

GUSA Licensee LLC
Response to FCC Form 312, Schedule B, Question E18
Page 1 of 1

Attachment 1: Comsearch Frequency Coordination and Interference Analysis Report

Attachment 2: Information on Microwave Landing System Sites

ATTACHMENT 1

**FREQUENCY COORDINATION AND INTERFERENCE
ANALYSIS REPORT**

Prepared for
GUSA Licensee, LLC
SOUTH POINT 1, HI
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
December 03, 2020

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 10/29/2020.

Company

Hawaii Electric Light Co Inc

Hawaii, State of

Kaiser Ind Corp

Mauna Kea Broadcasting Company, 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: 12/03/2020
Job Number: 201029COMSGE16

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign:
Licensee Code: ZAIRSA
Licensee Name: GUSA Licensee, LLC

Site Information

SOUTH POINT, HI

Venue Name:
Latitude (NAD 83): 19° 0' 51.0" N
Longitude (NAD 83): 155° 39' 48.9" W
Climate Zone: B
Rain Zone: 4
Ground Elevation (AMSL): 356.01 m / 1168.0 ft

Link Information

Satellite Type: Low Earth Orbit
Mode: TR - Transmit-Receive
Modulation: Analog and Digital
Minimum Elevation Angle: 5.0°
Azimuth Range: 0.0° to 360°
Antenna Centerline (AGL): 8.69 m / 28.5 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer: Cobham Satcom
Model: Tracker T 6000
Gain / Diameter: 51.2 dBi / 6.0 m
3-dB / 15-dB Beamwidth: 0.44° / 0.88°

Cobham Satcom
Tracker T 6000
47.6 dBi / 6.0 m
0.60° / 2.00°

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

10.9
20.9

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

58.5
68.5

Interference Objectives: Long Term -153.0 dBW/MHz 20%
Short Term -143.0 dBW/MHz 0.01%

-140.0 dBW/4 kHz 20%
-103.0 dBW/4 kHz 0.0025%

Frequency Information

Receive 7.0 GHz

Transmit 5.1 GHz

Emission / Frequency Range (MHz)

2M50G7D / 6900.0 - 7055.0
1M23G7W - 1M23XXX / 6900.0 - 7055.0 1M23G7W - 1M23XXX / 5096.0 - 5250.0
200KG7D / 6900.0 - 7055.0
70K0G7D / 6875.9 - 6879.1
50K0N0N / 6900.0 - 7055.0
7K00G1D / 6875.9 - 6879.1

4M50G7D / 5096.0 - 5250.0
76K0F2D / 5091.0 - 5092.0
50K0N0N / 5091.0 - 5092.0
40K0G2D / 5091.0 - 5092.0

Max Great Circle Coordination Distance: 226.0 km / 140.4 mi
Precipitation Scatter Contour Radius: 349.2 km / 217.0 mi

285.0 km / 177.1 mi
100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

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Coordination Values

SOUTH POINT, HI

Licensee Name	GUSA Licensee, LLC		
Latitude (NAD 83)	19° 0' 51.0" N		
Longitude (NAD 83)	155° 39' 48.9" W		
Ground Elevation (AMSL)	356.01 m / 1168.0 ft		
Antenna Centerline (AGL)	8.69 m / 28.5 ft		
Antenna Model	Cobham Satcom 6 meter		
Antenna Mode	Receive 7.0 GHz		
Interference Objectives: Long Term	-153.0 dBW/MHz	20%	Transmit 5.1 GHz -140.0 dBW/4 kHz 20%
Short Term	-143.0 dBW/MHz	0.01%	-103.0 dBW/4 kHz 0.0025%
Max Available RF Power	10.9 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 7.0 GHz		Transmit 5.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	2.99	76.44	10.40	226.00	10.40	285.00
5	2.81	74.71	10.40	226.00	10.40	285.00
10	2.61	73.04	10.40	226.00	10.40	285.00
15	2.51	71.54	10.40	226.00	10.40	285.00
20	2.30	70.09	10.40	226.00	10.40	285.00
25	2.12	68.77	10.40	226.00	10.40	285.00
30	1.87	67.54	10.40	226.00	10.40	285.00
35	1.22	66.09	10.40	226.00	10.40	285.00
40	0.72	64.93	10.40	226.00	10.40	285.00
45	0.48	64.21	10.40	226.00	10.40	285.00
50	0.00	63.44	10.40	226.00	10.40	285.00
55	0.00	63.37	10.40	226.00	10.40	285.00
60	0.00	63.51	10.40	226.00	10.40	285.00
65	0.00	63.87	10.40	226.00	10.40	285.00
70	0.00	64.44	10.40	226.00	10.40	285.00
75	0.00	65.22	10.40	226.00	10.40	285.00
80	0.00	66.19	10.40	226.00	10.40	285.00
85	0.00	67.34	10.40	226.00	10.40	285.00
90	0.00	68.67	10.40	226.00	10.40	285.00
95	0.00	70.15	10.40	226.00	10.40	285.00
100	0.00	71.78	10.40	226.00	10.40	285.00
105	0.00	73.53	10.40	226.00	10.40	285.00
110	0.00	75.39	10.40	226.00	10.40	285.00
115	0.00	77.35	10.40	226.00	10.40	285.00
120	0.00	79.40	10.40	226.00	10.40	285.00
125	0.00	81.51	10.40	226.00	10.40	285.00
130	0.00	83.67	10.40	226.00	10.40	285.00
135	0.00	85.87	10.40	226.00	10.40	285.00
140	0.00	88.10	10.40	226.00	10.40	285.00
145	0.00	90.34	10.40	226.00	10.40	285.00
150	0.00	92.58	10.40	226.00	10.40	285.00
155	0.00	94.80	10.40	226.00	10.40	285.00
160	0.00	96.99	10.40	226.00	10.40	285.00
165	0.00	99.14	10.40	226.00	10.40	285.00
170	0.00	101.24	10.40	226.00	10.40	285.00
175	0.00	103.26	10.40	226.00	10.40	285.00
180	0.00	105.19	10.40	226.00	10.40	285.00
185	0.00	107.02	10.40	226.00	10.40	285.00

