

**FREQUENCY COORDINATION AND INTERFERENCE  
ANALYSIS REPORT**

Prepared for  
**Intelsat License LLC**  
**Nuevo (Riverside), California**

**Satellite Earth Station**

Prepared By:  
**COMSEARCH**  
19700 Janelia Farm Boulevard  
Ashburn, Virginia 20147  
November 7, 2011

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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

Airband Communications, Inc.  
Aircell, LLC – GoGo, Inc.  
AT&T California  
Clearwire Spectrum Holdings III, LLC  
Color Broadband, Inc.  
Los Angeles SMSA Ltd. Partnership  
New Cingular Wireless PCS – Los Angeles  
NSAC, LLC  
Orange County of, CA  
Riverside, County of  
San Bernardino County of California  
Southern California Edison Company  
T-Mobile License 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 September 11, 2011.

#### Company

ABC Holding Company Inc.  
ABC Radio Los Angeles Assets, LLC  
AIRCELL, LLC - GOGO, LLC  
AMERIQUEST MORTGAGE COMPANY  
ARIZONA, STATE OF DEPT OF PUBLIC SAFETY  
AT&T COMMUNICATIONS OF CALIFORNIA, INC.  
AT&T California  
AirSites2000, LLC  
Airband Communications Inc  
Antelecom, Inc.  
BNSF Railway Company  
CALIFORNIA WATER SERVICE COMPANY  
CARITAS TELECOMMUNICATIONS  
CBS Broadcasting Inc  
CNG Communications, Inc.  
California, State of  
Central Arizona Water Conservation Distr  
City of Pasadena, California  
Clearwire Spectrum Holdings III, LLC  
Color BroadBand Inc.  
Community Services, Inc.  
Coolidge Unified School District #21  
Fireline Network Solutions Inc.  
Franklin Technology Systems, Inc.  
Fresno MSA Limited Partnership  
Frontier Communications of the Southwest  
GILA RIVER TELECOMMUNICATIONS, INC.  
Gila River Cellular General Partnership  
Glendale, City of  
Goff, Wayne C.  
ITT Corporation  
Imperial Irrigation District  
International Communications Network Inc  
KERN COUNTY SUPERINTENDENT OF SCHOOLS  
KERN ED TELECOM CONSORTIUM  
Kern, County of

Company (Continued)

LOS ANGELES CITY WATER & POWER  
LOS ANGELES UNIFIED SCHOOL DISTRICT  
LT-WR, LLC  
Lightwave Broadband 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  
METROPOLITAN AREA NETWORKS, INC.  
MONTEBELLO CITY CALIFORNIA  
Maricopa County Wireless Systems  
MetroConnect Inc  
Metropolitan Water Dist of So California  
NSAC, LLC  
New Cingular Wireless PCS LLC - AZ  
New Cingular Wireless PCS - Los Angeles  
New Cingular Wireless PCS LLC - N CAL  
New Cingular Wireless PCS LLC -San Diego  
Nextel of California Inc.  
Nextlink Wireless, Inc  
Nextweb Inc  
ORANGE COUNTY TRANSPORTATION AUTHORITY  
ORANGE, COUNTY OF, CA  
PACIFIC ENERGY RESOURCES, LTD  
Pinal County Community College  
QWEST CORPORATION  
Regional 3Cs  
Riverside, City of  
Riverside, County of  
SAN DIEGO COUNTY  
SAN DIEGO COUNTY SUPER. OF SCHOOLS  
SAN DIEGO, CITY OF  
SIERRA SANDS UNIFIED SCHOOL DISTRICT  
SKYRIVER COMMUNICATIONS INC  
SOUTHERN CALIFORNIA REGIONAL RAIL AUTH.  
ST. JOSEPH HEALTH SYSTEM  
SWWG, LLC  
San Bernardino Community Col Dis KVCR-TV  
San Bernardino County of California  
San Diego Gas & Electric Company  
Southern California Edison Company  
Southern California Gas Company  
Southern California Telephone Company  
Sprint Telephony PCS, L.P.

