EXHIBIT A – NARRATIVE EXHIBIT & TABLE OF CONTENTS

1.0 - Exhibit Table of Contents

Exhibit	Description	Total Pages
Exhibit A	Narrative Exhibit & Exhibit Table of Contents	1
Exhibit B	Final Coordination Reports	21
Exhibit C	Radiation Hazard Assessments	11
Exhibit D	FAA Notification	1

2.0 - Description of Application

Overon America, LLC ("Overon"), by way of the underlying application submitted by its attorneys, seeks Federal Communications Commission authority to operate a C-band earth station. Specifically, Overon seeks authority to operate a pair of identical 4.8 meter C-band antennas and a single 4.6 antenna from its Miami teleport facility. All involved antennas will operate on a transmit-only basis. [1]

[1] Overon will seek authority to receive signals space-to-Earth in the 4.0-4.2 GHz once the FCC recommences routine processing of C-band ground station license applications.

EXHIBIT B – FINAL COORDINATION REPORTS

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Overon America
MEDLEY, FL
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
March 11, 2021

TABLE OF CONTENTS

1. CONCLUSIONS

An interference study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the proposed earth station demonstrates that this site will operate satisfactorily with the common carrier microwave environment. Further, there will be no restrictions of its operation due to interference considerations.

2. SUMMARY OF RESULTS

A number of great circle interference cases were identified during the interference study of the proposed earth station. Each of the cases, which exceeded the interference objective on a line-of-sight basis, was profiled and the propagation losses estimated using NBS TN101 (Revised) techniques. The losses were found to be sufficient to reduce the signal levels to acceptable magnitudes in every case.

3. SUPPLEMENTAL SHOWING

Pursuant to Part 25.203(c) of the FCC Rules and Regulations, the satellite earth station proposed in this application was coordinated by Comsearch using computer techniques and in accordance with Part 25 of the FCC Rules and Regulations.

Coordination data for this earth station was sent to the below listed carriers with a letter dated 03/03/2021.

Company
Broward County Board of Commissioners
Broward County Telecommunications Div
COLLIER, COUNTY OF
Computer Office Solutions, Inc.
Embarq Florida, Inc.
Entercom License, LLC
Florida Power and Light Company
Florida State
Florida, State of
HiQ Data Corporation
Miami-Dade County
New Cingular Wireless PCS LLC - N FL
New Cingular Wireless PCS LLC - S FL
Olympic Wireless, LLC
Palm Beach, County of
South Florida Water Management District
T-Mobile License LLC
Verizon Wireless (VAW) LLC - S Florida
Verizon Wireless Personal Comm, LP(S FL)

4. EARTH STATION COORDINATION DATA

This section presents the data pertinent to frequency coordination of the proposed earth station that was circulated to all carriers within its coordination contours.

COMSEARCH
Earth Station Data Sheet
19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 http://www.comsearch.com

Date:	03/09/2021
Job Number:	210303COMSGE02

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	
Licensee Code	OVEAME
Licensee Name	Overon America

Site Information	**MEDLEY, FL**
Venue Name	7291 NW 74 ST
Latitude (NAD 83)	25° 50' 28.0" N
Longitude (NAD 83)	80° 18' 59.0" W
Climate Zone	B
Rain Zone	1
Ground Elevation (AMSL)	1.24 m / 4.1 ft

Link Information

Satellite Type	Geostationary
Mode	TO - Transmit-Only
Modulation	Digital
Satellite Arc	18° W to 139° West Longitude
Azimuth Range	102.9° to 255.1°
Corresponding Elevation Angles	16.4° / 19.7°
Antenna Centerline (AGL)	11.89 m / 39.0 ft

Antenna Information		**Transmit - FCC32**	
Manufacturer		Vertex	
Model		4.8 meter	
Gain / Diameter		48.1 dBi / 4.8 m	
3-dB / 15-dB Beamwidth		0.62° / 1.20°	
Max Available RF Power	(dBW/4 kHz)	-23.6	
	(dBW/MHz)	0.4	
Maximum EIRP	(dBW/4 kHz)	24.5	
	(dBW/MHz)	48.5	
Interference Objectives:	Long Term	-154.0 dBW/4 kHz	20%
	Short Term	-131.0 dBW/4 kHz	0.0025%

