

Ka,Q/V-Band Earth Station – Ontario, Ca.

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 Ontario, Ca 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 Ontario, Ca 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: CA

A notification letter and datasheets for the Ka, Q/V-band earth station in Ontario, Ca 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 eight 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
Alta	Market Based
DISH Network	Market Based
Columbia Capital	Market Based
UBET	Market Based
T-Mobile	Market Based
Verizon	Market Based
GeoLinks	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 Ontario, Ca. This data was circulated to all incumbent licensees in the shared 28/40/50 GHz frequency ranges.

Date: 03/27/2026
Job Number: 260327COMSGE11

Administrative Information

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

Site Information

ONTARIO, CA
Venue Name: ORANGE EMPIRE
Latitude (NAD 83): 34° 3' 46.2" N
Longitude (NAD 83): 117° 38' 2.4" W
Climate Zone: A
Rain Zone: 4
Ground Elevation (AMSL): 300.39 m / 985.5 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 – Ontario, Ca
Frequency Coordination Report
28/40/50 GHz

Coordination Values		ONTARIO, CA				
Licensee Name		SpaceX Services, Inc				
Latitude (NAD 83)		34° 3' 46.2" N				
Longitude (NAD 83)		117° 38' 2.4" W				
Ground Elevation (AMSL)		300.39 m / 985.5 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	1.43	76.13	0.00	225.00	0.00	100.00
5	1.36	71.92	0.00	225.00	0.00	100.00
10	1.30	67.75	0.00	225.00	0.00	100.00
15	1.42	63.68	0.00	225.00	0.00	100.00
20	1.20	59.59	0.00	225.00	0.00	100.00
25	0.96	55.55	0.00	225.00	0.00	100.00
30	0.82	51.65	0.00	225.00	0.00	100.00
35	0.71	47.89	0.00	225.00	0.00	100.00
40	0.62	44.32	0.00	225.00	0.00	100.00
45	0.56	41.00	0.00	225.00	0.00	100.00
50	0.49	37.97	0.00	225.00	0.00	100.00
55	0.42	35.31	0.00	225.00	0.00	100.00
60	0.35	33.12	0.00	225.00	0.00	100.00
65	0.28	31.49	0.00	225.00	0.00	100.00
70	0.00	30.32	0.00	225.00	0.00	100.00
75	0.00	30.14	0.00	225.00	0.00	100.00
80	0.00	30.71	0.00	225.00	0.00	100.00
85	0.00	31.99	0.00	225.00	0.00	100.00
90	0.00	33.89	0.00	225.00	0.00	100.00
95	0.00	36.32	0.00	225.00	0.00	100.00
100	0.00	39.18	0.00	225.00	0.00	100.00
105	0.00	42.37	0.00	225.00	0.00	100.00
110	0.00	45.83	0.00	225.00	0.00	100.00
115	0.00	49.50	0.00	225.00	0.00	100.00
120	0.00	53.33	0.00	225.00	0.00	100.00
125	0.00	57.29	0.00	225.00	0.00	100.00
130	0.00	61.35	0.00	225.00	0.00	100.00
135	0.00	65.49	0.00	225.00	0.00	100.00
140	0.00	69.69	0.00	225.00	0.00	100.00
145	0.00	73.93	0.00	225.00	0.00	100.00
150	0.00	78.21	0.00	225.00	0.00	100.00
155	0.00	82.52	0.00	225.00	0.00	100.00
160	0.00	86.83	0.00	225.00	0.00	100.00
165	0.00	91.16	0.00	225.00	0.00	100.00
170	0.00	95.48	0.00	225.00	0.00	100.00
175	0.00	99.79	0.00	225.00	0.00	100.00
180	0.00	104.09	0.00	225.00	0.00	100.00
185	0.00	108.35	0.00	225.00	0.00	100.00

