

Ka,Q/V-Band Earth Station – Buffalo, Mn.

Frequency Coordination Report

Ka, Q/V-Band

Receive: 37.5 – 42.5 GHz Transmit: 27.5 – 31.0 GHz, 47.2 – 50.2, 50.4 – 52.4 GHz



Prepared on Behalf of
SPACE EXPLORATION
HOLDINGS

May 14, 2026



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1. Summary of Results

On behalf of SPACE EXPLORATION HOLDINGS, Comsearch performed a coordination notice under Section 25.203(c) of the FCC's rules for all existing and proposed terrestrial licenses within the coordination contours of their proposed Ka, Q/V-band earth station in Buffalo, Mn which will receive at 40 GHz and transmit at 28 and 50 GHz¹. Prior-notification letters were sent to the licensees and a copy of the notification data is provided in section four of this report. The earth station coordination was finalized on May 14, 2026.

There are no unresolved objections from any of the incumbent 28/40/50 GHz licensees.

2. 28/40/50 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka, Q/V-band earth station in Buffalo, Mn was prior-coordinated by Comsearch. A notification letter and datasheets for this earth station were sent to the following 28/40/50 GHz common carrier fixed microwave licensees. These licensees are authorized to operate temporary fixed operations from 38.6 – 40.0 GHz on a nationwide basis or local basis.

Licensee	Authorized Geographic Area
AT&T	Statewide: MN

A notification letter and datasheets for the Ka, Q/V-band earth station in Buffalo, Mn were also sent to the following 40 GHz LTTS licensee. This licensee is authorized to operate temporary fixed operations from 38.6 – 40.0 GHz on a market basis.

Licensee	Authorized Geographic Area
None Identified	

No objections were received from the common carrier or LTTS incumbents.

¹ The proposed earth station will receive in the 37.5 – 42.5 GHz & transmit in the 47.2-50.2 GHz / 50.4-52.4 GHz portion of the Q/V-Band. Ka-band transmissions will be in the 27.5 – 31.0 GHz band.

3. 28/40/50 GHz UMFUS Coordination

There were ten 28/40/50 GHz UMFUS licensees identified within the coordination distance of the proposed earth station. The proposed earth station will operate on frequencies that overlap portions of the UMFUS service which includes the following frequency ranges:

27.5 GHz – 31.0 GHz
37.5 GHz – 42.5 GHz
47.2 GHz – 50.2 GHz

Licensee	Authorized Geographic Area
AT&T	Market Based
Nsight	Market Based
Nuvera	Market Based
DISH Network	Market Based
Columbia Capital	Market Based
UBET	Market Based
T-Mobile	Market Based
Verizon	Market Based
GeoLinks	Market Based
Windstream	Market Based

There were no specific objections from the UMFUS incumbents within the coordination distance at the end of the coordination period.



4. Earth Station Coordination Data

This section presents the data pertinent to the proposed Ka, Q/V-band earth station in Buffalo, Mn. This data was circulated to all incumbent licensees in the shared 28/40/50 GHz frequency ranges.

Date: 03/27/2026
Job Number: 260327COMSGE10

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign:
Licensee Code: SPACEX
Licensee Name: SpaceX Services, Inc

Site Information

BUFFALO, MN
Venue Name: LIKE THE FISH
Latitude (NAD 83): 45° 8' 17.1" N
Longitude (NAD 83): 93° 50' 31.5" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 298.76 m / 980.2 ft

Link Information

Satellite Type: Low Earth Orbit
Mode: TR - Transmit-Receive
Antenna Count: 40
Modulation: Digital
Minimum Elevation Angle: 10.0°
Azimuth Range: 0.0° to 360°
Antenna Centerline (AGL): 1.7 m / 5.6 ft

Antenna Information

Manufacturer: SpaceX
Model: 1.99 meter
Gain / Diameter: 50.0 dBi / 2.0 m
3-dB / 15-dB Beamwidth: 0.50° / 1.00°

Receive - FCC32

SpaceX
1.99 meter
50.0 dBi / 2.0 m
0.50° / 1.00°

Transmit - FCC32

SpaceX
1.99 meter
53.9 dBi / 2.0 m
0.30° / 0.60°

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

-40.8
-16.8

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

13.1
37.1

Aggregate EIRP (dBW/MHz)

