

**FREQUENCY COORDINATION AND INTERFERENCE
ANALYSIS REPORT**

Prepared for
Intelsat License LLC
PAUMALU, HI
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
April 16, 2019

TABLE OF CONTENTS

1. CONCLUSIONS	3
2. SUMMARY OF RESULTS	4
3. SUPPLEMENTAL SHOWING	5
4. EARTH STATION COORDINATION DATA.....	6
5. CERTIFICATION.....	10

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 04/02/2019.

Company

AT&T Corp.

County of Kauai Department of Police

Hawaii State

Hawaiian Electric Company, Inc

Hawaiian Telcom, Inc.

Honolulu City & County Dept of Info Tech

NEXSTAR BROADCASTING, INC.

New Cingular Wireless PCS LLC - Hawaii

Scientel Solutions, LLC

University of 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: 04/16/2019
Job Number: 190402COMSGE03

Administrative Information

Status ENGINEER PROPOSAL
Call Sign KA265
Licensee Code INTELS
Licensee Name Intelsat License LLC

Site Information PAUMALU, HI

Venue Name
Latitude (NAD 83) 21° 40' 27.0" N
Longitude (NAD 83) 158° 2' 16.0" W
Climate Zone A
Rain Zone 4
Ground Elevation (AMSL) 8.41 m / 27.6 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 222° W to 222° West Longitude
Azimuth Range 259.8° to 259.8°
Corresponding Elevation Angles 15.7° / 15.7°
Antenna Centerline (AGL) 9.8 m / 32.2 ft

Antenna Information

		Receive - FCC32	Transmit - FCC32
Manufacturer		Vertex	Vertex
Model		9 KPC	9 KPC
Gain / Diameter		50.1 dBi / 9.0 m	53.5 dBi / 9.0 m
3-dB / 15-dB Beamwidth		1.00° / 2.00°	1.00° / 2.00°
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)		6.5 30.5
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)		60.0 84.0
Interference Objectives:	Long Term Short Term	-156.0 dBW/MHz 20% -146.0 dBW/MHz 0.01%	-154.0 dBW/4 kHz 20% -131.0 dBW/4 kHz 0.0025%

Frequency Information

	Receive 4.0 GHz	Transmit 6.1 GHz
Emission / Frequency Range (MHz)	250KFXD / 3630.0	800KFXD / 5850.5 800KFXD / 6425.0
Max Great Circle Coordination Distance	372.9 km / 231.7 mi	258.6 km / 160.7 mi
Precipitation Scatter Contour Radius	375.7 km / 233.4 mi	241.9 km / 150.3 mi

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Coordination Values

PAUMALU, HI

Licensee Name: Intelsat License LLC
Latitude (NAD 83): 21° 40' 27.0" N
Longitude (NAD 83): 158° 2' 16.0" W
Ground Elevation (AMSL): 8.41 m / 27.6 ft
Antenna Centerline (AGL): 9.8 m / 32.2 ft
Antenna Model: Vertex 9 meter
Antenna Mode: Receive 4.0 GHz
Interference Objectives: Long Term: -156.0 dBW/MHz 20%
Short Term: -146.0 dBW/MHz 0.01%
Transmit 6.1 GHz: -154.0 dBW/4 kHz 20%
-131.0 dBW/4 kHz 0.0025%
Max Available RF Power: 6.5 (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)
0	0.00	99.84	-10.00	285.28	-10.00	206.04
5	0.00	104.65	-10.00	285.28	-10.00	206.04
10	0.00	109.44	-10.00	285.28	-10.00	206.04
15	0.00	114.23	-10.00	285.28	-10.00	206.04
20	0.00	118.99	-10.00	285.28	-10.00	206.04
25	0.00	123.73	-10.00	285.28	-10.00	206.04
30	0.00	128.44	-10.00	285.28	-10.00	206.04
35	0.00	133.11	-10.00	285.28	-10.00	206.04
40	0.00	137.73	-10.00	285.28	-10.00	206.04
45	0.00	142.26	-10.00	285.28	-10.00	206.04
50	1.74	147.39	-10.00	201.62	-10.00	129.01
55	4.34	152.90	-10.00	142.74	-10.00	100.00
60	6.14	158.12	-10.00	123.66	-10.00	100.00
65	8.30	163.51	-10.00	101.18	-10.00	100.00
70	9.74	168.57	-10.00	100.00	-10.00	100.00
75	10.84	173.19	-10.00	100.00	-10.00	100.00
80	11.22	175.51	-10.00	100.00	-10.00	100.00
85	10.24	172.44	-10.00	100.00	-10.00	100.00
90	10.47	168.52	-10.00	100.00	-10.00	100.00
95	10.71	163.99	-10.00	100.00	-10.00	100.00
100	12.34	159.50	-10.00	100.00	-10.00	100.00
105	13.19	154.65	-10.00	100.00	-10.00	100.00
110	13.95	149.72	-10.00	100.00	-10.00	100.00
115	14.37	144.75	-10.00	100.00	-10.00	100.00
120	14.79	139.76	-10.00	100.00	-10.00	100.00
125	14.95	134.77	-10.00	100.00	-10.00	100.00
130	15.13	129.77	-10.00	100.00	-10.00	100.00
135	15.48	124.77	-10.00	100.00	-10.00	100.00
140	15.31	119.77	-10.00	100.00	-10.00	100.00
145	14.94	114.77	-10.00	100.00	-10.00	100.00
150	14.71	109.77	-10.00	100.00	-10.00	100.00
155	14.49	104.77	-10.00	100.00	-10.00	100.00
160	14.27	99.77	-10.00	100.00	-10.00	100.00
165	13.81	94.77	-10.00	100.00	-10.00	100.00
170	11.62	89.77	-10.00	100.00	-10.00	100.00
175	10.02	84.80	-10.00	100.00	-10.00	100.00
180	9.24	79.84	-10.00	100.00	-10.00	100.00
185	7.02	74.95	-10.00	114.15	-10.00	100.00

