

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
GCI Communications Corporation
BEAVER, AK
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
September 13, 2012

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.

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.

Coordination data for this earth station was sent to the below listed carriers with a letter dated 08/30/2012.

Company

ACS of the Northland License Sub, Inc.

ALASCOM, INC.

DRS Technical Services

Golden Valley Electric Association, Inc.

New Cingular Wireless PCS LLC - Alaska

State of Alaska

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: 09/13/2012
Job Number: 120830COMSTC04

Administrative Information

Licensee Name GCI Communications Corporation

Site Information

BEAVER, AK

Latitude (NAD 83) 66°21' 37.3" N
Longitude (NAD 83) 147°23' 48.1" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 106.98 m / 351.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 94°W to 194°West Longitude
Azimuth Range 124.2° to 229.1°
Corresponding Elevation Angles 5.2° / 7.4°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information

Receive

Transmit

Manufacturer	Skyware Global	Skyware Global
Model	243	243
Gain / Diameter	38.0 dBi / 2.4 m	42.0 dBi / 2.4 m
3-dB / 15-dB Beamwidth	2.10° / 4.00°	1.30° / 2.60°

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

45K0G7W - 36M0G7W
45K0D7W - 36M0D7W
-8.1 -16.53
15.9 7.47

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

33.9 25.47
57.88 49.45
44.4 65.01

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -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)	45K0G7W - 36M0G7W / 3700.0 - 4200.0	45K0G7W - 36M0G7W / 5925.0 - 6425.0
	45K0D7W - 36M0D7W / 3700.0 - 4200.0	45K0D7W - 36M0D7W / 5925.0 - 6425.0

Max Great Circle Coordination Distance 508.0 km / 315.6 mi
Precipitation Scatter Contour Radius 616.3 km / 382.9 mi

246.5 km / 153.1 mi
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

BEAVER, AK

Licensee Name GCI Communications Corporation
Latitude (NAD 83) 66°21' 37.3" N
Longitude (NAD 83) 147°23' 48.1" W
Ground Elevation (AMSL) 106.98 m / 351.0 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
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 -8.1 (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	124.08	-10.00	285.28	-10.00	149.26
5	0.00	119.10	-10.00	285.28	-10.00	149.26
10	0.00	114.13	-10.00	285.28	-10.00	149.26
15	0.00	109.15	-10.00	285.28	-10.00	149.26
20	0.00	104.18	-10.00	285.28	-10.00	149.26
25	0.00	99.20	-10.00	285.28	-10.00	149.26
30	0.00	94.22	-10.00	285.28	-10.00	149.26
35	0.00	89.24	-10.00	285.28	-10.00	149.26
40	0.00	84.26	-10.00	285.28	-10.00	149.26
45	0.00	79.28	-10.00	285.28	-10.00	149.26
50	0.00	74.30	-10.00	285.28	-10.00	149.26
55	0.00	69.32	-10.00	285.28	-10.00	149.26
60	0.00	64.35	-10.00	285.28	-10.00	149.26
65	0.00	59.37	-10.00	285.28	-10.00	149.26
70	0.00	54.40	-10.00	285.28	-10.00	149.26
75	0.00	49.44	-10.00	285.28	-10.00	149.26
80	0.00	44.47	-9.20	290.40	-9.20	151.96
85	0.00	39.52	-7.92	298.85	-7.92	156.47
90	0.00	34.58	-6.47	308.73	-6.47	161.82
95	0.00	29.65	-4.80	321.10	-4.80	169.88
100	0.00	24.75	-2.84	335.31	-2.84	177.50
105	0.00	19.89	-0.47	353.04	-0.47	186.66
110	0.00	15.13	2.51	376.15	2.51	198.06
115	0.00	10.57	6.40	407.36	6.40	211.43
120	0.00	6.68	11.38	451.65	11.38	232.93
125	0.00	5.23	14.05	508.04	14.05	246.45
130	0.00	6.74	11.28	467.23	11.28	232.45
135	0.00	8.26	9.08	437.02	9.08	222.63
140	0.00	9.63	7.41	417.00	7.41	215.54
145	0.00	10.89	6.08	404.66	6.08	210.15
150	0.00	12.01	5.01	395.80	5.01	206.00
155	0.00	12.97	4.17	388.90	4.17	204.42
160	0.00	13.78	3.52	384.23	3.52	201.92
165	0.00	14.42	3.03	380.30	3.03	200.05
170	0.00	14.88	2.69	377.57	2.69	198.75
175	0.00	15.16	2.48	375.96	2.48	197.97
180	0.00	15.26	2.41	375.42	2.41	197.71
185	0.00	15.16	2.48	375.93	2.48	197.96

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

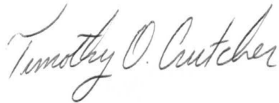
BEAVER, AK

Licensee Name GCI Communications Corporation
Latitude (NAD 83) 66°21' 37.3" N
Longitude (NAD 83) 147°23' 48.1" W
Ground Elevation (AMSL) 106.98 m / 351.0 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
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 -8.1 (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	0.00	14.88	2.68	377.55	2.68	198.74
195	0.00	14.42	3.02	380.28	3.02	200.04
200	0.00	13.78	3.52	384.22	3.52	201.92
205	0.00	12.98	4.17	388.89	4.17	204.41
210	0.00	12.01	5.01	395.78	5.01	205.99
215	0.00	10.89	6.07	404.61	6.07	210.13
220	0.00	9.64	7.40	417.24	7.40	215.51
225	0.00	8.25	9.09	437.72	9.09	222.69
230	0.00	7.42	10.24	459.57	10.24	227.74
235	0.00	9.43	7.64	418.04	7.64	216.51
240	0.00	13.13	4.04	387.84	4.04	203.92
245	0.00	17.48	0.93	363.80	0.93	192.04
250	0.00	22.11	-1.61	344.39	-1.61	182.24
255	0.00	26.86	-3.73	328.82	-3.73	174.05
260	0.00	31.68	-5.52	315.99	-5.52	165.45
265	0.00	36.55	-7.07	304.59	-7.07	159.57
270	0.00	41.44	-8.44	295.42	-8.44	154.63
275	0.00	46.36	-9.65	287.50	-9.65	150.42
280	0.00	51.28	-10.00	285.28	-10.00	149.26
285	0.00	56.22	-10.00	285.28	-10.00	149.26
290	0.00	61.16	-10.00	285.28	-10.00	149.26
295	0.00	66.11	-10.00	285.28	-10.00	149.26
300	0.00	71.07	-10.00	285.28	-10.00	149.26
305	0.00	76.02	-10.00	285.28	-10.00	149.26
310	0.00	80.98	-10.00	285.28	-10.00	149.26
315	0.00	85.94	-10.00	285.28	-10.00	149.26
320	0.00	90.89	-10.00	285.28	-10.00	149.26
325	0.00	95.85	-10.00	285.28	-10.00	149.26
330	0.00	100.81	-10.00	285.28	-10.00	149.26
335	0.00	105.77	-10.00	285.28	-10.00	149.26
340	0.00	110.72	-10.00	285.28	-10.00	149.26
345	0.00	115.67	-10.00	285.28	-10.00	149.26
350	0.00	120.62	-10.00	285.28	-10.00	149.26
355	0.00	125.56	-10.00	285.28	-10.00	149.26

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.



Timothy O. Crutcher
Frequency Planner
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: September 13, 2012