37.1

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

-151.0 dBW/4 kHz 20%
-128.0 dBW/4 kHz 0.0025%

Frequency Information

Receive 18.0 GHz
Emission / Frequency Range (MHz)
60M0D7W - 480MD7W / 17300.0 - 17800.0
60M0D7W - 480MD7W / 17800.0 - 18600.0
60M0D7W - 480MD7W / 18600.0 - 18800.0
60M0D7W - 480MD7W / 18800.0 - 19300.0
60M0D7W - 480MD7W / 19300.0 - 19700.0
60M0D7W - 480MD7W / 19700.0 - 20200.0
60M0D7W - 480MD7W / 20200.0 - 21200.0

Transmit 28.0 GHz

60M0D7W - 480MD7W / 27500.0 - 29100.0
60M0D7W - 480MD7W / 29100.0 - 29500.0
60M0D7W - 480MD7W / 29500.0 - 30000.0
60M0D7W - 480MD7W / 30000.0 - 31000.0

Max Great Circle Coordination Distance: 225.0 km / 139.8 mi
Precipitation Scatter Contour Radius: 100.0 km / 62.1 mi

100.0 km / 62.1 mi
100.0 km / 62.1 mi

SPACE EXPLORATION HOLDINGS
Ka, Q/V-Band Earth Station – Buffalo, Mn
Frequency Coordination Report
28/40/50 GHz

Coordination Values		BUFFALO, MN				
Licensee Name		SpaceX Services, Inc				
Latitude (NAD 83)		45° 8' 17.1" N				
Longitude (NAD 83)		93° 50' 31.5" W				
Ground Elevation (AMSL)		298.76 m / 980.2 ft				
Antenna Centerline (AGL)		1.7 m / 5.6 ft				
Antenna Model		SpaceX 1.99 meter				
Antenna Mode		Receive 18.0 GHz		Transmit 28.0 GHz		
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%	
	Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%	
Max Available RF Power		-40.8 (dBW/4 kHz)				
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.80	87.34	0.00	225.00	0.00	100.00
5	0.76	82.45	0.00	225.00	0.00	100.00
10	0.56	77.55	0.00	225.00	0.00	100.00
15	0.00	72.63	0.00	225.00	0.00	100.00
20	0.00	67.74	0.00	225.00	0.00	100.00
25	0.00	62.85	0.00	225.00	0.00	100.00
30	0.00	57.98	0.00	225.00	0.00	100.00
35	0.25	53.16	0.00	225.00	0.00	100.00
40	0.26	48.33	0.00	225.00	0.00	100.00
45	0.26	43.53	0.00	225.00	0.00	100.00
50	0.25	38.76	0.00	225.00	0.00	100.00
55	0.34	34.08	0.00	225.00	0.00	100.00
60	0.30	29.44	0.00	225.00	0.00	100.00
65	0.28	24.95	0.00	225.00	0.00	100.00
70	0.00	20.52	0.00	225.00	0.00	100.00
75	0.00	16.59	0.00	225.00	0.00	100.00
80	0.00	13.36	0.00	225.00	0.00	100.00
85	0.23	11.69	0.00	225.00	0.00	100.00
90	0.54	12.08	0.00	225.00	0.00	100.00
95	0.98	14.42	0.00	225.00	0.00	100.00
100	1.07	17.63	0.00	225.00	0.00	100.00
105	1.08	21.47	0.00	225.00	0.00	100.00
110	1.04	25.67	0.00	225.00	0.00	100.00
115	0.87	30.06	0.00	225.00	0.00	100.00
120	0.89	34.66	0.00	225.00	0.00	100.00
125	0.90	39.35	0.00	225.00	0.00	100.00
130	0.88	44.09	0.00	225.00	0.00	100.00
135	0.81	48.86	0.00	225.00	0.00	100.00
140	0.77	53.67	0.00	225.00	0.00	100.00
145	0.73	58.51	0.00	225.00	0.00	100.00
150	0.77	63.37	0.00	225.00	0.00	100.00
155	0.80	68.24	0.00	225.00	0.00	100.00
160	0.82	73.12	0.00	225.00	0.00	100.00
165	0.97	78.00	0.00	225.00	0.00	100.00
170	0.96	82.89	0.00	225.00	0.00	100.00
175	0.89	87.77	0.00	225.00	0.00	100.00
180	1.45	92.66	0.00	225.00	0.00	100.00
185	1.60	97.53	0.00	225.00	0.00	100.00

SPACE EXPLORATION HOLDINGS
Ka, Q/V-Band Earth Station – Buffalo, Mn
Frequency Coordination Report
28/40/50 GHz

