

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Hope Channel, Inc.
RIVERSIDE, CA
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
February 29, 2016

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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 Ltd. Partnership
Metropolitan Water Dist of So California
Riverside, County of
Southern California Edison Company
Southern California Gas Company

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 02/10/2016. Company name change sent 02/29/2016.

Company

ABC Holding Company Inc.
AirSites2000, LLC
Anaheim City, of
BNSF Railway Company
CCO SoCal I, LLC
California, State of
Calvary Chapel of Costa Mesa
Cellco Partnership - Southern California
City of Los Angeles Dept Water & Power
City of Montebello
Coast Community College District
DM Ventures, Inc. dba Warp2Biz
Entravision Holdings, LLC
Glendale, City of
Global Telecom & Technology Americas, In
ION Media Los Angeles License, Inc.
KTLA, LLC
LOS ANGELES UNIFIED SCHOOL DISTRICT
Lightwave Broadband LLC
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 -San Diego
Nextel of California Inc.
Norris, Samuel O
Northrop Grumman Systems Corp.
Olympic Wireless, LLC
Orange, County of, CA
Pacific Bell Tel Com dba AT&T California
Regional 3Cs
Riverside, County of
San Bernardino County of California
San Diego Broadband

San Diego County Water Authority
San Diego Gas & Electric Company
San Diego, County of
Skyriver Communications
Southern California Edison Company
Southern California Gas Company
Southern California Regional Rail Auth.
Station Venture Operations, LP
T-Mobile License LLC
TV MICROWAVES CO
Turn Wireless, LLC
Ultimate Internet Access, Inc
Union Pacific Railroad Company
University of California, HPWREN
Vectus, Inc
Verizon California Inc.
Verizon Wireless (VAW) LLC (Southern CA)
Western Technical Services
White, Fred K

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: 02/29/2016
Job Number: 160229COMSTC02

Administrative Information

Licensee Name Hope Channel, Inc.

Site Information

RIVERSIDE, CA

Latitude (NAD 83) 33° 55' 4.2" N
Longitude (NAD 83) 117° 29' 34.8" W
Climate Zone A
Rain Zone 4
Ground Elevation (AMSL) 221.64 m / 727.2 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 85° W to 188° West Longitude
Azimuth Range 131.2° to 258.8°
Corresponding Elevation Angles 37.5° / 7.5°
Antenna Centerline (AGL) 3.0 m / 9.8 ft

Antenna Information

Receive

Manufacturer SUMAN
Gain / Diameter 43.6 dBi / 4.5 m
3-dB / 15-dB Beamwidth 1.50° / 3.00°

Transmit

SUMAN
47.3 dBi / 4.5 m
1.00° / 2.00°

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

3M00G7W - 36M0G7W

-16.0 -16.0
8.0 8.0

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

31.3 31.3
55.3 55.3
60.05 70.84

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

-154.0 dBW/4 kHz 20%
-131.0 dBW/4 kHz 0.0025%

Frequency Information

Receive 4.0 GHz

Emission / Frequency Range (MHz) 3M00G7W - 36M0G7W / 3700.0 - 4200.0

Transmit 6.1 GHz

3M00G7W - 36M0G7W / 5925.0 - 6425.0

Max Great Circle Coordination Distance 475.6 km / 295.5 mi
Precipitation Scatter Contour Radius 407.5 km / 253.2 mi

