

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
GCI Communications Corp
NIKOLSKI, AK
Satellite Earth Station

Prepared By:
COMSEARCH
21515 Ridgetop Circle, Suite 300
Sterling, VA 20166
October 31, 2022

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 10/28/2022.

<u>Company</u>
Comsearch

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: 10/31/2022
Job Number: 221028COMSGE07

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign: NIKOLSKI
Licensee Code: P3203
Licensee Name: GCI Communications Corp

Site Information

NIKOLSKI, AK

Venue Name:
Latitude (NAD 83): 52° 56' 19.5" N
Longitude (NAD 83): 168° 51' 36.1" W
Climate Zone: B
Rain Zone: 2
Ground Elevation (AMSL): 8.08 m / 26.5 ft

Link Information

Satellite Type: Geostationary
Mode: TR - Transmit-Receive
Modulation: Analog and Digital
Satellite Arc: 103° W to 235° West Longitude
Azimuth Range: 109.7° to 250.6°
Corresponding Elevation Angles: 5.6° / 5.5°
Antenna Centerline (AGL): 2.74 m / 9.0 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer: CPI High Winds
Model: 2385
Gain / Diameter: 42.0 dBi / 3.8 m
3-dB / 15-dB Beamwidth: 1.40° / 2.80°

CPI High Winds
2385
46.5 dBi / 3.8 m
1.00° / 2.00°

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

-2.7
21.3

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

43.8
67.8

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 - 108MG7W / 3700.0 - 4200.0
45K0D7W - 108MD7W / 3700.0 - 4200.0

45K0G7W - 108MG7W / 5925.0 - 6425.0
45K0D7W - 108MD7W / 5925.0 - 6425.0

Max Great Circle Coordination Distance: 522.5 km / 324.6 mi
Precipitation Scatter Contour Radius: 610.2 km / 379.1 mi

305.5 km / 189.8 mi
101.3 km / 62.9 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

NIKOLSKI, AK

Licensee Name GCI Communications Corp
Latitude (NAD 83) 52° 56' 19.5" N
Longitude (NAD 83) 168° 51' 36.1" W
Ground Elevation (AMSL) 8.08 m / 26.5 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model CPI High Winds 3.8 meter)
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 -2.7 (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	12.75	109.28	-10.00	101.49	-10.00	100.00
5	12.75	104.56	-10.00	101.49	-10.00	100.00
10	12.75	99.61	-10.00	101.48	-10.00	100.00
15	14.76	94.62	-10.00	100.00	-10.00	100.00
20	14.76	89.69	-10.00	100.00	-10.00	100.00
25	14.76	84.75	-10.00	100.00	-10.00	100.00
30	14.76	79.81	-10.00	100.00	-10.00	100.00
35	14.76	74.88	-10.00	100.00	-10.00	100.00
40	14.71	69.95	-10.00	100.00	-10.00	100.00
45	14.71	65.02	-10.00	100.00	-10.00	100.00
50	14.71	60.10	-10.00	100.00	-10.00	100.00
55	14.71	55.19	-10.00	100.00	-10.00	100.00
60	14.71	50.29	-10.00	100.00	-10.00	100.00
65	14.71	45.40	-9.43	100.00	-9.43	100.00
70	14.71	40.54	-8.20	100.00	-8.20	100.00
75	14.54	35.67	-6.81	103.13	-6.81	100.00
80	14.55	30.88	-5.24	107.86	-5.24	100.00
85	13.62	25.87	-3.32	117.71	-3.32	100.00
90	13.62	21.19	-1.15	122.77	-1.15	100.00
95	13.62	16.68	1.44	131.56	1.44	100.00
100	13.62	12.54	4.54	143.49	4.54	100.00
105	13.62	9.26	7.84	157.73	7.84	100.00
110	13.89	6.73	11.29	522.52	11.29	305.54
115	13.90	4.08	16.74	323.16	16.74	172.12
120	13.19	0.90	33.19	329.67	33.19	159.87
125	13.19	1.64	26.61	276.17	26.61	131.83
130	13.19	3.98	17.00	211.61	17.00	103.92
135	13.19	6.15	12.28	183.65	12.28	100.00
140	13.19	8.16	9.20	167.60	9.20	100.00
145	13.13	10.06	6.94	156.98	6.94	100.00
150	13.13	11.68	5.32	149.92	5.32	100.00
155	13.13	13.09	4.07	144.64	4.07	100.00
160	13.13	14.25	3.16	140.88	3.16	100.00
165	13.13	15.17	2.47	138.21	2.47	100.00
170	13.13	15.84	2.00	136.40	2.00	100.00
175	13.13	16.23	1.74	135.39	1.74	100.00
180	13.13	16.37	1.65	135.05	1.65	100.00
185	13.13	16.24	1.74	135.37	1.74	100.00

