

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

NBC TELEMUNDO LICENSE LLC
Universal City, California

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
May 6, 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 proposed transmit-receive earth station.

Company

Los Angeles County Department of Public Works
Los Angeles County FCC Licensing Section
Los Angeles City Info Technology Section
Los Angeles SMSA Ltd. Partnership
Southern California Edison Company
Southern California Regional Rail Authority

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 23, 2012. A frequency coordination extension notice was forwarded on March 21, 2013.

Company

ABC Holding Company Inc.
ANAHEIM CITY, COMMUNICATIONS DIVISION
AT&T California
AirSites2000, LLC
American Tower, LLC
BNSF Railway Company
CCO SoCal I, LLC
CNG Communications, Inc.
COAST COMMUNITY COLLEGE DISTRICT
California, State of
Calvary Chapel of Costa Mesa
City Of Los Angeles, Dept Water & Power
Entravision Holdings, LLC
Fresno MSA Limited Partnership
GTE Mobilnet of California LTD Partnersh
Goff, Wayne C.
KERN ED TELECOM CONSORTIUM
KTLA INC
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
MHO Networks
MOBILE RELAY ASSOCIATES INC
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.
ORANGE, COUNTY OF, CA
Riverside, County of

Company (Continued)

San Bernardino County of California
Santa Barbara Cellular Systems, Ltd.
Skyriver Communications
Southern California Edison Company
Southern California Gas Company
Southern California Regional Rail Auth.
T-Mobile License LLC
TV MICROWAVES CO
Turn Wireless, LLC
Ventura, County of
Verizon California Inc.
Verizon Wireless (VAW) LLC (CA)
Vintage Production California LLC
Western Pacific Mobile Microwave
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: 05/06/2013
Job Number: 120923COMSJC01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code NBCTEL
Licensee Name NBC TELEMUNDO LICENSE LLC

Site Information UNIVERSAL CITY, CALIFORNIA

Venue Name
Latitude (NAD 83) 34° 8' 29.3" N
Longitude (NAD 83) 118° 20' 47.1" W
Climate Zone A
Rain Zone 4
Ground Elevation (AMSL) 167.94 m / 551.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 72° W to 139° West Longitude
Azimuth Range 118.2° to 213.9°
Corresponding Elevation Angles 27.1° / 44.6°
Antenna Centerline (AGL) 6.1 m / 20.0 ft

Antenna Information

	Receive	Transmit
Manufacturer	GD SATCOM Technologies	GD SATCOM Technologies
Model	9 Meter	9 Meter
Gain / Diameter	50.1 dBi / 9.0 m	53.6 dBi / 9.0 m
3-dB / 15-dB Beamwidth	0.53° / 1.11°	0.36° / 0.76°
Max Available RF Power (dBW/4 kHz)		-13.0
(dBW/MHz)		11.0
Maximum EIRP (dBW/4 kHz)		40.6
(dBW/MHz)		64.6
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)	2M00G7W - 36M0G7W / 3700.0 - 4200.0	2M00G7W - 36M0G7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	285.3 km / 177.2 mi	134.3 km / 83.4 mi
Precipitation Scatter Contour Radius	362.5 km / 225.2 mi	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values

