

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

Skynet Satellite Corporation
Mt. Jackson, Virginia
(Call Sign: E000706)

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
June 16, 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.

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

National Radio Astronomy Observatory

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 April 29, 2015.

Company

AT&T COMMUNICATIONS OF MARYLAND INC
AT&T Communications of Virginia, LLC
AT&T Corporation
Alltel Communications LLC-Southern VA
Alltel Communications of Petersburg Inc
Appalachia Engineering Services
Argos Engineering, LLC
Atlantic Broadband (Penn), LLC
Augusta, County of
Baltimore Gas and Electric Company
Blue Ridge Carriers
Capital Communications of America
Cellco Partnership-WDC/Baltimore
Charles, County of
Columbia Gas Transmission Corporation
Comprehensive Wireless LLC
ECW Wireless, LLC
Enoch Pratt Free Library
FELHC, INC
Frederick County
Fundamental Broadcasting LLC
Hardy Cellular Telephone Company
Harrisonburg-Rockingham ECC
Loudoun, County of
MCI Communications Services Inc.
MGW Networks, LLC
MVC Research. LLC
Maryland Public Broadcasting Commission
National Radio Astronomy Observatory
New Cingular Wireless PCS - Maryland
New Cingular Wireless PCS LLC - DC
New Cingular Wireless PCS LLC - VA
New Cingular Wireless PCS LLC- WV/NC/SC
Norfolk Southern Railway
Old Dominion LLC

Company (Continued)

PA Communications
PEG Bandwidth, LLC
Prince William, County of
RAPPAHANNOCK ELECTRIC COOPERATIVE
Rural Broadband Network Services LLC
SHENANDOAH VALLEY ELECTRIC COOPERATIVE
Southern Maryland Electric Cooperative I
Spotsylvania, County of
St. Mary's County of (MD)
Stafford, County of
State of Maryland, MIEMSS
Thought Transmissions, LLC
US Cellular Operating Company, LLC (WI)
USCOC of Cumberland, Inc.
USCOC of Virginia RSA #3, Inc.
Verizon Maryland, Inc.
Verizon Wireless (VAW) LLC - W/B/V Mkts
Verizon Wireless VAW LLC-Southern VA
Virginia RSA 5 Limited Partnership
Virginia Cellular LLC
Virginia Department of State Police
Virginia Electric & Power Company
Virginia PCS Alliance, L.C.
WV DHHR BPH, Office of EMS, Com. Div.
Washington D.C. SMSA L.P.
Washington Gas Light Company
World Class Wireless, LLC
YAB Mobile

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: 06/16/2015
Job Number: 150429COMSJC02

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E000706
Licensee Code ZLORSP
Licensee Name Skynet Satellite Corporation

Site Information MT JACKSON, VIRGINIA

Venue Name
Latitude (NAD 83) 38° 43' 42.0" N
Longitude (NAD 83) 78° 39' 38.0" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 275.0 m / 902.2 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 7° W to 143° West Longitude
Azimuth Range 101.7° to 253.3°
Corresponding Elevation Angles 5.6° / 11.2°
Antenna Centerline (AGL) 4.88 m / 16.0 ft

Antenna Information

	Receive	Transmit
Manufacturer	Vertex/RSI	Vertex/RSI
Model	13.2 Meter	13.2 Meter
Gain / Diameter	52.7 dBi / 13.2 m	56.8 dBi / 13.2 m
3-dB / 15-dB Beamwidth	0.40° / 0.80°	0.30° / 0.50°

3M77D7W

Max Available RF Power	(dBW/4 kHz)	-25.1			
	(dBW/MHz)	-1.1			
Maximum EIRP	(dBW/4 kHz)	31.7			
	(dBW/MHz)	55.7			
	(dBW)	61.4			
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	Transmit 6.1 GHz
Emission / Frequency Range (MHz)	1M62G7W / 3700.0 - 4200.0	3M77D7W / 5925.0 - 6425.0

Max Great Circle Coordination Distance	687.9 km / 427.4 mi	221.1 km / 137.4 mi
Precipitation Scatter Contour Radius	608.1 km / 377.8 mi	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

