

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Hawaii Pacific Teleport, L.P.
KAPOLEI, HI
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
November 01, 2019

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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.

Nor 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 11/01/2019.

Company

3G Wireless, LLC
AERIAL VIDEO SYSTEMS
Alascom Inc
Ascent Media Network Services, LLC
Bellsouth Telecommunications, Inc.
Borgeson, Tom R.
Broadcast Sports Inc.
Carolina Telephone and Telegraph Co
Casper, John
CenturyTel of the Southwest, Inc.
Chicago Comnet Corp
Cincinnati Bell Wireless LLC
Citywide News Network, Inc.
Cowboys Stadium LP
DCI II, INC.
Direct Broadcast Services, Inc.
Frontier California Inc.
Global Telecom & Technology Americas, In
Gray Television Licensee, LLC
HF Enterprises, Inc
Hallco Unlimited, Inc.
Hawaii Public Television Foundation
Hawaiian Telcom, Inc.
Heiden, William
Illinois Bell Telephone Company
Indiana Bell Telephone Company
Information & Display Systems, Inc.
Information Super Station, LLC
International Communications Group, Inc.
KITV, Inc
Kalo TV, Inc.
Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
Lesea Broadcasting of Hawaii, Inc.
MERCURY COMMUNICATIONS
Michigan Bell Telephone Company
Moreen, Steven K
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NEXSTAR BROADCASTING, INC.
NRJ TV Hawaii License Co, LLC
NSM Surveillance

Navajo Communications Company
NorthWest Suburbs Community Access Corp
Oceanic Time Warner Cable LLC
Ohio Bell GTelephone Company
Onboard Images
Pacific Bell Tel Com dba AT&T California
Penn Service Microwave Co., Inc.
Plateau Telecommunications, Inc.
Plum TV, LLC
Production & Satellite Services, Inc.
Quick Link Connections Inc.
Qwest Corporation
RCC Minnesota Inc. - MN NE ND SD
REMOTE FACILITIES CONSULTING SERVICES
RF Central, LLC
RF Film, Inc
Radiofone, Inc.
Randy Hermes Production
Remote Broadcasts, Inc.
Southwestern Bell Telephone L.P.
Speedshotz, Inc
TTWN Networks, LLC
Unisat, Inc.
United Telephone - Southeast
VERIZON SOUTH INC.
Verizon Maryland, Inc.
Verizon New England Inc.
Verizon New Jersey, Inc.
Verizon New York, Inc.
Verizon North Inc.
Verizon Northwest Inc.
Verizon Pennsylvania, Inc.
Verizon Virginia, Inc.
Verizon Washington DC, Inc.
Vyvx, LLC
Westar Satellite Services LP
Winged Vision Inc
Wisconsin Bell Telephone Company
Wolfe Air Aviation

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: 11/01/2019
Job Number: 191101COMSTC07

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E010236
Licensee Code HAWPAC
Licensee Name Hawaii Pacific Teleport, L.P.

Site Information

KAPOLEI, HI

Venue Name
Latitude (NAD 83) 21° 20' 10.2" N
Longitude (NAD 83) 158° 5' 18.0" W
Climate Zone A
Rain Zone 4
Ground Elevation (AMSL) 39.39 m / 129.2 ft

Link Information

Satellite Type Geostationary
Mode TO - Transmit-Only
Modulation Digital
Satellite Arc 133° W to 133° West Longitude
Azimuth Range 127.9° to 127.9°
Corresponding Elevation Angles 52.2° / 52.2°
Antenna Centerline (AGL) 5.0 m / 16.4 ft

Antenna Information

Transmit

Manufacturer Vertex
Model KPK
Gain / Diameter 59.8 dBi / 8.1 m
3-dB / 15-dB Beamwidth 0.20° / 0.40°

Max Available RF Power (dBW/4 kHz) 64K0G7W - 36M0G7W -14.2 -14.2
(dBW/MHz) 9.8 9.8

Maximum EIRP (dBW/4 kHz) 45.6 45.6
(dBW/MHz) 69.6 69.6
(dBW) 56.67 85.14

Interference Objectives: Long Term -151.0 dBW/4 kHz 20%
Short Term -128.0 dBW/4 kHz 0.0025%

Frequency Information

Transmit 13.0 GHz

Emission / Frequency Range (MHz) 64K0G7W - 36M0G7W / 13000.0 - 13250.0

Max Great Circle Coordination Distance 117.4 km / 72.9 mi
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