UNIVERSAL CITY, CA

Licensee Name NBC TELEMUNDO LICENSE LLC
Latitude (NAD 83) 34° 8' 29.3" N
Longitude (NAD 83) 118° 20' 47.1" W
Ground Elevation (AMSL) 167.94 m / 551.0 ft
Antenna Centerline (AGL) 6.1 m / 20.0 ft
Antenna Model GD SATCOM Technologies 9 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 -13.0 (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	0.34	114.93	-10.00	267.72	-10.00	123.85
5	0.84	110.66	-10.00	229.09	-10.00	100.00
10	0.77	106.23	-10.00	232.92	-10.00	100.00
15	1.16	101.82	-10.00	215.44	-10.00	100.00
20	1.30	97.35	-10.00	211.23	-10.00	100.00
25	1.61	92.86	-10.00	205.17	-10.00	100.00
30	1.32	88.35	-10.00	210.72	-10.00	100.00
35	1.69	83.83	-10.00	202.92	-10.00	100.00
40	1.51	79.34	-10.00	205.25	-10.00	100.00
45	0.94	74.94	-10.00	223.79	-10.00	100.00
50	0.82	70.52	-10.00	230.32	-10.00	100.00
55	0.58	66.18	-10.00	244.33	-10.00	107.48
60	0.41	61.89	-10.00	259.43	-10.00	118.15
65	0.20	57.69	-10.00	284.94	-10.00	134.08
70	3.60	52.30	-10.00	156.20	-10.00	100.00
75	5.08	47.46	-9.91	134.46	-9.91	100.00
80	7.59	42.18	-8.63	113.54	-8.63	100.00
85	7.99	37.73	-7.42	114.25	-7.42	100.00
90	9.28	32.94	-5.94	109.01	-5.94	100.00
95	10.91	28.01	-4.18	103.94	-4.18	100.00
100	10.44	24.46	-2.71	113.48	-2.71	100.00
105	11.96	19.97	-0.51	112.83	-0.51	100.00
110	12.26	16.90	1.30	119.25	1.30	100.00
115	13.07	14.38	3.05	122.27	3.05	100.00
120	9.46	17.74	0.78	135.50	0.78	100.00
125	7.70	20.53	-0.81	144.57	-0.81	100.00
130	8.56	21.89	-1.50	134.12	-1.50	100.00
135	9.47	24.19	-2.59	121.55	-2.59	100.00
140	9.39	27.49	-3.98	116.29	-3.98	100.00
145	8.78	30.95	-5.27	116.08	-5.27	100.00
150	8.53	33.88	-6.25	114.20	-6.25	100.00
155	7.45	37.19	-7.26	120.55	-7.26	100.00
160	8.68	38.13	-7.53	107.66	-7.53	100.00
165	8.39	39.94	-8.04	108.14	-8.04	100.00
170	6.78	42.61	-8.74	121.66	-8.74	100.00
175	7.11	42.98	-8.83	117.73	-8.83	100.00
180	6.31	44.01	-9.09	125.38	-9.09	100.00
185	5.51	44.57	-9.23	132.97	-9.23	100.00

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Coordination Values

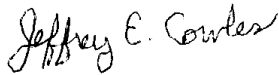
UNIVERSAL CITY, CA

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Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz 20%
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Max Available RF Power			-13.0 (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	4.41	44.90	-9.31	144.75	-9.31	100.00
195	4.96	43.14	-8.87	138.66	-8.87	100.00
200	4.88	41.67	-8.49	141.40	-8.49	100.00
205	5.52	39.89	-8.02	136.40	-8.02	100.00
210	6.05	38.69	-7.69	133.88	-7.69	100.00
215	6.83	37.76	-7.43	126.45	-7.43	100.00
220	7.79	37.21	-7.27	116.87	-7.27	100.00
225	7.03	38.92	-7.76	123.00	-7.76	100.00
230	5.90	41.40	-8.43	132.40	-8.43	100.00
235	6.10	43.08	-8.86	128.59	-8.86	100.00
240	4.64	46.48	-9.68	139.70	-9.68	100.00
245	4.56	49.03	-10.00	139.54	-10.00	100.00
250	4.66	51.71	-10.00	138.21	-10.00	100.00
255	3.76	55.23	-10.00	152.68	-10.00	100.00
260	2.61	58.97	-10.00	180.54	-10.00	100.00
265	1.36	62.77	-10.00	209.52	-10.00	100.00
270	0.86	66.24	-10.00	228.10	-10.00	100.00
275	0.00	69.87	-10.00	285.28	-10.00	134.30
280	0.00	73.24	-10.00	285.28	-10.00	134.30
285	0.23	76.62	-10.00	281.22	-10.00	132.88
290	0.28	80.11	-10.00	274.98	-10.00	128.75
295	0.29	83.65	-10.00	274.57	-10.00	128.47
300	0.24	87.22	-10.00	280.70	-10.00	132.54
305	0.25	90.80	-10.00	278.68	-10.00	131.21
310	0.34	94.38	-10.00	268.11	-10.00	124.12
315	0.34	97.94	-10.00	268.57	-10.00	124.43
320	0.32	101.47	-10.00	270.17	-10.00	125.52
325	0.35	104.96	-10.00	266.33	-10.00	122.91
330	0.38	108.40	-10.00	262.88	-10.00	120.54
335	0.41	111.76	-10.00	260.14	-10.00	118.64
340	0.43	115.02	-10.00	257.91	-10.00	117.09
345	0.44	118.16	-10.00	256.84	-10.00	116.34
350	0.43	121.15	-10.00	257.67	-10.00	116.92
355	0.39	119.26	-10.00	262.27	-10.00	120.11

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: May 6, 2013