site (mW/cm^2)	0.0860
	% Exposure	0.77 %

Carrier Summary		
Carrier	General Public %	Occupational %
Dish	0.67	0.14
AT&T	1.86	0.38
T-Mobile	1.21	0.25

2. Site Summary:

Site Information	
Site Name: US-WA-LAKE FOREST PARK	
Site Address: 19701 47th Avenue NE, Lake Forest Park, WA 06514	
Site Type: Tower	
Compliance Status	Will Be Compliant
Mitigation Required	No
Signage Required	Yes
Barriers Required	No
Access Locked	No
Area Controlled or Uncontrolled	Uncontrolled

3. Site Compliance

This report also incorporates overview of the site information:

- Antenna Inventory Table
- Calculation Tables showing exposure for each carrier transmit frequency
- Total exposure for all carriers existing and proposed at ground level considering the centerline of all antennas and horizontal distance from the tower.
- Maximum Effective Radiated Power Assumed as Worst Case for Calculations used in this study
- Calculations based on flat ground around base of the structure

4. Site Compliance Recommendations

Infinigy recommends the following upon the installation of antennas at the site:

Base of tower

Install a yellow caution sign. Note: The recommendation for alerting signage is moot if there is a yellow caution, or greater already installed.

5. Antenna Inventory Table

Ant ID	Sector	Operator	Antenna Nomenclature	Operating Frequency/Technology	Rad Ctr (Ft)	Az (Deg)	Total ERP Power (Watts)
1a	Alpha	Dish	JMA MX08FRO665-21	600 MHz LTE/5G	77	0	840
1b	Alpha	Dish	JMA MX08FRO665-21	700 MHz LTE	77	0	1107
1c	Alpha	Dish	JMA MX08FRO665-21	850 MHz LTE	77	0	1107
1d	Alpha	Dish	JMA MX08FRO665-21	2100 MHz LTE	77	0	2781
2a	Beta	Dish	JMA MX08FRO665-21	600 MHz LTE/5G	77	120	840
2b	Beta	Dish	JMA MX08FRO665-21	700 MHz LTE	77	120	1107
2c	Beta	Dish	JMA MX08FRO665-21	850 MHz LTE	77	120	1107
2d	Beta	Dish	JMA MX08FRO665-21	2100 MHz LTE	77	120	2781
3a	Gamma	Dish	JMA MX08FRO665-21	600 MHz LTE/5G	77	240	840
3b	Gamma	Dish	JMA MX08FRO665-21	700 MHz LTE	77	240	1107
3c	Gamma	Dish	JMA MX08FRO665-21	850 MHz LTE	77	240	1107
3d	Gamma	Dish	JMA MX08FRO665-21	2100 MHz LTE	77	240	2781
4a	Alpha	AT&T	CMA-UBTULBULBHH-6517-17-21-21	700 MHz LTE	67	0	1837
4b	Alpha	AT&T	CMA-UBTULBULBHH-6517-17-21-21	2100 MHz LTE	67	0	4615
5a	Alpha	AT&T	CMA-UBTULBULBHH-6517-17-21-21	850 MHz LTE	67	0	1837
5b	Alpha	AT&T	CMA-UBTULBULBHH-6517-17-21-21	1900 MHz LTE	67	0	4615
5c	Alpha	AT&T	CMA-UBTULBULBHH-6517-17-21-21	2300 MHz LTE	67	0	4615
6a	Beta	AT&T	CMA-UBTULBULBHH-6517-17-21-21	700 MHz LTE	67	120	1837
6b	Beta	AT&T	CMA-UBTULBULBHH-6517-17-21-21	2100 MHz LTE	67	120	4615
7a	Beta	AT&T	CMA-UBTULBULBHH-6517-17-21-21	850 MHz LTE	67	120	1837
7b	Beta	AT&T	CMA-UBTULBULBHH-6517-17-21-21	1900 MHz LTE	67	120	4615
7c	Beta	AT&T	CMA-UBTULBULBHH-6517-17-21-21	2300 MHz LTE	67	120	4615
8a	Gamma	AT&T	CMA-UBTULBULBHH-6517-17-21-21	700 MHz LTE	67	240	1837
8b	Gamma	AT&T	CMA-UBTULBULBHH-6517-17-21-21	2100 MHz LTE	67	240	4615
9a	Gamma	AT&T	CMA-UBTULBULBHH-6517-17-21-21	850 MHz LTE	67	240	1837

