

FCC 312
Main Form

FEDERAL COMMUNICATIONS COMMISSION

APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS

Approved by OETD
3/26/2007
Do Not Include These
Per Responses 11-16

FCC Use Only
File Number:

Call Sign:

Fee Number:

APPLICANT INFORMATION

1. Legal Name of Applicant Universal Space Network, Inc.		2. Voice Telephone Number (949) 476 - 3432
3. Other Name Used for Doing Business (if any)		4. Fax Telephone Number (949) 851 - 9485
5. Mailing Street Address or P.O. Box 1501 Quail Street, Suite 102		6. City Newport Beach
ATTENTION: JOANNE GREET (215) 328-9130		7. State/Country (if not U.S.A.) California
8. Zip Code 92660		9. Name of Contact Representative (if other than applicant)
10. Voice Telephone Number		11. Firm or Company Name
12. Fax Telephone Number		13. Mailing Street Address or P.O. Box
ATTENTION:		14. City
15. State/Country (if not U.S.A.)		16. Zip Code

CLASSIFICATION OF FILING

17. Place an "X" in the box next to the classification that applied to this filing for both questions a. and b. Mark only one box for 17a and only one box for 17b.

<input checked="" type="checkbox"/> a1. Earth Station	<input type="checkbox"/> b1. Application for License of New Station
<input type="checkbox"/> a2. Space Station	<input type="checkbox"/> b2. Application for Registration of New Domestic Receive-Only Station
	<input type="checkbox"/> b3. Amendment to a Pending Application
	<input type="checkbox"/> b4. Modification of License or Registration
	<input type="checkbox"/> b5. Assignment of License or Registration
	<input checked="" type="checkbox"/> b6. Transfer of Control of License or Registration
	<input type="checkbox"/> b7. Notification of Minor Modification
	<input type="checkbox"/> b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite
	<input type="checkbox"/> b9. Letter of Intent to Use Non-U.S. Licensed Satellite to provide Service in the United States
	<input checked="" type="checkbox"/> b10. Other (Please Specify): <u>Application to Request Special Temporary Authority</u>

18. If this filing is in reference to an existing station, enter:
Call sign of station: _____

19. If this filing is an amendment to a pending application enter:
(a) Date pending application was filed: _____
(b) File number of pending application: _____

TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s): Place an "X" in the box(es) next to all that apply.

- a. Fixed Satellite
- b. Mobile Satellite
- c. Radiodetermination Satellite
- d. Earth Exploration Satellite
- e. Direct to Home Fixed Satellite
- f. Digital Audio Radio Service
- g. Other (Please Specify) Launch, Early Orbit Support (LEOP) & IOT Support

21. STATUS:

- a. Common Carrier
- b. Non-Common Carrier
- a. Using U.S. licensed satellites
- b. Using Non-U.S. licensed satellites

22. If earth station applicant, place an "X" in the box(es) next to all that apply.

23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Mark only one box. Are these facilities:

- a. Connected to the Public Switched Network
- b. Not connected to the Public Switched Network

24. FREQUENCY BAND(S): Place and "X" in the box(es) next to all applicable frequency band(s).

- a. C-Band (4/6 GHz)
- b. Ku-Band (12/14 GHz)
- c. Other (please specify) Extended C-Band (7 GHz)

TYPE OF STATION

25. CLASS OF STATION: Place an "X" in the box next to the class of station that applies. Mark only one box.

- a. Fixed Earth Station
- b. Temporary-Fixed Earth Station
- c. 12/14 GHz VSAT Network
- d. Mobile Earth Station
- e. Space Station
- f. Other (Specify) _____

If space station applicant, go to Question 27.