Company (Continued)

T-MOBILE USA, INC.  
T-Mobile License LLC  
TEJON RANCH COMPANY  
TV MICROWAVES CO  
Towerstream Corp  
Trango Systems, Inc.  
Turn Wireless, LLC  
Union Pacific Railroad Company  
University of California, HPWREN  
VENTURA COUNTY COMMUNITY COLLEGE  
Vectus, Inc  
Ventura County Office of Education  
Ventura Regional Sanitation District  
Ventura, County of  
Verizon California Inc.  
Verizon Wireless (VAW) LLC (CA)  
Verizon Wireless (VAW) LLC (Georgia)  
Verizon Wireless (VAW) LLC-AZ/CO/NM/NV/UT  
WEST COVINA, CITY OF  
WT Consulting Group, LLC  
WWC License LLC - AZ/CO/NM/NV/UT  
Western Technical Services  
Wireless Guys, 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: 11/07/2011  
Job Number: 110911COMSJC02

### Administrative Information

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

### Site Information

**NUEVO, CALIFORNIA**  
Venue Name  
Latitude (NAD 83) 33° 47' 48.0" N  
Longitude (NAD 83) 117° 5' 20.0" W  
Climate Zone A  
Rain Zone 4  
Ground Elevation (AMSL) 562.0 m / 1843.8 ft

### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Analog & Digital  
Satellite Arc 44° W to 190° West Longitude  
Azimuth Range 99.6° to 260.3°  
Corresponding Elevation Angles 5.3° / 5.5°  
Antenna Centerline (AGL) 8.53 m / 28.0 ft

### Antenna Information

	Receive	Transmit
Manufacturer	GD Satcom	GD Satcom
Model	13.1 Meter	13.1 Meter
Gain / Diameter	61.9 dBi / 13.1 m	63.5 dBi / 13.1 m
3-dB / 15-dB Beamwidth	0.14° / 0.26°	0.12° / 0.22°

Max Available RF Power	(dBW/4 kHz)	-14.0
	(dBW/MHz)	10.0

Maximum EIRP	(dBW/4 kHz)	49.5
	(dBW/MHz)	73.5

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%

### Frequency Information

	Receive 11.0 GHz	Transmit 14.0 GHz
Emission / Frequency Range (MHz)	N0N / 10950.0 - 11200.0	N0N / 14000.0 - 14500.0
	600KF2D / 10950.0 - 11200.0	600KF2D / 14000.0 - 14500.0
	1M00F2D / 10950.0 - 11200.0	1M00F2D / 14000.0 - 14500.0
	56K0G7W - 72M0G7W / 10950.0 - 11200.0	56K0G7W - 72M0G7W / 14000.0 - 14500.0
	N0N / 11450.0 - 12200.0	
	600KF2D / 11450.0 - 12200.0	
	1M00F2D / 11450.0 - 12200.0	
	56K0G7W - 72M0G7W / 11450.0 - 12200.0	

Max Great Circle Coordination Distance	680.5 km / 422.8 mi	300.0 km / 186.4 mi
Precipitation Scatter Contour Radius	418.9 km / 260.2 mi	100.0 km / 62.1 mi

# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### NUEVO, CA

Licensee Name	Intelsat License LLC		
Latitude (NAD 83)	33° 47' 48.0" N		
Longitude (NAD 83)	117° 5' 20.0" W		
Ground Elevation (AMSL)	562.0 m / 1843.8 ft		
Antenna Centerline (AGL)	8.53 m / 28.0 ft		
Antenna Model	GD Satcom 13.1 Meter		
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		-14.0 (dBW/4 kHz)	