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Earth Station Data Sheet

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Coordination Values

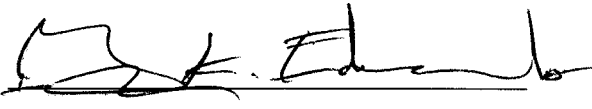
SOUTH POINT, HI

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Short Term	-143.0 dBW/MHz	0.01%	-103.0 dBW/4 kHz 0.0025%
Max Available RF Power	10.9 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 7.0 GHz		Transmit 5.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	108.73	10.40	226.00	10.40	285.00
195	0.00	110.32	10.40	226.00	10.40	285.00
200	0.00	111.75	10.40	226.00	10.40	285.00
205	0.00	113.03	10.40	226.00	10.40	285.00
210	0.00	114.13	10.40	226.00	10.40	285.00
215	0.27	114.79	10.40	226.00	10.40	285.00
220	0.42	115.35	10.40	226.00	10.40	285.00
225	0.64	115.63	10.40	226.00	10.40	285.00
230	0.86	115.70	10.40	226.00	10.40	285.00
235	1.11	115.52	10.40	226.00	10.40	285.00
240	1.32	115.18	10.40	226.00	10.40	285.00
245	1.56	114.60	10.40	226.00	10.40	285.00
250	1.69	113.95	10.40	226.00	10.40	285.00
255	1.86	113.07	10.40	226.00	10.40	285.00
260	2.22	111.85	10.40	226.00	10.40	285.00
265	2.41	110.65	10.40	226.00	10.40	285.00
270	2.48	109.39	10.40	226.00	10.40	285.00
275	2.55	108.00	10.40	226.00	10.40	285.00
280	2.74	106.41	10.40	226.00	10.40	285.00
285	2.74	104.85	10.40	226.00	10.40	285.00
290	2.73	103.18	10.40	226.00	10.40	285.00
295	2.68	101.44	10.40	226.00	10.40	285.00
300	2.67	99.60	10.40	226.00	10.40	285.00
305	2.73	97.67	10.40	226.00	10.40	285.00
310	2.62	95.74	10.40	226.00	10.40	285.00
315	2.55	93.76	10.40	226.00	10.40	285.00
320	2.65	91.72	10.40	226.00	10.40	285.00
325	2.70	89.69	10.40	226.00	10.40	285.00
330	2.86	87.68	10.40	226.00	10.40	285.00
335	2.88	85.69	10.40	226.00	10.40	285.00
340	2.91	83.73	10.40	226.00	10.40	285.00
345	2.95	81.81	10.40	226.00	10.40	285.00
350	3.34	80.10	10.40	226.00	10.40	285.00
355	3.16	78.24	10.40	226.00	10.40	285.00

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
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: December 03, 2020

ATTACHMENT 2

Information on Microwave Landing System Sites

For the Naalehu, Hawaii, Globalstar gateway site, there are five potential MLS sites, i.e., Category III airports, within the 200 nautical mile coordination distance. The Naalehu, Hawaii site is located at 19° 0' 51.0012" N, 155° 39' 48.9996" W. The airports are:

ITO	Hilo International Airport ITO, approximately 56.9 nautical miles from Naalehu
KOA	Ellison Onizuka Kona International Airport, approximately 58.1 miles away
MUE	Waimea-Kohala Airport, approximately 83.4 nautical miles away
UPP	Upolu Airport, approximately 97.3 nautical miles away
BSF	Bradshaw Army Airfield, approximately 86.2 nautical miles away

This site falls outside the 39.8 nautical mile maximum trigger distance for MLS/MSS coordination. In addition, based on a directory used for MLS coordination purposes, and to the best of its knowledge, Globalstar believes that MLS is not active at any of these airport sites.