Frequency Information	**Transmit 6.1 GHz**
Emission / Frequency Range (MHz)	3M00G7W - 36M0G7W / 5925.0 - 5928.0
	3M00G7W - 36M0G7W / 5992.0 - 6106.0
	3M00G7W - 36M0G7W / 6170.0 - 6182.0
	3M00G7W - 36M0G7W / 6242.0 - 6360.0
	3M00G7W - 36M0G7W / 6420.0 - 6425.0
Max Great Circle Coordination Distance	153.9 km / 95.6 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi

Coordination Values	**MEDLEY, FL**	
Licensee Name	Overon America	
Latitude (NAD 83)	25° 50' 28.0" N	
Longitude (NAD 83)	80° 18' 59.0" W	
Ground Elevation (AMSL)	1.24 m / 4.1 ft	
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Max Available RF Power	-23.6 (dBW/4 kHz)	

			Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	102.35	-10.00	117.20
5	0.00	97.56	-10.00	117.20
10	0.00	92.77	-10.00	117.20
15	0.00	87.97	-10.00	117.20
20	0.00	83.17	-10.00	117.20
25	0.00	78.38	-10.00	117.20
30	0.00	73.60	-10.00	117.20
35	0.00	68.82	-10.00	117.20
40	0.00	64.07	-10.00	117.20
45	0.00	59.33	-10.00	117.20
50	0.00	54.62	-10.00	117.20
55	0.00	49.95	-10.00	117.20
60	0.00	45.33	-9.41	116.81
65	0.00	40.78	-8.26	119.87
70	0.00	36.32	-7.00	123.43
75	0.00	32.00	-5.63	127.60
80	0.00	27.88	-4.13	132.47
85	0.00	24.06	-2.53	138.03
90	0.00	20.72	-0.91	144.07
95	0.00	18.13	0.54	149.70
100	0.00	16.62	1.48	153.60
105	0.00	16.51	1.56	153.91
110	0.00	17.81	0.73	150.46
115	0.00	20.27	-0.67	145.00
120	0.00	23.52	-2.28	138.93
125	0.00	27.27	-3.89	133.28
130	0.00	31.35	-5.41	128.30
135	0.00	35.50	-6.76	124.16
140	0.00	39.53	-7.92	120.80
145	0.00	43.40	-8.94	118.04
150	0.00	47.07	-9.82	115.77
155	0.00	50.47	-10.00	117.20
160	0.00	53.52	-10.00	117.20
165	0.00	56.10	-10.00	117.20
170	0.00	58.10	-10.00	117.20
175	0.00	59.36	-10.00	117.20
180	0.00	59.80	-10.00	117.20
185	0.00	59.36	-10.00	117.20

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147

(703)726-5500 http://www.comsearch.com

Coordination Values	**MEDLEY, FL**	
Licensee Name	Overon America	
Latitude (NAD 83)	25° 50' 28.0" N	
Longitude (NAD 83)	80° 18' 59.0" W	
Ground Elevation (AMSL)	1.24 m / 4.1 ft	
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Antenna Model	Vertex 4.8 meter	
Antenna Mode	Transmit 6.1 GHz	
Interference Objectives: Long Term	-154.0 dBW/4 kHz	20%
Short Term	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power	-23.6 (dBW/4 kHz)	

			Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	58.10	-10.00	117.20
195	0.00	56.10	-10.00	117.20
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320	0.00	66.42	-10.00	117.20
325	0.00	71.08	-10.00	117.20
330	0.00	75.76	-10.00	117.20
335	0.00	80.45	-10.00	117.20
340	0.00	85.16	-10.00	117.20
345	0.00	89.86	-10.00	117.20
350	0.00	94.57	-10.00	117.20
355	0.00	99.27	-10.00	117.20

