FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

SES Americom, Inc.
Somis, California
(Call Sign: E930289

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
January 10, 2014

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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 Limited Partnership
New Cingular Wireless PCS – Los Angeles
Skyriver Communications
Southern California Edison Company
Southern California Gas Company
Southern California Regional Rail Authority
Verizon California Inc

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.

Expedited coordination data for this earth station was emailed and sent to the below listed carriers with a letter dated December 19, 2013.

Company

ABC Holding Company Inc.
AT&T California
AirSites2000, LLC
American Tower, LLC
California, State of
City Of Los Angeles, Dept Water & Power
Exxon Communications Company
Fresno MSA Limited Partnership
GTE Mobilnet of California LTD Partnersh
GTE Mobilnet of Santa Barbara LTD Ptnsh
ION Media Los Angeles License, Inc.
KTLA, LLC
Kern, County of
LOS ANGELES UNIFIED SCHOOL DISTRICT
Los Angeles City Info Technology Agency
Los Angeles County Dept of Public Works
Los Angeles County FCC Licensing Section
Los Angeles SMSA Ltd. Partnership
MONTEBELLO CITY CALIFORNIA
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.
Regents of the University 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.
TV MICROWAVES CO
Ventura, County of
Verizon California Inc.
Verizon Wireless (VAW) LLC (CA)
Vintage Production California LLC
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: 01/10/2014
Job Number: 131219COMSJC02

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	E930289
Licensee Code	P3210
Licensee Name	SES Americom, Inc.

Site Information — SOMIS, CALIFORNIA

Venue Name	
Latitude (NAD 83)	34° 19' 32.0" N
Longitude (NAD 83)	118° 59' 41.4" W
Climate Zone	A
Rain Zone	4
Ground Elevation (AMSL)	307.85 m / 1010.0 ft

Link Information

Satellite Type	Geostationary
Mode	TR - Transmit-Receive
Modulation	Analog and Digital
Satellite Arc	170° W to 186° West Longitude
Azimuth Range	245.5° to 256.5°
Corresponding Elevation Angles	23.3° / 10.3°
Antenna Centerline (AGL)	4.27 m / 14.0 ft

Antenna Information

	Receive	Transmit
Manufacturer	GD Satcom	GD Satcom
Model	6.3 Meter	6.3 Meter
Gain / Diameter	46.3 dBi / 6.3 m	50.2 dBi / 6.3 m
3-dB / 15-dB Beamwidth	0.84° / 1.58°	0.57° / 1.00°

		N0N	100KG7W to 10M0G7W
Max Available RF Power	(dBW/4 kHz)	0.5	-2.7 -2.7
	(dBW/MHz)	24.5	21.3 21.3
Maximum EIRP	(dBW/4 kHz)	50.7	47.5 47.5
	(dBW/MHz)	74.7	71.5 71.5
	(dBW)	50.7	61.5 81.5

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 / 3625.0 - 3700.0 100KG7W - 10M0G7W / 3625.0 - 3700.0 N0N / 3700.0 - 4200.0 100KG7W - 10M0G7W / 3700.0 - 4200.0	N0N / 5850.0 - 5925.0 100KG7W - 10M0G7W / 5850.0 - 5925.0 N0N / 5925.0 - 6424.0 100KG7W - 10M0G7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	285.3 km / 177.2 mi	183.1 km / 113.7 mi
Precipitation Scatter Contour Radius	388.2 km / 241.2 mi	123.4 km / 76.7 mi

COMSEARCH

Earth Station Data Sheet

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Coordination Values	**SOMIS, CA**			
Licensee Name	SES Americom, Inc.			
Latitude (NAD 83)	34° 19' 32.0" N			
Longitude (NAD 83)	118° 59' 41.4" W			
Ground Elevation (AMSL)	307.85 m / 1010.0 ft			
Antenna Centerline (AGL)	4.27 m / 14.0 ft			
Antenna Model	GD Satcom 6.3 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			0.5 (dBW/4 kHz)	