Azimuth (°)	Horizon		Receive 11.0 GHz		Transmit 14.0 GHz	
	Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	1.31	99.58	-10.00	171.43	-10.00	100.00
5	2.45	94.60	-10.00	136.46	-10.00	100.00
10	2.23	89.60	-10.00	141.16	-10.00	100.00
15	2.76	84.61	-10.00	130.33	-10.00	100.00
20	3.19	79.61	-10.00	124.03	-10.00	100.00
25	2.86	74.62	-10.00	129.99	-10.00	100.00
30	3.85	69.61	-10.00	112.68	-10.00	100.00
35	3.43	64.62	-10.00	119.82	-10.00	100.00
40	3.44	59.62	-10.00	119.74	-10.00	100.00
45	3.44	54.62	-10.00	119.63	-10.00	100.00
50	3.07	49.64	-10.00	126.12	-10.00	100.00
55	2.85	44.66	-9.25	131.61	-9.25	100.00
60	2.71	39.67	-7.96	139.63	-7.96	100.00
65	3.57	34.64	-6.49	130.41	-6.49	100.00
70	3.67	29.64	-4.80	134.04	-4.80	100.00
75	3.13	24.69	-2.81	155.15	-2.81	100.00
80	3.52	19.68	-0.35	158.97	-0.35	100.00
85	3.81	14.68	2.83	172.50	2.83	100.00
90	3.48	9.78	7.25	202.66	7.25	100.00
95	2.91	5.20	14.11	250.86	14.11	100.00
100	2.84	2.52	21.96	626.83	21.96	272.78
105	3.04	5.73	13.05	241.10	13.05	100.00
110	3.71	9.37	7.71	200.47	7.71	100.00
115	3.78	13.31	3.90	179.31	3.90	100.00
120	3.80	17.21	1.11	160.19	1.11	100.00
125	3.88	20.99	-1.05	147.10	-1.05	100.00
130	3.79	24.77	-2.85	140.39	-2.85	100.00
135	3.72	28.41	-4.34	135.18	-4.34	100.00
140	3.78	31.79	-5.56	130.49	-5.56	100.00
145	4.15	34.73	-6.52	120.99	-6.52	100.00
150	3.43	38.20	-7.55	128.76	-7.55	100.00
155	2.31	41.73	-8.51	146.02	-8.51	100.00
160	2.79	43.64	-9.00	133.62	-9.00	100.00
165	4.10	44.30	-9.16	111.99	-9.16	100.00
170	3.95	45.73	-9.50	112.88	-9.50	100.00
175	4.16	46.29	-9.64	109.54	-9.64	100.00
180	4.73	45.98	-9.56	102.67	-9.56	100.00
185	5.57	44.90	-9.31	100.00	-9.31	100.00

# COMSEARCH

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### Coordination Values

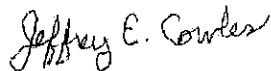
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			-151.0 dBW/4 kHz
Short Term	-146.0 dBW/MHz	0.01%	20%
			-128.0 dBW/4 kHz
Max Available RF Power			-14.0 (dBW/4 kHz)

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	5.93	43.82	-9.04	100.00	-9.04	100.00
195	5.51	43.00	-8.84	100.00	-8.84	100.00
200	4.93	41.81	-8.53	103.83	-8.53	100.00
205	5.10	39.49	-7.91	104.21	-7.91	100.00
210	5.80	36.38	-7.02	101.18	-7.02	100.00
215	5.96	33.40	-6.09	103.11	-6.09	100.00
220	5.72	30.43	-5.08	108.86	-5.08	100.00
225	5.51	27.21	-3.87	115.39	-3.87	100.00
230	5.62	23.59	-2.32	120.47	-2.32	100.00
235	5.57	19.92	-0.48	127.98	-0.48	100.00
240	5.62	16.09	1.84	135.70	1.84	100.00
245	5.20	12.44	4.63	154.61	4.63	100.00
250	4.43	8.94	8.22	190.70	8.22	100.00
255	4.62	4.81	14.94	221.76	14.94	100.00
260	4.21	1.30	29.19	680.49	29.19	300.04
265	4.87	4.75	15.09	218.80	15.09	100.00
270	4.18	9.79	7.23	189.33	7.23	100.00
275	3.33	14.86	2.70	182.86	2.70	100.00
280	2.87	19.87	-0.46	176.94	-0.46	100.00
285	1.28	25.04	-2.97	204.92	-2.97	100.00
290	1.22	29.98	-4.92	197.92	-4.92	100.00
295	0.75	34.99	-6.60	206.28	-6.60	100.00
300	0.00	40.02	-8.06	240.08	-8.06	120.67
305	0.00	44.97	-9.32	234.35	-9.32	117.49
310	0.41	49.90	-10.00	212.26	-10.00	100.00
315	0.00	54.89	-10.00	231.37	-10.00	115.80
320	0.00	59.86	-10.00	231.37	-10.00	115.80
325	0.00	64.83	-10.00	231.37	-10.00	115.80
330	0.00	69.80	-10.00	231.37	-10.00	115.80
335	0.00	74.78	-10.00	231.37	-10.00	115.80
340	0.00	79.75	-10.00	231.37	-10.00	115.80
345	0.00	84.73	-10.00	231.37	-10.00	115.80
350	0.00	89.71	-10.00	231.37	-10.00	115.80
355	0.29	94.69	-10.00	222.76	-10.00	108.84

## 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: November 7, 2011