

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**SES Americom, Inc.**  
**Vernon Valley, New Jersey**  
**Call Sign: WB81**  
**(E-Systems Antenna)**

**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, Virginia 20147  
June 13, 2012

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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

AT&T Corp.  
Auburn Data Systems, LLC  
Commonwealth of Pennsylvania – Radio Proj  
FELHC, Inc  
High Voltage Communications LLC  
iSignal  
Kryptic Technologies  
Monroe County Control Center (PA)  
Nassau County Police Department  
New Cingular Wireless PCS, LLC - NY  
New Cingular Wireless PCS, LLC - PA  
New Jersey State Police  
New Jersey Transit Rail Operations, Inc.  
New York Communications CO., Inc.  
Newgig Networks, LLC  
Northeast Pennsylvania SMSA Ltd. Partnership  
Orange and Rockland Utilities, Inc.  
Orange Poughkeepsie SMSA Ltd. Partnership  
Penn Service Microwave Co., Inc.  
SW Networks  
Turtle Networks 6384  
Turtle Networks 6457  
Weblin Holdings LLC

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 May 14, 2012.

#### Company

AB Services LLC  
ALGONQUIN GAS TRANSMISSION CO  
AT&T CORP  
Aerbender, LLC  
Allentown SMSA Limited Partnership  
Appalachian Broadcasting  
Atlantic City Electric Company  
Auburn Data Systems, LLC  
BFI Licenses, LLC  
Bedford, County of  
Borough of Huntingdon  
CAMDEN COUNTY  
CONNECTICUT STATE POLICE DEPARTMENT  
CONSOLIDATED EDISON COMPANY OF NEW YORK  
CTAB Holdings LLC  
Capital Communications of America  
Cellco Partnership - (W-NY)  
Cellco Partnership - CT, W-MA, VT  
Cellco Partnership- PA Region  
Cellco Partnership-Newark-Dallas Verizon  
Cellco Prtnrshp - Phil. Tri-State Rgn  
China Cat Productions LLC  
Commonwealth of Pennsylvania-Radio Proj.  
Comprehensive Wireless LLC  
Conterra Ultra Broadband, LLC  
Coral Reef Technologies Ltd  
Coralinks  
County of Warren  
Delmarva Power & Light Company  
Direct Broadcast Services, Inc.  
EASTERN PENNSYLVANIA EMS COUNCIL  
ECW Wireless, LLC  
EG Broadcast Newco Corp  
EMS OF NORTHEAST PENNSYLVANIA  
Eastern MLG LLC  
Essex County Sherrif Office

Company Continued)

FELHC, Inc.  
Fibertrack, LLC  
Fundamental Broadcasting LLC  
Garden State Transmissions  
Geneva Communications, LLC  
Gloucester, County of  
Goosetown Network Services, LLC  
High Voltage Communications LLC  
Jefferson Microwave, LLC  
Juniata County Emergency Services  
Kryptic Technologies  
MAHANTANGO MOUNTAIN MICROWAVE  
MB Microwave, LLC  
MVC Research. LLC  
Massachusetts Department of State Police  
Monroe County Control Center (PA)  
NEW YORK CITY POLICE DEPARTMENT  
Nassau County Police Department  
New Cingular Wireless PCS LLC -NJ  
New Cingular Wireless PCS LLC-DE/NH/RI  
New Cingular Wireless PCS of PA LLC  
New Cingular Wireless PCS, LLC (NY)  
New Cingular Wireless PCS, LLC - PA  
New Jersey State Police  
New Jersey Transit Rail Operations, Inc.  
New Jersey, State of -NJ Transit  
New York Communications CO., Inc  
New York, City of  
Newgig Networks, LLC  
Northeast Pennsylvania SMSA LTD Prtnrsh  
Northeast Utilities Services Company  
Orange Poughkeepsie SMSA LTD Partnership  
Orange and Rockland Utilities, Inc.  
PENNSYLVANIA TURNPIKE COMMISSION  
PSEG Services Corporation  
Passaic Valley Microwave  
Penn Service Microwave Co., Inc.  
Pike, County of PA  
Qoncept Holdings LLC  
SW Networks  
Stevens Institute of Technology  
Suffolk, County of  
TRF SERVICES LLC  
Texas Eastern Communications, Inc.  
Thought Transmissions, LLC  
Turtle Networks 6384  
Turtle Networks 6386  
Turtle Networks 6408  
Turtle Networks 6457  
Velox Networks LLC

Company Continued)

Weblin Holdings LLC  
Wireless Backhaul Infrastructure, LLC  
Wireless Internetwork LLC  
World Class Wireless LLC  
Zen Networks, Inc  
iSignal

## **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)726-5660 <http://www.comsearch.com>

Date: 06/13/2012  
Job Number: 120514COMSJC01

### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign WB81  
Licensee Code P3210  
Licensee Name SES Americom, Inc.

