

19700 Janelia Farm Boulevard

Ashburn, VA 20147

(703) 726-5500

Fax (703) 726-5600

COMSEARCH®



<http://www.comsearch.com>

July 24, 2011

\*\*\*\*\*  
\*\*\* CLIENT COPY \*\*\*  
\*\*\* PLEASE MAIL \*\*\*  
\*\*\* TO CUSTOMER \*\*\*

Re: Universal Space Network, Inc.  
North Pole, Alaska  
2 GHz Transmit/Receive Earth Station  
Job Number: 110724COMSJC02

\*\*\*\*\* EXPEDITED FREQUENCY COORDINATION \*\*\*\*\*  
\*\*\*\*\* RESPONSE REQUESTED BY AUGUST 5, 2011 \*\*\*\*\*

Dear Frequency Coordinator:

This notice is being provided in accordance with Section 25.203(c) of the FCC Rules and Regulations. We are forwarding the attached expedited coordination data on behalf of Universal Space Network, Inc. for the purpose of obtaining a STA to provide support services during the launch and early orbit testing of a new satellite from their existing transmit/receive earth station near North Pole, Alaska.

The coordination notice is being circulated to the owners (or their protection agents) of all existing or proposed terrestrial facilities operating in a shared frequency band within the coordination contours of the station(s).

Please update your database with the attached information.

We respectfully request that you examine this data for its interference potential with your system(s). In the event that your analysis identifies potential interference cases that were not previously reported, please contact Comsearch by August 5, 2011.

If there are any questions concerning this coordination notice, please contact Comsearch.

Sincerely,

COMSEARCH

Jeffrey E. Cowles  
Engineer III, Telecommunications  
[jcowles@comsearch.com](mailto:jcowles@comsearch.com)

Enclosure(s)

# COMSEARCH

## Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147  
(703)726-5660 <http://www.comsearch.com>

Date: 07/24/2011  
Job Number: 110724COMSJC02

### Administrative Information

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

### Site Information

#### NORTH POLE, ALASKA

Venue Name  
Latitude (NAD 83) 64° 48' 15.3" N  
Longitude (NAD 83) 147° 30' 0.8" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 140.66 m / 461.5 ft

### Link Information

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

### Antenna Information

#### Receive

#### Transmit

Manufacturer	Datron	Datron
Model	1453	1453
Gain / Diameter	46.9 dBi / 13.0 m	45.9 dBi / 13.0 m
3-dB / 15-dB Beamwidth	0.78° / 1.46°	0.76° / 1.46°

Max Available RF Power	(dBW/4 kHz)	4.5
	(dBW/MHz)	22.1

Maximum EIRP	(dBW/4 kHz)	50.4
	(dBW/MHz)	68.0
	(dBW)	68.0

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%

### Frequency Information

#### Receive 2.2 GHz

#### Transmit 2.0 GHz

Emission / Frequency Range (MHz)	230KG2D / 2230.0000	230KG2D / 2053.4583
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Max Great Circle Coordination Distance	559.9 km / 347.9 mi	476.4 km / 296.0 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi	263.4 km / 163.7 mi

