

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**Christian Television Network, Inc.**  
**LARGO, FL**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
September 24, 2015

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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.

### 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 09/01/2015.

Company

Alltel Communications LLC - S Florida  
Daystar Communications  
Duke Energy Business Services, LLC.  
Florida Rural Broadband Alliance, LLC  
Harris Corporation - Orlando, FL  
Hernando County Board of Co Commissioner  
Hillsborough County Sheriffs Office  
Lake, County of  
Mosaic Fertilizer LLC  
New Cingular Wireless PCS LLC - N FL  
Pasco, County of  
Peace River Electric Cooperative Inc.  
Pinellas, County of  
Polk, County of  
Rapid Systems, Inc  
Sumter County Board of County Commission  
Sumter Electric Cooperative, Inc.  
T-Mobile License LLC  
Tampa Electric Company  
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: 09/24/2015  
Job Number: 150901COMSGE03

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### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign  
Licensee Code CHRITE  
Licensee Name Christian Television Network, Inc.

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### Site Information

#### LARGO, FL

Venue Name  
Latitude (NAD 83) 27° 53' 55.9" N  
Longitude (NAD 83) 82° 44' 4.4" W  
Climate Zone B  
Rain Zone 1  
Ground Elevation (AMSL) 4.31 m / 14.1 ft

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### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 60° W to 143° West Longitude  
Azimuth Range 138.2° to 255.0°  
Corresponding Elevation Angles 48.9° / 17.7°  
Antenna Centerline (AGL) 4.27 m / 14.0 ft

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### Antenna Information

#### Receive - FCC32

#### Transmit - FCC32

Manufacturer	Antesky	Antesky	
Model	6.2 Meter	6.2 Meter	
Gain / Diameter	46.4 dBi / 6.2 m	50.0 dBi / 6.2 m	
3-dB / 15-dB Beamwidth	0.80° / 1.40°	0.56° / 1.00°	
Max Available RF Power (dBW/4 kHz)		-22.3	
(dBW/MHz)		1.7	
Maximum EIRP (dBW/4 kHz)		27.7	
(dBW/MHz)		51.7	
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%

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### Frequency Information

#### Receive 4.0 GHz

#### Transmit 6.1 GHz

Emission / Frequency Range (MHz)	3M45G7W / 3700.0 - 4200.0	3M45G7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	569.8 km / 354.0 mi	156.1 km / 97.0 mi
Precipitation Scatter Contour Radius	587.5 km / 365.0 mi	100.0 km / 62.1 mi

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## Earth Station Data Sheet

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### Coordination Values

### LARGO, FL

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Longitude (NAD 83) 82° 44' 4.4" W  
Ground Elevation (AMSL) 4.31 m / 14.1 ft  
Antenna Centerline (AGL) 4.27 m / 14.0 ft  
Antenna Model Antesky 6.2 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 -22.3 (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	104.24	-10.00	412.20	-10.00	118.62
5	0.00	108.98	-10.00	412.20	-10.00	118.62
10	0.00	113.71	-10.00	412.20	-10.00	118.62
15	0.00	111.08	-10.00	412.20	-10.00	118.62
20	0.00	108.07	-10.00	412.20	-10.00	118.62
25	0.00	104.98	-10.00	412.20	-10.00	118.62
30	0.00	101.82	-10.00	412.20	-10.00	118.62
35	0.00	98.61	-10.00	412.20	-10.00	118.62
40	0.00	95.35	-10.00	412.20	-10.00	118.62
45	0.00	92.08	-10.00	412.20	-10.00	118.62
50	0.00	88.79	-10.00	412.20	-10.00	118.62
55	0.00	85.51	-10.00	412.20	-10.00	118.62
60	0.00	82.25	-10.00	412.20	-10.00	118.62
65	0.00	79.02	-10.00	412.20	-10.00	118.62
70	0.00	75.84	-10.00	412.20	-10.00	118.62
75	0.00	72.73	-10.00	412.20	-10.00	118.62
80	0.00	69.70	-10.00	412.20	-10.00	118.62
85	0.00	66.78	-10.00	412.20	-10.00	118.62
90	0.00	63.99	-10.00	412.20	-10.00	118.62
95	0.00	61.34	-10.00	412.20	-10.00	118.62
100	0.00	58.87	-10.00	412.20	-10.00	118.62
105	0.00	56.60	-10.00	412.20	-10.00	118.62
110	0.00	54.57	-10.00	412.20	-10.00	118.62
115	0.00	52.81	-10.00	412.20	-10.00	118.62
120	0.00	51.34	-10.00	412.20	-10.00	118.62
125	0.00	50.19	-10.00	412.20	-10.00	118.62
130	0.00	49.40	-10.00	412.20	-10.00	118.62
135	0.00	48.97	-10.00	412.20	-10.00	118.62
140	0.00	48.92	-10.00	412.20	-10.00	118.62
145	0.00	49.25	-10.00	412.20	-10.00	118.62
150	0.00	49.95	-10.00	412.20	-10.00	118.62
155	0.00	51.00	-10.00	412.20	-10.00	118.62
160	0.00	52.39	-10.00	412.20	-10.00	118.62
165	0.00	54.08	-10.00	412.20	-10.00	118.62
170	0.00	55.87	-10.00	412.20	-10.00	118.62
175	0.00	57.03	-10.00	412.20	-10.00	118.62
180	0.00	57.43	-10.00	412.20	-10.00	118.62
185	0.00	57.03	-10.00	412.20	-10.00	118.62