Coordination Values		BUFFALO, MN				
Licensee Name		SpaceX Services, Inc				
Latitude (NAD 83)		45° 8' 17.1" N				
Longitude (NAD 83)		93° 50' 31.5" W				
Ground Elevation (AMSL)		298.76 m / 980.2 ft				
Antenna Centerline (AGL)		1.7 m / 5.6 ft				
Antenna Model		SpaceX 1.99 meter				
Antenna Mode		Receive 18.0 GHz		Transmit 28.0 GHz		
Interference Objectives: Long Term		-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%	
		Short Term	0.01%	-128.0 dBW/4 kHz	0.0025%	
Max Available RF Power		-40.8 (dBW/4 kHz)				
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	1.63	102.40	0.00	225.00	0.00	100.00
195	1.70	107.26	0.00	225.00	0.00	100.00
200	1.57	112.13	0.00	225.00	0.00	100.00
205	1.14	117.03	0.00	225.00	0.00	100.00
210	0.64	121.94	0.00	225.00	0.00	100.00
215	0.50	126.80	0.00	225.00	0.00	100.00
220	0.62	131.60	0.00	225.00	0.00	100.00
225	0.40	136.44	0.00	225.00	0.00	100.00
230	0.47	141.18	0.00	225.00	0.00	100.00
235	0.35	145.92	0.00	225.00	0.00	100.00
240	0.26	150.57	0.00	225.00	0.00	100.00
245	0.00	155.18	0.00	225.00	0.00	100.00
250	0.00	159.48	0.00	225.00	0.00	100.00
255	0.00	163.41	0.00	225.00	0.00	100.00
260	0.31	166.37	0.00	225.00	0.00	100.00
265	0.00	168.53	0.00	225.00	0.00	100.00
270	0.23	168.22	0.00	225.00	0.00	100.00
275	0.27	166.17	0.00	225.00	0.00	100.00
280	0.33	162.87	0.00	225.00	0.00	100.00
285	0.43	158.88	0.00	225.00	0.00	100.00
290	0.65	154.50	0.00	225.00	0.00	100.00
295	0.86	149.95	0.00	225.00	0.00	100.00
300	1.02	145.30	0.00	225.00	0.00	100.00
305	1.11	140.60	0.00	225.00	0.00	100.00
310	1.09	135.87	0.00	225.00	0.00	100.00
315	1.01	131.10	0.00	225.00	0.00	100.00
320	1.11	126.27	0.00	225.00	0.00	100.00
325	1.11	121.44	0.00	225.00	0.00	100.00
330	0.91	116.62	0.00	225.00	0.00	100.00
335	0.72	111.77	0.00	225.00	0.00	100.00
340	0.52	106.90	0.00	225.00	0.00	100.00
345	0.33	102.02	0.00	225.00	0.00	100.00
350	0.51	97.12	0.00	225.00	0.00	100.00
355	0.68	92.23	0.00	225.00	0.00	100.00

Date: 03/27/2026
Job Number: 260327COMSGE10

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign:
Licensee Code: SPACEX
Licensee Name: SpaceX Services, Inc

Site Information

BUFFALO, MN
Venue Name: LIKE THE FISH
Latitude (NAD 83): 45° 8' 17.1" N
Longitude (NAD 83): 93° 50' 31.5" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 298.76 m / 980.2 ft

Link Information

Satellite Type: Low Earth Orbit
Mode: TR - Transmit-Receive
Antenna Count: 40
Modulation: Digital
Minimum Elevation Angle: 10.0°
Azimuth Range: 0.0° to 360°
Antenna Centerline (AGL): 1.7 m / 5.6 ft

Antenna Information

Manufacturer:
Model:
Gain / Diameter:
3-dB / 15-dB Beamwidth:

Receive - FCC32

SpaceX
1.99 meter
55.9 dBi / 2.0 m
0.25° / 0.50°

Transmit - FCC32

SpaceX
1.99 meter
58.1 dBi / 2.0 m
0.20° / 0.40°

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

-47.8
-23.8

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

10.3
34.3

Aggregate EIRP (dBW/MHz)

34.3

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

-151.0 dBW/4 kHz 20%
-128.0 dBW/4 kHz 0.0025%

Frequency Information

Emission / Frequency Range (MHz)

