

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
SES Americom, Inc.
SOUTH MTN, CA
(7.3 meter)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
October 24, 2017

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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

Los Angeles SMSA Ltd. Partnership
Skyriver Communications
Southern California Gas Company
Southern California Regional Rail Auth.

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 10/04/2017.

Company

ABC Holding Company Inc.
AT&T Mobility Spectrum LLC - Southern CA
Air Sites 2000 LLC
American Tower, LLC
BNS Electronics, Inc.
California Internet Solutions, Inc.
California Internet, L.P.
California Resources Corporation
California, State of
City of Los Angeles Dept Water & Power
City of Montebello
Communication Services, Inc.
Conterra Ultra Broadband, LLC
DM Ventures, Inc. dba Warp2Biz
Exxon Communications Company
Fresno MSA Limited Partnership
Frontier California Inc.
GTE Mobilnet of Santa Barbara LTD Ptsh
Glendale City California
ION Media Los Angeles License, Inc.
Imperial Irrigation District
KTLA, LLC
Kcindur Communications Inc
Kern, County of
LDM Engineering
Los Angeles City Info Technology Agency
Los Angeles County Dept of Public Works
Los Angeles County FCC Licensing Section
Los Angeles County Metro Transit Auth
Los Angeles Regional Interoperable Comm
Los Angeles SMSA Ltd. Partnership
Los Angeles Unified School District
MHO Networks
Metropolitan Water Dist of So California
New Cingular Wireless PCS - Los Angeles
New Cingular Wireless PCS LLC - N CAL
Nextel of California Inc.
Nextweb Inc
Northrop Grumman Systems Corp.
Nrj TV La License Co, LLC

Olympic Wireless, LLC
Orange, County of, CA
Pacific Bell Tel Com dba AT&T California
Pacific Lightwave Inc
Regents of the University of California
Riverside, County of
San Bernardino County of California
Santa Barbara Cellular Systems, Ltd.
Santa Barbara, County of
Skyriver Communications
Southern California Edison Company
Southern California Gas Company
Southern California Regional Rail Auth.
Spectrum Link, Inc.
Subrigo Corporation
T-Mobile License LLC
TV Microwaves Company
Turn Wireless, LLC
Union Pacific Railroad Company
Vectus, Inc
Ventura, County of
Verizon Wireless (VAW) LLC (Southern CA)
Verizon Wireless (VAW) LLC-N CA/NV
Western Technical Services

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: 10/24/2017
Job Number: 171004COMSGE07

Administrative Information

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

Site Information SOUTH MTN, CA

Venue Name
Latitude (NAD 83) 34° 19' 31.1" N
Longitude (NAD 83) 118° 59' 46.2" W
Climate Zone A
Rain Zone 4
Ground Elevation (AMSL) 308.61 m / 1012.5 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 46° W to 192° West Longitude
Azimuth Range 99.8° to 260.2°
Corresponding Elevation Angles 5.3° / 5.3°
Antenna Centerline (AGL) 4.88 m / 16.0 ft

Antenna Information

		Receive - FCC32		Transmit - FCC32	
Manufacturer		Alpha Satcom		Alpha Satcom	
Model		ASL 7.3 LMC		ASL 7.3 LMC	
Gain / Diameter		48.1 dBi / 7.3 m		51.8 dBi / 7.3 m	
3-dB / 15-dB Beamwidth		0.60° / 1.22°		0.44° / 0.88°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-2.7 21.3	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			49.1 73.1	
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 / 3700.0 - 4200.0	N0N - 72M0G7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	624.0 km / 387.7 mi	370.7 km / 230.3 mi
Precipitation Scatter Contour Radius	429.6 km / 266.9 mi	100.0 km / 62.1 mi