5. CERTIFICATION

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE FREQUENCY COORDINATION DATA CONTAINED IN THIS APPLICATION, THAT I AM FAMILIAR WITH PARTS 101 AND 25 OF THE FCC RULES AND REGULATIONS, THAT I HAVE EITHER PREPARED OR REVIEWED THE FREQUENCY COORDINATION DATA SUBMITTED WITH THIS APPLICATION, AND THAT IT IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: _

Gary K. Edwards
Senior Manager
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: March 11, 2021

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Overon America
MEDLEY, FL
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
March 11, 2021

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19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 http://www.comsearch.com

Date:	03/11/2021
Job Number:	210303COMSGE01

Administrative Information	
Status	ENGINEER PROPOSAL
Call Sign	
Licensee Code	OVEAME
Licensee Name	Overon America

Site Information	**MEDLEY, FL**
Venue Name	7291 NW 74 ST
Latitude (NAD 83)	25° 50' 28.0" N
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Climate Zone	B
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Mode	TO - Transmit-Only
Modulation	Digital
Satellite Arc	18° W to 139° West Longitude
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Antenna Information		**Transmit - FCC32**
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Model		4.6 meter
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Max Available RF Power	(dBW/4 kHz)	-23.6
	(dBW/MHz)	0.4
Maximum EIRP	(dBW/4 kHz)	23.7
	(dBW/MHz)	47.7
Interference Objectives:	Long Term	-154.0 dBW/4 kHz 20%
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170	0.00	58.10	-10.00	117.20
175	0.00	59.36	-10.00	117.20
180	0.00	59.80	-10.00	117.20
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Coordination Values	**MEDLEY, FL**	
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Antenna Model	Andrew 4.6 meter	
Antenna Mode	Transmit 6.1 GHz	
Interference Objectives: Long Term	-154.0 dBW/4 kHz	20%
Short Term	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power	-23.6 (dBW/4 kHz)	

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Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	58.10	-10.00	117.20
195	0.00	56.10	-10.00	117.20
200	0.00	53.52	-10.00	117.20
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265	0.00	21.94	-1.53	141.71
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305	0.00	52.63	-10.00	117.20
310	0.00	57.18	-10.00	117.20
315	0.00	61.78	-10.00	117.20
320	0.00	66.42	-10.00	117.20
325	0.00	71.08	-10.00	117.20
330	0.00	75.76	-10.00	117.20
335	0.00	80.45	-10.00	117.20
340	0.00	85.16	-10.00	117.20
345	0.00	89.86	-10.00	117.20
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BY: ______________________________

Gary K. Edwards
Senior Manager
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: March 11, 2021

EXHIBIT C – RADIATION HAZARD ASSESSMENTS

Analysis of Non-Ionizing Radiation for a 4.8-Meter Earth Station System

This report analyzes the non-ionizing radiation levels for a 4.8-meter earth station system. The analysis and calculations performed in this report comply with the methods described in the FCC Office of Engineering and Technology Bulletin, No. 65 first published in 1985 and revised in 1997 in Edition 97-01. The radiation safety limits used in the analysis are in conformance with the FCC R&O 96-326. Bulletin No. 65 and the FCC R&O specifies that there are two separate tiers of exposure limits that are dependant on the situation in which the exposure takes place and/or the status of the individuals who are subject to the exposure. The Maximum Permissible Exposure (MPE) limits for persons in a General Population/Uncontrolled environment are shown in Table 1. The General Population/Uncontrolled MPE is a function of transmit frequency and is for an exposure period of thirty minutes or less. The MPE limits for persons in an Occupational/Controlled environment are shown in Table 2. The Occupational MPE is a function of transmit frequency and is for an exposure period of six minutes or less. The purpose of the analysis described in this report is to determine the power flux density levels of the earth station in the far-field, near-field, transition region, between the subreflector or feed and main reflector surface, at the main reflector surface, and between the antenna edge and the ground and to compare these levels to the specified MPEs.

