

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
SES Americom, Inc.
WOODBINE, MD
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
August 31, 2016

TABLE OF CONTENTS

1. CONCLUSIONS	3
2. SUMMARY OF RESULTS	4
3. SUPPLEMENTAL SHOWING	5
4. EARTH STATION COORDINATION DATA.....	7
5. CERTIFICATION.....	11

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 07/28/2016.

Company

ALLEGANY COUNTY GOVERNMENT
ALTIUS Communications
APC Realty and Equipment CO LLC
Adams County Department of Emergency Svc
Affiniti PA, LLC
Arlington County Emergency Comm Ctr
B.F. SAUL COMPANY
BUSINESS INFORMATION GROUP, INC.
Believe Wireless, LLC
Blaze Broadband
Boeing Company
CAMP HILL SCHOOL DISTRICT
CBS Broadcasting Inc
CBS Communication Services Inc
CECIL COUNTY PUBLIC SCHOOLS
CONXX, Inc.
Calvert County Government
Calvert, County of
Carlisle Area School District
Chesapeake Television Licensee, LLC
Clearwire Spectrum Holdings III, LLC
Commissioners of Caroline County
County of York
Cumberland County, New Jersey
Cumberland Valley School District
DELAWARE RIVER & BAY AUTHORITY
DOVER AREA SCHOOL DISTRICT
Delmarva Power and Light Company
ECW Wireless, LLC
Eastern Lancaster County School District
Enoch Pratt Free Library
Franklin County Dept. of Emergency Servi
George Washington University
Global Telecom & Technology Americas
Home Sales Company, Inc
LANCASTER GENERAL HOSPITAL
Loudoun, County of
Maryland Port Administration
Maryland, State of - MDOT-MTA
NBC Telemundo License LLC

New Cingular Wireless PCS - Maryland
New Cingular Wireless PCS, LLC - PA
Northern York County School District
PhillieCo, L.P.
Prince William, County of
Radio One Inc
RapidDSL & Wireless, Inc.
Red Rose Transit Authority
Red Zebra Broadcasting Licensee, LLC
SHIPPENSBURG AREA SCHOOL DISTRICT
Salisbury University Foundation, Inc.
Shenandoah Personal Communications, LLC
South Western School District
Sprint Spectrum L.P.
Steelton-Highspire School District
T-Mobile License LLC
Telecom Transport Management, Inc
Telegia Communications Inc.
Virginia Everywhere, LLC
WASHINGTON CABLE SYSTEMS INC
WICOMICO BOARD OF EDUCATION
WKYSFM, INC
Washington Metro Area Transit Police Dep
Wicomico County
Wor-Wic Community College
World Class Wireless, LLC
XO Communications, LLC
York Water Co

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: 07/28/2016
Job Number: 160728COMSGE04

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code P3210
Licensee Name SES Americom, Inc.

Site Information

WOODBINE, MD
Venue Name
Latitude (NAD 83) 39° 22' 38.8" N
Longitude (NAD 83) 77° 4' 52.9" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 196.59 m / 645.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 14° W to 142° West Longitude
Azimuth Range 107.9° to 253.5°
Corresponding Elevation Angles 12.0° / 10.6°
Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information

		Receive - FCC32		Transmit - FCC32	
Manufacturer		Vertex/GD Satcom		Vertex/GD Satcom	
Model		9 meter		9 meter	
Gain / Diameter		58.5 dBi / 9.0 m		61.5 dBi / 9.0 m	
3-dB / 15-dB Beamwidth		0.20° / 0.40°		0.13° / 0.32°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			9.5 33.5	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			71.0 95.0	
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
	Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%

Frequency Information

	Receive 11.0 GHz	Transmit 18.0 GHz
Emission / Frequency Range (MHz)	N0N - 54M0G7W / 10950.0 - 11200.0 N0N - 54M0G7W / 11450.0 - 12200.0	N0N - 54M0G7W / 17300.0 - 17800.0
Max Great Circle Coordination Distance	340.0 km / 211.3 mi	278.4 km / 173.0 mi
Precipitation Scatter Contour Radius	528.2 km / 328.2 mi	421.0 km / 261.5 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