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

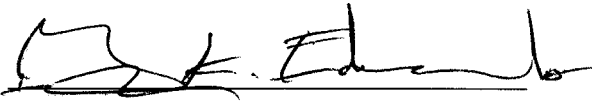
NIKOLSKI, AK

Licensee Name GCI Communications Corp
Latitude (NAD 83) 52° 56' 19.5" N
Longitude (NAD 83) 168° 51' 36.1" W
Ground Elevation (AMSL) 8.08 m / 26.5 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model CPI High Winds 3.8 meter)
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 -2.7 (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	13.13	15.84	2.01	136.42	2.01	100.00
195	13.13	15.17	2.47	138.21	2.47	100.00
200	13.13	14.25	3.15	140.86	3.15	100.00
205	13.13	13.08	4.08	144.67	4.08	100.00
210	13.13	11.68	5.32	149.91	5.32	100.00
215	13.13	10.05	6.94	157.01	6.94	100.00
220	13.13	8.22	9.13	167.65	9.13	100.00
225	13.13	6.19	12.20	183.71	12.20	100.00
230	13.13	4.01	16.92	211.64	16.92	103.93
235	13.13	1.73	26.08	272.73	26.08	130.19
240	13.13	0.96	32.43	323.99	32.43	156.57
245	14.06	4.19	16.44	328.96	16.44	176.76
250	12.58	5.63	13.24	496.14	13.24	286.37
255	12.58	8.40	8.90	170.70	8.90	100.00
260	12.58	11.82	5.19	152.76	5.19	100.00
265	12.58	16.07	1.85	139.00	1.85	100.00
270	12.58	20.66	-0.88	128.96	-0.88	100.00
275	12.58	25.40	-3.12	121.26	-3.12	100.00
280	10.09	29.77	-4.85	127.84	-4.85	100.00
285	10.09	34.72	-6.51	122.17	-6.51	100.00
290	10.09	39.67	-7.96	117.64	-7.96	100.00
295	12.03	44.83	-9.29	106.81	-9.29	100.00
300	12.03	49.77	-10.00	104.69	-10.00	100.00
305	12.03	54.71	-10.00	104.69	-10.00	100.00
310	12.03	59.67	-10.00	104.68	-10.00	100.00
315	12.03	64.62	-10.00	104.69	-10.00	100.00
320	12.03	69.58	-10.00	104.68	-10.00	100.00
325	7.55	74.45	-10.00	117.45	-10.00	100.00
330	10.03	79.48	-10.00	113.60	-10.00	100.00
335	10.03	84.46	-10.00	113.60	-10.00	100.00
340	10.03	89.45	-10.00	113.60	-10.00	100.00
345	10.03	94.43	-10.00	113.59	-10.00	100.00
350	10.04	99.41	-10.00	113.59	-10.00	100.00
355	12.75	104.32	-10.00	101.49	-10.00	100.00

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
21515 Ridgetop Circle, Suite 300
Sterling, VA 20166

DATED: October 31, 2022