

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Global Evangelism Inc
SAN ANTONIO, TX
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
March 16, 2017

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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. Operation in the transmit band will be limited to the frequency bands shown in Section 4 of this report.

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

Aircanopy Internet Services, Inc.
Enterprise Products Operating, LLC
Texas RSA 18 Ltd Partnership
Texas RSA 20B1 LTD Partnership

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 03/02/2017.

Company

AT&T Corp.
AT&T Mobility Spectrum LLC - South Texas
Aircanopy Internet Services, Inc.
Alpha Media Licensee LLC
Austin, City of
BM Service Corp.
Bastrop County, Office of Emergency Mgmt
Blanco, County of
Bluebonnet Electric Cooperative
CGKC&H Rural Cellular Partnership
Caldwell County, Office of EMRG Mgmt.
Cingular Wireless of Texas RSA #16 LP
City Public Service
ConocoPhillips Communications Inc.
Corridor Television, LLP
Cox Radio, Inc (San Antonio, TX)
Encana Oil & Gas (USA) Inc. (TX & LA)
Enterprise Products Operating, LLC
FiberLight LLC
Guadalupe Valley Electric Coop
Infrastructure Networks, Inc.
Kerr County Sheriff
Llano, County of
Lower Colorado River Authority
Marathon Oil Company
Medina County Sheriffs Office
New Cingular Wireless PCS LLC - S Texas
Olympic Wireless, LLC
Pedernales Electric Cooperative Inc
Pooley, Allen L
Rosetta Resources Operating LP
San Antonio MTA, L.P. - Central Texas
San Antonio Water System
South Texas Electric Cooperative
T-Mobile License LLC
Texas Electronic Transport Company
Texas RSA 15B2 Limited Partnership
Texas RSA 18 Ltd Partnership
Texas RSA 19 LTD Partnership
Texas RSA 20B1 LTD Partnership
Verizon Wireless (VAW) LLC-C TX/LA/AR
West Central Wireless LP

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: 03/16/2017
Job Number: 170302COMSTC02

Administrative Information

Licensee Name Global Evangelism Inc

Site Information

SAN ANTONIO, TX

Latitude (NAD 83) 29° 36' 42.7" N
Longitude (NAD 83) 98° 29' 46.9" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 304.8 m / 1000.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 60° W to 143° West Longitude
Azimuth Range 121.9° to 243.3°
Corresponding Elevation Angles 35.8° / 30.9°
Antenna Centerline (AGL) 5.79 m / 19.0 ft

Antenna Information

Receive - V40901

Manufacturer VERTEX COMMUNICATIONS
Model 9 KPC
Gain / Diameter 50.1 dBi / 9.0 m
3-dB / 15-dB Beamwidth 0.55° / 1.20°

Transmit - V60901

Manufacturer VERTEX COMMUNICATIONS
Model 9 KPC
Gain / Diameter 53.5 dBi / 9.0 m
0.40° / 0.80°

		<u>51K2G7W - 36M0G7W</u>			
		-14.0	-14.1		
		10.0	9.9		
Max Available RF Power	(dBW/4 kHz)	39.5	39.4		
	(dBW/MHz)	50.57	63.4		
	(dBW)	50.57	78.94		
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

Receive 4.0 GHz

Emission / Frequency Range (MHz) 51K2G7W - 36M0G7W / 3700.0 - 4200.0

Transmit 6.1 GHz

51K2G7W - 36M0G7W / 5925.0 - 6359.0
51K2G7W - 30M0G7W / 6391.0 - 6425.0

Max Great Circle Coordination Distance 310.2 km / 192.7 mi 133.7 km / 83.1 mi
Precipitation Scatter Contour Radius 488.5 km / 303.5 mi 100.0 km / 62.1 mi