WOODBINE, MD

Licensee Name SES Americom, Inc.
Latitude (NAD 83) 39° 22' 38.8" N
Longitude (NAD 83) 77° 4' 52.9" W
Ground Elevation (AMSL) 196.59 m / 645.0 ft
Antenna Centerline (AGL) 5.49 m / 18.0 ft
Antenna Model Vertex 9 meter
Antenna Mode Receive 11.0 GHz Transmit 18.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20% -151.0 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%
Max Available RF Power 9.5 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 18.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	4.75	106.45	-10.00	100.98	-10.00	100.00
5	4.73	102.75	-10.00	101.17	-10.00	100.00
10	4.41	97.79	-10.00	105.08	-10.00	100.00
15	4.21	92.83	-10.00	107.60	-10.00	100.00
20	3.50	87.88	-10.00	118.68	-10.00	100.00
25	2.80	82.95	-10.00	129.71	-10.00	100.00
30	2.10	78.04	-10.00	144.10	-10.00	109.51
35	1.60	73.15	-10.00	158.79	-10.00	120.89
40	1.03	68.28	-10.00	180.61	-10.00	133.71
45	1.13	63.38	-10.00	177.27	-10.00	131.06
50	1.08	58.50	-10.00	178.91	-10.00	132.34
55	0.74	53.68	-10.00	195.00	-10.00	146.97
60	0.67	48.85	-10.00	198.36	-10.00	150.56
65	0.71	44.03	-9.09	200.11	-9.09	152.06
70	0.80	39.24	-7.84	201.34	-7.84	152.87
75	0.75	34.52	-6.45	206.49	-6.45	161.15
80	0.66	29.90	-4.89	217.66	-4.89	174.77
85	0.69	25.36	-3.10	224.43	-3.10	181.18
90	0.69	21.03	-1.07	234.12	-1.07	189.88
95	0.66	17.07	1.20	247.50	1.20	200.30
100	0.69	13.73	3.56	258.72	3.56	209.21
105	0.66	11.67	5.33	270.18	5.33	218.50
110	0.39	11.78	5.22	290.48	5.22	236.54
115	0.48	13.51	3.73	272.58	3.73	221.50
120	0.53	16.63	1.48	256.12	1.48	207.96
125	0.47	20.21	-0.64	250.11	-0.64	203.62
130	0.00	23.96	-2.49	267.56	-2.49	220.54
135	0.00	27.26	-3.89	260.36	-3.89	214.79
140	0.00	30.39	-5.07	254.47	-5.07	210.05
145	0.00	33.32	-6.07	249.59	-6.07	206.11
150	0.00	36.01	-6.91	245.56	-6.91	202.84
155	0.00	38.41	-7.61	242.14	-7.61	200.16
160	0.22	40.28	-8.13	237.94	-8.13	197.32
165	0.32	41.86	-8.55	226.25	-8.55	185.86
170	0.41	43.00	-8.84	216.47	-8.84	175.48
175	0.42	43.75	-9.02	214.67	-9.02	173.55
180	0.50	43.93	-9.07	208.32	-9.07	166.19
185	0.49	43.68	-9.01	208.82	-9.01	166.76

