

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

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

Prepared By:
COMSEARCH
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June 28, 2022

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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.

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 01/18/2022.

Company

AT&T Mobility Spectrum LLC - Hawaii
AT&T Mobility Spectrum LLC - ID, MT, WY
Cellco Partnership - Hawaii
County of Maui Dept of Water Supply
Hawaii Dialogix Telecom LLC
Hawaii, State of
Hawaiian Telecom Inc.
Honolulu Board of Water Supply
Honolulu City & County Dept of Info Tech
Maui, County of
Sprint Spectrum LLC
Sprintcom, Inc
T-Mobile License LLC
Trex Broadband
US Internet Wireless
Verizon Wireless VAW LLC - (Hawaii)
Wavecom Solutions Corporation

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: 06/28/2022
Job Number: 220118COMSGE02

Administrative Information

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

Site Information

MAUI, HI

Venue Name:
Latitude (NAD 83): 20° 49' 1.5" N
Longitude (NAD 83): 156° 27' 16.9" W
Climate Zone: C
Rain Zone: 4
Ground Elevation (AMSL): 36.0 m / 118.1 ft

Link Information

Satellite Type: Low Earth Orbit
Mode: TR - Transmit-Receive
Modulation: Digital
Minimum Elevation Angle: 20.0°
Azimuth Range: 0.0° to 360°
Antenna Centerline (AGL): 2.74 m / 9.0 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer	Kuiper	Kuiper
Model	Model 24001	Model 24001
Gain / Diameter	49.0 dBi / 2.4 m	53.8 dBi / 2.4 m
3-dB / 15-dB Beamwidth	0.77° / 1.70°	0.49° / 1.17°
Max Available RF Power (dBW/4 kHz)		-41.0
	(dBW/MHz)	-17.0
Maximum EIRP (dBW/4 kHz)		12.8
	(dBW/MHz)	36.8
Interference Objectives:	Long Term	-156.0 dBW/MHz 20%
	Short Term	-146.0 dBW/MHz 0.01%
		-151.0 dBW/4 kHz 20%
		-128.0 dBW/4 kHz 0.0025%

Frequency Information

Receive 18.0 GHz

Transmit 28.0 GHz

Emission / Frequency Range (MHz): 50M0G7D - 500MG7D / 17800.0 - 18600.0 50M0G7D - 500MG7D / 27500.0 - 30000.0
50M0G7D - 500MG7D / 18800.0 - 20200.0

Max Great Circle Coordination Distance: 242.0 km / 150.4 mi 100.0 km / 62.1 mi
Precipitation Scatter Contour Radius: 100.0 km / 62.1 mi 100.0 km / 62.1 mi