COMSEARCH

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Coordination Values

SAN ANTONIO, TX

Licensee Name Global Evangelism Inc
Latitude (NAD 83) 29° 36' 42.7" N
Longitude (NAD 83) 98° 29' 46.9" W
Ground Elevation (AMSL) 304.8 m / 1000.0 ft
Antenna Centerline (AGL) 5.79 m / 19.0 ft
Antenna Model VERTEX COMMUNICATIONS 9 KPC
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 -14.0 (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	1.01	112.93	-18.24	184.92	-16.09	100.00
5	0.92	111.74	-17.29	193.41	-15.85	100.00
10	0.96	107.78	-15.90	197.64	-15.50	100.00
15	0.75	103.72	-15.90	205.50	-15.50	100.00
20	0.60	99.66	-15.90	212.92	-15.50	100.00
25	0.57	95.59	-15.90	214.90	-15.50	100.00
30	0.50	91.51	-15.90	218.56	-15.50	100.00
35	0.42	87.44	-15.90	226.10	-15.50	100.62
40	0.53	83.36	-15.90	216.71	-15.50	100.00
45	0.44	79.32	-15.90	224.80	-15.50	100.00
50	0.30	75.32	-15.90	238.67	-15.50	110.02
55	0.30	71.34	-15.90	238.63	-15.50	110.00
60	0.00	67.52	-15.90	250.54	-15.50	118.35
65	0.00	63.69	-14.90	256.04	-15.50	118.35
70	0.00	59.95	-14.89	256.09	-15.50	118.35
75	0.00	56.33	-14.17	260.17	-15.50	118.35
80	0.00	52.85	-13.47	264.17	-15.50	118.35
85	0.00	49.56	-12.81	268.03	-15.50	118.35
90	0.00	46.48	-12.20	271.70	-15.50	118.35
95	0.00	43.67	-11.63	275.10	-15.44	118.51
100	0.00	41.20	-11.14	278.14	-13.46	123.66
105	0.00	39.12	-10.37	282.94	-12.15	127.12
110	0.00	37.49	-9.40	289.15	-11.50	128.84
115	0.00	36.40	-8.74	293.43	-11.06	130.01
120	0.00	35.88	-8.43	295.49	-10.85	130.56
125	0.00	35.95	-8.47	295.18	-10.88	130.48
130	0.00	36.63	-8.88	292.52	-11.15	129.76
135	0.00	37.87	-9.62	287.71	-11.65	128.44
140	0.00	39.61	-10.67	281.07	-12.34	126.59
145	0.00	41.80	-11.26	277.39	-13.94	122.40
150	0.00	44.37	-11.77	274.25	-16.00	117.08
155	0.00	47.25	-12.35	270.78	-16.50	115.78
160	0.00	49.99	-12.90	267.53	-16.50	115.78
165	0.00	52.27	-13.35	264.84	-16.50	115.78
170	0.00	54.01	-13.70	262.83	-16.50	115.78
175	0.00	55.10	-13.92	261.58	-16.50	115.78
180	0.00	55.47	-13.99	261.15	-16.50	115.78
185	0.00	55.10	-13.92	261.58	-16.50	115.78

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Coordination Values

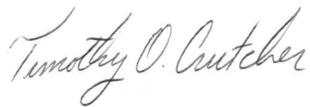
SAN ANTONIO, TX

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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 -14.0 (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	54.01	-13.70	262.83	-16.50	115.78
195	0.00	52.27	-13.35	264.84	-16.50	115.78
200	0.00	49.99	-12.90	267.53	-16.50	115.78
205	0.00	47.25	-12.35	270.78	-16.50	115.78
210	0.00	44.14	-11.73	274.52	-15.82	117.54
215	0.00	40.91	-11.08	278.49	-13.23	124.27
220	0.00	37.97	-9.68	287.32	-11.69	128.34
225	0.00	35.42	-8.15	297.32	-10.67	131.06
230	0.00	33.35	-7.24	303.45	-10.17	132.39
235	0.00	31.85	-6.64	307.54	-9.87	133.19
240	0.00	31.02	-6.31	309.85	-9.70	133.64
245	0.00	30.90	-6.26	310.18	-9.68	133.70
250	0.00	31.51	-6.50	308.50	-9.80	133.38
255	0.00	32.80	-7.02	304.95	-10.06	132.68
260	0.21	34.51	-7.70	299.24	-10.40	131.09
265	0.20	36.94	-9.06	291.23	-11.28	129.38
270	0.47	39.59	-10.65	249.43	-12.34	105.13
275	0.42	42.81	-11.46	249.71	-14.75	102.46
280	0.62	46.16	-12.13	230.74	-15.50	100.00
285	0.59	49.84	-12.87	228.41	-15.50	100.00
290	0.59	53.68	-13.64	224.76	-15.50	100.00
295	0.80	57.56	-14.41	209.51	-15.50	100.00
300	0.58	61.69	-14.90	218.87	-15.50	100.00
305	0.60	65.82	-15.56	214.82	-15.50	100.00
310	0.59	70.02	-15.90	213.80	-15.50	100.00
315	0.72	74.24	-15.90	206.78	-15.50	100.00
320	0.63	78.53	-15.90	211.60	-15.50	100.00
325	0.90	82.81	-15.90	200.45	-15.50	100.00
330	1.18	87.13	-15.90	190.26	-15.50	100.00
335	1.01	91.47	-15.90	195.39	-15.50	100.00
340	1.09	95.81	-15.90	192.97	-15.50	100.00
345	0.96	100.12	-15.90	197.50	-15.50	100.00
350	1.12	104.44	-15.90	192.19	-15.50	100.00
355	1.09	108.71	-15.90	193.06	-15.50	100.00

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.



Timothy O. Crutcher
Frequency Planner
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: March 16, 2017