### Site Information VERNON VALLEY, NEW JERSEY

Venue Name  
Latitude (NAD 83) 41° 12' 6.3" N  
Longitude (NAD 83) 74° 31' 34.6" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 182.88 m / 600.0 ft

### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Analog and Digital  
Satellite Arc 26° W to 143° West Longitude  
Azimuth Range 120.2° to 255.4°  
Corresponding Elevation Angles 21.8° / 7.4°  
Antenna Centerline (AGL) 7.62 m / 25.0 ft

### Antenna Information

Manufacturer  
Model  
Gain / Diameter  
3-dB / 15-dB Beamwidth

### Receive

E-Systems  
13 Meter  
53.2 dBi / 13.0 m  
0.38° / 0.80°

### Transmit

E-Systems  
13 Meter  
56.9 dBi / 13.0 m  
0.26° / 0.50°

1M00F8W, 215KG7W to 36M0G7W

Max Available RF Power	(dBW/4 kHz)	-0.5	-2.7	-12.7
	(dBW/MHz)	23.5	21.3	11.3
Maximum EIRP	(dBW/4 kHz)	56.4	54.2	44.2
	(dBW/MHz)	80.4	78.2	68.2
	(dBW)	80.4	71.5	83.7

Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
	Short Term	-144.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%

### Frequency Information

Emission / Frequency Range (MHz)

### Receive 4.0 GHz

1M00F8W / 3700.0 - 4200.0  
215KG7W - 36M0G7W / 3700.0 - 4200.0

### Transmit 6.1 GHz

1M00F8W / 5925.0 - 6425.0  
215KG7W - 36M0G7W / 5925.0 - 6425.0

Max Great Circle Coordination Distance	494.8 km / 307.4 mi	305.4 km / 189.8 mi
Precipitation Scatter Contour Radius	571.5 km / 355.1 mi	155.5 km / 96.6 mi

# COMSEARCH

## Earth Station Data Sheet

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<b>Coordination Values</b>	<b>VERNON VALLEY, NJ</b>		
Licensee Name	SES Americom, Inc.		
Latitude (NAD 83)	41° 12' 6.3" N		
Longitude (NAD 83)	74° 31' 34.6" W		
Ground Elevation (AMSL)	182.88 m / 600.0 ft		
Antenna Centerline (AGL)	7.62 m / 25.0 ft		
Antenna Model	E-Systems 13 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	-144.0 dBW/MHz    0.01%	-131.0 dBW/4 kHz    0.0025%
Max Available RF Power			-0.5 (dBW/4 kHz)

