

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**Intelsat License LLC**  
**Filmore, California**  
**(Call Sign: E00063)**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, Virginia 20147  
September 27, 2013

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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 transmit-receive earth station.

### Company

MetroPCS Networks California, LLC  
Los Angeles SMSA Ltd. Partnership  
AT&T California  
Los Angeles County Dept. of Public Works

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 September 18, 2013.

#### Company

ABC Holding Company Inc.  
AMERIQUEST MORTGAGE COMPANY  
ANACAPA Micro Products, Inc.  
AT&T COMMUNICATIONS OF CALIFORNIA, INC.  
AT&T California  
Airband Communications Inc  
Airwave Broadband Wireless, Inc.  
Alarmlink, Inc.  
Antelecom, Inc.  
Arizona, State Of Dept Of Public Safety  
BNSF Railway Company  
Bakersfield, City of  
Bel Air Internet, LLC  
Beta Operating Company LLC  
CARITAS TELECOMMUNICATIONS  
CBS Broadcasting Inc  
CNG Communications, Inc.  
California Water Service Company  
California, State of  
Catalina Broadband Solutions, LLC  
Chevron USA Inc.  
City Of Los Angeles, Dept Water & Power  
City of Pasadena, California  
City of Santa Barbara Water Resources De  
Clearwire Spectrum Holdings III, LLC  
Color BroadBand Inc.  
Community Services, Inc.  
DM Ventures, Inc. dba Warp2Biz  
Exxon Communications Company  
Fireline Network Solutions Inc.  
Fisher Wireless Services, Inc.  
Franklin Technology Systems, Inc.  
Fresno MSA Limited Partnership  
Frontier Communications of the Southwest

Company (Continued)

GTE Mobilnet of California LTD Partnersh  
GTE Mobilnet of Santa Barbara LTD Ptnsh  
Glendale, City of  
Grimmay Enterprises, Inc  
Iberdrola Renewables, LLC  
J G BOSWELL COMPANY  
KERN COUNTY SUPERINTENDENT OF SCHOOLS  
KERN SCHOOLS FEDERAL CREDIT UNION  
Kern, County of  
Kimtron, Inc.  
LOS ANGELES UNIFIED SCHOOL DISTRICT  
LT-WR, LLC  
Lockheed Martin Corp - Baltimore, MD  
Long Beach City California  
Long Beach City Electronics Div.  
Long Beach City Wireless Comm Div  
Long Beach City of, CA - Fire Department  
Los Angeles City Info Technology Agency  
Los Angeles County Dept of Public Works  
Los Angeles County FCC Licensing Section  
Los Angeles SMSA Ltd. Partnership  
Los Angeles, City of  
MHO Networks  
MONTEBELLO CITY CALIFORNIA  
MetroConnect Inc  
MetroPCS California, LLC  
MetroPCS Networks California, LLC  
Metropolitan Water Dist of So California  
NRJ TV III CA License Co, LLC  
NRJ TV LA License Co, LLC  
New Cingular Wireless PCS - Los Angeles  
New Cingular Wireless PCS LLC - N CAL  
Nextel of California Inc.  
Nextlink Wireless, LLC  
Nextweb, Inc.  
ORANGE COUNTY TRANSPORTATION AUTHORITY  
ORANGE, COUNTY OF, CA  
PALO VERDE IRRIGATION DISTRICT  
Port of Los Angeles  
Providence Health & Services  
RPM Wireless Internet, LLC  
Regents of the University of California  
Regional 3Cs  
Riverside, City of  
Riverside, County of  
ST. JOSEPH HEALTH SYSTEM  
San Bernardino Community Col Dis KVCR-TV  
San Bernardino County of California  
San Diego County  
San Diego County Water Authority  
San Diego Gas & Electric Company

Company (Continued)