			Receive 4.0 GHz		Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	16.27	103.38	-10.00	100.00	-10.00	100.00
5	16.21	108.36	-10.00	100.00	-10.00	100.00
10	16.46	113.31	-10.00	100.00	-10.00	100.00
15	17.10	118.24	-10.00	100.00	-10.00	100.00
20	15.91	123.28	-10.00	100.00	-10.00	100.00
25	16.03	128.23	-10.00	100.00	-10.00	100.00
30	14.60	133.30	-10.00	100.00	-10.00	100.00
35	15.50	138.19	-10.00	100.00	-10.00	100.00
40	15.76	143.11	-10.00	100.00	-10.00	100.00
45	16.52	147.91	-10.00	100.00	-10.00	100.00
50	17.15	152.64	-10.00	100.00	-10.00	100.00
55	17.68	157.28	-10.00	100.00	-10.00	100.00
60	18.46	161.59	-10.00	100.00	-10.00	100.00
65	18.02	166.13	-10.00	100.00	-10.00	100.00
70	19.38	168.79	-10.00	100.00	-10.00	100.00
75	19.27	169.64	-10.00	100.00	-10.00	100.00
80	19.33	164.93	-10.00	100.00	-10.00	100.00
85	17.53	159.65	-10.00	100.00	-10.00	100.00
90	17.22	154.76	-10.00	100.00	-10.00	100.00
95	17.26	149.90	-10.00	100.00	-10.00	100.00
100	17.18	144.98	-10.00	100.00	-10.00	100.00
105	14.42	139.63	-10.00	100.00	-10.00	100.00
110	11.61	134.26	-10.00	100.00	-10.00	100.00
115	9.63	129.08	-10.00	100.00	-10.00	100.00
120	8.28	124.07	-10.00	101.35	-10.00	100.00
125	7.55	119.20	-10.00	108.52	-10.00	100.00
130	6.77	114.33	-10.00	116.80	-10.00	100.00
135	5.86	109.48	-10.00	126.60	-10.00	100.00
140	5.24	104.68	-10.00	132.55	-10.00	100.00
145	6.25	99.99	-10.00	122.48	-10.00	100.00
150	7.25	95.24	-10.00	111.72	-10.00	100.00
155	8.68	90.44	-10.00	100.00	-10.00	100.00
160	7.74	85.63	-10.00	106.45	-10.00	100.00
165	7.79	80.81	-10.00	106.01	-10.00	100.00
170	7.92	75.99	-10.00	104.65	-10.00	100.00
175	8.98	71.09	-10.00	100.00	-10.00	100.00
180	7.80	66.41	-10.00	105.92	-10.00	100.00

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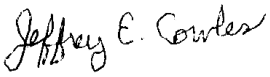
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power			0.5 (dBW/4 kHz)	

			Receive 4.0 GHz		Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
185	5.20	62.06	-10.00	132.88	-10.00	100.00
190	2.97	57.89	-10.00	172.19	-10.00	100.00
195	0.00	54.23	-10.00	285.28	-10.00	183.06
200	1.56	49.35	-10.00	206.26	-10.00	112.79
205	2.30	44.75	-9.27	191.07	-9.27	100.00
210	2.27	40.52	-8.19	196.93	-8.19	102.43
215	3.04	36.05	-6.92	186.04	-6.92	100.00
220	3.35	31.94	-5.61	185.92	-5.61	100.00
225	2.64	28.77	-4.47	206.73	-4.47	108.52
230	0.89	26.31	-3.50	264.58	-3.50	154.82
235	2.33	21.68	-1.40	227.75	-1.40	125.79
240	3.62	17.06	1.20	213.14	1.20	112.03
245	5.00	12.33	4.73	209.67	4.73	105.06
250	4.62	8.63	8.60	241.99	8.60	125.18
255	5.59	4.92	14.70	275.39	14.70	139.60
260	6.43	5.16	14.18	255.06	14.18	128.08
265	6.18	9.39	7.68	213.68	7.68	104.84
270	7.10	13.82	3.49	179.26	3.49	100.00
275	8.89	18.51	0.32	138.31	0.32	100.00
280	10.03	23.46	-2.26	118.33	-2.26	100.00
285	10.79	28.46	-4.36	104.04	-4.36	100.00
290	11.84	33.49	-6.12	100.00	-6.12	100.00
295	11.71	38.48	-7.63	100.00	-7.63	100.00
300	12.51	43.51	-8.96	100.00	-8.96	100.00
305	11.99	48.48	-10.00	100.00	-10.00	100.00
310	11.74	53.47	-10.00	100.00	-10.00	100.00
315	12.43	58.49	-10.00	100.00	-10.00	100.00
320	13.76	63.51	-10.00	100.00	-10.00	100.00
325	14.82	68.53	-10.00	100.00	-10.00	100.00
330	14.84	73.51	-10.00	100.00	-10.00	100.00
335	14.10	78.49	-10.00	100.00	-10.00	100.00
340	14.67	83.48	-10.00	100.00	-10.00	100.00
345	16.07	88.47	-10.00	100.00	-10.00	100.00
350	17.12	93.44	-10.00	100.00	-10.00	100.00
355	16.11	98.42	-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.



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Engineer III, Telecommunications
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Va. 20147

DATED: January 10, 2014