Receive 40.0 GHz

60M0D7W - 480MD7W / 37500.0 - 42500.0

Transmit 50.0 GHz

60M0D7W - 480MD7W / 47200.0 - 50200.0
60M0D7W - 480MD7W / 50400.0 - 51400.0
60M0D7W - 480MD7W / 51400.0 - 52400.0

Max Great Circle Coordination Distance
Precipitation Scatter Contour Radius

225.0 km / 139.8 mi
100.0 km / 62.1 mi

100.0 km / 62.1 mi
100.0 km / 62.1 mi

SPACE EXPLORATION HOLDINGS
Ka, Q/V-Band Earth Station – Buffalo, Mn
Frequency Coordination Report
28/40/50 GHz

Coordination Values		BUFFALO, MN				
Licensee Name		SpaceX Services, Inc				
Latitude (NAD 83)		45° 8' 17.1" N				
Longitude (NAD 83)		93° 50' 31.5" W				
Ground Elevation (AMSL)		298.76 m / 980.2 ft				
Antenna Centerline (AGL)		1.7 m / 5.6 ft				
Antenna Model		SpaceX 1.99 meter				
Antenna Mode		Receive 40.0 GHz		Transmit 50.0 GHz		
Interference Objectives: Long Term		-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%	
		Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%
Max Available RF Power		-47.8 (dBW/4 kHz)				
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 40.0 GHz		Transmit 50.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.80	87.34	0.00	225.00	0.00	100.00
5	0.76	82.45	0.00	225.00	0.00	100.00
10	0.56	77.55	0.00	225.00	0.00	100.00
15	0.00	72.63	0.00	225.00	0.00	100.00
20	0.00	67.74	0.00	225.00	0.00	100.00
25	0.00	62.85	0.00	225.00	0.00	100.00
30	0.00	57.98	0.00	225.00	0.00	100.00
35	0.25	53.16	0.00	225.00	0.00	100.00
40	0.26	48.33	0.00	225.00	0.00	100.00
45	0.26	43.53	0.00	225.00	0.00	100.00
50	0.25	38.76	0.00	225.00	0.00	100.00
55	0.34	34.08	0.00	225.00	0.00	100.00
60	0.30	29.44	0.00	225.00	0.00	100.00
65	0.28	24.95	0.00	225.00	0.00	100.00
70	0.00	20.52	0.00	225.00	0.00	100.00
75	0.00	16.59	0.00	225.00	0.00	100.00
80	0.00	13.36	0.00	225.00	0.00	100.00
85	0.23	11.69	0.00	225.00	0.00	100.00
90	0.54	12.08	0.00	225.00	0.00	100.00
95	0.98	14.42	0.00	225.00	0.00	100.00
100	1.07	17.63	0.00	225.00	0.00	100.00
105	1.08	21.47	0.00	225.00	0.00	100.00
110	1.04	25.67	0.00	225.00	0.00	100.00
115	0.87	30.06	0.00	225.00	0.00	100.00
120	0.89	34.66	0.00	225.00	0.00	100.00
125	0.90	39.35	0.00	225.00	0.00	100.00
130	0.88	44.09	0.00	225.00	0.00	100.00
135	0.81	48.86	0.00	225.00	0.00	100.00
140	0.77	53.67	0.00	225.00	0.00	100.00
145	0.73	58.51	0.00	225.00	0.00	100.00
150	0.77	63.37	0.00	225.00	0.00	100.00
155	0.80	68.24	0.00	225.00	0.00	100.00
160	0.82	73.12	0.00	225.00	0.00	100.00
165	0.97	78.00	0.00	225.00	0.00	100.00
170	0.96	82.89	0.00	225.00	0.00	100.00
175	0.89	87.77	0.00	225.00	0.00	100.00
180	1.45	92.66	0.00	225.00	0.00	100.00
185	1.60	97.53	0.00	225.00	0.00	100.00

SPACE EXPLORATION HOLDINGS
Ka, Q/V-Band Earth Station – Buffalo, Mn
Frequency Coordination Report
28/40/50 GHz