Santa Barbara Cellular Systems, Ltd.  
Santa Barbara, County of  
Skyriver Communications  
Southern California Edison Company  
Southern California Gas Company  
Southern California Regional Rail Auth.  
Southern California Telephone Company  
Sprint Spectrum L.P  
Sprint Telephony PCS, L.P.  
T-Mobile License LLC  
TV MICROWAVES CO  
Tejon Ranch Co  
Temecula Valley Real Estate, Inc  
Towerstream Corp  
Turn Wireless, LLC  
Ultimate Internet Access, Inc.  
Union Pacific Railroad Company  
United Water Conservation District  
VENOCO, INC.  
VENTURA COUNTY COMMUNITY COLLEGE  
Vectus, Inc  
Ventura County Office of Education  
Ventura Regional Sanitation District  
Ventura, County of  
Venture Technologies Group, LLC  
Verizon California Inc.  
Verizon Wireless (VAW) LLC (CA)  
Verizon Wireless(VAW) LLC-AZ/CO/NM/NV/UT  
WEST COVINA, CITY OF  
WISPRENN  
WT Consulting Group, LLC  
WWC License LLC - AZ/CO/NM/NV/UT  
WiLine Spectrum Holdings LLC.  
enXco Services Corporation  
unWired Broadband, Inc

## **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: 09/27/2013  
Job Number: 130918COMSJC01

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### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign E000063  
Licensee Code INTELS  
Licensee Name Intelsat License LLC

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### Site Information FILMORE, CALIFORNIA

Venue Name  
Latitude (NAD 83) 34° 24' 18.0" N  
Longitude (NAD 83) 118° 53' 42.4" W  
Climate Zone A  
Rain Zone 4  
Ground Elevation (AMSL) 296.27 m / 972.0 ft

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### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 46° W to 139° West Longitude  
Azimuth Range 99.9° to 212.9°  
Corresponding Elevation Angles 5.4° / 44.6°  
Antenna Centerline (AGL) 7.32 m / 24.0 ft

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### Antenna Information

**Receive**  
Manufacturer RSI  
Model 1130 KS  
Gain / Diameter 61.2 dBi / 11.0 m  
3-dB / 15-dB Beamwidth 0.15° / 0.28°

### Transmit

RSI  
1130 KS  
62.5 dBi / 11.0 m  
0.13° / 0.24°

Max Available RF Power (dBW/4 kHz)  
(dBW/MHz)

-0.8  
23.2

Maximum EIRP (dBW/4 kHz)  
(dBW/MHz)  
(dBW)

61.7  
85.7  
85.0

Interference Objectives: Long Term -156.0 dBW/MHz 20%  
Short Term -146.0 dBW/MHz 0.01%

-151.0 dBW/4 kHz 20%  
-128.0 dBW/4 kHz 0.0025%

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### Frequency Information

Emission / Frequency Range (MHz)

#### Receive 11.0 GHz

180KFXD / 10950.0 - 11200.0  
64K0G7W - 36M0G7W / 10950.0 - 11200.0  
180KFXD / 11450.0 - 12700.0  
64K0G7W - 36M0G7W / 11450.0 - 12700.0

#### Transmit 14.0 GHz

850KFXD / 13750.0 - 13770.0  
850KFXD / 13780.0 - 14000.0  
850KFXD / 14000.0 - 14500.0

Max Great Circle Coordination Distance 685.3 km / 425.8 mi  
Precipitation Scatter Contour Radius 418.2 km / 259.8 mi

