

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**SES Americom, Inc.**  
**HAWLEY, PA**  
**(HMBJ)**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
September 30, 2020

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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 08/14/2020.

Company

AQ2AT LLC  
AT&T Wireless Services 3 LLC - PA  
Algonquin Gas Transmission, LLC  
Allentown SMSA Limited Partnership  
Auburn Data Systems, LLC  
Avangrid Networks, Inc.  
Binghamton MSA Limited Partnership(NY)  
Binghamton MSA Limited Partnership(PA)  
Blair County 911  
Blueline Communications  
Bradford County  
Broome County Emergency Services  
Cambria, County of  
Carbon, County of 911 Center  
Cellco Partnership - (W-NY)  
Cellco Partnership - Bridgeville, PA/WV  
Cellco Partnership- PA Region  
Central Hudson Gas & Electric Corp.  
Clearfield, County of  
Commonwealth of Pennsylvania-Radio Proj.  
Connecticut, State of  
Consolidated Edison Company of New York  
County of Centre  
County of Pike  
County of Warren, NJ  
Delaware County Emergency Services (NY)  
Dominion Energy Transmission, Inc.  
Dutchess County Emergency Response  
EMS of Northeast Pennsylvania  
Eastern MLG LLC  
Eastern Pennsylvania EMS Council  
Electric Railroad, LLC  
Essex County Sheriff's Office (NJ)  
Eversource Energy Service Company  
FELHC, Inc.  
Getwireless.Net  
Goosetown Network Services, LLC  
High Voltage Communications LLC (CFN)  
Highway Networks, LLC  
In The Stix Broadband LLC

Indiana, County of  
Jefferson Microwave, LLC  
Kryptick Technologies  
Lackawanna, County of  
Luzerne County of PA  
Monroe County Control Center (PA)  
Morris, County of  
NYNEX Mobile of New York LP  
Nassau County Police Department  
New Cingular Wireless PCS, LLC - PA  
New Jersey State Police  
New Jersey, State of -NJ Transit  
New Line Networks, LLC  
New York City Police Department  
New York Communications Co., Inc  
Northeast Pennsylvania SMSA LTD Prtnrsh  
Northumberland County DPS/911  
Office of Emergency Telecom Services, NJ  
Orange County Dept of Emergency Services  
Orange Poughkeepsie SMSA LTD Partnership  
Orange and Rockland Utilities, Inc.  
PSEG Services Corporation  
Pennsylvania Turnpike Commission  
Peoples Natural Gas Company LLC  
Pike County Commissioners  
Putnam County Bureau of Emerg. Services  
SW Networks  
Southampton, Town Of, Police Dept.  
Spectrum Holding Company LLC  
State of New York, Div of State Police  
Suffolk County Police Department  
Sullivan County DPW  
Susquehanna County PA  
T-Mobile License LLC  
Texas Eastern Communications, LLC  
Transcontinental Gas Pipe Line Co., LLC  
Transwave Communication Systems, Inc.  
Ulster County of  
Uniti Fiber LLC  
Verizon Wireless (VAW) LLC (NY)  
Verizon Wireless (VAW) LLC-Pennsylvania  
Wayne, County of  
Weblin Holdings LLC  
Westchester, County of  
Wireless Internetwork LLC  
World Class Wireless, LLC  
xWave Engineering 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: 09/30/2020  
Job Number: 200814COMSGE03

### Administrative Information

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

### Site Information

#### HAWLEY, PA

Venue Name  
Latitude (NAD 83) 41° 27' 52.1" N  
Longitude (NAD 83) 75° 7' 47.5" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 270.54 m / 887.6 ft

### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 5° W to 145° West Longitude  
Azimuth Range 103.5° to 256.4°  
Corresponding Elevation Angles 6.1° / 6.3°  
Antenna Centerline (AGL) 10.36 m / 34.0 ft

### Antenna Information

#### Receive - FCC32

#### Transmit - FCC32

Manufacturer	GD Satcom	GD Satcom	
Model	13 THBG	13 THBG	
Gain / Diameter	53.4 dBi / 13.0 m	57.1 dBi / 13.0 m	
3-dB / 15-dB Beamwidth	0.38° / 0.76°	0.26° / 0.52°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)	0.5 24.5	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)	57.6 81.6	
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)	N0N - 72M0G7W / 3625.0 - 4200.0	N0N - 72M0G7W / 5850.0 - 6425.0
Max Great Circle Coordination Distance	605.7 km / 376.3 mi	368.0 km / 228.6 mi
Precipitation Scatter Contour Radius	596.9 km / 370.9 mi	186.2 km / 115.7 mi



# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### HAWLEY, PA

Licensee Name SES Americom, Inc.  
Latitude (NAD 83) 41° 27' 52.1" N  
Longitude (NAD 83) 75° 7' 47.5" W  
Ground Elevation (AMSL) 270.54 m / 887.6 ft  
Antenna Centerline (AGL) 10.36 m / 34.0 ft  
Antenna Model GD Satcom 13m  
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 0.5 (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	4.58	103.46	-10.00	139.25	-10.00	100.00
5	3.59	98.45	-10.00	156.25	-10.00	100.00
10	2.50	93.45	-10.00	182.96	-10.00	100.00
15	2.37	88.46	-10.00	186.08	-10.00	100.00
20	2.72	83.47	-10.00	177.88	-10.00	100.00
25	3.03	78.48	-10.00	170.76	-10.00	100.00
30	2.83	73.49	-10.00	175.53	-10.00	100.00
35	2.76	68.50	-10.00	177.04	-10.00	100.00
40	2.62	63.51	-10.00	180.38	-10.00	100.00
45	1.86	58.56	-10.00	198.41	-10.00	105.52
50	2.18	53.56	-10.00	190.41	-10.00	100.00
55	2.55	48.56	-10.00	181.89	-10.00	100.00
60	2.62	43.57	-8.98	185.42	-8.98	100.00
65	2.52	38.60	-7.67	193.93	-7.67	100.00
70	1.95	33.69	-6.19	211.29	-6.19	116.09
75	1.60	28.79	-4.48	230.90	-4.48	130.69
80	1.36	23.91	-2.46	251.35	-2.46	143.06
85	1.39	19.03	0.01	267.13	0.01	152.92
90	2.18	14.01	3.34	263.56	3.34	145.90
95	2.46	9.21	7.90	291.08	7.90	160.26
100	2.60	4.93	14.69	346.74	14.69	192.91
105	2.03	4.36	16.02	559.97	16.02	346.84
110	1.97	7.59	9.99	325.28	9.99	184.59
115	2.75	10.58	6.38	270.35	6.38	146.72
120	3.17	13.75	3.54	238.15	3.54	128.68
125	3.62	16.78	1.38	214.23	1.38	112.74
130	4.32	19.48	-0.24	195.17	-0.24	100.00
135	4.58	22.36	-1.74	182.90	-1.74	100.00
140	4.62	25.21	-3.04	175.07	-3.04	100.00
145	4.96	27.59	-4.02	162.10	-4.02	100.00
150	4.39	30.48	-5.10	165.93	-5.10	100.00
155	3.00	33.84	-6.23	190.41	-6.23	100.00
160	2.65	36.00	-6.91	194.83	-6.91	100.00
165	2.79	37.35	-7.31	189.80	-7.31	100.00
170	2.78	38.44	-7.62	188.48	-7.62	100.00
175	2.69	39.18	-7.83	189.42	-7.83	100.00
180	2.44	39.66	-7.96	194.37	-7.96	100.00
185	2.21	39.66	-7.96	199.32	-7.96	104.40

# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

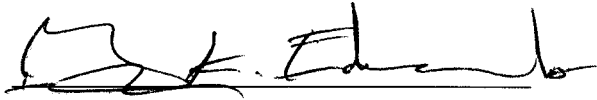
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Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%  
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power 0.5 (dBW/4 kHz)

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	2.38	38.82	-7.73	196.64	-7.73	101.81
195	3.69	36.50	-7.06	171.00	-7.06	100.00
200	4.44	34.36	-6.40	158.21	-6.40	100.00
205	4.53	32.48	-5.79	159.82	-5.79	100.00
210	4.33	30.53	-5.12	166.78	-5.12	100.00
215	4.03	28.36	-4.32	178.25	-4.32	100.00
220	4.28	25.48	-3.16	180.19	-3.16	100.00
225	4.30	22.57	-1.84	186.85	-1.84	100.00
230	4.40	19.42	-0.21	194.05	-0.21	100.00
235	4.86	15.86	1.99	198.89	1.99	100.00
240	5.57	12.01	5.01	204.90	5.01	100.56
245	6.10	8.20	9.16	224.37	9.16	111.55
250	6.85	4.17	16.49	266.92	16.49	133.03
255	7.40	0.39	42.23	605.66	42.23	367.99
260	8.02	4.03	16.87	251.11	16.87	122.30
265	8.64	8.95	8.20	189.90	8.20	100.00
270	9.71	14.06	3.30	146.12	3.30	100.00
275	10.39	19.07	-0.01	125.83	-0.01	100.00
280	11.38	24.15	-2.57	107.64	-2.57	100.00
285	11.59	29.09	-4.59	100.00	-4.59	100.00
290	11.64	34.02	-6.29	100.00	-6.29	100.00
295	11.61	38.95	-7.76	100.00	-7.76	100.00
300	11.64	43.90	-9.06	100.00	-9.06	100.00
305	11.80	48.88	-10.00	100.00	-10.00	100.00
310	11.58	53.82	-10.00	100.00	-10.00	100.00
315	11.86	58.81	-10.00	100.00	-10.00	100.00
320	11.83	63.78	-10.00	100.00	-10.00	100.00
325	11.53	68.74	-10.00	100.00	-10.00	100.00
330	10.83	73.70	-10.00	100.00	-10.00	100.00
335	9.64	78.66	-10.00	100.00	-10.00	100.00
340	8.54	83.65	-10.00	100.00	-10.00	100.00
345	7.66	88.65	-10.00	107.36	-10.00	100.00
350	6.28	93.64	-10.00	122.09	-10.00	100.00
355	5.41	98.64	-10.00	130.84	-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: September 30, 2020