

# 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  
May 04, 2021

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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 03/23/2021.

#### Company

ABC, Inc. - WPVI-TV  
ACC License, LLC  
Access MLP Operating LLC  
Adams County Department of Emergency Svc  
Affiniti PA, LLC  
Agile Network Builders LLC  
AJG Corporation  
Albemarle, County of  
Allegany County Government  
Allfirst Bank  
Altius Communications  
American Broadcasting Companies, Inc.  
Anne Arundel, County of  
AQ2AT LLC  
ARD Operating, LLC  
Arlington County, VA  
AT&T Mobility Spectrum LLC-GA/WV/NC/SC  
AT&T Wireless Services 3 LLC - NM  
Atlantic Broadband (Penn), LLC  
Atlantic, County of  
Baltimore County of Maryland  
Baltimore Gas and Electric Company  
Beasley Media Group, LLC  
Bedford County of  
Believe Wireless, LLC  
Berkeley, County of  
Berks County Department of Emergency Ser  
Blair County 911  
Blaze Broadband  
Bloosurf  
Blueline Communications  
Buckeye Partners  
Bucks County Dept. of Emergency Comm  
Business Only Broadband, LLC  
Calvert, County of  
Cambria, County of  
Cape May County, MIS Department  
Capitol Region Airport Commission  
Carbon, County of 911 Center  
Caroline County, VA

CBS Broadcasting Inc  
CBS Television Licenses LLC  
Cecil Cnty Depart. of Emergency Services  
Cellco Partnership - Bridgeville, PA/WV  
Cellco Partnership - Southern Virginia  
Cellco Partnership- PA Region  
Cellco Prtnrshp - Phil. Tri-State Rgn  
Central Virginia Electric Cooperative  
Centre Wisp Venture 6  
Centre, County of  
Charles, County of  
Charlottesville TV LLC  
Cherry Hill, Township Of  
Chester, County of  
Chesterfield, County of  
City of Bethlehem  
City of Laurel  
City of Ocean City, MD  
Citynet, LLC  
Citywisper LLC  
Clair Global  
Clearwire Spectrum Holdings II, LLC  
Clearwire Spectrum Holdings III, LLC  
Clearwire Spectrum Holdings LLC  
Cobham Advanced Electronic Solutions Inc  
Columbia, County  
Comcast of Southeast Pennsylvania, Inc.  
Commonwealth of Pennsylvania-Radio Proj.  
Commonwealth Public Broadcasting  
Complete Residential & Comm Contracting  
Comprehensive Wireless LLC  
Consult Dynamics, Inc  
Conterra Ultra Broadband, LLC  
Conxx, Inc.  
County of Burlington  
County of Burlington, Public Safety Cntr  
County of Camden  
County of Culpeper  
County of King William, Virginia  
County of Shenandoah  
County of York (PA)  
County of York (VA)  
Crownsnest Broadband LLC  
C-Span  
CTI Networks, Inc  
Cumberland, County of (PA)  
D&E Communications, Inc.  
Data Stream Mobile Technology Inc.  
Dauphin County Emergency Management  
DC2A LLC  
Declaration Networks Group, Inc  
Delaware County (PA) Emergency Services  
Delaware Division of Communications  
Delaware River & Bay Authority  
DELAWARE RIVER PORT AUTHORITY  
Digital Consultants, LLC

Drive  
Eastern Gas Transmission and Storage, In  
Eastern Shore of Virginia Broadband Auth  
ECW Wireless, LLC  
Egg Harbor Township, Board of Education  
Enoch Pratt Free Library  
Entercom License, LLC  
Exelon Generation Company, LLC  
FELHC, Inc.  
Fox Television Stations, LLC  
Franklin County Dept. of Emergency Servi  
Frederick County, MD  
Fulton County PA  
Fundamental Broadcasting LLC  
Garden State Transmissions  
Getwireless.Net  
Global Telecom & Technology Americas  
Globecomm License Sub LLC  
Gloucester Township  
Gloucester, County of  
Goochland, County of  
Grant, County of  
Gray Television Licensee LLC (Gray TV)  
Gray Television Licensee, LLC  
Greater Boston Radio Inc.  
GWETA, Inc.  
Hampton Road Sanitation District  
Hampton Roads Educational Telecommunicat  
Hanover, County of  
Hardy Cellular Telephone Company  
Hardy Telecommunications  
Harrisburg Licensee, LLC  
Harrisonburg-Rockingham ECC  
Hearst Properties Inc  
Henrico County  
High Mountain Farm, LLC  
Hilltop Tower Leasing  
Hilltower Tower Leasing, Inc  
Huntingdon, County of  
In The Stix Broadband LLC  
Independence Public Media - Philadelphia  
Ion Media Philadelphia License, Inc.  
iSignal  
Jefferson Microwave, LLC  
Juniata County Emergency Services  
Kanawha, County of  
King George County  
Lancaster County-Wide Communications  
Learning Tree Farms  
Lehigh, County of  
Limitless Mobile, LLC  
Loudoun County Public Schools  
Loudoun, County of  
Louisa County of  
Luzerne County of PA  
Maritime Applied Physics Corporation