# COMSEARCH

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### Coordination Values

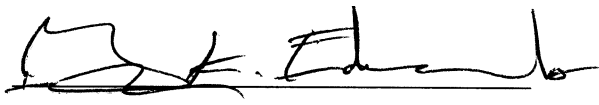
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Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power -22.3 (dBW/4 kHz)

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	55.87	-10.00	412.20	-10.00	118.62
195	0.00	54.02	-10.00	412.20	-10.00	118.62
200	0.00	51.61	-10.00	412.20	-10.00	118.62
205	0.00	48.73	-10.00	412.20	-10.00	118.62
210	0.00	45.49	-9.45	419.10	-9.45	120.12
215	0.00	41.98	-8.58	430.27	-8.58	122.58
220	0.00	38.25	-7.57	443.57	-7.57	125.57
225	0.00	34.35	-6.40	459.45	-6.40	129.22
230	0.00	30.33	-5.05	477.90	-5.05	133.70
235	0.00	26.50	-3.58	499.56	-3.58	138.87
240	0.00	23.08	-2.08	522.72	-2.08	144.50
245	0.00	20.28	-0.68	545.28	-0.68	149.94
250	0.00	18.39	0.38	562.90	0.38	154.35
255	0.00	17.71	0.79	569.83	0.79	156.10
260	0.00	18.38	0.39	563.08	0.39	154.40
265	0.00	20.25	-0.66	545.57	-0.66	150.02
270	0.00	23.03	-2.06	523.04	-2.06	144.58
275	0.00	26.45	-3.56	499.87	-3.56	138.95
280	0.00	30.28	-5.03	478.18	-5.03	133.77
285	0.00	34.39	-6.41	459.30	-6.41	129.19
290	0.00	38.68	-7.69	441.95	-7.69	125.21
295	0.00	43.11	-8.86	426.55	-8.86	121.76
300	0.00	47.62	-9.95	412.87	-9.95	118.77
305	0.00	52.21	-10.00	412.20	-10.00	118.62
310	0.00	56.85	-10.00	412.20	-10.00	118.62
315	0.00	61.52	-10.00	412.20	-10.00	118.62
320	0.00	66.23	-10.00	412.20	-10.00	118.62
325	0.00	70.95	-10.00	412.20	-10.00	118.62
330	0.00	75.69	-10.00	412.20	-10.00	118.62
335	0.00	80.45	-10.00	412.20	-10.00	118.62
340	0.00	85.20	-10.00	412.20	-10.00	118.62
345	0.00	89.97	-10.00	412.20	-10.00	118.62
350	0.00	94.73	-10.00	412.20	-10.00	118.62
355	0.00	99.49	-10.00	412.20	-10.00	118.62

## 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: September 24, 2015