

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Universal Space Network, Inc.
NAALEHU, HI
Satellite Earth Station

Prepared By:
COMSEARCH
21515 Ridgetop Circle, Suite 300
Sterling, VA 20166
January 02, 2026

TABLE OF CONTENTS

1. CONCLUSIONS	3
2. SUMMARY OF RESULTS	4
3. SUPPLEMENTAL SHOWING	5
4. EARTH STATION COORDINATION DATA.....	7
5. CERTIFICATION.....	11

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 12/02/2025.

Company

3G Wireless, LLC
Accelerated Media Technologies
Aerial Video Systems
Ascent Media Network Services, LLC
Bellsouth Telecommunications, Inc.
Borgeson, Tom R.
Broadcast Sports Inc.
Carolina Telephone and Telegraph Co
Casper, John
Chicago Comnet Corp
Cowboys Stadium LP
CP Communications
DCI II, INC.
Fine Satellites & Fiber, LLC
Frontier California Inc.
Global Telecom & Technology Americas, In
Goodyear Tire & Rubber Company
Gray Television Licensee, LLC
HF Enterprises, Inc
Hawaii Public Television Foundation
Hawaiian Telecom Inc.
Heiden, William
Indiana Bell Telephone Company
KITV, Inc
Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
KTBV License LLC
Lehman, Ronald G
Lumen Technologies Inc
Michigan Bell Telephone Company
Microwave Video Systems, LLC
NorthWest Suburbs Community Access Corp
Ohio Bell GTelephone Company
Onboard Images
Pacific Bell Tel Com dba AT&T California
Quick Link Connections Inc.
Qwest Corporation
RCC Minnesota Inc. - MN NE ND SD
RF Film, Inc
Remote Facilities Consulting Services

SayRabbit LLC
SBE Coordinator
Southwestern Bell Telephone L.P.
TTWN Networks, LLC
VERIZON SOUTH INC.
Verizon Maryland, Inc.
Verizon New England Inc.
Verizon New Jersey, Inc.
Verizon New York, Inc.
Verizon North Inc.
Verizon Northwest Inc.
Verizon Pennsylvania, Inc.
Verizon Virginia, Inc.
Verizon Washington DC, Inc.
Winged Vision Inc
Wisconsin Bell Telephone Company
Wolfe Air Aviation

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: 01/02/2026
Job Number: 251202COMSGE07

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign: (HI-13M-1)
Licensee Code: UNSPNE
Licensee Name: Universal Space Network, Inc.

Site Information

NAALEHU, HI
Venue Name: MTG-EUM 3.5E
Latitude (NAD 83): 19° 0' 50.0" N
Longitude (NAD 83): 155° 39' 47.9" W
Climate Zone: C
Rain Zone: 4
Ground Elevation (AMSL): 373.0 m / 1223.8 ft

Link Information

Satellite Type: Low Earth Orbit
Mode: TO - Transmit-Only
Modulation: Digital
Minimum Elevation Angle: 5.0°
Azimuth Range: 0.0° to 360°
Antenna Centerline (AGL): 8.54 m / 28.0 ft

Antenna Information

Transmit - FCC32
Manufacturer: Datron
Model: 1453
Gain / Diameter: 45.9 dBi / 13.0 m
3-dB / 15-dB Beamwidth: 0.76° / 1.46°

Max Available RF Power	(dBW/4 kHz)	-1.9	
	(dBW/MHz)	22.1	
Maximum EIRP	(dBW/4 kHz)	44.0	
	(dBW/MHz)	68.0	
Interference Objectives:	Long Term	-154.0 dBW/4 kHz	20%
	Short Term	-131.0 dBW/4 kHz	0.0025%

Frequency Information

Transmit 2.0 GHz
Emission / Frequency Range (MHz): 1M00G2D / 2070.4938

Max Great Circle Coordination Distance: 293.2 km / 182.2 mi
Precipitation Scatter Contour Radius: 100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values