172.9 km / 107.4 mi
100.0 km / 62.1 mi

COMSEARCH

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Coordination Values

RIVERSIDE, CA

Licensee Name Hope Channel, Inc.
Latitude (NAD 83) 33° 55' 4.2" N
Longitude (NAD 83) 117° 29' 34.8" W
Ground Elevation (AMSL) 221.64 m / 727.2 ft
Antenna Centerline (AGL) 3.0 m / 9.8 ft
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 -16.0 (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	0.85	101.10	-10.00	228.71	-10.00	100.00
5	0.94	106.07	-10.00	223.58	-10.00	100.00
10	0.73	111.02	-10.00	235.32	-10.00	100.00
15	1.13	110.84	-10.00	216.13	-10.00	100.00
20	1.05	106.92	-10.00	218.68	-10.00	100.00
25	1.02	102.98	-10.00	219.58	-10.00	100.00
30	0.77	98.97	-10.00	233.08	-10.00	100.00
35	0.66	94.98	-10.00	239.83	-10.00	100.00
40	0.46	90.98	-10.00	254.67	-10.00	106.93
45	0.71	86.98	-10.00	236.40	-10.00	100.00
50	0.44	83.01	-10.00	256.22	-10.00	108.01
55	0.54	79.04	-10.00	247.15	-10.00	101.69
60	0.80	75.05	-10.00	231.45	-10.00	100.00
65	0.70	71.17	-10.00	237.00	-10.00	100.00
70	1.25	67.17	-10.00	212.82	-10.00	100.00
75	1.33	63.35	-10.00	210.31	-10.00	100.00
80	0.63	59.95	-10.00	241.80	-10.00	100.00
85	0.47	56.49	-10.00	252.87	-10.00	105.66
90	0.36	53.18	-10.00	265.51	-10.00	114.40
95	0.41	49.97	-10.00	259.67	-10.00	110.40
100	0.48	46.97	-9.79	253.56	-9.79	105.84
105	0.56	44.22	-9.14	250.96	-9.14	102.98
110	0.62	41.81	-8.53	250.46	-8.53	101.66
115	0.92	39.58	-7.94	235.53	-7.94	100.00
120	1.26	37.75	-7.42	225.53	-7.42	100.00
125	1.20	36.79	-7.14	228.92	-7.14	100.00
130	1.22	36.33	-7.01	228.89	-7.01	100.00
135	1.26	36.44	-7.04	227.40	-7.04	100.00
140	1.61	36.84	-7.16	216.00	-7.16	100.00
145	1.38	38.35	-7.59	220.65	-7.59	100.00
150	1.46	40.07	-8.07	215.83	-8.07	100.00
155	2.78	41.25	-8.38	184.63	-8.38	100.00
160	3.35	43.04	-8.85	169.23	-8.85	100.00
165	2.55	45.57	-9.47	184.42	-9.47	100.00
170	2.41	47.06	-9.82	185.97	-9.82	100.00
175	2.34	47.95	-10.00	186.73	-10.00	100.00
180	1.88	48.69	-10.00	197.78	-10.00	100.00
185	2.04	48.26	-10.00	193.71	-10.00	100.00

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Antenna Centerline (AGL)	3.0 m / 9.8 ft				
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				-16.0 (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	1.77	47.66	-9.95	200.85	-9.95	100.00
195	2.04	46.03	-9.58	195.54	-9.58	100.00
200	0.89	45.11	-9.36	229.54	-9.36	100.00
205	0.60	42.95	-8.83	250.22	-8.83	101.96
210	1.31	39.68	-7.96	220.88	-7.96	100.00
215	1.24	36.71	-7.12	227.86	-7.12	100.00
220	1.01	33.58	-6.15	240.85	-6.15	100.00
225	2.06	29.42	-4.72	216.06	-4.72	100.00
230	3.19	25.08	-2.98	202.51	-2.98	100.00
235	4.65	20.44	-0.76	187.05	-0.76	100.00
240	4.92	16.46	1.59	195.78	1.59	100.00
245	6.42	11.65	5.34	199.16	5.34	100.00
250	6.54	7.64	9.92	223.06	9.92	100.00
255	7.54	3.04	19.91	284.47	19.91	100.00
260	6.04	1.84	25.38	475.62	25.38	172.85
265	4.29	6.94	10.97	266.41	10.97	100.00
270	3.35	11.90	5.12	244.59	5.12	100.00
275	3.84	16.56	1.52	210.37	1.52	100.00
280	4.09	21.43	-1.27	193.30	-1.27	100.00
285	4.41	26.34	-3.52	175.99	-3.52	100.00
290	4.61	31.29	-5.39	160.53	-5.39	100.00
295	3.58	36.35	-7.01	173.64	-7.01	100.00
300	3.05	41.37	-8.42	178.26	-8.42	100.00
305	2.50	46.38	-9.66	184.67	-9.66	100.00
310	2.44	51.35	-10.00	184.52	-10.00	100.00
315	2.95	56.29	-10.00	172.57	-10.00	100.00
320	4.79	61.21	-10.00	136.40	-10.00	100.00
325	3.79	66.23	-10.00	152.13	-10.00	100.00
330	3.77	71.22	-10.00	152.46	-10.00	100.00
335	1.84	76.24	-10.00	198.96	-10.00	100.00
340	1.10	81.23	-10.00	217.09	-10.00	100.00
345	1.47	86.20	-10.00	206.39	-10.00	100.00
350	0.76	91.17	-10.00	233.91	-10.00	100.00
355	1.51	96.14	-10.00	205.26	-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.



Timothy O. Crutcher
Frequency Planner
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: February 29, 2016