COMSEARCH

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

Coordination Values

SOUTH MTN, CA

Licensee Name SES Americom, Inc.
Latitude (NAD 83) 34° 19' 31.1" N
Longitude (NAD 83) 118° 59' 46.2" W
Ground Elevation (AMSL) 308.61 m / 1012.5 ft
Antenna Centerline (AGL) 4.88 m / 16.0 ft
Antenna Model Alpha Satcom 7.3 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 -2.7 (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	16.69	99.59	-10.00	100.00	-10.00	100.00
5	15.19	94.72	-10.00	100.00	-10.00	100.00
10	14.55	89.79	-10.00	100.00	-10.00	100.00
15	11.70	84.82	-10.00	100.00	-10.00	100.00
20	10.88	79.83	-10.00	100.00	-10.00	100.00
25	10.71	74.86	-10.00	100.00	-10.00	100.00
30	12.52	69.95	-10.00	100.00	-10.00	100.00
35	13.56	65.06	-10.00	100.00	-10.00	100.00
40	13.10	60.09	-10.00	100.00	-10.00	100.00
45	11.73	55.04	-10.00	100.00	-10.00	100.00
50	10.52	49.99	-10.00	100.00	-10.00	100.00
55	10.57	45.03	-9.34	100.00	-9.34	100.00
60	11.02	40.13	-8.09	100.00	-8.09	100.00
65	10.39	35.11	-6.64	100.00	-6.64	100.00
70	10.71	30.23	-5.01	101.80	-5.01	100.00
75	11.22	25.44	-3.14	106.27	-3.14	100.00
80	10.31	20.38	-0.73	123.08	-0.73	100.00
85	11.02	15.83	2.01	130.95	2.01	100.00
90	11.02	11.31	5.66	148.65	5.66	100.00
95	10.97	7.20	10.56	181.94	10.56	100.00
100	8.68	1.83	25.42	623.95	25.42	370.66
105	6.85	3.29	19.06	291.96	19.06	132.00
110	7.38	6.94	10.96	217.98	10.96	100.00
115	8.20	10.35	6.63	184.75	6.63	100.00
120	9.21	13.52	3.73	153.53	3.73	100.00
125	9.65	16.93	1.28	136.27	1.28	100.00
130	9.07	20.91	-1.01	131.88	-1.01	100.00
135	8.86	24.48	-2.72	126.19	-2.72	100.00
140	8.62	27.91	-4.14	122.28	-4.14	100.00
145	8.99	30.63	-5.15	114.78	-5.15	100.00
150	8.37	33.83	-6.23	115.65	-6.23	100.00
155	7.52	36.94	-7.19	120.04	-7.19	100.00
160	5.09	41.12	-8.35	139.44	-8.35	100.00
165	2.30	45.37	-9.42	190.45	-9.42	100.00
170	0.77	48.17	-10.00	233.27	-10.00	128.05
175	0.00	49.80	-10.00	285.28	-10.00	170.66
180	0.28	49.83	-10.00	274.96	-10.00	160.02
185	0.00	49.80	-10.00	285.28	-10.00	170.66

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Coordination Values

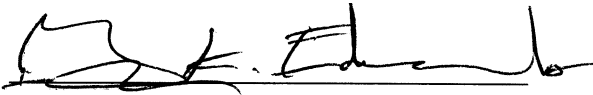
SOUTH MTN, CA

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Latitude (NAD 83)	34° 19' 31.1" N			
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Antenna Model	Alpha Satcom 7.3 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			-2.7 (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	0.51	48.40	-10.00	248.80	-10.00	138.62
195	1.38	46.19	-9.61	210.82	-9.61	108.99
200	2.72	43.17	-8.88	183.64	-8.88	100.00
205	4.53	39.44	-7.90	149.28	-7.90	100.00
210	4.83	36.65	-7.10	148.47	-7.10	100.00
215	4.75	33.84	-6.24	153.87	-6.24	100.00
220	3.07	31.88	-5.59	192.22	-5.59	100.00
225	5.08	27.12	-3.83	161.38	-3.83	100.00
230	7.20	22.18	-1.65	146.34	-1.65	100.00
235	8.24	17.87	0.70	146.51	0.70	100.00
240	9.27	13.48	3.75	153.12	3.75	100.00
245	11.07	8.53	8.73	169.62	8.73	100.00
250	12.19	3.97	17.02	208.70	17.02	100.00
255	12.38	0.52	39.05	399.63	39.05	190.28
260	11.36	3.42	18.64	620.49	18.64	369.28
265	10.14	6.71	11.33	193.47	11.33	100.00
270	8.94	10.43	6.54	176.09	6.54	100.00
275	9.09	15.25	2.42	147.31	2.42	100.00
280	11.61	20.72	-0.91	113.32	-0.91	100.00
285	13.22	25.94	-3.35	100.00	-3.35	100.00
290	13.78	30.86	-5.23	100.00	-5.23	100.00
295	14.31	35.79	-6.84	100.00	-6.84	100.00
300	12.77	40.36	-8.15	100.00	-8.15	100.00
305	12.17	45.19	-9.38	100.00	-9.38	100.00
310	12.53	50.17	-10.00	100.00	-10.00	100.00
315	14.21	55.27	-10.00	100.00	-10.00	100.00
320	14.00	60.16	-10.00	100.00	-10.00	100.00
325	14.13	65.10	-10.00	100.00	-10.00	100.00
330	13.94	70.02	-10.00	100.00	-10.00	100.00
335	14.66	74.99	-10.00	100.00	-10.00	100.00
340	13.73	79.89	-10.00	100.00	-10.00	100.00
345	13.27	84.83	-10.00	100.00	-10.00	100.00
350	14.57	89.78	-10.00	100.00	-10.00	100.00
355	15.53	94.71	-10.00	100.00	-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: October 24, 2017