NAALEHU, HI

Licensee Name Universal Space Network, Inc.
Latitude (NAD 83) 19° 0' 50.0" N
Longitude (NAD 83) 155° 39' 47.9" W
Ground Elevation (AMSL) 373.0 m / 1223.8 ft
Antenna Centerline (AGL) 8.54 m / 28.0 ft
Antenna Model Datron 13 meter
Antenna Mode Transmit 2.0 GHz
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power -1.9 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	2.83	76.36	4.50	293.25
5	2.67	74.62	4.50	293.25
10	2.48	72.95	4.50	293.25
15	2.36	71.44	4.50	293.25
20	2.17	69.98	4.50	293.25
25	1.97	68.65	4.50	293.25
30	1.73	67.42	4.50	293.25
35	1.00	65.89	4.50	293.25
40	0.40	64.63	4.50	293.25
45	0.00	63.74	4.50	293.25
50	0.00	63.44	4.50	293.25
55	0.00	63.37	4.50	293.25
60	0.00	63.51	4.50	293.25
65	0.00	63.87	4.50	293.25
70	0.00	64.44	4.50	293.25
75	0.00	65.22	4.50	293.25
80	0.00	66.19	4.50	293.25
85	0.00	67.34	4.50	293.25
90	0.00	68.67	4.50	293.25
95	0.00	70.15	4.50	293.25
100	0.00	71.78	4.50	293.25
105	0.00	73.53	4.50	293.25
110	0.00	75.39	4.50	293.25
115	0.00	77.35	4.50	293.25
120	0.00	79.40	4.50	293.25
125	0.00	81.51	4.50	293.25
130	0.00	83.67	4.50	293.25
135	0.00	85.87	4.50	293.25
140	0.00	88.10	4.50	293.25
145	0.00	90.34	4.50	293.25
150	0.00	92.58	4.50	293.25
155	0.00	94.80	4.50	293.25
160	0.00	96.99	4.50	293.25
165	0.00	99.14	4.50	293.25
170	0.00	101.24	4.50	293.25
175	0.00	103.26	4.50	293.25
180	0.00	105.19	4.50	293.25
185	0.00	107.02	4.50	293.25

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values

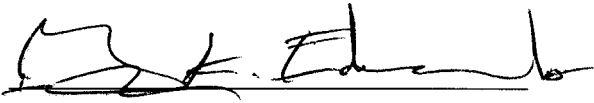
NAALEHU, HI

Licensee Name Universal Space Network, Inc.
Latitude (NAD 83) 19° 0' 50.0" N
Longitude (NAD 83) 155° 39' 47.9" W
Ground Elevation (AMSL) 373.0 m / 1223.8 ft
Antenna Centerline (AGL) 8.54 m / 28.0 ft
Antenna Model Datron 13 meter
Antenna Mode Transmit 2.0 GHz
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power -1.9 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	108.73	4.50	293.25
195	0.00	110.32	4.50	293.25
200	0.00	111.75	4.50	293.25
205	0.00	113.03	4.50	293.25
210	0.00	114.13	4.50	293.25
215	0.00	115.04	4.50	293.25
220	0.00	115.75	4.50	293.25
225	0.00	116.26	4.50	293.25
230	0.00	116.56	4.50	293.25
235	0.00	116.63	4.50	293.25
240	0.00	116.49	4.50	293.25
245	0.00	116.13	4.50	293.25
250	0.00	115.56	4.50	293.25
255	0.00	114.78	4.50	293.25
260	0.27	113.57	4.50	293.25
265	0.44	112.29	4.50	293.25
270	0.62	110.85	4.50	293.25
275	0.95	109.16	4.50	293.25
280	1.11	107.50	4.50	293.25
285	1.16	105.78	4.50	293.25
290	1.21	103.98	4.50	293.25
295	1.39	102.02	4.50	293.25
300	1.51	100.04	4.50	293.25
305	1.66	98.00	4.50	293.25
310	1.95	95.90	4.50	293.25
315	2.16	93.81	4.50	293.25
320	2.38	91.74	4.50	293.25
325	2.45	89.69	4.50	293.25
330	2.55	87.65	4.50	293.25
335	2.61	85.64	4.50	293.25
340	2.74	83.68	4.50	293.25
345	2.78	81.76	4.50	293.25
350	3.21	80.05	4.50	293.25
355	3.02	78.18	4.50	293.25

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: January 02, 2026

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Universal Space Network, Inc.
NAALEHU, HI
Satellite Earth Station

Prepared By:
COMSEARCH
21515 Ridgetop Circle, Suite 300
Sterling, VA 20166
January 02, 2026

TABLE OF CONTENTS

1. CONCLUSIONS	3
2. SUMMARY OF RESULTS	4
3. SUPPLEMENTAL SHOWING	5
4. EARTH STATION COORDINATION DATA.....	7
5. CERTIFICATION.....	11

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 12/02/2025.