Azimuth (°)	Receive 4.0 GHz			Transmit 6.1 GHz		
	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	4.63	104.55	-10.00	131.79	-10.00	100.00
5	3.41	109.52	-10.00	150.55	-10.00	100.00
10	2.68	109.05	-10.00	167.00	-10.00	100.00
15	1.65	104.26	-10.00	194.90	-10.00	107.69
20	2.40	99.63	-10.00	175.36	-10.00	100.00
25	2.85	94.93	-10.00	162.83	-10.00	100.00
30	3.09	90.20	-10.00	157.41	-10.00	100.00
35	1.65	85.51	-10.00	194.88	-10.00	107.68
40	0.59	80.88	-10.00	232.82	-10.00	141.86
45	0.00	76.29	-10.00	272.88	-10.00	179.20
50	0.00	71.68	-10.00	272.88	-10.00	179.20
55	0.00	67.09	-10.00	272.88	-10.00	179.20
60	0.00	62.53	-10.00	272.88	-10.00	179.20
65	0.00	58.02	-10.00	272.88	-10.00	179.20
70	0.00	53.55	-10.00	272.88	-10.00	179.20
75	1.05	48.80	-10.00	209.14	-10.00	122.98
80	1.76	44.16	-9.13	195.80	-9.13	107.47
85	1.91	39.80	-8.00	196.84	-8.00	107.19
90	2.18	35.52	-6.76	196.23	-6.76	105.71
95	2.48	31.38	-5.42	195.98	-5.42	104.52
100	2.75	27.51	-3.99	197.07	-3.99	104.50
105	2.81	24.16	-2.58	202.55	-2.58	108.47
110	2.62	21.65	-1.39	210.04	-1.39	116.54
115	2.51	19.97	-0.51	217.08	-0.51	121.89
120	2.93	18.89	0.10	211.00	0.10	116.38
125	2.69	19.70	-0.36	213.90	-0.36	119.15
130	3.27	20.89	-1.00	200.85	-1.00	105.91
135	3.61	23.30	-2.18	187.77	-2.18	100.00
140	4.30	25.67	-3.24	166.79	-3.24	100.00
145	4.25	28.41	-4.34	161.79	-4.34	100.00
150	4.16	30.92	-5.26	158.53	-5.26	100.00
155	4.73	32.56	-5.82	146.63	-5.82	100.00
160	3.90	35.12	-6.64	156.44	-6.64	100.00
165	3.12	37.32	-7.30	172.33	-7.30	100.00
170	3.15	38.36	-7.60	170.01	-7.60	100.00
175	3.33	38.84	-7.73	163.38	-7.73	100.00
180	2.87	39.51	-7.92	174.80	-7.92	100.00

# COMSEARCH

## Earth Station Data Sheet

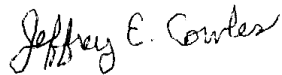
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	Short Term	-144.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power				-0.5 (dBW/4 kHz)	

Azimuth (°)	Receive 4.0 GHz			Transmit 6.1 GHz		
	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
185	2.51	39.65	-7.96	182.98	-7.96	100.00
190	2.04	39.44	-7.90	193.97	-7.90	104.53
195	0.48	39.81	-8.00	252.05	-8.00	155.99
200	0.00	38.67	-7.68	287.30	-7.68	188.13
205	0.24	36.50	-7.06	286.34	-7.06	186.49
210	0.74	33.81	-6.23	244.92	-6.23	147.82
215	1.98	30.26	-5.02	206.33	-5.02	115.84
220	2.00	27.50	-3.98	210.97	-3.98	119.20
225	2.53	24.13	-2.56	206.13	-2.56	113.88
230	3.41	20.34	-0.71	199.39	-0.71	104.44
235	3.71	16.87	1.32	203.79	1.32	107.12
240	4.11	13.21	3.98	207.94	3.98	110.42
245	4.56	9.42	7.65	222.45	7.65	118.28
250	4.92	5.63	13.24	255.69	13.24	134.54
255	5.40	2.05	24.23	494.84	24.23	305.44
260	6.04	4.76	15.05	252.68	15.05	131.80
265	6.81	9.58	7.46	194.84	7.46	100.00
270	8.54	14.61	2.88	144.47	2.88	100.00
275	9.66	19.69	-0.36	120.96	-0.36	100.00
280	10.08	24.70	-2.82	107.03	-2.82	100.00
285	11.84	29.87	-4.88	100.00	-4.88	100.00
290	11.39	34.77	-6.53	100.00	-6.53	100.00
295	10.89	39.70	-7.97	100.00	-7.97	100.00
300	10.34	44.64	-9.24	100.00	-9.24	100.00
305	9.59	49.60	-10.00	100.00	-10.00	100.00
310	9.88	54.61	-10.00	100.00	-10.00	100.00
315	8.96	59.58	-10.00	100.00	-10.00	100.00
320	8.45	64.57	-10.00	100.00	-10.00	100.00
325	8.54	69.57	-10.00	100.00	-10.00	100.00
330	9.42	74.58	-10.00	100.00	-10.00	100.00
335	9.42	79.57	-10.00	100.00	-10.00	100.00
340	9.42	84.57	-10.00	100.00	-10.00	100.00
345	8.33	89.57	-10.00	100.00	-10.00	100.00
350	7.24	94.57	-10.00	103.75	-10.00	100.00
355	5.94	99.56	-10.00	117.78	-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 13, 2012