26. TYPE OF EARTH STATION FACILITY Mark only one box.

- a. Transmit/Receive
- b. Transmit-Only
- c. Receive-Only

PURPOSE OF MODIFICATION OR AMENDMENT

27. The purpose of this proposed modification or amendment is to: Place and "X" in the box(es) next to all that apply.

- a - authorization to add new emission designator and related service
- b - authorization to change emission designator and related service
- c - authorization to increase EIRP and EIRP density
- d - authorization to replace antenna
- e - authorization to add antenna
- f - authorization to relocate fixed station
- g - authorization to change assigned frequency(ies)
- h - authorization to add Points of Communication (satellites & countries)
- i - authorization to change Points of Communication (satellites & countries)
- j - authorization for facilities for which environmental assessment and radiation hazard reporting is required
- k - Other (Please Specify) N/A

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307?

If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. §§ 1.1308 and 1.1311, as an exhibit to this application.

- YES
- NO

A Radiation Hazard Study must accompany all applications as an exhibit for new transmitting facilities, major modifications, or amendments. Refer to OET Bulletin 65.

ALIEN OWNERSHIP

29. Is the applicant a foreign government or the representative of any foreign government?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
30. Is the applicant an alien or the representative of an alien?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative there of or by any corporation organized under the laws of a foreign country?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit, the identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.		

BASIC QUALIFICATIONS

35. Does the applicant request any waivers or exemptions from any of the Commission's Rules? If Yes, attach as an exhibit, copies of the requests for waivers or exception with supporting documents.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
36. Has the applicant or any party to this application had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
37. Has the applicant, or any party to this application, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal Court? If Yes, attach as an exhibit, an explanation of the circumstances	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radios apparatus, exclusive traffic arrangement or any other mean or unfair method of competition? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, addresses, and citizenship of those stockholders owing of record and/or voting 10 percent or more of the Filer's voting stock and the percentages so help. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.		
41. By checking Yes, the undersigned certifies, that neither the applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 or the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
42a. Does the applicant intend to use a non-U.S. Licensed satellite to provide service in the United States? If yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. § 25.137, as appropriate. If no, proceed to question 43.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station? <u>International Telecommunication Union</u>		

43. Description. (Summarize the nature of the application and the services to be provided).

Universal Space Network's ground station in Naalehu, Hawaii shall be used to assist Space Systems Loral and Sirius XM Radio during the launch and early orbit phase (LEOP) of the Sirius FM-6 spacecraft (Call Sign S2812). Communications shall consist of telemetry, telecommand, data delivery and control of the satellite. LEOP shall last no longer than Launch +12 days. The launch is scheduled for October 20, 2013. The earth station will also be used for In-Orbit-Testing (IOT) of the satellite. Communications in this phase shall consist of telemetry, telecommand, and payload calibration of the satellite. IOT shall last no longer than 28 days after the satellite has been parked. Parking is expected to occur about November 20, 2013.

Exhibit No.	Identify all exhibits that are attached to this application.
A	Frequency Coordination Report

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Place an "X" in the box next to applicable response.)

- a. Individual
- b. Unincorporated Association
- c. Partnership
- d. Corporation
- e. Governmental Entity
- e. Other (Please specify) _____

45. Typed Name of Person Signing
Joanne Greet

46. Title of Person Signing
Manager, Compliance

47. Signature

48. Date

WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
Technical and Operational Description

(Place an "X" in one of the blocks below)

License of New Station Registration of new Domestic Receive-Only Station Amendment to a Pending Application Modification of License/Registration Notification of Minor Modification

B1. Location of Earth Station Site. If temporary-fixed, mobile, or VSAT remote facility, specify area of operation and point of contact. If VSAT hub station, give its location. For VSAT networks attach individual Schedule B, Page 1 sheets for each hub station and each remote station. Individually provide the Location, Points of Communications, and Destination Points for each hub and remote station.

B1a. Station Call Sign USH101	B1b. Site Identifier (HUB, REMOTE1, etc.)	B1c. Telephone Number (808) 929-8069	B1j. Geographic Coordinates N/S, Deg. - Min. - Sec. - E/W Lat. 19° 00' 50.3" N Lon. 155° 39' 46.6" W	B1k. Lat./Lon. Coordinates are: <input type="checkbox"/> NAD-27 <input checked="" type="checkbox"/> NAD-83
B1d. Mailing Street Address of Station or Area of Operation 93-1704 South Point Road		B1c. Name of Contact Person Joanne Greet	B1l. Site Elevation (AMSL) 378.0 meters	
B1f. City Naalehu	B1g. County Ka'u	B1h. State HI	B1i. Zip Code 96772-0842	

B2. Points of Communications: List the names and orbit locations of all satellites with which this earth station will communicate. The entry "ALSAT" is sufficient to identify the names and locations of all satellite facilities licensed by the U.S. All non-U.S. licensed satellites must be listed individually.