430.7 km / 267.6 mi  
141.6 km / 87.9 mi

# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### FILMORE, CA

Licensee Name Intelsat License LLC  
Latitude (NAD 83) 34° 24' 18.0" N  
Longitude (NAD 83) 118° 53' 42.4" W  
Ground Elevation (AMSL) 296.27 m / 972.0 ft  
Antenna Centerline (AGL) 7.32 m / 24.0 ft  
Antenna Model RSI 1130 KS  
Antenna Mode Receive 11.0 GHz Transmit 14.0 GHz  
Interference Objectives: Long Term -156.0 dBW/MHz 20% -151.0 dBW/4 kHz 20%  
Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%  
Max Available RF Power -0.8 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 14.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	8.87	99.85	-10.00	100.00	-10.00	100.00
5	8.65	94.86	-10.00	100.00	-10.00	100.00
10	8.47	89.87	-10.00	100.00	-10.00	100.00
15	8.99	84.88	-10.00	100.00	-10.00	100.00
20	10.09	79.90	-10.00	100.00	-10.00	100.00
25	10.69	74.93	-10.00	100.00	-10.00	100.00
30	10.62	69.95	-10.00	100.00	-10.00	100.00
35	10.05	64.96	-10.00	100.00	-10.00	100.00
40	9.87	59.97	-10.00	100.00	-10.00	100.00
45	10.00	55.00	-10.00	100.00	-10.00	100.00
50	9.71	50.00	-10.00	100.00	-10.00	100.00
55	8.86	44.97	-9.32	100.00	-9.32	100.00
60	8.43	39.96	-8.04	100.00	-8.04	100.00
65	9.45	35.07	-6.62	100.00	-6.62	100.00
70	8.65	30.03	-4.94	100.00	-4.94	100.00
75	7.64	24.96	-2.93	100.00	-2.93	100.00
80	6.43	19.89	-0.47	119.39	-0.47	100.00
85	6.76	14.93	2.65	128.16	2.65	100.00
90	6.66	9.95	7.06	148.86	7.06	100.00
95	6.17	4.93	14.68	204.10	14.68	103.78
100	5.16	0.26	46.70	685.29	46.70	430.72
105	4.15	4.87	14.82	229.33	14.82	126.86
110	3.15	9.47	7.59	208.26	7.59	116.53
115	1.55	14.39	3.05	222.32	3.05	130.18
120	0.77	18.78	0.16	236.06	0.16	145.08
125	1.68	22.04	-1.58	200.36	-1.58	112.78
130	3.07	24.87	-2.89	156.12	-2.89	100.00
135	2.49	28.82	-4.49	161.96	-4.49	100.00
140	2.94	31.91	-5.60	145.29	-5.60	100.00
145	3.01	35.06	-6.62	139.21	-6.62	100.00
150	2.83	38.12	-7.53	138.93	-7.53	100.00
155	3.46	40.24	-8.12	126.17	-8.12	100.00
160	3.66	42.28	-8.65	120.75	-8.65	100.00
165	3.39	44.29	-9.16	123.52	-9.16	100.00
170	3.62	45.37	-9.42	118.73	-9.42	100.00
175	3.40	46.36	-9.65	121.52	-9.65	100.00
180	2.55	47.47	-9.91	134.88	-9.91	100.00
185	2.73	47.03	-9.81	131.74	-9.81	100.00

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Antenna Model	RSI 1130 KS		
Antenna Mode	Receive 11.0 GHz		Transmit 14.0 GHz
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz 20%
Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power			-0.8 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 14.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	2.58	46.36	-9.65	135.30	-9.65	100.00
195	0.83	46.61	-9.71	191.76	-9.71	113.06
200	0.69	45.41	-9.43	200.07	-9.43	120.10
205	1.54	43.65	-9.00	168.77	-9.00	100.00
210	1.22	43.47	-8.95	179.47	-8.95	102.41
215	1.34	43.30	-8.91	175.64	-8.91	100.00
220	0.00	45.05	-9.34	234.27	-9.34	154.06
225	0.00	45.88	-9.54	233.39	-9.54	153.36
230	0.00	47.11	-9.83	232.12	-9.83	152.34
235	0.00	48.72	-10.00	231.37	-10.00	151.74
240	0.00	50.66	-10.00	231.37	-10.00	151.74
245	0.00	52.89	-10.00	231.37	-10.00	151.74
250	0.00	55.38	-10.00	231.37	-10.00	151.74
255	0.00	58.09	-10.00	231.37	-10.00	151.74
260	0.00	60.99	-10.00	231.37	-10.00	151.74
265	0.00	64.04	-10.00	231.37	-10.00	151.74
270	0.00	67.23	-10.00	231.37	-10.00	151.74
275	1.16	70.12	-10.00	176.42	-10.00	101.02
280	1.10	73.58	-10.00	178.50	-10.00	102.60
285	2.88	76.71	-10.00	129.55	-10.00	100.00
290	4.18	80.19	-10.00	108.05	-10.00	100.00
295	4.23	83.96	-10.00	107.43	-10.00	100.00
300	4.78	87.75	-10.00	100.61	-10.00	100.00
305	4.21	91.57	-10.00	107.67	-10.00	100.00
310	3.71	95.34	-10.00	115.06	-10.00	100.00
315	2.80	98.97	-10.00	130.95	-10.00	100.00
320	3.49	102.77	-10.00	118.86	-10.00	100.00
325	3.96	106.56	-10.00	110.95	-10.00	100.00
330	4.24	110.29	-10.00	107.20	-10.00	100.00
335	5.02	114.15	-10.00	100.00	-10.00	100.00
340	6.36	118.25	-10.00	100.00	-10.00	100.00
345	6.46	114.86	-10.00	100.00	-10.00	100.00
350	7.49	109.85	-10.00	100.00	-10.00	100.00
355	8.60	104.84	-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.



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

DATED: September 27, 2013