Company

3G Wireless, LLC
Accelerated Media Technologies
Aerial Video Systems
Ascent Media Network Services, LLC
Bellsouth Telecommunications, Inc.
Borgeson, Tom R.
Broadcast Sports Inc.
Carolina Telephone and Telegraph Co
Casper, John
Chicago Comnet Corp
Cowboys Stadium LP
CP Communications
DCI II, INC.
Fine Satellites & Fiber, LLC
Frontier California Inc.
Global Telecom & Technology Americas, In
Goodyear Tire & Rubber Company
Gray Television Licensee, LLC
HF Enterprises, Inc
Hawaii Public Television Foundation
Hawaiian Telecom Inc.
Heiden, William
Indiana Bell Telephone Company
KITV, Inc
Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
KTBV License LLC
Lehman, Ronald G
Lumen Technologies Inc
Michigan Bell Telephone Company
Microwave Video Systems, LLC
NorthWest Suburbs Community Access Corp
Ohio Bell GTelephone Company
Onboard Images
Pacific Bell Tel Com dba AT&T California
Quick Link Connections Inc.
Qwest Corporation
RCC Minnesota Inc. - MN NE ND SD
RF Film, Inc
Remote Facilities Consulting Services

SayRabbit LLC
SBE Coordinator
Southwestern Bell Telephone L.P.
TTWN Networks, LLC
VERIZON SOUTH INC.
Verizon Maryland, Inc.
Verizon New England Inc.
Verizon New Jersey, Inc.
Verizon New York, Inc.
Verizon North Inc.
Verizon Northwest Inc.
Verizon Pennsylvania, Inc.
Verizon Virginia, Inc.
Verizon Washington DC, Inc.
Winged Vision Inc
Wisconsin Bell Telephone Company
Wolfe Air Aviation

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: 12/02/2025
Job Number: 251202COMSGE08

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	(HI-13M-2)
Licensee Code	UNSPNE
Licensee Name	Universal Space Network, Inc.

Site Information

Venue Name	NAALEHU, HI
Latitude (NAD 83)	MTG-EUM_3.5E
Longitude (NAD 83)	19° 0' 50.0" N
Climate Zone	155° 39' 47.9" W
Rain Zone	C
Ground Elevation (AMSL)	4
	373.0 m / 1223.8 ft

Link Information

Satellite Type	Low Earth Orbit
Mode	TO - Transmit-Only
Modulation	Digital
Minimum Elevation Angle	5.0°
Azimuth Range	0.0° to 360°
Antenna Centerline (AGL)	8.54 m / 28.0 ft

Antenna Information

Manufacturer	Transmit - FCC32
Model	Datron
Gain / Diameter	1453
3-dB / 15-dB Beamwidth	45.9 dBi / 13.0 m
	0.76° / 1.46°

Max Available RF Power	(dBW/4 kHz)	-1.9	
	(dBW/MHz)	22.1	
Maximum EIRP	(dBW/4 kHz)	44.0	
	(dBW/MHz)	68.0	
Interference Objectives:	Long Term	-154.0 dBW/4 kHz	20%
	Short Term	-131.0 dBW/4 kHz	0.0025%

Frequency Information

Emission / Frequency Range (MHz)	Transmit 2.0 GHz
	1M00G2D / 2070.4938

Max Great Circle Coordination Distance	293.2 km / 182.2 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values