Satellite Name and Orbit Location	Satellite Name and Orbit Location
Sirius FM-6 (S2812) GTO and parking at 115.2° West	

B3. Destination points for communications using non-U.S. licensed satellites. For each non-U.S. licensed satellite facility identified in section B2 above, specify the destination point(s) (countries) where the services will be provided by this earth station via each non-U.S. license satellite system. Use additional sheets as needed.

Satellite Name	List of Destination Points
Sirius FM-6	Space Systems Loral, Palo Alto, California and Sirius XM Radio, Vernon, New Jersey

**FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)**

B4. Earth Station Antenna Facilities: Use additional pages as needed.

(a) Site ID*	(b) Antenna ID**	(c) Quantity	(d) Manufacturer	(e) Model	(f) Antenna Size (meters)	(g) Antenna Gain Transmit and/or Receive (____ dBi at _____ GHz)
USHI01	HI-13M	1	Datron	1453	13.0	57.1 dBi at 7052.0 GHz

B5. Antenna Heights and Maximum Power Limits: (The corresponding Antenna ID in tables B4 and B5 applies to the same antenna)

(a) Antenna ID**	(b) Antenna Structure Registration No.	Maximum Antenna Height		(c) Building Height Above Ground Level (meters)***	(f) Maximum Antenna Height Above Rooftop (meters)***	(g) Total Input Power at antenna flange (Watts)	(h) Total EIRP for all carriers (dBW)
		(c) Above Ground Level (meters)	(d) Above Mean Sea Level (meters)				
HI-13M		20.0	398.0			620.0	85.0

Notes: * If this is an application for a VSAT network, identify the site (Item B1b, Schedule B, Page 1) where each antenna is located. Also include this Site-ID on Schedule B, Page 5.
 ** Identify each antenna in VSAT network or multi-antenna station with a unique identifier, such as HUB, REMOTE1, A1, A2, 10M, 12M, 7M, etc. Use this same antenna ID throughout tables B4, B5, B6, and B7 when referring to the same antenna.
 *** Attach sketch of site or exemption, See 47 CFR Part 17.

**FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)**

B6. Frequency Coordination Limits: Use additional pages as needed.

(a) Antenna ID*	(b) Frequency Limits (MHz)	(c) Range of Satellite Arc Eastern Limit**	(d) Range of Satellite Arc Western Limit**	(e) Antenna Elevation Angle Eastern Limit	(f) Antenna Elevation Angle Western Limit	(g) Earth Station Azimuth Angle Eastern Limit	(h) Earth Station Azimuth Angle Western Limit	(i) Maximum EIRP Density toward the Horizon (dBW/4kHz)
HI-13M	7052.000	0.0° W.L.	360.0° W.L.	5.0°	5.0°			15.4
HI-13M	7056.000	0.0° W.L.	360.0° W.L.	5.0°	5.0°			15.4

Notes: * Provide the ANTENNA-ID from table B4 to identify the antenna to which each frequency band and orbital arc range is associated.
 ** If operating with geostationary satellites, give the orbital arc limits and the associated elevation and azimuth angles. If operating with non-geostationary satellites, give the notation "NON-GEO" for the satellite arc and give the minimum operational elevation angle and the maximum azimuth angle range.

**FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)**

B7. Particulars of Operation (Full particulars are required for each r.f. carrier): Use additional pages as needed.