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

Coordination Values		ONTARIO, CA				
Licensee Name		SpaceX Services, Inc				
Latitude (NAD 83)		34° 3' 46.2" N				
Longitude (NAD 83)		117° 38' 2.4" W				
Ground Elevation (AMSL)		300.39 m / 985.5 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	0.00	112.57	0.00	225.00	0.00	100.00
195	0.00	116.74	0.00	225.00	0.00	100.00
200	0.00	120.84	0.00	225.00	0.00	100.00
205	0.00	124.85	0.00	225.00	0.00	100.00
210	0.00	128.74	0.00	225.00	0.00	100.00
215	0.00	132.49	0.00	225.00	0.00	100.00
220	0.00	136.05	0.00	225.00	0.00	100.00
225	0.00	139.38	0.00	225.00	0.00	100.00
230	0.00	142.40	0.00	225.00	0.00	100.00
235	0.00	145.04	0.00	225.00	0.00	100.00
240	0.00	147.20	0.00	225.00	0.00	100.00
245	0.00	148.78	0.00	225.00	0.00	100.00
250	0.00	149.68	0.00	225.00	0.00	100.00
255	0.00	149.86	0.00	225.00	0.00	100.00
260	0.00	149.29	0.00	225.00	0.00	100.00
265	0.00	148.01	0.00	225.00	0.00	100.00
270	0.00	146.11	0.00	225.00	0.00	100.00
275	0.00	143.68	0.00	225.00	0.00	100.00
280	0.27	140.63	0.00	225.00	0.00	100.00
285	0.38	137.39	0.00	225.00	0.00	100.00
290	0.43	133.92	0.00	225.00	0.00	100.00
295	0.48	130.26	0.00	225.00	0.00	100.00
300	0.56	126.42	0.00	225.00	0.00	100.00
305	0.67	122.46	0.00	225.00	0.00	100.00
310	0.77	118.40	0.00	225.00	0.00	100.00
315	0.93	114.26	0.00	225.00	0.00	100.00
320	1.10	110.07	0.00	225.00	0.00	100.00
325	1.21	105.86	0.00	225.00	0.00	100.00
330	1.32	101.62	0.00	225.00	0.00	100.00
335	1.40	97.37	0.00	225.00	0.00	100.00
340	1.42	93.12	0.00	225.00	0.00	100.00
345	1.38	88.86	0.00	225.00	0.00	100.00
350	1.35	84.60	0.00	225.00	0.00	100.00
355	1.41	80.35	0.00	225.00	0.00	100.00

Date:	03/27/2026		
Job Number:	260327COMSGE11		
Administrative Information			
Status	ENGINEER PROPOSAL		
Call Sign			
Licensee Code	SPACEX		
Licensee Name	SpaceX Services, Inc		
Site Information			
Venue Name	ONTARIO, CA		
Latitude (NAD 83)	ORANGE EMPIRE		
Longitude (NAD 83)	34° 3' 46.2" N		
Climate Zone	117° 38' 2.4" W		
Rain Zone	A		
Ground Elevation (AMSL)	4		
	300.39 m / 985.5 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		55.9 dBi / 2.0 m	58.1 dBi / 2.0 m
3-dB / 15-dB Beamwidth		0.25° / 0.50°	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		Receive 40.0 GHz	Transmit 50.0 GHz
Emission / Frequency Range (MHz)		60M0D7W - 480MD7W / 37500.0 - 42500.0	60M0D7W - 480MD7W / 47200.0 - 50200.0 60M0D7W - 480MD7W / 50400.0 - 51400.0 60M0D7W - 480MD7W / 51400.0 - 52400.0
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