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Earth Station Data Sheet

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Coordination Values	KAPOLEI, HI
Licensee Name	Hawaii Pacific Teleport, L.P.
Latitude (NAD 83)	21° 20' 10.2" N
Longitude (NAD 83)	158° 5' 18.0" W
Ground Elevation (AMSL)	39.39 m / 129.2 ft
Antenna Centerline (AGL)	5.0 m / 16.4 ft
Antenna Model	FCC Reference 32-25LOG(THETA)
Antenna Mode	Transmit 13.0 GHz
Interference Objectives: Long Term	-151.0 dBW/4 kHz 20%
Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-14.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	10.98	117.49	-10.00	100.00
5	11.04	114.11	-10.00	100.00
10	11.14	110.63	-10.00	100.00
15	10.88	106.96	-10.00	100.00
20	10.81	103.30	-10.00	100.00
25	10.62	99.58	-10.00	100.00
30	10.21	95.83	-10.00	100.00
35	10.08	92.12	-10.00	100.00
40	10.06	88.41	-10.00	100.00
45	10.08	84.71	-10.00	100.00
50	9.90	81.05	-10.00	100.00
55	9.79	77.43	-10.00	100.00
60	8.89	74.08	-10.00	100.00
65	7.64	71.03	-10.00	100.00
70	7.33	67.85	-10.00	100.00
75	6.42	65.10	-10.00	100.00
80	4.94	62.91	-10.00	100.00
85	3.88	60.83	-10.00	100.00
90	2.99	58.95	-10.00	100.00
95	0.00	59.01	-10.00	117.41
100	0.00	57.19	-10.00	117.41
105	0.00	55.62	-10.00	117.41
110	0.00	54.31	-10.00	117.41
115	0.00	53.31	-10.00	117.41
120	0.00	52.62	-10.00	117.41
125	0.00	52.26	-10.00	117.41
130	0.00	52.23	-10.00	117.41
135	0.00	52.55	-10.00	117.41
140	0.00	53.19	-10.00	117.41
145	0.00	54.15	-10.00	117.41
150	0.00	55.41	-10.00	117.41
155	0.00	56.95	-10.00	117.41
160	0.00	58.74	-10.00	117.41
165	0.00	60.76	-10.00	117.41
170	0.00	62.97	-10.00	117.41
175	0.00	65.37	-10.00	117.41
180	0.00	67.91	-10.00	117.41
185	0.00	70.58	-10.00	117.41

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Earth Station Data Sheet

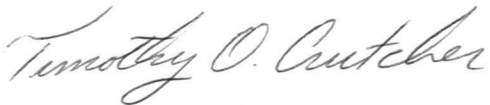
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Max Available RF Power	-14.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	73.36	-10.00	117.41
195	0.00	76.23	-10.00	117.41
200	0.00	79.17	-10.00	117.41
205	0.00	82.16	-10.00	117.41
210	0.00	85.20	-10.00	117.41
215	0.00	88.25	-10.00	117.41
220	0.00	91.32	-10.00	117.41
225	0.00	94.37	-10.00	117.41
230	0.00	97.41	-10.00	117.41
235	0.00	100.41	-10.00	117.41
240	0.00	103.36	-10.00	117.41
245	0.00	106.24	-10.00	117.41
250	0.00	109.03	-10.00	117.41
255	0.00	111.72	-10.00	117.41
260	0.00	114.28	-10.00	117.41
265	0.00	116.70	-10.00	117.41
270	0.00	118.94	-10.00	117.41
275	0.00	120.99	-10.00	117.41
280	0.00	122.81	-10.00	117.41
285	0.00	124.38	-10.00	117.41
290	0.49	126.14	-10.00	100.00
295	2.65	129.23	-10.00	100.00
300	3.44	130.77	-10.00	100.00
305	4.15	131.88	-10.00	100.00
310	4.83	132.59	-10.00	100.00
315	7.05	134.40	-10.00	100.00
320	8.43	134.90	-10.00	100.00
325	9.62	134.71	-10.00	100.00
330	9.98	133.31	-10.00	100.00
335	9.96	131.21	-10.00	100.00
340	9.48	128.46	-10.00	100.00
345	9.68	125.98	-10.00	100.00
350	10.45	123.58	-10.00	100.00
355	10.45	120.49	-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.

A handwritten signature in cursive script that reads "Timothy O. Crutcher".

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

DATED: November 01, 2019