

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**Intelsat License LLC**  
**FILLMORE, CA**  
**(E000363)**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
September 29, 2015

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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 County FCC Licensing Section  
Los Angeles SMSA Ltd. Partnership  
Skyriver Communications  
Southern California Edison Company  
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 09/10/2015.

#### Company

ABC Holding Company Inc.  
AirSites2000, LLC  
American Tower, LLC  
Anaheim City, of  
BNS Electronics, Inc.  
California, State of  
Calvary Chapel of Costa Mesa  
City of Los Angeles Dept Water & Power  
City of Montebello  
Coast Community College District  
Communication Services, Inc.  
Conterra Ultra Broadband, LLC  
DM Ventures, Inc. dba Warp2Biz  
Encina Communications Company  
Entravision Holdings, LLC  
Exxon Communications Company  
Frazier Mountain Internet Service, Inc.  
Freeport-McMoRan Oil & Gas LLC  
Fresno MSA Limited Partnership  
GTE Mobilnet of Santa Barbara LTD Ptsh  
Glendale, City of  
ION Media Los Angeles License, Inc.  
KTLA, LLC  
Kern Ed Telecom Consortium  
Kern, County of  
LDM Engineering  
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 County Metro Transit Auth  
Los Angeles SMSA Ltd. Partnership  
MHO Networks  
MOBILE RELAY ASSOCIATES INC  
Metropolitan Water Dist of So California  
NRJ TV LA License Co, LLC  
New Cingular Wireless PCS - Los Angeles  
New Cingular Wireless PCS LLC - N CAL  
Nextel of California Inc.  
Nextweb Inc

Northrop Grumman Systems Corp.  
Olympic Wireless, LLC  
Orange, County of, CA  
Pacific Bell Tel Com dba AT&T California  
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.  
TV MICROWAVES CO  
Turn Wireless, LLC  
Union Pacific Railroad Company  
Ventura, County of  
Verizon California Inc.  
Verizon Wireless (VAW) LLC (Southern CA)  
Verizon Wireless (VAW) LLC-N CA/NV  
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: 09/29/2015  
Job Number: 150910COMSGE02

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### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign E000363  
Licensee Code INTELS  
Licensee Name Intelsat License LLC

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### Site Information

**FILLMORE, CA**  
Venue Name  
Latitude (NAD 83) 34° 24' 18.0" N  
Longitude (NAD 83) 118° 53' 39.0" W  
Climate Zone A  
Rain Zone 4  
Ground Elevation (AMSL) 305.0 m / 1000.7 ft

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### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 54° W to 145° West Longitude  
Azimuth Range 104.8° to 220.9°  
Corresponding Elevation Angles 12.0° / 41.3°  
Antenna Centerline (AGL) 11.1 m / 36.4 ft

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### Antenna Information

		<b>Receive - S40911</b>		<b>Transmit - S60911</b>	
Manufacturer		SCIENTIFIC-ATLANTA, INC		SCIENTIFIC-ATLANTA, INC	
Model		8009A 9.1 METER		8009A 9.1 METER	
Gain / Diameter		50.3 dBi / 9.1 m		53.8 dBi / 9.1 m	
3-dB / 15-dB Beamwidth		0.52° / 1.06°		0.36° / 0.72°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			4.9 28.9	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz) (dBW)			58.7 82.7 0.0	
Interference Objectives:	Long Term	-144.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%
	Short Term	-134.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%

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### Frequency Information

	<b>Receive 4.0 GHz</b>	<b>Transmit 6.1 GHz</b>
Emission / Frequency Range (MHz)	850KG7W / 3700.0 - 4200.0	850KG7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	229.8 km / 142.8 mi	205.8 km / 127.9 mi
Precipitation Scatter Contour Radius	342.8 km / 213.0 mi	209.8 km / 130.4 mi



# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147  
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### Coordination Values