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

Coordination Values		ONTARIO, CA						
Licensee Name		SpaceX Services, Inc						
Latitude (NAD 83)		34° 3' 46.2" N						
Longitude (NAD 83)		117° 38' 2.4" W						
Ground Elevation (AMSL)		300.39 m / 985.5 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 (°)	Horizon Gain (dBi)	Receive 40.0 GHz	Transmit 50.0 GHz			
				Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)		
0	1.43	76.13	0.00	225.00	0.00	100.00		
5	1.36	71.92	0.00	225.00	0.00	100.00		
10	1.30	67.75	0.00	225.00	0.00	100.00		
15	1.42	63.68	0.00	225.00	0.00	100.00		
20	1.20	59.59	0.00	225.00	0.00	100.00		
25	0.96	55.55	0.00	225.00	0.00	100.00		
30	0.82	51.65	0.00	225.00	0.00	100.00		
35	0.71	47.89	0.00	225.00	0.00	100.00		
40	0.62	44.32	0.00	225.00	0.00	100.00		
45	0.56	41.00	0.00	225.00	0.00	100.00		
50	0.49	37.97	0.00	225.00	0.00	100.00		
55	0.42	35.31	0.00	225.00	0.00	100.00		
60	0.35	33.12	0.00	225.00	0.00	100.00		
65	0.28	31.49	0.00	225.00	0.00	100.00		
70	0.00	30.32	0.00	225.00	0.00	100.00		
75	0.00	30.14	0.00	225.00	0.00	100.00		
80	0.00	30.71	0.00	225.00	0.00	100.00		
85	0.00	31.99	0.00	225.00	0.00	100.00		
90	0.00	33.89	0.00	225.00	0.00	100.00		
95	0.00	36.32	0.00	225.00	0.00	100.00		
100	0.00	39.18	0.00	225.00	0.00	100.00		
105	0.00	42.37	0.00	225.00	0.00	100.00		
110	0.00	45.83	0.00	225.00	0.00	100.00		
115	0.00	49.50	0.00	225.00	0.00	100.00		
120	0.00	53.33	0.00	225.00	0.00	100.00		
125	0.00	57.29	0.00	225.00	0.00	100.00		
130	0.00	61.35	0.00	225.00	0.00	100.00		
135	0.00	65.49	0.00	225.00	0.00	100.00		
140	0.00	69.69	0.00	225.00	0.00	100.00		
145	0.00	73.93	0.00	225.00	0.00	100.00		
150	0.00	78.21	0.00	225.00	0.00	100.00		
155	0.00	82.52	0.00	225.00	0.00	100.00		
160	0.00	86.83	0.00	225.00	0.00	100.00		
165	0.00	91.16	0.00	225.00	0.00	100.00		
170	0.00	95.48	0.00	225.00	0.00	100.00		
175	0.00	99.79	0.00	225.00	0.00	100.00		
180	0.00	104.09	0.00	225.00	0.00	100.00		
185		0.00		108.35	0.00	225.00	0.00	100.00

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

Coordination Values		ONTARIO, CA				
Licensee Name		SpaceX Services, Inc				
Latitude (NAD 83)		34° 3' 46.2" N				
Longitude (NAD 83)		117° 38' 2.4" W				
Ground Elevation (AMSL)		300.39 m / 985.5 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 (°)	Horizon Gain (dBi)	Receive 40.0 GHz	Transmit 50.0 GHz	
				Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	112.57	0.00	225.00	0.00	100.00
195	0.00	116.74	0.00	225.00	0.00	100.00
200	0.00	120.84	0.00	225.00	0.00	100.00
205	0.00	124.85	0.00	225.00	0.00	100.00
210	0.00	128.74	0.00	225.00	0.00	100.00
215	0.00	132.49	0.00	225.00	0.00	100.00
220	0.00	136.05	0.00	225.00	0.00	100.00
225	0.00	139.38	0.00	225.00	0.00	100.00
230	0.00	142.40	0.00	225.00	0.00	100.00
235	0.00	145.04	0.00	225.00	0.00	100.00
240	0.00	147.20	0.00	225.00	0.00	100.00
245	0.00	148.78	0.00	225.00	0.00	100.00
250	0.00	149.68	0.00	225.00	0.00	100.00
255	0.00	149.86	0.00	225.00	0.00	100.00
260	0.00	149.29	0.00	225.00	0.00	100.00
265	0.00	148.01	0.00	225.00	0.00	100.00
270	0.00	146.11	0.00	225.00	0.00	100.00
275	0.00	143.68	0.00	225.00	0.00	100.00
280	0.27	140.63	0.00	225.00	0.00	100.00
285	0.38	137.39	0.00	225.00	0.00	100.00
290	0.43	133.92	0.00	225.00	0.00	100.00
295	0.48	130.26	0.00	225.00	0.00	100.00
300	0.56	126.42	0.00	225.00	0.00	100.00
305	0.67	122.46	0.00	225.00	0.00	100.00
310	0.77	118.40	0.00	225.00	0.00	100.00
315	0.93	114.26	0.00	225.00	0.00	100.00
320	1.10	110.07	0.00	225.00	0.00	100.00
325	1.21	105.86	0.00	225.00	0.00	100.00
330	1.32	101.62	0.00	225.00	0.00	100.00
335	1.40	97.37	0.00	225.00	0.00	100.00
340	1.42	93.12	0.00	225.00	0.00	100.00
345	1.38	88.86	0.00	225.00	0.00	100.00
350	1.35	84.60	0.00	225.00	0.00	100.00
355	1.41	80.35	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
ONTARIO, CA
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