Table 1. Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm^2)
30-300	0.2
300-1500	Frequency (MHz)*(0.8/1200)
1500-100,000	1.0

Table 2. Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm^2)
30-300	1.0
300-1500	Frequency (MHz)*(4.0/1200)
1500-100,000	5.0

Table 3. Formulas and Parameters Used for Determining Power Flux Densities

Parameter	Symbol	Formula	Value	Units
Antenna Diameter	D	Input	4.8	m
Antenna Surface Area	$A_{surface}$	$\pi D^2 / 4$	18.10	m^2
Subreflector Diameter	D_{sr}	Input	35.6	cm
Area of Subreflector	A_{sr}	$\pi D_{sr}{}^2/4$	995.38	cm^2
Frequency	F	Input	6175	MHz
Wavelength	λ	$300 / F$	0.048583	m
Transmit Power	P	Input	40.30	W
Antenna Gain (dBi)	G_{es}	Input	48.1	dBi
Antenna Gain (factor)	G	$10^{Ges/10}$	64565.4	n/a
Pi	π	Constant	3.1415927	n/a
Antenna Efficiency	η	$G\lambda^2/(\pi^2 D^2)$	0.67	n/a

1. Far Field Distance Calculation

The distance to the beginning of the far field can be determined from the following equation:

Distance to the Far Field Region $R_{ff} = 0.60\ D^2 / \lambda$ (1)
$= 284.5$ m

The maximum main beam power density in the far field can be determined from the following equation:

On-Axis Power Density in the Far Field $S_{ff} = G\ P / (4\ \pi\ R_{ff}^{\ 2})$ (2)
$= 2.557\ W/m^2$
$= 0.256\ mW/cm^2$

2. Near Field Calculation

Power flux density is considered to be at a maximum value throughout the entire length of the defined Near Field region. The region is contained within a cylindrical volume having the same diameter as the antenna. Past the boundary of the Near Field region, the power density from the antenna decreases linearly with respect to increasing distance.

The distance to the end of the Near Field can be determined from the following equation:

Extent of the Near Field $R_{nf} = D^2 / (4\ \lambda)$ (3)
$= 118.6$ m

The maximum power density in the Near Field can be determined from the following equation:

Near Field Power Density $S_{nf} = 16.0\ \eta\ P / (\pi\ D^2)$ (4)
$= 5.970\ W/m^2$
$= 0.597\ mW/cm^2$

3. Transition Region Calculation

The Transition region is located between the Near and Far Field regions. The power density begins to decrease linearly with increasing distance in the Transition region. While the power density decreases inversely with distance in the Transition region, the power density decreases inversely with the square of the distance in the Far Field region. The maximum power density in the Transition region will not exceed that calculated for the Near Field region. The power density calculated in Section 1 is the highest power density the antenna can produce in any of the regions away from the antenna. The power density at a distance R_t can be determined from the following equation:

Transition Region Power Density $S_t = S_{nf}\ R_{nf} / R_t$ (5)
$= 0.597\ mW/cm^2$

4. Region between the Main Reflector and the Subreflector

Transmissions from the feed assembly are directed toward the subreflector surface, and are reflected back toward the main reflector. The most common feed assemblies are waveguide flanges, horns or subreflectors. The energy between the subreflector and the reflector surfaces can be calculated by determining the power density at the subreflector surface. This can be determined from the following equation:

Power Density at the Subreflector $S_{sr} = 4000\ P / A_{sr}$ (6)
$= 161.948\ \mathrm{mW/cm^2}$

5. Main Reflector Region

The power density in the main reflector is determined in the same manner as the power density at the subreflector. The area is now the area of the main reflector aperture and can be determined from the following equation:

Power Density at the Main Reflector Surface $S_{surface} = 4\ P / A_{surface}$ (7)
$= 8.908\ \mathrm{W/m^2}$
$= 0.891\ \mathrm{mW/cm^2}$