Ant ID	Sector	Operator	Antenna Nomenclature	Operating Frequency/Technology	Rad Ctr (Ft)	Az (Deg)	Total ERP Power (Watts)
9b	Gamma	AT&T	CMA-UBTULBULBHH-6517-17-21-21	1900 MHz LTE	67	240	4615
9c	Gamma	AT&T	CMA-UBTULBULBHH-6517-17-21-21	2300 MHz LTE	67	240	4615
10a	Alpha	T-Mobile	Commscope FFVV-65C-R3-V1	600 MHz LTE/5G	57	0	1271
10b	Alpha	T-Mobile	Commscope FFVV-65C-R3-V1	700 MHz LTE	57	0	1394
10c	Alpha	T-Mobile	Commscope FFVV-65C-R3-V1	1900 MHz LTE	57	0	2260
10d	Alpha	T-Mobile	Commscope FFVV-65C-R3-V1	2100 MHz LTE	57	0	2781
11a	Beta	T-Mobile	Commscope FFVV-65C-R3-V1	600 MHz LTE/5G	57	120	1271
11b	Beta	T-Mobile	Commscope FFVV-65C-R3-V1	700 MHz LTE	57	120	1394
11c	Beta	T-Mobile	Commscope FFVV-65C-R3-V1	1900 MHz LTE	57	120	2260
11d	Beta	T-Mobile	Commscope FFVV-65C-R3-V1	2100 MHz LTE	57	120	2781
12a	Gamma	T-Mobile	Commscope FFVV-65C-R3-V1	600 MHz LTE/5G	57	240	1271
12b	Gamma	T-Mobile	Commscope FFVV-65C-R3-V1	700 MHz LTE	57	240	1394
12c	Gamma	T-Mobile	Commscope FFVV-65C-R3-V1	1900 MHz LTE	57	240	2260
12d	Gamma	T-Mobile	Commscope FFVV-65C-R3-V1	2100 MHz LTE	57	240	2781

6. RF Guidelines

To ensure safety of company workers, the following points need to be taken into consideration and implemented at wireless sites in accordance with the Carriers policies:

a) Worksite: Any employee at the site should avoid working directly in front of the antenna or in areas predicted to exceed general population exposure limits by 100%. Workers should insist that the transmitters be switched off during the work period.

b) RF Safety Training and Awareness: All employees working in areas exceeding the general population limits should have a basic awareness of RF safety measures. Videos, classroom lectures and online courses are all appropriate training methods on these topics.

c) Site Access: Restricting access to transmitting antenna locations is one of the most important elements of RF safety. This can be done with:
   - Locked doors/gates/ladder access
   - Alarmed doors
   - Restrictive barriers

d) Three-foot Buffer: There is an inverse relationship between the strength of the field and the distance from the antenna. The RF field diminishes with distance from the antenna. Workers should maintain a three-foot distance from the antennas.

e) Antennas: Workers should always assume that the antenna is transmitting and should never stop right in front of the antenna. If someone must pass by an antenna, he/she should move quickly, thus reducing RF exposure.

7. All Carriers Exposure Analysis By Band and Technology

Dish

Dish 600 MHz LTE/5G		
Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	**0.4**
	Exposure values at the site (mW/cm²)	**0.001878**
	% Exposure	**0.16%**
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	**2.0**
	Exposure values at the site (mW/cm²)	**0.001878**
	% Exposure	**0.0313%**

Dish 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	**0.5**
	Exposure values at the site (mW/cm²)	**0.002475**
	% Exposure	**0.17%**
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	**2.3**
	Exposure values at the site (mW/cm²)	**0.002475**
	% Exposure	**0.0359%**

Dish 850 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm²)	**0.6**
	Exposure values at the site (mW/cm²)	**0.002475**
	% Exposure	**0.14%**
Controlled / Occupational	FCC's Exposure limits(mW/cm²)	**2.8**
	Exposure values at the site (mW/cm²)	**0.002475**
	% Exposure	**0.0295%**

Dish 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.006219**
	% Exposure	**0.21%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.006219**
	% Exposure	**0.0415%**

AT&T

AT&T 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.5**
	Exposure values at the site (mW/cm^2)	**0.0050**
	% Exposure	**0.33%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.3**
	Exposure values at the site (mW/cm^2)	**0.0050**
	% Exposure	**0.07%**

AT&T 850 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.6**
	Exposure values at the site (mW/cm^2)	**0.0050**
	% Exposure	**0.28%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.8**
	Exposure values at the site (mW/cm^2)	**0.0050**
	% Exposure	**0.06%**

AT&T 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0125**
	% Exposure	**0.42%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0125**
	% Exposure	**0.08%**

AT&T 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0125**
	% Exposure	**0.42%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0125**
	% Exposure	**0.08%**

AT&T 2300 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0125**
	% Exposure	**0.42%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0125**
	% Exposure	**0.08%**

T-Mobile

T-Mobile 600 MHz LTE/5G		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.4**
	Exposure values at the site (mW/cm^2)	**0.0042**
	% Exposure	**0.35%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.0**
	Exposure values at the site (mW/cm^2)	**0.0042**
	% Exposure	**0.07%**

T-Mobile 700 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**0.5**
	Exposure values at the site (mW/cm^2)	**0.0046**
	% Exposure	**0.31%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**2.3**
	Exposure values at the site (mW/cm^2)	**0.0046**
	% Exposure	**0.067%**