NAALEHU, HI

Licensee Name Universal Space Network, Inc.
Latitude (NAD 83) 19° 0' 50.0" N
Longitude (NAD 83) 155° 39' 47.9" W
Ground Elevation (AMSL) 373.0 m / 1223.8 ft
Antenna Centerline (AGL) 8.54 m / 28.0 ft
Antenna Model Datron 13 meter
Antenna Mode Transmit 2.0 GHz
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power -1.9 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	2.83	76.36	4.50	293.25
5	2.67	74.62	4.50	293.25
10	2.48	72.95	4.50	293.25
15	2.36	71.44	4.50	293.25
20	2.17	69.98	4.50	293.25
25	1.97	68.65	4.50	293.25
30	1.73	67.42	4.50	293.25
35	1.00	65.89	4.50	293.25
40	0.40	64.63	4.50	293.25
45	0.00	63.74	4.50	293.25
50	0.00	63.44	4.50	293.25
55	0.00	63.37	4.50	293.25
60	0.00	63.51	4.50	293.25
65	0.00	63.87	4.50	293.25
70	0.00	64.44	4.50	293.25
75	0.00	65.22	4.50	293.25
80	0.00	66.19	4.50	293.25
85	0.00	67.34	4.50	293.25
90	0.00	68.67	4.50	293.25
95	0.00	70.15	4.50	293.25
100	0.00	71.78	4.50	293.25
105	0.00	73.53	4.50	293.25
110	0.00	75.39	4.50	293.25
115	0.00	77.35	4.50	293.25
120	0.00	79.40	4.50	293.25
125	0.00	81.51	4.50	293.25
130	0.00	83.67	4.50	293.25
135	0.00	85.87	4.50	293.25
140	0.00	88.10	4.50	293.25
145	0.00	90.34	4.50	293.25
150	0.00	92.58	4.50	293.25
155	0.00	94.80	4.50	293.25
160	0.00	96.99	4.50	293.25
165	0.00	99.14	4.50	293.25
170	0.00	101.24	4.50	293.25
175	0.00	103.26	4.50	293.25
180	0.00	105.19	4.50	293.25
185	0.00	107.02	4.50	293.25

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values

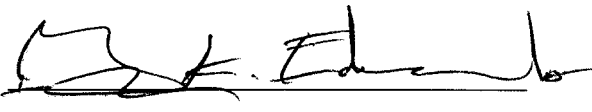
NAALEHU, HI

Licensee Name Universal Space Network, Inc.
Latitude (NAD 83) 19° 0' 50.0" N
Longitude (NAD 83) 155° 39' 47.9" W
Ground Elevation (AMSL) 373.0 m / 1223.8 ft
Antenna Centerline (AGL) 8.54 m / 28.0 ft
Antenna Model Datron 13 meter
Antenna Mode Transmit 2.0 GHz
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power -1.9 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	108.73	4.50	293.25
195	0.00	110.32	4.50	293.25
200	0.00	111.75	4.50	293.25
205	0.00	113.03	4.50	293.25
210	0.00	114.13	4.50	293.25
215	0.00	115.04	4.50	293.25
220	0.00	115.75	4.50	293.25
225	0.00	116.26	4.50	293.25
230	0.00	116.56	4.50	293.25
235	0.00	116.63	4.50	293.25
240	0.00	116.49	4.50	293.25
245	0.00	116.13	4.50	293.25
250	0.00	115.56	4.50	293.25
255	0.00	114.78	4.50	293.25
260	0.27	113.57	4.50	293.25
265	0.44	112.29	4.50	293.25
270	0.62	110.85	4.50	293.25
275	0.95	109.16	4.50	293.25
280	1.11	107.50	4.50	293.25
285	1.16	105.78	4.50	293.25
290	1.21	103.98	4.50	293.25
295	1.39	102.02	4.50	293.25
300	1.51	100.04	4.50	293.25
305	1.66	98.00	4.50	293.25
310	1.95	95.90	4.50	293.25
315	2.16	93.81	4.50	293.25
320	2.38	91.74	4.50	293.25
325	2.45	89.69	4.50	293.25
330	2.55	87.65	4.50	293.25
335	2.61	85.64	4.50	293.25
340	2.74	83.68	4.50	293.25
345	2.78	81.76	4.50	293.25
350	3.21	80.05	4.50	293.25
355	3.02	78.18	4.50	293.25

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: January 02, 2026