

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Hawaii Pacific Teleport, L.P.
PULANTAT, GU
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
July 23, 2020

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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

PTI Pacifica Inc.

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 06/30/2020.

Company

Choice Phone LLC

DoCoMo Pacific, Inc.

Guam Educational Telecom Corp

Guam Power Authority

PTI Pacifica Inc.

SBE Coordinator

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: 07/23/2020
Job Number: 200630COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E190068
Licensee Code HAWPAC
Licensee Name Hawaii Pacific Teleport, L.P.

Site Information PULANTAT, GU

Venue Name
Latitude (NAD 83) 13° 25' 4.8" N
Longitude (NAD 83) 144° 45' 6.2" E
Climate Zone C
Rain Zone 4
Ground Elevation (AMSL) 109.13 m / 358.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 140° W to 291° West Longitude
Azimuth Range 93.5° to 266.6°
Corresponding Elevation Angles 5.7° / 5.2°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

	Receive - FCC32	Transmit - FCC32
Manufacturer	General Dynamics	General Dynamics
Model	Model 4.8	Model 4.8
Gain / Diameter	53.5 dBi / 4.8 m	55.2 dBi / 4.8 m
3-dB / 15-dB Beamwidth	0.34° / 0.68°	0.28° / 0.56°
Max Available RF Power (dBW/4 kHz) (dBW/MHz)		-14.0 10.0
Maximum EIRP (dBW/4 kHz) (dBW/MHz)		41.2 65.2
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 11.0 GHz	Transmit 14.0 GHz
Emission / Frequency Range (MHz)	1M00G7D -10M0G7D / 10950.0 - 11200.0 1M00G7D -10M0G7D / 11450.0 - 12750.0	1M00G7D -10M0G7D / 14000.0 - 14500.0
Max Great Circle Coordination Distance	869.8 km / 540.4 mi	476.9 km / 296.3 mi
Precipitation Scatter Contour Radius	420.4 km / 261.2 mi	100.0 km / 62.1 mi

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Coordination Values

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Antenna Model General Dynamics 4.8 meter
Antenna Mode Receive 11.0 GHz Transmit 14.0 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 -14.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	2.03	93.37	-10.00	186.62
5	1.30	88.50	-10.00	232.86
10	1.13	83.52	-10.00	245.42
15	1.08	78.53	-10.00	249.39
20	0.67	73.56	-10.00	306.64
25	0.47	68.59	-10.00	343.74
30	0.46	63.62	-10.00	345.41
35	0.56	58.64	-10.00	323.78
40	0.61	53.66	-10.00	315.89
45	0.29	48.72	-10.00	396.66
50	0.00	43.79	-9.03	439.95
55	0.00	38.85	-7.73	455.67
60	0.00	33.92	-6.26	474.18
65	0.00	29.01	-4.56	498.22
70	0.00	24.14	-2.57	525.07
75	0.00	19.32	-0.15	558.61
80	0.00	14.62	2.87	602.24
85	0.00	10.21	6.78	658.44
90	0.00	6.67	11.40	739.07
95	0.00	5.87	12.78	765.07
100	0.00	8.63	8.61	689.03
105	0.00	12.81	4.31	619.83
110	0.00	17.43	0.97	574.54
115	0.00	22.21	-1.66	537.49
120	0.00	27.03	-3.80	508.45
125	0.00	31.83	-5.57	485.00
130	0.00	36.61	-7.09	463.68
135	0.00	41.35	-8.41	447.40
140	0.00	46.05	-9.58	433.53
145	0.00	50.69	-10.00	428.68
150	0.00	55.24	-10.00	428.68
155	0.00	59.66	-10.00	428.68
160	0.00	63.87	-10.00	428.68
165	0.00	67.74	-10.00	428.68
170	0.00	71.03	-10.00	428.68
175	0.00	73.36	-10.00	428.68
180	0.00	74.23	-10.00	428.68
185	0.00	73.36	-10.00	428.68

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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 -14.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	71.03	-10.00	428.68
195	0.00	67.74	-10.00	428.68
200	0.00	63.87	-10.00	428.68
205	0.00	59.66	-10.00	428.68
210	0.00	55.24	-10.00	428.68
215	0.31	50.61	-10.00	388.59
220	0.55	45.91	-9.55	329.73
225	0.67	41.18	-8.37	320.49
230	0.53	36.48	-7.05	356.14
235	0.47	31.71	-5.53	382.30
240	0.59	26.89	-3.74	374.77
245	0.85	22.00	-1.56	349.96
250	1.10	17.11	1.17	336.97
255	1.21	12.28	4.77	358.28
260	1.29	7.68	9.86	395.14
265	1.46	4.07	16.77	447.81
270	1.50	5.00	14.52	418.25
275	1.79	9.04	8.10	330.91
280	1.87	13.78	3.52	286.31
285	2.16	18.62	0.25	241.69
290	2.28	23.55	-2.30	217.99
295	2.62	28.48	-4.36	189.22
300	3.37	33.42	-6.10	141.99
305	3.91	38.39	-7.61	115.85
310	4.23	43.38	-8.93	104.36
315	4.28	48.38	-10.00	100.00
320	4.44	53.38	-10.00	100.00
325	4.31	58.38	-10.00	100.00
330	3.90	63.38	-10.00	104.31
335	3.53	68.39	-10.00	115.19
340	3.52	73.38	-10.00	115.41
345	3.37	78.38	-10.00	119.97
350	3.31	83.38	-10.00	121.84
355	2.71	88.38	-10.00	146.93