COMSEARCH

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Coordination Values

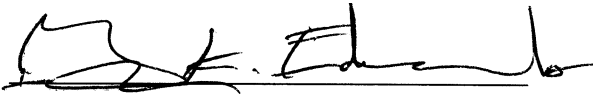
WOODBINE, MD

Licensee Name SES Americom, Inc.
Latitude (NAD 83) 39° 22' 38.8" N
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Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%
Max Available RF Power 9.5 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 18.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.52	42.90	-8.81	208.29	-8.81	166.01
195	0.46	41.73	-8.51	214.13	-8.51	172.66
200	0.37	40.15	-8.09	223.90	-8.09	183.13
205	0.54	37.95	-7.48	212.72	-7.48	170.50
210	0.52	35.58	-6.78	216.45	-6.78	174.36
215	0.30	33.08	-5.99	239.32	-5.99	197.44
220	0.21	30.23	-5.01	254.16	-5.01	209.73
225	0.42	26.95	-3.77	238.86	-3.77	195.83
230	0.62	23.52	-2.29	232.10	-2.29	188.53
235	0.67	20.07	-0.56	237.81	-0.56	193.19
240	0.47	16.67	1.45	260.93	1.45	212.31
245	0.42	13.19	3.99	280.18	3.99	228.12
250	0.41	10.73	6.23	294.33	6.23	239.34
255	0.51	10.19	6.80	340.03	6.80	278.37
260	0.50	11.99	5.03	277.93	5.03	225.54
265	0.44	15.31	2.37	268.71	2.37	218.80
270	0.48	19.30	-0.14	251.01	-0.14	204.18
275	0.59	23.64	-2.34	233.52	-2.34	189.96
280	0.59	28.23	-4.27	224.14	-4.27	181.41
285	0.86	32.86	-5.92	203.83	-5.92	157.71
290	1.65	37.47	-7.34	173.73	-7.34	128.86
295	1.58	42.33	-8.67	169.06	-8.67	125.87
300	1.91	47.16	-9.84	149.95	-9.84	114.17
305	1.69	52.09	-10.00	156.05	-10.00	118.87
310	2.01	56.96	-10.00	146.45	-10.00	111.43
315	2.23	61.87	-10.00	141.16	-10.00	107.05
320	2.46	66.79	-10.00	136.37	-10.00	102.84
325	2.56	71.73	-10.00	134.35	-10.00	100.99
330	2.62	76.67	-10.00	133.01	-10.00	100.00
335	2.80	81.62	-10.00	130.94	-10.00	100.00
340	3.84	86.56	-10.00	112.86	-10.00	100.00
345	4.01	91.53	-10.00	110.18	-10.00	100.00
350	4.30	96.50	-10.00	106.50	-10.00	100.00
355	4.76	101.48	-10.00	100.83	-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.

BY: 

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

DATED: August 31, 2016



19700 Janelia Farm Boulevard
Ashburn, VA 20147
703-726-5500
Fax 703-726-5596

March 24, 2017

Office of the Secretary
Federal Communications Commission
Washington, DC 20554

Re: SES Americom, Inc.
Coordinated Job Number: 160728COMSGE04

Dear Sir:

This letter is to confirm that the KU-Band (DBS) T/R Earth Station antenna coordinated under Comsearch Job # 160728COMSGE04 and located near Woodbine, MD (39-22-38.8 N, 77-4-52.9 W), under the ownership of SES Americom, Inc., has been under our continuous monitor and frequency protection service. We have been monitoring all new frequency coordinations on their behalf and maintaining their participation in the frequency coordination process as specified in part 25 of the FCC Rules and Regulations.

If you have any questions, or require additional information, please don't hesitate to call me on (703) 726-5656 or by email at DMeyer@comsearch.com

Sincerely,
COMSEARCH

A handwritten signature in black ink that reads 'David E. Meyer'.

David E. Meyer
Senior Manager
Frequency Protection Services



19700 Janelia Farm Boulevard
Ashburn, VA 20147
703-726-5500
Fax 703-726-5596

March 24, 2017

Office of the Secretary
Federal Communications Commission
Washington, DC 20554

Re: SES Americom, Inc.
Coordinated Job Number: 160728COMSGE07

Dear Sir:

This letter is to confirm that the KU-Band T/R Earth Station antenna coordinated under Comsearch Job # 160728COMSGE07 and located near Woodbine, MD (39-22-38.8 N, 77-4-52.9 W), under the ownership of SES Americom, Inc., has been under our continuous monitor and frequency protection service. We have been monitoring all new frequency coordinations on their behalf and maintaining their participation in the frequency coordination process as specified in part 25 of the FCC Rules and Regulations.

If you have any questions, or require additional information, please don't hesitate to call me on (703) 726-5656 or by email at DMeyer@comsearch.com

Sincerely,
COMSEARCH

A handwritten signature in black ink that reads "David E. Meyer". The signature is written in a cursive style.

David E. Meyer
Senior Manager
Frequency Protection Services