

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**United Teleports**  
**PORT ST LUCIE, FL**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
October 04, 2016

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## 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.

The following companies reported potential great circle interference conflicts that did not meet the objectives on a line-of-sight basis. When over-the-horizon losses are considered on the interfering paths, sufficient blockage exists to negate harmful interference from occurring with the proposed transmit-receive earth station.

### Company

Verizon Wireless Personal Comm, LP(S FL)

No other carriers reported potential interference cases.

### 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 09/02/2016.

#### Company

Alltel Communications LLC - S Florida  
COLLIER, COUNTY OF  
Central Florida Educational Foundation  
Charlotte County Board of County Comm  
City of Melbourne  
Daystar Communications  
Duke Energy Business Services, LLC.  
Embarq Florida, Inc.  
FL Courts 18th Judicial Circuit  
Florida High Speed Internet  
Florida Power and Light Company  
Florida RSA No. 2B (Indian River) LP  
Florida Rural Broadband Alliance, LLC  
GM Consulting Group, Inc.  
Harris Corporation - Florida  
HiQ Data Corporation  
LEE COUNTY - BOCC  
MARTIN COUNTY SHERIFFS OFFICE  
Miami-Dade County  
Mosaic Fertilizer LLC  
New Cingular Wireless PCS LLC - N FL  
New Cingular Wireless PCS LLC - S FL  
Olympic Wireless, LLC  
Osceola County Intergovernmental Comm  
PALM BEACH, COUNTY OF  
Peace River Electric Cooperative Inc.  
Polk, County of  
Saint Lucie, County of  
Sarasota, County of  
South Florida Water Management District  
Sun Broadcasting, Inc.  
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: 10/04/2016  
Job Number: 160902COMSGE01

### Administrative Information

Status: ENGINEER PROPOSAL  
Call Sign: PORT ST  
Licensee Code: UNTELE  
Licensee Name: United Teleports

### Site Information

Venue Name: PORT ST LUCIE, FL  
Latitude (NAD 83): 27° 16' 56.5" N  
Longitude (NAD 83): 80° 28' 58.6" W  
Climate Zone: B  
Rain Zone: 1  
Ground Elevation (AMSL): 7.46 m / 24.5 ft

### Link Information

Satellite Type: Geostationary  
Mode: TR - Transmit-Receive  
Modulation: Digital  
Satellite Arc: 40° W to 121° West Longitude  
Azimuth Range: 118.2° to 241.8°  
Corresponding Elevation Angles: 35.5° / 35.4°  
Antenna Centerline (AGL): 3.66 m / 12.0 ft

### Antenna Information

		Receive - FCC32	Transmit - FCC32		
Manufacturer		Prodelin	Prodelin		
Model		3.8 Meter	3.8 Meter		
Gain / Diameter		41.8 dBi / 3.8 m	46.2 dBi / 3.8 m		
3-dB / 15-dB Beamwidth		1.40° / 2.60°	0.80° / 1.60°		
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)		(1) -10.4	(2) -15.4	(3) -17.0
			13.6	8.6	7.0
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)		35.8	30.8	29.2
			59.8	54.8	53.2
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz 20%	
	Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz 0.0025%	

### Frequency Information

Emission / Frequency Range (MHz)	Receive 4.0 GHz	Transmit 6.1 GHz
	2M50G7W - 12M0G7W / 3700.0 - 4200.0	(1) 2M50G7W - 12M0G7W / 5925.0 - 6047.0 2M50G7W - 12M0G7W / 6095.0 - 6107.0 2M50G7W - 12M0G7W / 6169.0 - 6270.0 2M50G7W - 12M0G7W / 6392.0 - 6425.0
		(2) 2M50G7W - 12M0G7W / 5925.0 - 6047.0 2M50G7W - 12M0G7W / 6095.0 - 6107.0 2M50G7W - 12M0G7W / 6140.0 - 6359.0 2M50G7W - 12M0G7W / 6392.0 - 6425.0
		(3) 2M50G7W - 12M0G7W / 5925.0 - 6047.0 2M50G7W - 12M0G7W / 6080.0 - 6107.0 2M50G7W - 12M0G7W / 6140.0 - 6359.0 2M50G7W - 12M0G7W / 6392.0 - 6425.0

Max Great Circle Coordination Distance: 454.7 km / 282.5 mi      176.5 km / 109.7 mi  
Precipitation Scatter Contour Radius: 556.0 km / 345.4 mi      131.4 km / 81.6 mi

# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147  
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### Coordination Values