Coordination Values		BUFFALO, MN				
Licensee Name		SpaceX Services, Inc				
Latitude (NAD 83)		45° 8' 17.1" N				
Longitude (NAD 83)		93° 50' 31.5" W				
Ground Elevation (AMSL)		298.76 m / 980.2 ft				
Antenna Centerline (AGL)		1.7 m / 5.6 ft				
Antenna Model		SpaceX 1.99 meter				
Antenna Mode		Receive 40.0 GHz		Transmit 50.0 GHz		
Interference Objectives: Long Term		-156.0 dBW/MHz	20%	-151.0 dBW/4 kHz	20%	
		Short Term	-146.0 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%
Max Available RF Power		-47.8 (dBW/4 kHz)				
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 40.0 GHz		Transmit 50.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	1.63	102.40	0.00	225.00	0.00	100.00
195	1.70	107.26	0.00	225.00	0.00	100.00
200	1.57	112.13	0.00	225.00	0.00	100.00
205	1.14	117.03	0.00	225.00	0.00	100.00
210	0.64	121.94	0.00	225.00	0.00	100.00
215	0.50	126.80	0.00	225.00	0.00	100.00
220	0.62	131.60	0.00	225.00	0.00	100.00
225	0.40	136.44	0.00	225.00	0.00	100.00
230	0.47	141.18	0.00	225.00	0.00	100.00
235	0.35	145.92	0.00	225.00	0.00	100.00
240	0.26	150.57	0.00	225.00	0.00	100.00
245	0.00	155.18	0.00	225.00	0.00	100.00
250	0.00	159.48	0.00	225.00	0.00	100.00
255	0.00	163.41	0.00	225.00	0.00	100.00
260	0.31	166.37	0.00	225.00	0.00	100.00
265	0.00	168.53	0.00	225.00	0.00	100.00
270	0.23	168.22	0.00	225.00	0.00	100.00
275	0.27	166.17	0.00	225.00	0.00	100.00
280	0.33	162.87	0.00	225.00	0.00	100.00
285	0.43	158.88	0.00	225.00	0.00	100.00
290	0.65	154.50	0.00	225.00	0.00	100.00
295	0.86	149.95	0.00	225.00	0.00	100.00
300	1.02	145.30	0.00	225.00	0.00	100.00
305	1.11	140.60	0.00	225.00	0.00	100.00
310	1.09	135.87	0.00	225.00	0.00	100.00
315	1.01	131.10	0.00	225.00	0.00	100.00
320	1.11	126.27	0.00	225.00	0.00	100.00
325	1.11	121.44	0.00	225.00	0.00	100.00
330	0.91	116.62	0.00	225.00	0.00	100.00
335	0.72	111.77	0.00	225.00	0.00	100.00
340	0.52	106.90	0.00	225.00	0.00	100.00
345	0.33	102.02	0.00	225.00	0.00	100.00
350	0.51	97.12	0.00	225.00	0.00	100.00
355	0.68	92.23	0.00	225.00	0.00	100.00



5. Contact Information

For questions or information regarding the Ka, Q/V-band Frequency Coordination Report, please contact:

Contact person:	Gary Edwards
Title:	Senior Manager, Satellite Services
Company:	Comsearch
Address:	21515 Ridgetop Circle, Suite 300, Sterling, VA 20166
Telephone:	703-726-5662
Email:	GEdwards@Comsearch.com
Web site:	www.comsearch.com

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
SpaceX Services, Inc
BUFFALO, MN
Satellite Earth Station

Prepared By:
COMSEARCH
21515 Ridgetop Circle, Suite 300
Sterling, VA 20166
May 13, 2026

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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.

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 03/27/2026.

Company

AMG Technology Investment Group LLC
AT&T Enterprises, LLC
AT&T Mobility Spectrum-MN/IA/ND/NE/MT/SD
AT&T Mobility Wireless Ops Hldgs - MN
Allina Health EMS
Arvig Enterprises, Inc
BNSF Railway Company
Business Only Broadband, LLC
City of Buffalo
City of Minneapolis
Compudyne Inc.
Gardonville Cooperative Telephone Assn
Hennepin County Sheriff's Office
HomeTown Internet, LLC
Lifecore BioMedical
MN FWA Buyer, LLC
Mayo Foundation for Medical Education
Multimedia Holdings Corp. (KARE-TV)
New Cingular Wireless PCS LLC- Wisconsin
New Cingular Wireless PCS LLC-Minnesota
North Memorial Health Care
NorthfieldWiFi
Northwest Communications Inc.
One Ring Networks, Inc.
Radio Link Internet
Router12 Networks
Skybeam Acquisition Corporation
St Paul Police Department
St. Michael Broadcasting, Inc.
T-Mobile MW LLC
Union Pacific Railroad Company
VerCom, Inc.