T-Mobile 1900 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0075**
	% Exposure	**0.25%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0075**
	% Exposure	**0.05%**

T-Mobile 2100 MHz LTE		
Uncontrolled / General Population	FCC's exposure limits (mW/cm^2)	**1.0**
	Exposure values at the site (mW/cm^2)	**0.0092**
	% Exposure	**0.31%**
Controlled / Occupational	FCC's Exposure limits(mW/cm^2)	**5.0**
	Exposure values at the site (mW/cm^2)	**0.0092**
	% Exposure	**0.06%**

8. Appendix A: FCC Guidelines

FCC Policies

The Federal Communications Commission (FCC) in 1996 implemented regulations and policies for analysis of RF propagation to evaluate RF emissions. All the analysis and results of this report are compared with FCC's (Federal Communications Commission) rules to determine whether a site is compliant for Occupational/Controlled or General Public/Uncontrolled exposure. All the analysis of RF propagation is done in terms of a percentage. The limits primarily indicate the power density and are generally expressed in terms of milliwatts per centimeter square, mW/cm^2.

FCC guidelines incorporate two separate tiers of exposure limits that are dependent on the scenario/ situation in which that exposure takes place or the status of the individuals who are subjected to that exposure. The decision as to which tier is applied to a scenario is based on the following definitions:

Occupational / Controlled

These limits apply in situations when someone is exposed to RF energy through his/her occupation, is fully aware of the harmful effects of the RF exposure and has an ability to exercise control over this exposure. Occupational / controlled exposure limits also apply when 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. limits for Occupational/Controlled exposure can be found on Table 1(A).

General Population / Uncontrolled

These limits apply to situations in which the general public may be exposed or in which persons who are exposed because of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure to RF. Therefore, members of the general public would always be considered under this category, for example, in the case of a telecommunications tower that exposes people in a nearby residential area. Exposure limits for General Population/Uncontrolled can be found on Table 1(B).

Table 1. LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

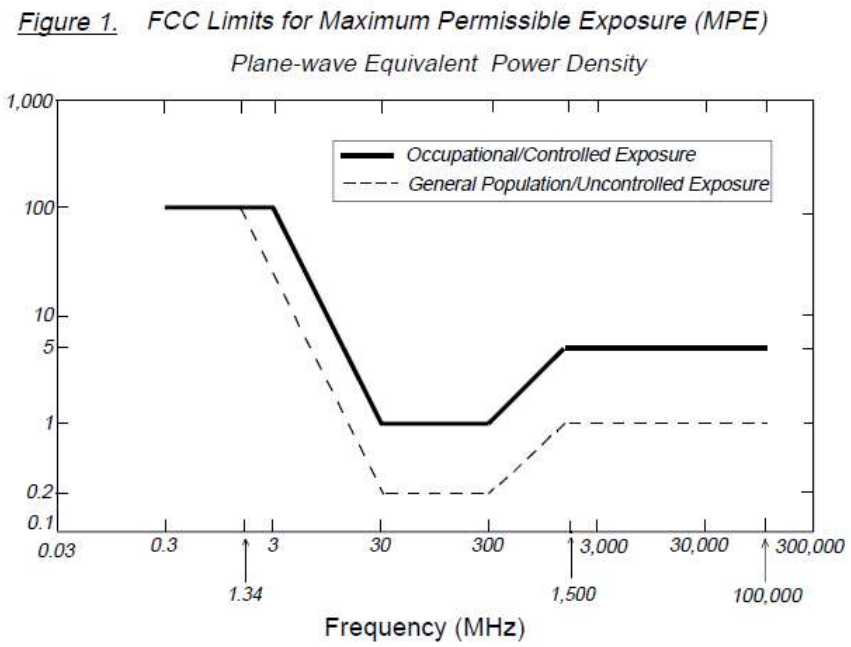
(A) Limits for Occupational/Controlled Exposure

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

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (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



OSHA Statement:

The objective of the OSHA Act is to ensure the safety and health of the working men and women by enforcing certain standards. The act also assists and encourages the states in their efforts to ensure safe and healthy working conditions through means of research, information, education and training in the field of occupational safety and health and for other purposes.

According to OSHA Act section 5, important duties to be considered are:

(a) Each employer

1) Shall furnish to each of his employees' employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious harm to his employees
2) Shall comply with occupational safety and health standards promulgated under this act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

9. Preparer Certification

I, Tim Harris, preparer of this report, certify that I am fully trained and aware of the rules and regulations of both the Federal Communications Commission and the Occupational Safety and Heath Administration regarding Human Exposure to Radio Frequency Radiation.

The information used to perform the calculations was provided by Sectorsite/PTI. Engineering assumptions were authorized and made in the instances of exact data not provided.

I certify that the information contained in this report is true and correct to the best of my knowledge.

Timothy A. Harris *11/7/2022*

Signature Date