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## Earth Station Data Sheet

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### Coordination Values

### NORTH POLE, AK

Licensee Name	Universal Space Network, Inc.				
Latitude (NAD 83)	64° 48' 15.3" N				
Longitude (NAD 83)	147° 30' 0.8" W				
Ground Elevation (AMSL)	140.66 m / 461.5 ft				
Antenna Centerline (AGL)	8.54 m / 28.0 ft				
Antenna Model	Datron 1453				
Antenna Mode	Receive 2.2 GHz		Transmit 2.0 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				4.5 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 2.2 GHz		Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.85	5.00	4.50	436.30	4.50	340.80
5	1.20	5.00	4.50	414.80	4.50	317.10
10	1.19	5.00	4.50	415.30	4.50	317.70
15	1.02	5.00	4.50	425.10	4.50	328.60
20	0.94	5.00	4.50	430.20	4.50	331.10
25	0.76	5.00	4.50	422.90	4.50	348.10
30	0.75	5.00	4.50	443.60	4.50	348.90
35	0.48	5.00	4.50	467.90	4.50	375.60
40	0.32	5.00	4.50	487.20	4.50	396.90
45	0.00	5.00	4.50	559.90	4.50	476.40
50	0.00	5.00	4.50	559.90	4.50	476.40
55	0.00	5.00	4.50	559.90	4.50	476.40
60	0.00	5.00	4.50	559.90	4.50	476.40
65	0.00	5.00	4.50	559.90	4.50	476.40
70	0.00	5.00	4.50	559.90	4.50	476.40
75	0.00	5.00	4.50	559.90	4.50	476.40
80	0.00	5.00	4.50	559.90	4.50	476.40
85	0.00	5.00	4.50	559.90	4.50	476.40
90	0.00	5.00	4.50	559.90	4.50	476.40
95	0.00	5.00	4.50	559.90	4.50	476.40
100	0.00	5.00	4.50	559.90	4.50	476.40
105	0.00	5.00	4.50	559.90	4.50	476.40
110	0.00	5.00	4.50	559.90	4.50	476.40
115	0.00	5.00	4.50	559.90	4.50	476.40
120	0.00	5.00	4.50	559.90	4.50	476.40
125	0.00	5.00	4.50	559.90	4.50	476.40
130	0.00	5.00	4.50	559.90	4.50	476.40
135	0.00	5.00	4.50	559.90	4.50	476.40
140	0.00	5.00	4.50	559.90	4.50	476.40
145	0.00	5.00	4.50	559.90	4.50	476.40
150	0.00	5.00	4.50	559.90	4.50	476.40
155	0.00	5.00	4.50	559.90	4.50	476.40
160	0.00	5.00	4.50	559.90	4.50	476.40
165	0.00	5.00	4.50	559.90	4.50	476.40
170	0.00	5.00	4.50	559.90	4.50	476.40
175	0.00	5.00	4.50	559.90	4.50	476.40
180	0.00	5.00	4.50	559.90	4.50	476.40
185	0.00	5.00	4.50	559.90	4.50	476.40

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**Coordination Values****NORTH POLE, AK**

Licensee Name	Universal Space Network, Inc.		
Latitude (NAD 83)	64° 48' 15.3" N		
Longitude (NAD 83)	147° 30' 0.8" W		
Ground Elevation (AMSL)	140.66 m / 461.5 ft		
Antenna Centerline (AGL)	8.54 m / 28.0 ft		
Antenna Model	Datron 1453		
Antenna Mode	Receive 2.2 GHz		Transmit 2.0 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			4.5 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 2.2 GHz		Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	5.00	4.50	559.90	4.50	476.40
200	0.00	5.00	4.50	559.90	4.50	476.40
205	0.00	5.00	4.50	559.90	4.50	476.40
210	0.00	5.00	4.50	559.90	4.50	476.40
215	0.00	5.00	4.50	559.90	4.50	476.40
220	0.00	5.00	4.50	559.90	4.50	476.40
225	0.00	5.00	4.50	559.90	4.50	476.40
230	0.00	5.00	4.50	559.90	4.50	476.40
235	0.00	5.00	4.50	559.90	4.50	476.40
240	0.00	5.00	4.50	559.90	4.50	476.40
245	0.00	5.00	4.50	559.90	4.50	476.40
250	0.00	5.00	4.50	559.90	4.50	476.40
255	0.00	5.00	4.50	559.90	4.50	476.40
260	0.00	5.00	4.50	559.90	4.50	476.40
265	0.00	5.00	4.50	559.90	4.50	476.40
270	0.00	5.00	4.50	559.90	4.50	476.40
275	0.00	5.00	4.50	559.90	4.50	476.40
280	0.00	5.00	4.50	559.90	4.50	476.40
285	0.00	5.00	4.50	559.90	4.50	476.40
290	0.00	5.00	4.50	559.90	4.50	476.40
295	0.00	5.00	4.50	559.90	4.50	476.40
300	0.00	5.00	4.50	559.90	4.50	476.40
305	0.00	5.00	4.50	559.90	4.50	476.40
310	0.35	5.00	4.50	483.20	4.50	392.50
315	0.96	5.00	4.50	428.90	4.50	327.70
320	0.60	5.00	4.50	456.10	4.50	362.70
325	0.80	5.00	4.50	439.90	4.50	344.80
330	0.82	5.00	4.50	438.40	4.50	343.20
335	0.69	5.00	4.50	448.40	4.50	354.20
340	0.94	5.00	4.50	430.20	4.50	334.10
345	1.16	5.00	4.50	417.00	4.50	319.50
350	1.18	5.00	4.50	415.90	4.50	318.30
355	1.23	5.00	4.50	413.10	4.50	315.30