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: 05/13/2026
Job Number: 260327COMSGE10

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign:
Licensee Code: SPACEX
Licensee Name: SpaceX Services, Inc

Site Information

BUFFALO, MN
Venue Name: LIKE THE FISH
Latitude (NAD 83): 45° 8' 17.1" N
Longitude (NAD 83): 93° 50' 31.5" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 298.76 m / 980.2 ft

Link Information

Satellite Type: Low Earth Orbit
Mode: TR - Transmit-Receive
Antenna Count: 40
Modulation: Digital
Minimum Elevation Angle: 10.0°
Azimuth Range: 0.0° to 360°
Antenna Centerline (AGL): 1.7 m / 5.6 ft

Antenna Information

		Receive - FCC32	Transmit - FCC32
Manufacturer		SpaceX	SpaceX
Model		1.99 meter	1.99 meter
Gain / Diameter		50.0 dBi / 2.0 m	53.9 dBi / 2.0 m
3-dB / 15-dB Beamwidth		0.50° / 1.00°	0.30° / 0.60°
Max Available RF Power	(dBW/4 kHz)		-40.8
	(dBW/MHz)		-16.8
Maximum EIRP	(dBW/4 kHz)		13.1
	(dBW/MHz)		37.1
Aggregate EIRP	(dBW/MHz)		37.1
Interference Objectives:	Long Term	-156.0 dBW/MHz	20%
	Short Term	-146.0 dBW/MHz	0.01%

Frequency Information

	Receive 18.0 GHz	Transmit 28.0 GHz
Emission / Frequency Range (MHz)	60M0D7W - 480MD7W / 17300.0 - 17800.0 60M0D7W - 480MD7W / 17800.0 - 18600.0 60M0D7W - 480MD7W / 18600.0 - 18800.0 60M0D7W - 480MD7W / 18800.0 - 19300.0 60M0D7W - 480MD7W / 19300.0 - 19700.0 60M0D7W - 480MD7W / 19700.0 - 20200.0 60M0D7W - 480MD7W / 20200.0 - 21200.0	60M0D7W - 480MD7W / 27500.0 - 29100.0 60M0D7W - 480MD7W / 29100.0 - 29500.0 60M0D7W - 480MD7W / 29500.0 - 30000.0 60M0D7W - 480MD7W / 30000.0 - 31000.0
Max Great Circle Coordination Distance	225.0 km / 139.8 mi	100.0 km / 62.1 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 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

BUFFALO, MN

Licensee Name SpaceX Services, Inc
Latitude (NAD 83) 45° 8' 17.1" N
Longitude (NAD 83) 93° 50' 31.5" W
Ground Elevation (AMSL) 298.76 m / 980.2 ft
Antenna Centerline (AGL) 1.7 m / 5.6 ft
Antenna Model SpaceX 1.99 meter
Antenna Mode Receive 18.0 GHz Transmit 28.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20% -151.0 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%
Max Available RF Power -40.8 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.80	87.34	0.00	225.00	0.00	100.00
5	0.76	82.45	0.00	225.00	0.00	100.00
10	0.56	77.55	0.00	225.00	0.00	100.00
15	0.00	72.63	0.00	225.00	0.00	100.00
20	0.00	67.74	0.00	225.00	0.00	100.00
25	0.00	62.85	0.00	225.00	0.00	100.00
30	0.00	57.98	0.00	225.00	0.00	100.00
35	0.25	53.16	0.00	225.00	0.00	100.00
40	0.26	48.33	0.00	225.00	0.00	100.00
45	0.26	43.53	0.00	225.00	0.00	100.00
50	0.25	38.76	0.00	225.00	0.00	100.00
55	0.34	34.08	0.00	225.00	0.00	100.00
60	0.30	29.44	0.00	225.00	0.00	100.00
65	0.28	24.95	0.00	225.00	0.00	100.00
70	0.00	20.52	0.00	225.00	0.00	100.00
75	0.00	16.59	0.00	225.00	0.00	100.00
80	0.00	13.36	0.00	225.00	0.00	100.00
85	0.23	11.69	0.00	225.00	0.00	100.00
90	0.54	12.08	0.00	225.00	0.00	100.00
95	0.98	14.42	0.00	225.00	0.00	100.00
100	1.07	17.63	0.00	225.00	0.00	100.00
105	1.08	21.47	0.00	225.00	0.00	100.00
110	1.04	25.67	0.00	225.00	0.00	100.00
115	0.87	30.06	0.00	225.00	0.00	100.00
120	0.89	34.66	0.00	225.00	0.00	100.00
125	0.90	39.35	0.00	225.00	0.00	100.00
130	0.88	44.09	0.00	225.00	0.00	100.00
135	0.81	48.86	0.00	225.00	0.00	100.00
140	0.77	53.67	0.00	225.00	0.00	100.00
145	0.73	58.51	0.00	225.00	0.00	100.00
150	0.77	63.37	0.00	225.00	0.00	100.00
155	0.80	68.24	0.00	225.00	0.00	100.00
160	0.82	73.12	0.00	225.00	0.00	100.00
165	0.97	78.00	0.00	225.00	0.00	100.00
170	0.96	82.89	0.00	225.00	0.00	100.00
175	0.89	87.77	0.00	225.00	0.00	100.00
180	1.45	92.66	0.00	225.00	0.00	100.00
185	1.60	97.53	0.00	225.00	0.00	100.00