Maryland Port Administration  
Maryland Public Broadcasting Commission  
Maryland State Highway Administration  
Maryland, State of - Dept.of Info & Tech  
Maryland, State of - MDOT-MTA  
Maryland-National Capital Park & Plannin  
Metify Inc  
MGW Networks, LLC  
Micrologic, Inc  
Mifflin County  
Mifflin County Wireless  
Millersburg Area School District  
MIT Lincoln Laboratory  
MLS Engineering  
Montgomery County Of  
Morgan Wireless LLC  
Morgan, County of  
Mountain View Communications, LLC  
National Cable Satellite Corporation  
NBC Telemundo License Co.  
NBC Telemundo License LLC  
Nelson, County of  
Netrepid, Inc.  
New Cingular Wireless PCS LLC - NJ  
New Cingular Wireless PCS - Maryland  
New Cingular Wireless PCS LLC - DC  
New Cingular Wireless PCS LLC - Georgia  
New Cingular Wireless PCS LLC - VA  
New Cingular Wireless PCS LLC - WV,NC,SC  
New Cingular Wireless PCS LLC-DE/NH/RI  
New Cingular Wireless PCS, LLC - PA  
New Jersey State Police  
New Jersey Turnpike Authority-Pkwy Div  
New Jersey, State of -NJ Transit  
New Kent County  
New Line Networks, LLC  
NewConnect  
NEXSTAR BROADCASTING, INC.  
Norfolk Southern Railway Company  
Noroc Broadband LLC  
Northern Virginia Electric Cooperative  
Northumberland County DPS/911  
Notthisagain LLC  
Novec Solutions, Inc  
NSAC, LLC  
Ocean City, City of  
Ocean County of - Div of Wireless Tech.  
One Ring Networks, Inc.  
Page County Broadband Authority  
Page, County of (VA)  
Peco Energy Company  
Pennsylvania Educational Comm Systems  
Pennsylvania Sports Entertainment Netwo.  
Pennsylvania Turnpike Commission  
Perry, County of  
Philadelphia Television Network, Inc.



Philadelphia Television Station WPSG  
PhillieCo, L.P.  
Pierce Broadband, LLC  
Pocahontas County Commission  
Pontis Communications, Inc.  
Port Networks, Inc  
Powhatan, County of  
Prince William, County of  
Public Broadcasting Service  
R. Fritz Enterprises Inc  
Radio License Holding CBC, LLC  
Radio One Inc  
Radio One, Inc. - MD  
Randolph County OEM 911  
RapidDSL & Wireless, Inc.  
Rappahannock Electric Cooperative  
Raven Rock Networks, Inc.  
Red Rose Transit Authority  
Richmond, City of  
Richmond, County of  
River Valley Internet LLC  
Riverstreet Networks  
RiverStreet Wireless of Virginia, Inc.  
Rockbridge Reg. Pub Safety Comm Ctr  
Rural Broadband Network Services LLC  
Schuylkill, County of  
Scripps Broadcasting Holdings, LLC,  
Secom Net  
Shenandoah Personal Communications, LLC  
SmartSky Microwave, LLC  
Snyder, County of  
Somerset County, Maryland  
Somerset, County of  
South Central Task Force (SCTFNET)  
South Western School District  
Southeastern Pennsylvania Transit Auth  
Southern Maryland Electric Cooperative I  
Southside Electric Cooperative  
Spotsylvania, County of  
Sprint Spectrum L.P.  
Sprintcom, Inc  
St. Mary's County of (MD)  
Stafford, County of  
Standard Backhaul Communications LLC  
State of Maryland, MIEMSS  
State of New Jersey  
Sullivan, County of  
Sussex County Government  
Telecom Transport Management, Inc  
Telegia Communications Inc.  
Thought Transmissions, LLC  
T-Mobile License LLC  
Towerstream Corp.  
Townsquare License, LLC  
Transcontinental Gas Pipe Line Co., LLC  
Transwave Communication Systems, Inc.