6. Region between the Main Reflector and the Ground

Assuming uniform illumination of the reflector surface, the power density between the antenna and the ground can be determined from the following equation:

Power Density between Reflector and Ground $S_g = P / A_{surface}$ (8)
$= 2.227\ \mathrm{W/m^2}$
$= 0.223\ \mathrm{mW/cm^2}$

7. Summary of Calculations

Table 4. Summary of Expected Radiation levels for Uncontrolled Environment

Region	Calculated Maximum Radiation Power Density Level (mW/cm^2)		Hazard Assessment
1. Far Field (R_{ff} = 284.5 m)	S_{ff}	0.256	Satisfies FCC MPE
2. Near Field (R_{nf} = 118.6 m)	S_{nf}	0.597	Satisfies FCC MPE
3. Transition Region ($R_{nf} < R_t < R_{ff}$)	S_t	0.597	Satisfies FCC MPE
4. Between Main Reflector and Subreflector	S_{sr}	161.948	Potential Hazard
5. Main Reflector	$S_{surface}$	0.891	Satisfies FCC MPE
6. Between Main Reflector and Ground	S_g	0.223	Satisfies FCC MPE

Table 5. Summary of Expected Radiation levels for Controlled Environment

Region	Calculated Maximum Radiation Power Density Level (mW/cm^2)		Hazard Assessment
1. Far Field (R_{ff} = 284.5 m)	S_{ff}	0.256	Satisfies FCC MPE
2. Near Field (R_{nf} = 118.6 m)	S_{nf}	0.597	Satisfies FCC MPE
3. Transition Region ($R_{nf} < R_t < R_{ff}$)	S_t	0.597	Satisfies FCC MPE
4. Between Main Reflector and Subreflector	S_{sr}	161.948	Potential Hazard
5. Main Reflector	$S_{surface}$	0.891	Satisfies FCC MPE
6. Between Main Reflector and Ground	S_g	0.223	Satisfies FCC MPE

It is the applicant's responsibility to ensure that the public and operational personnel are not exposed to harmful levels of radiation.

8. Conclusions

Based on the above analysis it is concluded that harmful levels of radiation will not exist in regions normally occupied by the public or the earth station's operating personnel. The transmitter will be turned off during antenna maintenance so that the FCC MPE of 5.0 mW/cm2 will be complied with for those regions with close proximity to the reflector that exceed acceptable levels.

The antenna will be located on a roof. The bottom lip of the dish will be 9.1 meters above ground level. The general public will not have access to areas within ½ diameter from the edge of the antenna.

Since one diameter removed from the main beam of the antenna or ½ diameter removed from the edge of the antenna the RF levels are reduced by a factor of 100 or 20 dB. None of the areas exceeding the MPE levels will be accessible by the general public

Means of Compliance Controlled Areas

The earth station's operational staff will not have access to the areas that exceed the MPE levels while the earth station is in operation.

The transmitters will be turned off during antenna maintenance

The applicant agrees to abide by the conditions specified in Condition 5208 provided below:

> *Condition 5208 - The licensee shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for worker.*

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE RADIATION HAZARD REPORT, AND THAT IT IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: _

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DATED: March 8, 2021

Analysis of Non-Ionizing Radiation for a 4.6-Meter Earth Station System

This report analyzes the non-ionizing radiation levels for a 4.6-meter earth station system. The analysis and calculations performed in this report comply with the methods described in the FCC Office of Engineering and Technology Bulletin, No. 65 first published in 1985 and revised in 1997 in Edition 97-01. The radiation safety limits used in the analysis are in conformance with the FCC R&O 96-326. Bulletin No. 65 and the FCC R&O specifies that there are two separate tiers of exposure limits that are dependant on the situation in which the exposure takes place and/or the status of the individuals who are subject to the exposure. The Maximum Permissible Exposure (MPE) limits for persons in a General Population/Uncontrolled environment are shown in Table 1. The General Population/Uncontrolled MPE is a function of transmit frequency and is for an exposure period of thirty minutes or less. The MPE limits for persons in an Occupational/Controlled environment are shown in Table 2. The Occupational MPE is a function of transmit frequency and is for an exposure period of six minutes or less. The purpose of the analysis described in this report is to determine the power flux density levels of the earth station in the far-field, near-field, transition region, between the subreflector or feed and main reflector surface, at the main reflector surface, and between the antenna edge and the ground and to compare these levels to the specified MPEs.