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

BUFFALO, MN

Licensee Name SpaceX Services, Inc

Latitude (NAD 83) 45° 8' 17.1" N

Longitude (NAD 83) 93° 50' 31.5" W

Ground Elevation (AMSL) 298.76 m / 980.2 ft

Antenna Centerline (AGL) 1.7 m / 5.6 ft

Antenna Model SpaceX 1.99 meter

Antenna Mode Receive 18.0 GHz

Transmit 28.0 GHz

Interference Objectives: Long Term -156.0 dBW/MHz 20% -151.0 dBW/4 kHz 20%

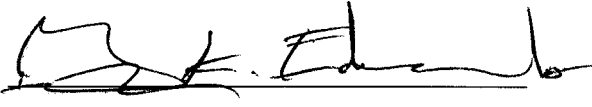
Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%

Max Available RF Power -40.8 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	1.63	102.40	0.00	225.00	0.00	100.00
195	1.70	107.26	0.00	225.00	0.00	100.00
200	1.57	112.13	0.00	225.00	0.00	100.00
205	1.14	117.03	0.00	225.00	0.00	100.00
210	0.64	121.94	0.00	225.00	0.00	100.00
215	0.50	126.80	0.00	225.00	0.00	100.00
220	0.62	131.60	0.00	225.00	0.00	100.00
225	0.40	136.44	0.00	225.00	0.00	100.00
230	0.47	141.18	0.00	225.00	0.00	100.00
235	0.35	145.92	0.00	225.00	0.00	100.00
240	0.26	150.57	0.00	225.00	0.00	100.00
245	0.00	155.18	0.00	225.00	0.00	100.00
250	0.00	159.48	0.00	225.00	0.00	100.00
255	0.00	163.41	0.00	225.00	0.00	100.00
260	0.31	166.37	0.00	225.00	0.00	100.00
265	0.00	168.53	0.00	225.00	0.00	100.00
270	0.23	168.22	0.00	225.00	0.00	100.00
275	0.27	166.17	0.00	225.00	0.00	100.00
280	0.33	162.87	0.00	225.00	0.00	100.00
285	0.43	158.88	0.00	225.00	0.00	100.00
290	0.65	154.50	0.00	225.00	0.00	100.00
295	0.86	149.95	0.00	225.00	0.00	100.00
300	1.02	145.30	0.00	225.00	0.00	100.00
305	1.11	140.60	0.00	225.00	0.00	100.00
310	1.09	135.87	0.00	225.00	0.00	100.00
315	1.01	131.10	0.00	225.00	0.00	100.00
320	1.11	126.27	0.00	225.00	0.00	100.00
325	1.11	121.44	0.00	225.00	0.00	100.00
330	0.91	116.62	0.00	225.00	0.00	100.00
335	0.72	111.77	0.00	225.00	0.00	100.00
340	0.52	106.90	0.00	225.00	0.00	100.00
345	0.33	102.02	0.00	225.00	0.00	100.00
350	0.51	97.12	0.00	225.00	0.00	100.00
355	0.68	92.23	0.00	225.00	0.00	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: May 13, 2026



E-band Frequency Coordination Report

The “Buffalo, Like the Fish” Gateway (Buffalo, MN)

March 25, 2026



Summary

SpaceX performed a coordination notice under Section 25.203(c), Section 25.251, and Appendix 7 of the ITU's Radio Regulations. Prior-notification letters with earth station details were sent to potentially affected terrestrial licensees; a copy of these details are available in this report. The earth station coordination was finalized on April 09, 2026. No objections were received from any terrestrial licensees.