(a) Antenna ID*	(b) Frequency Limits (MHz)	(c) T/R Mode **	(d) Antenna Polarization (H,V,L,R)	(e) Emission Designator	(f) Maximum EIRP per Carrier (dBW)	(g) Maximum EIRP Density per Carrier (dBW/4kHz)	(h) Description of Modulation and Services
HI-13M	7052.000	T	L, R	200KG2D	85.0	68.0	1000 BPS is PCM/PSK/PM (on 8 kHz subcarrier) plus Range Tones
HI-13M	7056.000	T	L, R	200KG2D	85.0	68.0	1000 BPS is PCM/PSK/PM (on 8 kHz subcarrier) plus Range Tones

Notes: * Provide the ANTENNA-ID from table B4 to identify the antenna to which each frequency band and emission is associated. For VSAT networks, include frequencies and emissions for all HUB and REMOTE units.
 ** Indicate whether the earth station transmits or receives in each frequency band.

**FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS
FCC Form 312 - Schedule B: (Technical and Operational Description)**

If VSAT Network, provide the SITE-ID (Item B1b) of the station that B8-B13 are in response to (HUB, REMOTE1, etc.): _____

<p>B8. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurements? If NO, provide as an exhibit, a technical analysis showing compliance with two-degree spacing policy.</p>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO												
<p>B9. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurement?</p>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO												
<p>B10. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point.</p>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO												
<p>Remote Control Point Location:</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:40%; padding: 2px;">B10a. Street Address 417 Caredean Drive Suite A</td> <td style="width:20%; padding: 2px;">B10c. County Montgomery</td> <td style="width:20%; padding: 2px;">B10d. State/Country PA</td> <td style="width:20%; padding: 2px;">B10e. Zip Code 19044</td> </tr> <tr> <td colspan="2" style="padding: 2px;">B10b. City Horsham</td> <td colspan="2" style="padding: 2px;">B10g. Call Sign of Control Station (if appropriate)</td> </tr> <tr> <td colspan="2" style="padding: 2px;">B10f. Telephone Number 215-328-9130</td> <td colspan="2"></td> </tr> </table>		B10a. Street Address 417 Caredean Drive Suite A	B10c. County Montgomery	B10d. State/Country PA	B10e. Zip Code 19044	B10b. City Horsham		B10g. Call Sign of Control Station (if appropriate)		B10f. Telephone Number 215-328-9130			
B10a. Street Address 417 Caredean Drive Suite A	B10c. County Montgomery	B10d. State/Country PA	B10e. Zip Code 19044										
B10b. City Horsham		B10g. Call Sign of Control Station (if appropriate)											
B10f. Telephone Number 215-328-9130													
<p>B11. Is frequency coordination required? If YES, attach a frequency coordination report as an exhibit.</p>	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO												
<p>B12. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as an exhibit.</p>	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO												
<p>B13. FAA Notification - (See 47 CFT Part 17 and 47 CFT Part 25.113(c)) Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and/or the FAA's study regarding the potential hazard of the structure to aviation? FAILURE TO COMPLY WITH 47 CFT PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION</p>	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO												

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**Universal Space Network, Inc.
Naalehu, Hawaii**

Satellite Earth Station

Prepared By:

COMSEARCH

19700 Janelia Farm Boulevard

Ashburn, Virginia 20147

June 21, 2013

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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-only earth station.

Company

None

No 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.

Expedited coordination data for this earth station was emailed and sent to the below listed carriers with a letter dated June 9, 2013.

Company

3G Wireless, LLC
AERIAL VIDEO SYSTEMS
AT&T California
Alascom Inc
Ascent Media Network Services, LLC
Bellsouth Telecommunications, Inc.
BFI Licenses, LLC
Borgeson, Tom R.
Broadcast Sports Inc.
CNG Communications, Inc.
Carolina Telephone and Telegraph Co
Casper, John
CenturyTel of the Southwest, Inc.
Chicago Comnet Corp
Cincinnati Bell Wireless LLC
Circuit of the Americas, LLC
Citywide News Network, Inc.
Cohen, Elana
Cowboys Stadium LP
CP Communications PA, LLC
DCI II, INC.
Direct Broadcast Services, Inc.
Fishman Brothers Enterprises
GOODYEAR TIRE AND RUBBER COMPANY
GSN New, Inc
Global Microwave Systems Inc
HF Enterprises, Inc
HO'ONA'AUAO COMMUNITY TV, INC.
Hallco Unlimited, Inc.
Hawaii State
Hawaiian Telcom, Inc.
Hearst -Argyle Stations, Inc (KITV-TV)
Heiden, William
Ho Ona Auao Community TV, Inc