Table 1. Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm^2)
30-300	0.2
300-1500	Frequency (MHz)*(0.8/1200)
1500-100,000	1.0

Table 2. Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Power Density (mW/cm^2)
30-300	1.0
300-1500	Frequency (MHz)*(4.0/1200)
1500-100,000	5.0

Table 3. Formulas and Parameters Used for Determining Power Flux Densities

Parameter	Symbol	Formula	Value	Units
Antenna Diameter	D	Input	4.6	m
Antenna Surface Area	$A_{surface}$	$\pi D^2 / 4$	16.62	m^2
Subreflector Diameter	D_{sr}	Input	61.6	cm
Area of Subreflector	A_{sr}	$\pi D_{sr}^2/4$	2979.27	cm^2
Frequency	F	Input	6175	MHz
Wavelength	λ	$300 / F$	0.048583	m
Transmit Power	P	Input	48.05	W
Antenna Gain (dBi)	G_{es}	Input	47.3	dBi
Antenna Gain (factor)	G	$10^{Ges/10}$	53703.2	n/a
Pi	π	Constant	3.1415927	n/a
Antenna Efficiency	η	$G\lambda^2/(\pi^2D^2)$	0.61	n/a

1. Far Field Distance Calculation

The distance to the beginning of the far field can be determined from the following equation:

Distance to the Far Field Region $R_{ff} = 0.60\ D^2 / \lambda$ (1)
$= 261.3$ m

The maximum main beam power density in the far field can be determined from the following equation:

On-Axis Power Density in the Far Field $S_{ff} = G\ P / (4\ \pi\ R_{ff}^{\ 2})$ (2)
$= 3.007$ W/m^2
$= 0.301$ mW/cm^2

2. Near Field Calculation

Power flux density is considered to be at a maximum value throughout the entire length of the defined Near Field region. The region is contained within a cylindrical volume having the same diameter as the antenna. Past the boundary of the Near Field region, the power density from the antenna decreases linearly with respect to increasing distance.

The distance to the end of the Near Field can be determined from the following equation:

Extent of the Near Field $R_{nf} = D^2 / (4\ \lambda)$ (3)
$= 108.9$ m

The maximum power density in the Near Field can be determined from the following equation:

Near Field Power Density $S_{nf} = 16.0\ \eta\ P / (\pi\ D^2)$ (4)
$= 7.019$ W/m^2
$= 0.702$ mW/cm^2

3. Transition Region Calculation

The Transition region is located between the Near and Far Field regions. The power density begins to decrease linearly with increasing distance in the Transition region. While the power density decreases inversely with distance in the Transition region, the power density decreases inversely with the square of the distance in the Far Field region. The maximum power density in the Transition region will not exceed that calculated for the Near Field region. The power density calculated in Section 1 is the highest power density the antenna can produce in any of the regions away from the antenna. The power density at a distance R_t can be determined from the following equation:

Transition Region Power Density $S_t = S_{nf}\ R_{nf} / R_t$ (5)
$= 0.702$ mW/cm^2

4. Region between the Main Reflector and the Subreflector

Transmissions from the feed assembly are directed toward the subreflector surface, and are reflected back toward the main reflector. The most common feed assemblies are waveguide flanges, horns or subreflectors. The energy between the subreflector and the reflector surfaces can be calculated by determining the power density at the subreflector surface. This can be determined from the following equation:

Power Density at the Subreflector $S_{sr} = 4000\ P / A_{sr}$ (6)
$= 64.512\ mW/cm^2$

5. Main Reflector Region

The power density in the main reflector is determined in the same manner as the power density at the subreflector. The area is now the area of the main reflector aperture and can be determined from the following equation:

Power Density at the Main Reflector Surface $S_{surface} = 4\ P / A_{surface}$ (7)
$= 11.565\ W/m^2$
$= 1.157\ mW/cm^2$

6. Region between the Main Reflector and the Ground

Assuming uniform illumination of the reflector surface, the power density between the antenna and the ground can be determined from the following equation:

Power Density between Reflector and Ground $S_g = P / A_{surface}$ (8)
$= 2.891\ W/m^2$
$= 0.289\ mW/cm^2$

7. Summary of Calculations

Table 4. Summary of Expected Radiation levels for Uncontrolled Environment

Region	Calculated Maximum Radiation Power Density Level (mW/cm^2)		Hazard Assessment
1. Far Field (R_{ff} = 261.3 m)	S_{ff}	0.301	Satisfies FCC MPE
2. Near Field (R_{nf} = 108.9 m)	S_{nf}	0.702	Satisfies FCC MPE
3. Transition Region ($R_{nf} < R_t < R_{ff}$)	S_t	0.702	Satisfies FCC MPE
4. Between Main Reflector and Subreflector	S_{sr}	64.512	Potential Hazard
5. Main Reflector	$S_{surface}$	1.157	Potential Hazard
6. Between Main Reflector and Ground	S_g	0.289	Satisfies FCC MPE

Table 5. Summary of Expected Radiation levels for Controlled Environment

Region	Calculated Maximum Radiation Power Density Level (mW/cm^2)		Hazard Assessment
1. Far Field (R_{ff} = 261.3 m)	S_{ff}	0.301	Satisfies FCC MPE
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5. Main Reflector	$S_{surface}$	1.157	Satisfies FCC MPE
6. Between Main Reflector and Ground	S_g	0.289	Satisfies FCC MPE

It is the applicant's responsibility to ensure that the public and operational personnel are not exposed to harmful levels of radiation.

8. Conclusions

Based on the above analysis it is concluded that the FCC MPE guidelines have been exceeded (or met) in the regions of Table 4 and 5. The applicant proposes to comply with the MPE limits by one or more of the following methods.

The antenna will be located on a roof. The bottom lip of the dish will be 9.1 meters above ground level. The general public will not have access to areas within ½ diameter from the edge of the antenna.

Since one diameter removed from the main beam of the antenna or ½ diameter removed from the edge of the antenna the RF levels are reduced by a factor of 100 or 20 dB. None of the areas exceeding the MPE levels will be accessible by the general public

Means of Compliance Controlled Areas

The earth station's operational staff will not have access to the areas that exceed the MPE levels while the earth station is in operation.

The transmitters will be turned off during antenna maintenance

The applicant agrees to abide by the conditions specified in Condition 5208 provided below:

> *Condition 5208 - The licensee shall take all necessary measures to ensure that the antenna does not create potential exposure of humans to radiofrequency radiation in excess of the FCC exposure limits defined in 47 CFR 1.1307(b) and 1.1310 wherever such exposures might occur. Measures must be taken to ensure compliance with limits for both occupational/controlled exposure and for general population/uncontrolled exposure, as defined in these rule sections. Compliance can be accomplished in most cases by appropriate restrictions such as fencing. Requirements for restrictions can be determined by predictions based on calculations, modeling or by field measurements. The FCC's OET Bulletin 65 (available on-line at www.fcc.gov/oet/rfsafety) provides information on predicting exposure levels and on methods for ensuring compliance, including the use of warning and alerting signs and protective equipment for worker.*

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BY: _______________________

Gary K. Edwards
Senior Manager
COMSEARCH
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DATED: March 8, 2021

EXHIBIT D – FAA NOTIFICATION (Response to Field E20)

Pursuant to 47. C.F.R. §17.7 (e), FAA notification is not necessary because (1) all proposed antennas will be shielded by permanent and substantial manmade structures, and (2) no remote antenna structure will exceed 6.1 meters in height.