### FILLMORE, CA

Licensee Name Intelsat License LLC  
Latitude (NAD 83) 34° 24' 18.0" N  
Longitude (NAD 83) 118° 53' 39.0" W  
Ground Elevation (AMSL) 305.0 m / 1000.7 ft  
Antenna Centerline (AGL) 11.1 m / 36.4 ft  
Antenna Model SCIENTIFIC-ATLANTA, INC 8009A 9.1 METER  
Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz  
Interference Objectives: Long Term -144.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%  
Short Term -134.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power 4.9 (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	8.33	104.80	-10.70	100.00	-11.24	100.00
5	7.08	99.80	-10.70	100.00	-11.40	100.00
10	7.13	94.81	-10.70	100.00	-11.35	100.00
15	8.32	89.83	-10.70	100.00	-11.32	100.00
20	9.71	84.84	-10.70	100.00	-11.38	100.00
25	9.62	79.84	-10.70	100.00	-11.36	100.00
30	8.22	74.86	-10.70	100.00	-11.28	100.00
35	8.63	69.87	-10.70	100.00	-11.24	100.00
40	9.02	64.87	-10.70	100.00	-11.47	100.00
45	8.56	59.89	-10.70	100.00	-11.27	100.00
50	7.16	54.97	-10.70	100.00	-11.53	100.00
55	7.53	49.98	-9.70	100.00	-11.50	100.00
60	8.83	44.92	-8.68	100.00	-9.18	100.00
65	9.24	39.91	-7.66	100.00	-8.16	100.00
70	8.51	34.98	-5.70	100.00	-6.20	100.00
75	6.97	30.21	-4.74	100.00	-5.24	100.00
80	5.71	25.56	-3.81	104.78	-3.42	100.00
85	6.21	20.62	-1.95	107.06	-3.20	100.00
90	5.95	15.99	-1.70	110.80	-0.79	100.00
95	5.05	12.01	1.29	131.60	1.79	110.17
100	2.87	10.31	2.99	179.49	3.49	151.00
105	2.94	9.04	4.26	184.66	4.76	155.92
110	2.18	11.07	2.23	191.46	2.73	163.27
115	1.96	14.24	-0.94	181.40	-0.20	154.85
120	0.86	18.72	-1.70	209.56	-2.43	183.22
125	1.56	22.12	-2.55	185.48	-3.20	153.29
130	3.02	24.90	-3.66	142.03	-3.20	122.75
135	2.50	28.81	-4.46	149.52	-4.72	126.67
140	2.70	32.08	-5.12	142.47	-5.62	119.47
145	2.79	35.21	-5.78	137.93	-6.28	115.18
150	2.86	38.10	-6.94	133.70	-7.44	109.69
155	3.39	40.30	-7.76	121.11	-8.26	100.00
160	3.46	42.45	-8.19	118.14	-8.69	100.00
165	3.37	44.32	-8.56	118.50	-9.06	100.00
170	3.46	45.52	-8.80	115.97	-9.62	100.00
175	3.37	46.39	-8.98	116.97	-10.31	100.00
180	2.48	47.54	-9.21	132.40	-11.23	103.09
185	2.59	47.17	-9.13	130.70	-10.93	102.09

# COMSEARCH

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### Coordination Values

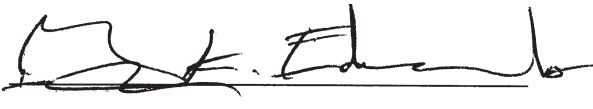
### FILLMORE, CA

Licensee Name Intelsat License LLC  
Latitude (NAD 83) 34° 24' 18.0" N  
Longitude (NAD 83) 118° 53' 39.0" W  
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Interference Objectives: Long Term -144.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%  
Short Term -134.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power 4.9 (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	2.44	46.49	-9.00	133.95	-10.40	106.84
195	0.85	46.58	-9.02	180.65	-10.46	146.57
200	0.64	44.87	-8.67	193.34	-9.17	163.54
205	1.29	42.55	-8.21	165.23	-8.71	137.92
210	0.96	41.53	-8.01	179.06	-8.51	148.59
215	1.19	40.45	-7.79	172.04	-8.29	142.15
220	0.00	41.29	-7.96	229.83	-8.46	205.82
225	0.00	41.45	-7.99	229.68	-8.49	205.70
230	0.00	42.09	-8.12	229.08	-8.62	205.21
235	0.00	43.20	-8.34	228.04	-8.84	204.37
240	0.00	44.75	-8.65	226.61	-9.15	203.19
245	0.00	46.68	-9.04	224.84	-10.54	197.88
250	0.00	48.94	-9.49	222.80	-11.37	194.70
255	0.00	51.50	-10.30	219.22	-11.24	195.20
260	0.00	54.31	-10.70	217.51	-11.52	194.12
265	0.00	57.32	-10.70	217.51	-11.50	194.21
270	0.00	60.51	-10.70	217.51	-11.54	194.07
275	1.03	63.40	-10.70	161.91	-11.47	134.98
280	1.04	66.90	-10.70	161.53	-11.46	134.70
285	2.63	70.03	-10.70	123.88	-11.46	100.00
290	3.91	73.51	-10.70	100.58	-11.39	100.00
295	3.79	77.42	-10.70	102.70	-11.52	100.00
300	4.43	81.27	-10.70	100.00	-11.51	100.00
305	4.07	85.28	-10.70	100.00	-11.30	100.00
310	3.63	89.26	-10.70	105.61	-11.23	100.00
315	2.64	93.18	-10.70	123.68	-11.32	100.00
320	3.26	97.13	-10.70	112.23	-11.46	100.00
325	3.46	101.07	-10.70	108.61	-11.24	100.00
330	4.26	105.12	-10.70	100.00	-11.43	100.00
335	5.11	109.22	-10.70	100.00	-11.26	100.00
340	5.89	113.33	-10.70	100.00	-15.20	100.00
345	6.28	117.31	-13.01	100.00	-17.20	100.00
350	7.61	114.75	-10.70	100.00	-16.91	100.00
355	8.39	109.79	-10.70	100.00	-11.28	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 29, 2015