Methodology

SpaceX has completed an interference analysis based on accepted international and Commission methodologies demonstrating that this satellite earth station will not cause harmful interference to existing terrestrial facilities in the band. Specifically, for each known receiver within the great circle coordination distance surrounding the proposed earth station, SpaceX calculated the expected interference/noise ratio (I/N) to the receiver, assuming the SpaceX antenna properties listed on the following page, SpaceX site layout and design, free-space propagation without terrain or clutter, and actual characteristics of receiver(s) obtained from the 70/80/90 GHz link-registration database. Even under these conservative assumptions, SpaceX's analysis confirms that this earth station will not cause interference exceeding 1.0 dB of degradation to the static threshold of existing 70/80 GHz links within the great circle coordination distance.¹

Operators contacted

Prior-coordination letters were sent to the following operators:

1. BOB, LLC
2. BOB, LLC dba Business Only Broadband
3. Baltic Networks USA
4. Ceragon Networks, Inc.
5. HomeTown Internet, LLC
6. Keltgen Technology
7. LTD Broadband LLC
8. MN FWA Buyer, LLC
9. Micronet Communications, Inc.
10. Morgan, Lewis & Bockius, LLP
11. Northern Network Concepts, Inc.
12. NorthfieldWiFi
13. REDWOOD, COUNTY OF
14. REMEC Broadband Wireless Networks LLC DBA Bridgewave Communications

¹ If there were any cases in which the interference threshold was exceeded in the conservative free-space analysis for any relevant receiver, SpaceX conducted an additional analysis with more realistic assumptions of terrain and clutter, under which the interference threshold was not exceeded for any relevant receiver. This further ensures that there will be no above-threshold interference to existing receivers.



15. Siklu, Inc
16. SpaceX
17. T-MOBILE LICENSE LLC
18. WiSP Services,LLC

Earth Station Data

This section presents the data that was circulated to all operators that met the criteria for notification for this earth station.

Site Information:

- Transmitting station name: The “Buffalo, Like the Fish” Gateway
- Transmitting station coordinates: 45.13808, -93.8421
- Ground Elevation (AMSL): 298 m
- Antenna Count: 40
- Aggregate EIRP toward the horizon: -9 dBW/MHz

Frequency Information:

- Transmit: 81-86 GHz
- Receive: 71-76 GHz
- Max Great Circle Coordination Distance: 127 km
- Rain Scatter Coordination Distance Contour: 6 km

Link Information:

- Satellite Type: Low Earth Orbit
- Mode: TR – Transmit-Receive
- Modulation: Digital
- Minimum Elevation Angle: 15.0°
- Azimuth Range: 0.0° to 360.0°
- Antenna Centerline (AGL): 1.7 m

Antenna Information:

- Manufacturer: SpaceX
- Model/Diameter: 1.99m
- Gain: 60.9 dBi at 83.5 GHz
- Max Available RF Power: -20.8 dBW/MHz
- Horizon Gain: 0 dBi
- Maximum EIRP: 40.1 dBW/MHz (main beam)
- Permissible RF Interference Power Level²: I/N ≤ -6 dB
- Antenna Mask: ITU-R S.580

² See 47 CFR § 101.105(a)(5)(i). This I/N value would cause a maximum of 1.0 dB of degradation to the static threshold of the protected receiver.

Horizon Angle by Azimuth:

All values are in degrees

Azimuth	Horizon Angle
0.0	0.16
5.0	0.17
10.0	0.05
15.0	0.08
20.0	0.05
25.0	0.02
30.0	0.10
35.0	0.12
40.0	0.15
45.0	0.07
50.0	0.16
55.0	0.23
60.0	0.22
65.0	0.14
70.0	0.18
75.0	0.16
80.0	0.10
85.0	0.27
90.0	0.42
95.0	0.77
100.0	0.72
105.0	0.64
110.0	0.54
115.0	0.41
120.0	0.26
125.0	0.08
130.0	-0.01
135.0	0.01
140.0	-0.03
145.0	0.02
150.0	-0.06
155.0	-0.01
160.0	0.34
165.0	0.13
170.0	-0.04
175.0	-0.01
180.0	0.30
185.0	0.56
190.0	0.51
195.0	0.43



Frequency Coordination Report
E-Band Earth Station

200.0	0.38
205.0	0.34
210.0	0.22
215.0	0.26
220.0	0.22
225.0	0.31
230.0	0.26
235.0	0.29
240.0	0.27
245.0	0.10
250.0	-0.03
255.0	-0.02
260.0	0.22
265.0	0.06
270.0	0.01
275.0	0.01
280.0	0.17
285.0	0.24
290.0	0.33
295.0	0.44
300.0	0.55
305.0	0.68
310.0	0.71
315.0	0.76
320.0	0.83
325.0	0.71
330.0	0.54
335.0	0.38
340.0	0.21
345.0	0.09
350.0	0.05
355.0	0.09