MT JACKSON, VA

Licensee Name Skynet Satellite Corporation
Latitude (NAD 83) 38° 43' 42.0" N
Longitude (NAD 83) 78° 39' 38.0" W
Ground Elevation (AMSL) 275.0 m / 902.2 ft
Antenna Centerline (AGL) 4.88 m / 16.0 ft
Antenna Model Vertex/RSI 13.2 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 -25.1 (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	1.80	101.69	-10.00	199.87	-10.00	100.00
5	1.51	96.70	-10.00	205.24	-10.00	100.00
10	1.38	91.71	-10.00	208.94	-10.00	100.00
15	1.59	86.73	-10.00	205.54	-10.00	100.00
20	1.30	81.74	-10.00	211.16	-10.00	100.00
25	1.02	76.76	-10.00	219.70	-10.00	100.00
30	0.79	71.78	-10.00	232.13	-10.00	100.00
35	0.59	66.81	-10.00	244.15	-10.00	100.00
40	0.59	61.83	-10.00	243.89	-10.00	100.00
45	0.64	56.86	-10.00	240.75	-10.00	100.00
50	0.72	51.88	-10.00	235.96	-10.00	100.00
55	0.86	46.90	-9.78	229.37	-9.78	100.00
60	0.92	41.93	-8.56	232.36	-8.56	100.00
65	1.11	36.95	-7.19	231.51	-7.19	100.00
70	1.89	31.91	-5.60	215.83	-5.60	100.00
75	3.35	26.80	-3.70	195.64	-3.70	100.00
80	4.00	21.77	-1.45	193.99	-1.45	100.00
85	4.24	16.77	1.39	205.14	1.39	100.00
90	4.68	11.75	5.25	217.93	5.25	100.00
95	4.65	6.78	11.22	260.96	11.22	100.00
100	4.09	2.26	23.16	687.94	23.16	221.10
105	3.16	4.06	16.79	446.68	16.79	132.02
110	3.29	7.73	9.79	282.63	9.79	100.00
115	3.38	11.37	5.61	247.24	5.61	100.00
120	3.27	15.08	2.54	229.07	2.54	100.00
125	3.41	18.51	0.31	212.58	0.31	100.00
130	3.48	21.88	-1.50	204.16	-1.50	100.00
135	2.92	25.56	-3.19	204.67	-3.19	100.00
140	2.23	29.19	-4.63	212.44	-4.63	100.00
145	1.47	32.70	-5.86	227.22	-5.86	100.00
150	0.96	35.80	-6.85	239.78	-6.85	100.00
155	0.87	38.28	-7.57	240.64	-7.57	100.00
160	0.91	40.32	-8.14	235.26	-8.14	100.00
165	1.09	41.83	-8.54	225.07	-8.54	100.00
170	1.11	43.04	-8.85	222.68	-8.85	100.00
175	1.06	43.84	-9.05	223.33	-9.05	100.00
180	0.99	44.16	-9.13	225.16	-9.13	100.00

COMSEARCH

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Coordination Values

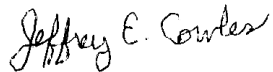
MT JACKSON, VA

Licensee Name Skynet Satellite Corporation
Latitude (NAD 83) 38° 43' 42.0" N
Longitude (NAD 83) 78° 39' 38.0" W
Ground Elevation (AMSL) 275.0 m / 902.2 ft
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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 -25.1 (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)
185	0.99	43.91	-9.06	225.91	-9.06	100.00
190	0.99	43.15	-8.87	226.47	-8.87	100.00
195	1.06	41.86	-8.54	225.96	-8.54	100.00
200	0.94	40.29	-8.13	233.44	-8.13	100.00
205	1.43	37.80	-7.44	219.90	-7.44	100.00
210	1.50	35.36	-6.71	221.66	-6.71	100.00
215	1.09	32.99	-5.96	239.24	-5.96	100.00
220	1.16	30.00	-4.93	243.03	-4.93	100.00
225	1.71	26.44	-3.56	232.53	-3.56	100.00
230	2.08	22.88	-1.98	230.61	-1.98	100.00
235	1.51	19.84	-0.44	259.40	-0.44	100.00
240	1.75	16.11	1.82	266.62	1.82	100.00
245	1.67	12.60	4.49	289.74	4.49	100.00
250	1.49	10.26	6.73	316.13	6.73	100.00
255	1.44	9.92	7.09	350.59	7.09	107.89
260	2.35	11.12	5.85	277.87	5.85	100.00
265	3.15	14.20	3.19	236.37	3.19	100.00
270	1.87	19.10	-0.02	249.37	-0.02	100.00
275	1.64	23.65	-2.35	242.35	-2.35	100.00
280	1.65	28.27	-4.28	230.49	-4.28	100.00
285	1.77	32.96	-5.95	217.48	-5.95	100.00
290	1.85	37.74	-7.42	208.11	-7.42	100.00
295	1.89	42.57	-8.73	203.21	-8.73	100.00
300	2.24	47.39	-9.89	189.54	-9.89	100.00
305	2.54	52.25	-10.00	182.07	-10.00	100.00
310	2.37	57.18	-10.00	185.96	-10.00	100.00
315	2.05	62.12	-10.00	193.43	-10.00	100.00
320	1.87	67.06	-10.00	198.01	-10.00	100.00
325	1.90	71.98	-10.00	197.16	-10.00	100.00
330	2.05	76.90	-10.00	193.36	-10.00	100.00
335	1.81	81.84	-10.00	199.64	-10.00	100.00
340	2.04	86.77	-10.00	193.59	-10.00	100.00
345	2.07	91.71	-10.00	193.03	-10.00	100.00
350	2.41	96.65	-10.00	185.03	-10.00	100.00
355	2.23	101.59	-10.00	189.19	-10.00	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.



Jeffrey E. Cowles
Engineer III, Telecommunications
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Va. 20147

DATED: June 16, 2015