Triangle Communications, Inc.  
Two Way Radio Inc.  
Union, County Of  
Uniti Fiber LLC  
Upward Broadband  
USCOC of Cumberland, Inc.  
USCOC of Virginia RSA #3, Inc.  
Valley Rural Electric Cooperative, Inc.  
Vector Data Systems, LLC  
Verizon New Jersey, Inc.  
Verizon Virginia, Inc.  
Verizon Wireless (VAW) LLC - Maryland  
Verizon Wireless (VAW) LLC - W/B/V Mkts  
Verizon Wireless (VAW) LLC-Pennsylvania  
Verizon Wireless VAW LLC-Southern VA  
Virginia Air Networks, LLC  
Virginia Broadband, LLC  
Virginia Department of State Police  
Virginia Electric & Power Company  
Virginia Everywhere, LLC  
Virginia Tech Foundation , Inc.  
Visual Link Internet LLC  
Warren County, VA  
Warrenton Fauquier Joint Communications  
Washington County Board of Education  
Washington County Public Schools  
Washington Gas Light Company  
Washington Suburban Sanitary Commission  
WBAL Hearst-Argyle TV, Inc. (CA Corp.)  
WCHS Licensee, Inc.  
WDCW, LLC  
Weblin Holdings LLC  
West Virginia Educational Broadcasting  
West Virginia Radio Corp of Charleston  
West Virginia Radio Corporation  
Westmoreland, County of  
WHYY, Inc.  
WHYY, Inc.  
Wicomico Board of Education  
Wicomico County  
Widmo Holdings LLC  
Williamson Enterprise LLC  
Winchester, City of  
Wireless Internetwork LLC  
WITF Inc.  
WJAC Licensee, LLC  
WPXI, LLC  
WRLH Licensee, LLC  
WUSA-TV, Inc  
WV DHSEM, SIRN System  
XO Communications, LLC  
xWave Engineering LLC  
Zito Media Communications LLC

## **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: 05/04/2021  
Job Number: 210323COMSGE01

### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign E050287  
Licensee Code P3210  
Licensee Name SES Americom, Inc.

### Site Information WOODBINE, MD

Venue Name  
Latitude (NAD 83) 39° 22' 37.1" N  
Longitude (NAD 83) 77° 4' 49.1" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 198.12 m / 650.0 ft

### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Analog and Digital  
Satellite Arc 10° W to 145° West Longitude  
Azimuth Range 105.0° to 255.6°  
Corresponding Elevation Angles 8.9° / 8.3°  
Antenna Centerline (AGL) 11.89 m / 39.0 ft

### Antenna Information

	Receive - FCC32	Transmit - FCC32
Manufacturer	Vertex	Vertex
Model	13.1 meter	13.1 meter
Gain / Diameter	62.3 dBi / 13.1 m	63.7 dBi / 13.1 m
3-dB / 15-dB Beamwidth	0.10° / 0.26°	0.11° / 0.22°
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)	0.5 24.5
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)	64.2 88.2
Interference Objectives:	Long Term Short Term	-156.0 dBW/MHz 20% -146.0 dBW/MHz 0.01%
		-151.0 dBW/4 kHz 20% -128.0 dBW/4 kHz 0.0025%

### Frequency Information

	Receive 11.0 GHz	Transmit 14.0 GHz
Emission / Frequency Range (MHz)	N0N - 72M0G7W / 10950.0 - 12750.0	N0N - 72M0G7W / 13750.0 - 14500.0

