

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**Hawaii Pacific Teleport, L.P.**  
**SAIPAN, MP**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
February 19, 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. Operation in the 6 GHz transmit band will be restricted to the bandwidth shown in Section 4 of this report.

## 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 for all cases affected by the bandwidth shown in Section 4 of this report.

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

Micronesian Telecommunications Corp

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 02/11/2019. Minor change sent on 02/19/2019.

Company

Micronesian Telecommunications Corp  
PTI Pacifica Inc.

## **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: 02/19/2019  
Job Number: 190219COMSTC01

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### Administrative Information

Licensee Code HAWPAC  
Licensee Name Hawaii Pacific Teleport, L.P.

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### Site Information

#### SAIPAN, MP

Latitude (NAD 83) 15° 7' 41.1" N  
Longitude (NAD 83) 145° 43' 23.6" E  
Climate Zone A  
Rain Zone 4  
Ground Elevation (AMSL) 53.37 m / 175.1 ft

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### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 206° W to 206° West Longitude  
Azimuth Range 150.8° to 150.8°  
Corresponding Elevation Angles 69.8° / 69.8°  
Antenna Centerline (AGL) 2.4 m / 7.9 ft

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### Antenna Information

#### Receive

Manufacturer Challenger  
Model 3.8M  
Gain / Diameter 42.0 dBi / 3.8 m  
3-dB / 15-dB Beamwidth 1.80° / 3.60°

#### Transmit

Challenger  
3.8M  
46.1 dBi / 3.8 m  
1.00° / 2.00°

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

#### 51K2G7W - 36M0G7W

-14.0 -18.29  
10.0 10.0

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

32.1 27.81  
43.17 51.81  
43.17 69.11

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%

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### Frequency Information

#### Receive 4.0 GHz

Emission / Frequency Range (MHz) 51K2G7W - 54M0G7W / 3700.0 - 4200.0

#### Transmit 6.1 GHz

51K2G7W - 54M0G7W / 6168.0 - 6425.0

Max Great Circle Coordination Distance 285.3 km / 177.2 mi  
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

157.3 km / 97.7 mi  
100.0 km / 62.1 mi

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### Coordination Values

### SAIPAN, MP

Licensee Name	Hawaii Pacific Teleport, L.P.			
Latitude (NAD 83)	15° 7' 41.1" N			
Longitude (NAD 83)	145° 43' 23.6" E			
Ground Elevation (AMSL)	53.37 m / 175.1 ft			
Antenna Centerline (AGL)	2.4 m / 7.9 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			-14.0 (dBW/4 kHz)	