Company (Continued)

ION MEDIA HAWAII LICENSE, INC.
Illinois Bell Telephone Company
Indiana Bell Telephone Company
Information & Display Systems, Inc.
Information Super Station, LLC
International Communications Group, Inc.
KHNL/KGMB License Subsidiary, LLC
Kaiser Ind Corp
Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
MERCURY COMMUNICATIONS
Mauna Kea Broadcasting Company, Inc.
Metro Networks Communications, Inc.
Metrosat Communications, Inc.
Michigan Bell Telephone Company
Moreen, Steven K
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NEW ENGLAND SATELLITE SYSTEMS INC
NRJ TV Hawaii License Co, LLC
NSM Surveillance
NVT Hawaii Licensee, LLC
Navajo Communications Company
NorthWest Suburbs Community Access Corp
ONE LOVE OUTREACH, INC.
Ohio Bell Telephone Company
On Scene Video Production
Onboard Images
Penn Service Microwave Co., Inc.
Plateau Telecommunications, Inc.
Plum TV, LLC
Production & Satellite Services, Inc.
Public Television Communications Center
QUICK LINK CONNECTIONS INC
QWEST CORPORATION
RCC Minnesota Inc. - MN NE ND SD
REMOTE FACILITIES CONSULTING SERVICES
RF Central, LLC
RF Film, Inc
RF Technology LLC
Radiofone, Inc.
Randy Hermes Production
Regulus Media Services, Inc.
Remote Broadcasts, Inc.
Society of Broadcast Engineers
Southwestern Bell Telephone L.P.
Speedshotz, Inc
Time Warner Entertainment Company L.P.
Total RF Marketing Inc
Trinity Broadcasting Network Inc
Unisat, Inc.
United Telephone - Southeast

Company (Continued)

VERIZON SOUTH INC.
Verizon California 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.
Village Video Productions Inc
Vyvx, LLC
Westar Satellite Services LP
Western Technical Services
Wexler Video, Inc.
Winged Vision Inc
Wisconsin Bell, Inc.
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: 06/21/2013
Job Number: 130609COMSJC01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign NAALEHU
Licensee Code UNSPNE
Licensee Name Universal Space Network, Inc.

Site Information

NAALEHU, HAWAII

Venue Name
Latitude (NAD 83) 19° 0' 50.3" N
Longitude (NAD 83) 155° 39' 46.6" W
Climate Zone C
Rain Zone 4
Ground Elevation (AMSL) 378.0 m / 1240.2 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) 8.53 m / 28.0 ft

Antenna Information

Transmit

Manufacturer Datron
Model 1453
Gain / Diameter 57.1 dBi / 13.0 m
3-dB / 15-dB Beamwidth 0.24° / 0.45°

