

# 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  
September 17, 2018

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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 receive-only earth station.

Company

Hawaii State

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 08/30/2018.

Company

AT&T Corp.  
Cellco Partnership - Hawaii  
Clearwire Hawaii Partners Spectrum LLC  
Clearwire Spectrum Holdings III, LLC  
Coral Wireless Licenses, LLC  
County of Kauai Department of Police  
Harmer Radio and Electronics, Inc.  
Hawaii Catholic TV, Inc  
Hawaii Dialogix Telecom LLC  
Hawaii State  
Hawaiian Electric Company, Inc  
Hawaiian Telcom, Inc.  
Honolulu Board of Water Supply  
Honolulu City & County Dept of Info Tech  
Maui Electric Company Ltd  
Maui Wellness Group LLC  
Maui, County of  
Mid Pacific Communications Inc.  
NPCR, Inc.  
New Cingular Wireless PCS LLC - Hawaii  
Oceanic Time Warner Cable LLC  
Olympic Wireless, LLC  
Servpac, Inc  
Sprint Spectrum L.P.  
Sprintcom, Inc  
T-Mobile License LLC  
Trex Broadband  
Verizon Wireless VAW LLC - (Hawaii)

## **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: 09/17/2018  
Job Number: 180830COMSTC07

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### Administrative Information

Call Sign E030115  
Licensee Code HAWPAC  
Licensee Name Hawaii Pacific Teleport, L.P.

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### Site Information

**KAPOLEI, HI**  
Latitude (NAD 83) 21° 20' 8.9" N  
Longitude (NAD 83) 158° 5' 17.8" W  
Climate Zone A  
Rain Zone 4  
Ground Elevation (AMSL) 36.58 m / 120.0 ft

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### Link Information

Satellite Type Geostationary  
Mode RO - Receive-Only  
Modulation Digital  
Satellite Arc 222° W to 222° West Longitude  
Azimuth Range 259.9° to 259.9°  
Corresponding Elevation Angles 15.8° / 15.8°  
Antenna Centerline (AGL) 3.0 m / 9.8 ft

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### Antenna Information

**Receive**  
Manufacturer Andrew Corp  
Model ESA45  
Gain / Diameter 51.6 dBi / 4.5 m  
3-dB / 15-dB Beamwidth 0.80° / 1.60°

Interference Objectives: Long Term -154.1 dBW/MHz 20%  
Short Term -142.8 dBW/MHz 0.01%

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### Frequency Information

**Receive 11.0 GHz**  
Emission / Frequency Range (MHz) 100KG1D - 54M0G1D / 11450.0 - 11700.0

Max Great Circle Coordination Distance 274.5 km / 170.5 mi  
Precipitation Scatter Contour Radius 362.4 km / 225.2 mi

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### Coordination Values

### KAPOLEI, HI

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Antenna Centerline (AGL) 3.0 m / 9.8 ft  
Antenna Mode Receive 11.0 GHz  
Interference Objectives: Long Term -154.1 dBW/MHz 20%  
Short Term -142.8 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	9.64	100.04	-10.00	100.00
5	9.59	105.01	-10.00	100.00
10	10.66	110.02	-10.00	100.00
15	10.24	114.98	-10.00	100.00
20	10.74	119.97	-10.00	100.00
25	11.24	124.97	-10.00	100.00
30	11.57	129.97	-10.00	100.00
35	11.13	134.91	-10.00	100.00
40	11.22	139.88	-10.00	100.00
45	9.95	144.68	-10.00	100.00
50	9.28	149.46	-10.00	100.00
55	8.75	154.18	-10.00	100.00
60	7.56	158.52	-10.00	100.00
65	6.87	162.68	-10.00	100.00
70	5.81	165.97	-10.00	100.00
75	4.94	168.08	-10.00	100.00
80	0.00	164.19	-10.00	218.01
85	0.00	163.40	-10.00	218.01
90	0.30	161.55	-10.00	208.97
95	0.00	158.27	-10.00	218.01
100	0.00	154.63	-10.00	218.01
105	0.00	150.61	-10.00	218.01
110	0.00	146.34	-10.00	218.01
115	0.00	141.92	-10.00	218.01
120	0.00	137.39	-10.00	218.01
125	0.00	132.77	-10.00	218.01
130	0.00	128.11	-10.00	218.01
135	0.00	123.40	-10.00	218.01
140	0.00	118.66	-10.00	218.01
145	0.00	113.89	-10.00	218.01
150	0.00	109.11	-10.00	218.01
155	0.00	104.32	-10.00	218.01
160	0.00	99.52	-10.00	218.01
165	0.00	94.71	-10.00	218.01
170	0.00	89.90	-10.00	218.01
175	0.00	85.09	-10.00	218.01
180	0.00	80.28	-10.00	218.01
185	0.00	75.48	-10.00	218.01



# COMSEARCH

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### Coordination Values

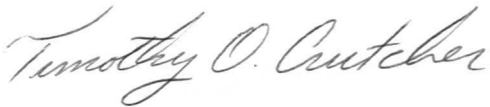
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Antenna Mode Receive 11.0 GHz  
Interference Objectives: Long Term -154.1 dBW/MHz 20%  
Short Term -142.8 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	70.69	-10.00	218.01
195	0.00	65.91	-10.00	218.01
200	0.00	61.15	-10.00	218.01
205	0.00	56.41	-10.00	218.01
210	0.00	51.70	-10.00	218.01
215	0.00	47.03	-9.81	218.77
220	0.00	42.42	-8.69	223.33
225	0.00	37.89	-7.46	228.49
230	0.00	33.48	-6.12	234.37
235	0.00	29.22	-4.64	241.07
240	0.00	25.21	-3.04	248.75
245	0.00	21.59	-1.36	256.99
250	0.00	18.59	0.27	265.26
255	0.00	16.54	1.54	271.92
260	0.00	15.81	2.02	274.50
265	0.00	16.60	1.50	271.71
270	0.00	18.70	0.21	264.94
275	0.00	21.73	-1.43	256.64
280	0.26	25.22	-3.04	242.21
285	0.25	29.27	-4.66	236.11
290	0.54	33.43	-6.10	205.43
295	0.87	37.77	-7.43	185.57
300	1.61	42.14	-8.62	149.95
305	2.28	46.67	-9.73	130.00
310	4.38	51.05	-10.00	100.00
315	5.69	55.72	-10.00	100.00
320	7.82	60.42	-10.00	100.00
325	8.98	65.29	-10.00	100.00
330	9.31	70.24	-10.00	100.00
335	9.85	75.19	-10.00	100.00
340	9.51	80.16	-10.00	100.00
345	9.51	85.13	-10.00	100.00
350	9.50	90.10	-10.00	100.00
355	9.45	95.07	-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  
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COMSEARCH  
19700 Janelia Farm Boulevard  
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DATED: September 17, 2018