Azimuth (°)	Receive 4.0 GHz		Transmit 6.1 GHz			
	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.84	97.98	-10.00	228.89	-10.00	100.00
5	1.60	102.61	-10.00	205.19	-10.00	132.84
10	2.13	107.13	-10.00	191.63	-10.00	132.84
15	2.26	105.91	-10.00	188.49	-10.00	132.84
20	3.14	105.01	-10.00	166.46	-10.00	132.84
25	1.84	102.69	-10.00	198.77	-10.00	132.84
30	1.39	100.87	-10.00	208.68	-10.00	132.84
35	1.37	99.22	-10.00	209.24	-10.00	132.84
40	0.87	97.35	-10.00	227.44	-10.00	132.84
45	1.16	95.71	-10.00	215.32	-10.00	132.84
50	1.36	93.97	-10.00	209.41	-10.00	132.84
55	1.33	92.14	-10.00	210.31	-10.00	132.84
60	1.29	90.31	-10.00	211.64	-10.00	132.84
65	1.14	88.49	-10.00	216.06	-10.00	132.84
70	1.16	86.68	-10.00	215.37	-10.00	132.84
75	0.93	84.95	-10.00	224.31	-10.00	132.84
80	0.74	83.27	-10.00	234.80	-10.00	132.84
85	0.69	81.62	-10.00	238.08	-10.00	132.84
90	0.37	80.15	-10.00	264.19	-10.00	132.84
95	0.23	78.70	-10.00	280.91	-10.00	132.84
100	0.28	77.24	-10.00	275.09	-10.00	132.84
105	0.32	75.87	-10.00	270.49	-10.00	132.84
110	0.43	74.55	-10.00	257.76	-10.00	132.84
115	0.69	73.21	-10.00	237.72	-10.00	132.84
120	0.84	72.06	-10.00	229.23	-10.00	132.84
125	0.87	71.13	-10.00	227.20	-10.00	132.84
130	0.85	70.40	-10.00	228.50	-10.00	132.84
135	0.81	69.83	-10.00	230.67	-10.00	132.84
140	0.78	69.42	-10.00	232.22	-10.00	132.84
145	0.83	69.10	-10.00	229.76	-10.00	132.84
150	0.86	68.95	-10.00	228.04	-10.00	132.84
155	0.87	69.00	-10.00	227.48	-10.00	122.43
160	0.87	69.22	-10.00	227.13	-10.00	120.28
165	0.87	69.61	-10.00	227.36	-10.00	112.87
170	0.87	70.16	-10.00	227.58	-10.00	107.59
175	0.81	70.91	-10.00	230.77	-10.00	103.26
180	0.71	71.85	-10.00	236.63	-10.00	100.00
185	0.62	72.90	-10.00	242.16	-10.00	100.00



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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 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.53	72.63	-10.00	248.11	-10.00	100.00
195	0.45	67.95	-10.00	255.68	-10.00	100.00
200	0.35	63.31	-10.00	266.40	-10.00	100.00
205	0.33	58.69	-10.00	269.56	-10.00	100.00
210	0.00	54.11	-10.00	285.28	-10.00	100.00
215	0.00	49.60	-10.00	285.28	-10.00	100.00
220	0.00	45.17	-10.00	285.28	-9.37	100.00
225	0.00	40.81	-10.00	285.28	-8.27	100.00
230	0.00	36.58	-10.00	285.28	-7.08	100.54
235	0.00	32.54	-10.00	285.28	-5.81	102.88
240	0.00	28.80	-10.00	285.28	-4.49	108.07
245	0.00	25.54	-10.00	285.28	-3.18	118.38
250	0.00	22.98	-10.00	285.28	-2.03	135.01
255	0.00	21.12	-10.00	285.28	-1.12	147.63
260	0.00	20.22	-10.00	285.28	-0.65	152.99
265	0.00	20.50	-10.00	285.28	-0.79	157.29
270	0.00	21.72	-10.00	285.28	-1.42	141.69
275	0.00	23.77	-10.00	285.28	-2.40	120.89
280	0.00	26.76	-10.00	285.28	-3.69	114.69
285	0.00	30.18	-10.00	285.28	-4.99	102.75
290	0.00	33.94	-10.00	285.28	-6.27	100.00
295	0.00	38.08	-10.00	285.28	-7.52	100.00
300	0.00	42.31	-10.00	285.28	-8.66	100.00
305	0.00	46.71	-10.00	285.28	-9.74	100.00
310	0.00	51.21	-10.00	285.28	-10.00	100.00
315	0.00	55.82	-10.00	285.28	-10.00	100.00
320	0.00	60.49	-10.00	285.28	-10.00	100.00
325	0.00	65.04	-10.00	285.28	-10.00	100.00
330	0.00	69.71	-10.00	285.28	-10.00	100.00
335	0.00	74.36	-10.00	285.28	-10.00	100.00
340	0.00	79.01	-10.00	285.28	-10.00	100.00
345	0.00	83.80	-10.00	285.28	-10.00	100.00
350	0.00	88.55	-10.00	285.28	-10.00	100.00
355	0.00	93.29	-10.00	285.28	-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  
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Ashburn, VA 20147

DATED: February 19, 2019