Max Great Circle Coordination Distance	461.7 km / 286.9 mi	303.3 km / 188.4 mi
Precipitation Scatter Contour Radius	551.4 km / 342.6 mi	171.2 km / 106.3 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' 37.1" N  
Longitude (NAD 83) 77° 4' 49.1" W  
Ground Elevation (AMSL) 198.12 m / 650.0 ft  
Antenna Centerline (AGL) 11.89 m / 39.0 ft  
Antenna Model Vertex 13.1 meter  
Antenna Mode Receive 11.0 GHz Transmit 14.0 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 0.5 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 14.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.44	104.30	-10.00	209.60	-10.00	134.16
5	0.42	99.91	-10.00	211.39	-10.00	135.90
10	0.30	94.96	-10.00	221.77	-10.00	146.31
15	0.30	90.02	-10.00	221.39	-10.00	145.91
20	0.39	85.07	-10.00	213.82	-10.00	138.28
25	0.59	80.12	-10.00	202.45	-10.00	126.40
30	0.72	75.18	-10.00	196.21	-10.00	120.78
35	0.57	70.24	-10.00	203.37	-10.00	127.26
40	0.68	65.29	-10.00	198.21	-10.00	122.56
45	0.59	60.37	-10.00	202.68	-10.00	126.61
50	0.57	55.44	-10.00	203.69	-10.00	127.56
55	0.50	50.54	-10.00	204.44	-10.00	130.50
60	0.52	45.63	-9.48	205.70	-9.48	130.00
65	0.56	40.74	-8.25	208.45	-8.25	131.51
70	0.55	35.88	-6.87	214.91	-6.87	136.41
75	0.48	31.08	-5.31	225.84	-5.31	145.60
80	0.43	26.33	-3.51	239.04	-3.51	157.11
85	0.38	21.70	-1.41	255.03	-1.41	172.71
90	0.34	17.25	1.08	272.08	1.08	186.42
95	0.27	13.21	3.98	295.65	3.98	203.33
100	0.30	9.97	7.03	308.74	7.03	213.12
105	0.00	8.93	8.23	461.70	8.23	303.27
110	0.00	10.21	6.77	319.51	6.77	221.62
115	0.00	13.36	3.85	300.01	3.85	209.73
120	0.00	16.99	1.24	287.81	1.24	200.48
125	0.00	20.53	-0.81	276.47	-0.81	192.67
130	0.00	23.96	-2.49	267.56	-2.49	186.30
135	0.00	27.26	-3.89	260.36	-3.89	180.98
140	0.00	30.39	-5.07	254.47	-5.07	176.50
145	0.00	33.32	-6.07	249.59	-6.07	172.70
150	0.00	36.01	-6.91	245.56	-6.91	169.49
155	0.00	38.41	-7.61	242.14	-7.61	166.83
160	0.00	40.48	-8.18	239.51	-8.18	164.67
165	0.00	42.16	-8.62	237.50	-8.62	161.49
170	0.00	43.40	-8.94	236.07	-8.94	160.29
175	0.00	44.17	-9.13	235.23	-9.13	159.58
180	0.28	44.14	-9.12	227.29	-9.12	151.16
185	0.29	43.88	-9.06	227.01	-9.06	150.80

# COMSEARCH

## Earth Station Data Sheet

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

### Coordination Values

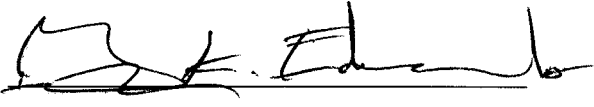
### WOODBINE, MD

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Latitude (NAD 83) 39° 22' 37.1" N  
Longitude (NAD 83) 77° 4' 49.1" W  
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Antenna Model Vertex 13.1 meter  
Antenna Mode Receive 11.0 GHz Transmit 14.0 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 0.5 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 14.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.28	43.13	-8.87	228.37	-8.87	152.04
195	0.36	41.83	-8.54	222.78	-8.54	145.90
200	0.28	40.23	-8.11	231.82	-8.11	154.86
205	0.24	38.21	-7.55	238.29	-7.55	161.16
210	0.32	35.75	-6.83	233.66	-6.83	155.39
215	0.00	33.32	-6.07	249.59	-6.07	172.70
220	0.00	30.39	-5.07	254.47	-5.07	176.50
225	0.00	27.26	-3.89	260.37	-3.89	180.98
230	0.33	23.73	-2.38	254.74	-2.38	173.54
235	0.41	20.25	-0.66	255.38	-0.66	172.21
240	0.33	16.77	1.39	274.83	1.39	188.62
245	0.30	13.16	4.02	292.77	4.02	200.81
250	0.33	9.69	7.34	306.82	7.34	211.27
255	0.30	8.00	9.42	452.92	9.42	296.75
260	0.32	9.11	8.02	312.77	8.02	215.07
265	0.37	12.29	4.76	289.90	4.76	198.41
270	0.32	16.45	1.60	277.07	1.60	190.44
275	0.43	20.91	-1.01	251.85	-1.01	169.02
280	0.47	25.58	-3.20	237.08	-3.20	154.70
285	0.47	30.36	-5.06	227.80	-5.06	147.31
290	0.37	35.22	-6.67	230.29	-6.67	151.69
295	0.28	40.11	-8.08	231.62	-8.08	154.62
300	0.29	45.00	-9.33	225.50	-9.33	149.51
305	0.00	49.94	-10.00	231.37	-10.00	156.37
310	0.47	54.81	-10.00	206.51	-10.00	131.19
315	0.64	59.73	-10.00	200.02	-10.00	124.19
320	0.64	64.68	-10.00	199.89	-10.00	124.07
325	0.85	69.62	-10.00	189.54	-10.00	115.08
330	1.13	74.56	-10.00	177.39	-10.00	105.38
335	1.16	79.52	-10.00	176.40	-10.00	104.63
340	1.03	84.48	-10.00	180.57	-10.00	107.84
345	0.78	89.44	-10.00	193.28	-10.00	118.24
350	0.58	94.39	-10.00	202.84	-10.00	126.76
355	0.40	99.34	-10.00	213.09	-10.00	137.56

## 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: May 04, 2021