### PORT ST LUCIE, FL

Licensee Name United Teleports  
Latitude (NAD 83) 27° 16' 56.5" N  
Longitude (NAD 83) 80° 28' 58.6" W  
Ground Elevation (AMSL) 7.46 m / 24.5 ft  
Antenna Centerline (AGL) 3.66 m / 12.0 ft  
Antenna Model Prodelin 3.8 meter  
Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz  
Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%  
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power -10.4 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	112.66	-10.00	412.20	-10.00	161.07
5	0.00	108.75	-10.00	412.20	-10.00	161.07
10	0.00	104.77	-10.00	412.20	-10.00	161.07
15	0.00	100.75	-10.00	412.20	-10.00	161.07
20	0.00	96.70	-10.00	412.20	-10.00	161.07
25	0.00	92.64	-10.00	412.20	-10.00	161.07
30	0.00	88.57	-10.00	412.20	-10.00	161.07
35	0.00	84.50	-10.00	412.20	-10.00	161.07
40	0.00	80.44	-10.00	412.20	-10.00	161.07
45	0.00	76.41	-10.00	412.20	-10.00	161.07
50	0.00	72.42	-10.00	412.20	-10.00	161.07
55	0.00	68.48	-10.00	412.20	-10.00	161.07
60	0.00	64.61	-10.00	412.20	-10.00	161.07
65	0.00	60.82	-10.00	412.20	-10.00	161.07
70	0.00	57.14	-10.00	412.20	-10.00	161.07
75	0.00	53.60	-10.00	412.20	-10.00	161.07
80	0.00	50.22	-10.00	412.20	-10.00	161.07
85	0.00	47.05	-9.82	414.50	-9.82	161.90
90	0.00	44.14	-9.12	423.25	-9.12	165.08
95	0.00	41.54	-8.46	431.75	-8.46	168.17
100	0.00	39.32	-7.86	439.59	-7.86	171.03
105	0.00	37.54	-7.36	446.30	-7.36	173.48
110	0.00	36.28	-6.99	451.32	-6.99	175.31
115	0.00	35.58	-6.78	454.18	-6.78	176.36
120	0.00	35.49	-6.75	454.56	-6.75	176.50
125	0.00	36.01	-6.91	452.41	-6.91	175.71
130	0.00	37.11	-7.24	447.98	-7.24	174.09
135	0.00	38.74	-7.70	441.71	-7.70	171.80
140	0.00	40.84	-8.28	434.15	-8.28	169.05
145	0.00	43.34	-8.92	425.80	-8.92	166.01
150	0.00	46.17	-9.61	417.09	-9.61	162.84
155	0.00	49.26	-10.00	412.20	-10.00	161.07
160	0.00	52.18	-10.00	412.20	-10.00	161.07
165	0.00	54.65	-10.00	412.20	-10.00	161.07
170	0.00	56.54	-10.00	412.20	-10.00	161.07
175	0.00	57.73	-10.00	412.20	-10.00	161.07
180	0.00	58.14	-10.00	412.20	-10.00	161.07
185	0.00	57.73	-10.00	412.20	-10.00	161.07



# COMSEARCH

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### Coordination Values

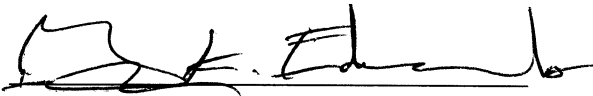
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Antenna Centerline (AGL)	3.66 m / 12.0 ft			
Antenna Model	Prodelin 3.8 meter			
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power			-10.4 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	56.54	-10.00	412.20	-10.00	161.07
195	0.00	54.65	-10.00	412.20	-10.00	161.07
200	0.00	52.18	-10.00	412.20	-10.00	161.07
205	0.00	49.26	-10.00	412.20	-10.00	161.07
210	0.00	46.16	-9.61	417.10	-9.61	162.85
215	0.00	43.33	-8.92	425.82	-8.92	166.02
220	0.00	40.83	-8.27	434.19	-8.27	169.06
225	0.00	38.73	-7.70	441.77	-7.70	171.82
230	0.00	37.09	-7.23	448.06	-7.23	174.12
235	0.00	35.99	-6.90	452.51	-6.90	175.75
240	0.00	35.47	-6.75	454.68	-6.75	176.54
245	0.00	35.55	-6.77	454.32	-6.77	176.41
250	0.00	36.24	-6.98	451.46	-6.98	175.36
255	0.00	37.50	-7.35	446.44	-7.35	173.53
260	0.00	39.28	-7.85	439.73	-7.85	171.08
265	0.00	41.50	-8.45	431.87	-8.45	168.22
270	0.00	44.10	-9.11	423.37	-9.11	165.12
275	0.00	47.02	-9.81	414.61	-9.81	161.94
280	0.00	50.19	-10.00	412.20	-10.00	161.07
285	0.00	53.56	-10.00	412.20	-10.00	161.07
290	0.00	57.11	-10.00	412.20	-10.00	161.07
295	0.00	60.79	-10.00	412.20	-10.00	161.07
300	0.00	64.58	-10.00	412.20	-10.00	161.07
305	0.00	68.45	-10.00	412.20	-10.00	161.07
310	0.00	72.39	-10.00	412.20	-10.00	161.07
315	0.00	76.39	-10.00	412.20	-10.00	161.07
320	0.00	80.42	-10.00	412.20	-10.00	161.07
325	0.00	84.47	-10.00	412.20	-10.00	161.07
330	0.00	88.54	-10.00	412.20	-10.00	161.07
335	0.00	92.62	-10.00	412.20	-10.00	161.07
340	0.00	96.68	-10.00	412.20	-10.00	161.07
345	0.00	100.73	-10.00	412.20	-10.00	161.07
350	0.00	104.75	-10.00	412.20	-10.00	161.07
355	0.00	108.73	-10.00	412.20	-10.00	161.07

## 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: October 04, 2016