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Coordination Values

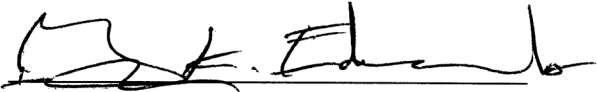
PAUMALU, HI

Licensee Name	Intelsat License LLC			
Latitude (NAD 83)	21° 40' 27.0" N			
Longitude (NAD 83)	158° 2' 16.0" W			
Ground Elevation (AMSL)	8.41 m / 27.6 ft			
Antenna Centerline (AGL)	9.8 m / 32.2 ft			
Antenna Model	Vertex 9 meter			
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			6.5 (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	8.47	69.94	-10.00	100.00	-10.00	100.00
195	7.83	65.02	-10.00	105.60	-10.00	100.00
200	7.30	60.13	-10.00	111.13	-10.00	100.00
205	6.84	55.25	-10.00	116.08	-10.00	100.00
210	6.67	50.37	-10.00	117.89	-10.00	100.00
215	5.74	45.63	-9.48	129.74	-9.48	100.00
220	3.28	41.36	-8.41	173.12	-8.41	104.16
225	0.00	37.74	-7.42	302.22	-7.42	214.61
230	0.00	33.32	-6.07	311.53	-6.07	220.28
235	0.00	29.06	-4.58	322.66	-4.58	226.75
240	0.00	25.05	-2.97	334.34	-2.97	234.08
245	0.00	21.43	-1.28	346.92	-1.28	242.11
250	0.00	18.43	0.36	359.39	0.36	249.59
255	0.00	16.39	1.63	369.26	1.63	256.15
260	0.00	15.71	2.10	372.93	2.10	258.63
265	0.00	16.53	1.54	368.55	1.54	255.68
270	0.00	18.67	0.22	358.30	0.22	248.87
275	0.00	21.74	-1.43	345.75	-1.43	241.36
280	0.00	25.41	-3.12	333.22	-3.12	233.37
285	0.00	29.44	-4.72	321.64	-4.72	226.12
290	0.00	33.72	-6.20	310.62	-6.20	219.73
295	0.00	38.15	-7.54	301.42	-7.54	214.13
300	0.00	42.70	-8.76	293.29	-8.76	209.22
305	0.00	47.31	-9.87	286.08	-9.87	204.89
310	0.00	51.99	-10.00	285.28	-10.00	206.04
315	0.00	56.70	-10.00	285.28	-10.00	206.04
320	0.00	61.45	-10.00	285.28	-10.00	206.04
325	0.00	66.21	-10.00	285.28	-10.00	206.04
330	0.00	71.00	-10.00	285.28	-10.00	206.04
335	0.00	75.79	-10.00	285.28	-10.00	206.04
340	0.00	80.60	-10.00	285.28	-10.00	206.04
345	0.00	85.41	-10.00	285.28	-10.00	206.04
350	0.00	90.22	-10.00	285.28	-10.00	206.04
355	0.00	95.03	-10.00	285.28	-10.00	206.04

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
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: April 16, 2019