Max Available RF Power (dBW/4 kHz) 10.9
(dBW/MHz) 34.9

Maximum EIRP (dBW/4 kHz) 68.0
(dBW/MHz) 92.0
(dBW) 85.0

Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%

Frequency Information

Transmit 7.0 GHz

Emission / Frequency Range (MHz) 200KG2D / 7052.0
200KG2D / 7056.0

Max Great Circle Coordination Distance 760.0 km / 472.2 mi
Precipitation Scatter Contour Radius 330.4 km / 205.3 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' 50.3" N
Longitude (NAD 83) 155° 39' 46.6" W
Ground Elevation (AMSL) 378.0 m / 1240.2 ft
Antenna Centerline (AGL) 8.53 m / 28.0 ft
Antenna Model Datron 1453
Antenna Mode Transmit 7.0 GHz
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power 10.9 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 7.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	2.78	76.33	4.50	365.00
5	2.62	74.59	4.50	374.40
10	2.39	72.89	4.50	388.60
15	2.30	71.39	4.50	394.30
20	2.17	69.98	4.50	403.00
25	2.03	68.70	4.50	412.70
30	1.68	67.37	4.50	439.30
35	0.90	65.80	4.50	517.90
40	0.33	64.56	4.50	619.40
45	0.00	63.74	4.50	760.00
50	0.00	63.44	4.50	760.00
55	0.00	63.37	4.50	760.00
60	0.00	63.51	4.50	760.00
65	0.00	63.87	4.50	760.00
70	0.00	64.44	4.50	760.00
75	0.00	65.22	4.50	760.00
80	0.00	66.19	4.50	760.00
85	0.00	67.34	4.50	760.00
90	0.00	68.67	4.50	760.00
95	0.00	70.15	4.50	760.00
100	0.00	71.77	4.50	760.00
105	0.00	73.53	4.50	760.00
110	0.00	75.39	4.50	760.00
115	0.00	77.35	4.50	760.00
120	0.00	79.39	4.50	760.00
125	0.00	81.51	4.50	760.00
130	0.00	83.67	4.50	760.00
135	0.00	85.87	4.50	760.00
140	0.00	88.10	4.50	760.00
145	0.00	90.34	4.50	760.00
150	0.00	92.58	4.50	760.00
155	0.00	94.80	4.50	760.00
160	0.00	96.99	4.50	760.00
165	0.00	99.14	4.50	760.00
170	0.00	101.24	4.50	760.00
175	0.00	103.26	4.50	760.00
180	0.00	105.19	4.50	760.00
185	0.00	107.02	4.50	760.00

COMSEARCH

Earth Station Data Sheet

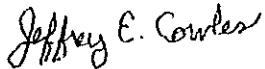
19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values	NAALEHU, HI
Licensee Name	Universal Space Network, Inc.
Latitude (NAD 83)	19° 0' 50.3" N
Longitude (NAD 83)	155° 39' 46.6" W
Ground Elevation (AMSL)	378.0 m / 1240.2 ft
Antenna Centerline (AGL)	8.53 m / 28.0 ft
Antenna Model	Datron 1453
Antenna Mode	Transmit 7.0 GHz
Interference Objectives: Long Term	-154.0 dBW/4 kHz 20%
Short Term	-131.0 dBW/4 kHz 0.0025%
Max Available RF Power	10.9 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 7.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	108.73	4.50	760.00
195	0.00	110.32	4.50	760.00
200	0.00	111.75	4.50	760.00
205	0.00	113.03	4.50	760.00
210	0.00	114.13	4.50	760.00
215	0.00	115.04	4.50	760.00
220	0.00	115.75	4.50	760.00
225	0.00	116.26	4.50	760.00
230	0.00	116.56	4.50	760.00
235	0.00	116.63	4.50	760.00
240	0.00	116.49	4.50	760.00
245	0.00	116.13	4.50	760.00
250	0.00	115.56	4.50	760.00
255	0.00	114.78	4.50	760.00
260	0.00	113.81	4.50	760.00
265	0.34	112.37	4.50	616.80
270	0.54	110.91	4.50	573.30
275	0.79	109.28	4.50	532.80
280	1.04	107.54	4.50	500.90
285	0.98	105.89	4.50	508.00
290	1.14	104.01	4.50	489.70
295	1.30	102.06	4.50	473.20
300	1.42	100.07	4.50	461.80
305	1.68	97.99	4.50	439.30
310	1.86	95.92	4.50	425.20
315	2.05	93.83	4.50	411.30
320	2.17	91.75	4.50	403.00
325	2.35	89.69	4.50	391.10
330	2.46	87.64	4.50	384.10
335	2.59	85.64	4.50	376.20
340	2.68	83.67	4.50	370.80
345	2.73	81.74	4.50	367.90
350	3.10	80.01	4.50	347.30
355	2.96	78.15	4.50	354.90

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.



Jeffrey E. Cowles
Engineer III, Telecommunications
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: June 21, 2013