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Coordination Values

MAUI, HI

Licensee Name Hawaii Pacific Teleport, L.P.
Latitude (NAD 83) 20° 49' 1.5" N
Longitude (NAD 83) 156° 27' 16.9" W
Ground Elevation (AMSL) 36.0 m / 118.1 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model Kuiper 2.4 meter
Antenna Mode Receive 18.0 GHz Transmit 28.0 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 -41.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.33	73.48	2.30	242.00	2.30	100.00
5	0.41	71.77	2.30	242.00	2.30	100.00
10	0.47	70.18	2.30	242.00	2.30	100.00
15	0.54	68.75	2.30	242.00	2.30	100.00
20	0.59	67.47	2.30	242.00	2.30	100.00
25	0.69	66.41	2.30	242.00	2.30	100.00
30	0.78	65.53	2.30	242.00	2.30	100.00
35	0.94	64.92	2.30	242.00	2.30	100.00
40	1.05	64.46	2.30	242.00	2.30	100.00
45	1.09	64.15	2.30	242.00	2.30	100.00
50	1.06	63.98	2.30	242.00	2.30	100.00
55	1.16	64.16	2.30	242.00	2.30	100.00
60	1.18	64.46	2.30	242.00	2.30	100.00
65	1.20	64.96	2.30	242.00	2.30	100.00
70	1.25	65.70	2.30	242.00	2.30	100.00
75	1.20	66.53	2.30	242.00	2.30	100.00
80	1.42	67.79	2.30	242.00	2.30	100.00
85	1.60	69.16	2.30	242.00	2.30	100.00
90	1.60	70.52	2.30	242.00	2.30	100.00
95	1.66	72.08	2.30	242.00	2.30	100.00
100	1.67	73.71	2.30	242.00	2.30	100.00
105	1.73	75.49	2.30	242.00	2.30	100.00
110	1.76	77.35	2.30	242.00	2.30	100.00
115	1.78	79.28	2.30	242.00	2.30	100.00
120	1.73	81.25	2.30	242.00	2.30	100.00
125	1.55	83.26	2.30	242.00	2.30	100.00
130	1.41	85.34	2.30	242.00	2.30	100.00
135	1.24	87.47	2.30	242.00	2.30	100.00
140	1.13	89.65	2.30	242.00	2.30	100.00
145	0.96	91.85	2.30	242.00	2.30	100.00
150	0.77	94.06	2.30	242.00	2.30	100.00
155	0.52	96.30	2.30	242.00	2.30	100.00
160	0.36	98.50	2.30	242.00	2.30	100.00
165	0.20	100.68	2.30	242.00	2.30	100.00
170	0.00	102.83	2.30	242.00	2.30	100.00
175	0.00	104.82	2.30	242.00	2.30	100.00
180	0.00	106.72	2.30	242.00	2.30	100.00
185	0.00	108.50	2.30	242.00	2.30	100.00

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Coordination Values

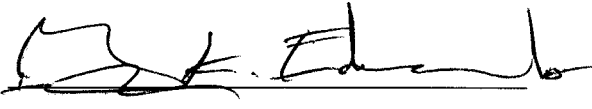
MAUI, HI

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Max Available RF Power -41.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	110.16	2.30	242.00	2.30	100.00
195	0.00	111.67	2.30	242.00	2.30	100.00
200	0.00	113.02	2.30	242.00	2.30	100.00
205	0.00	114.20	2.30	242.00	2.30	100.00
210	0.00	115.19	2.30	242.00	2.30	100.00
215	0.00	115.98	2.30	242.00	2.30	100.00
220	0.00	116.56	2.30	242.00	2.30	100.00
225	0.00	116.93	2.30	242.00	2.30	100.00
230	0.00	117.08	2.30	242.00	2.30	100.00
235	0.00	117.00	2.30	242.00	2.30	100.00
240	0.00	116.70	2.30	242.00	2.30	100.00
245	0.70	115.52	2.30	242.00	2.30	100.00
250	1.39	114.17	2.30	242.00	2.30	100.00
255	2.11	112.64	2.30	242.00	2.30	100.00
260	2.71	111.11	2.30	242.00	2.30	100.00
265	3.29	109.49	2.30	242.00	2.30	100.00
270	3.50	108.06	2.30	242.00	2.30	100.00
275	2.90	107.08	2.30	242.00	2.30	100.00
280	3.76	104.99	2.30	242.00	2.30	100.00
285	2.66	104.00	2.30	242.00	2.30	100.00
290	2.19	102.45	2.30	242.00	2.30	100.00
295	2.47	100.44	2.30	242.00	2.30	100.00
300	1.74	98.74	2.30	242.00	2.30	100.00
305	1.31	96.80	2.30	242.00	2.30	100.00
310	1.23	94.69	2.30	242.00	2.30	100.00
315	0.87	92.56	2.30	242.00	2.30	100.00
320	0.49	90.36	2.30	242.00	2.30	100.00
325	0.25	88.11	2.30	242.00	2.30	100.00
330	0.00	85.83	2.30	242.00	2.30	100.00
335	0.00	83.59	2.30	242.00	2.30	100.00
340	0.00	81.39	2.30	242.00	2.30	100.00
345	0.00	79.25	2.30	242.00	2.30	100.00
350	0.00	77.17	2.30	242.00	2.30	100.00
355	0.24	75.30	2.30	242.00	2.30	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.

BY: 

Gary K. Edwards
Senior Manager
COMSEARCH
21515 Ridgetop Circle, Suite 300
Sterling, VA 20166

DATED: June 28, 2022