ABC Holding Company Inc.
AT&T Enterprises, LLC
AT&T Mobility Spectrum LLC - N CA
AT&T Mobility Spectrum LLC - Southern CA
Aera Energy LLC
Aerionet, Inc.
Air Sites 2000 LLC
Antelecom, Inc.
Antelope Valley College
Antilles Wireless LLC
BNSF Railway Company
Bahia Hotel
Bakersfield, City of
Bel Air Internet, LLC
Beverly Hills, City of
Board of Trustees for San Diego Univ
Burbank, City of
CBS Broadcasting Inc
CCS Wireless, Inc.
California Internet, LLC dba GeoLinks
California Resources Corporation
California Water Service Company
California, State of
CamTech Broadband
Cellco Partnership - N CA/NV
Cellco Partnership - Southern California
Chevron USA Inc.
Chino Hills, City of (CA)
City of Corona
City of Corona Information Technology De
City of Culver City
City of Downey
City of Irvine Public Safety
City of Los Angeles Dept Water & Power
City of Monrovia
City of Montebello
City of Oceanside
City of Pasadena, California
City of Poway
City of Riverside

City of San Bernardino, MWD
City of Santa Barbara Fire Department
City of Torrance
City of West Covina
City of Whittier
Communication Services Inc.
Conterra Ultra Broadband, LLC
Corona, City of - Fire Communications
Corona, City of, Dept of Water & Power
Cosner-Neipp Corporation
Cox Communications, Inc.
DM Ventures Inc.
Dish Wireless LLC
Disneyland Resort
Eastern Municipal Water District
Everywhere Wireless, LLC
Fireline Network Solutions Inc.
Fox Television Stations, LLC
Franklin Technology Systems, Inc.
Fresno MSA Limited Partnership
Frontier California Inc.
Gila Electronics of Yuma, Inc
Gilcomm, LLC
Gilmond, Daniel
Glendale City of
Global Enterprise Solutions, Inc.
Go Creative Wireless
Heartland Communications Facility Auth
Imperial Irrigation District
Indio, City of
Inland Empire Utilities Agency
International Communications Network Inc
Irvine Ranch Water District
JetWire, Inc.
KABC Television, LLC
KERN COUNTY CALIFORNIA
KMEX License Partnership G.P.
Kern County Superintendent of Schools
Kern Ed Telecom Consortium
Kern Schools Federal Credit Union
Kern Valley Dispatch
Kern, County of
LT-WR, LLC
Lemon Grove School District
Lightwave Broadband LLC
Loma Linda University Health
Long Beach, City of (WCD)
Los Angeles City Info Technology Agency
Los Angeles County Dept of Public Works
Los Angeles County FCC Licensing Section
Los Angeles County Metro Transit Auth
Los Angeles Regional Interoperable Comm
Los Angeles SMSA Ltd. Partnership
Los Angeles, City of (ITA)
MHO Networks
MJM Telecom Corp

Manzana Wind, LLC
Metropolitan Water Dist of So California
MiTec Solutions LLC
Mobile Relay Associates Inc.
Mojave Water Agency
Moulton Niguel Water District
NBC Telemundo License LLC
New Cingular Wireless PCS - Los Angeles
New Cingular Wireless PCS LLC -San Diego
New Cingular Wireless PCS, LLC - S/E CAL
Nextweb Inc
North County Dispatch Joint Powers Auth
North County Fire Protection District
Olympic Wireless, LLC
One Internet America, LLC
One Ring Networks, Inc.
Pacific Bell Tel Com dba AT&T California
Pacific Lightwave Inc
Palm Springs Unified School District
Palm Springs, City of
Palomar Broadband
Pasadena Area Community College Dist
Pomona College - KSPC
Quest Diagnostics Incorporated
Redondo Beach Police Department
Regents of the University of California
Regents of the University of California
Riverside, County of
Rural High-Speed Communications
SBC-Wireless, Inc.
San Antonio Regional Hospital
San Bernardino County of California
San Diego Broadband
San Diego Gas & Electric Company
San Diego Unified School District
San Diego University
San Diego, City of
San Diego, County of
Santa Barbara, County of
Santa Fe Irrigation District
Santa Margarita Water District
Scripps Broadcasting Holdings, LLC
Sierra Sands Unified School District
SiteXpedite, LLC
Sky Valley Network LLC
Skynet Internet Inc
Skyriver Communications
SmartSky Microwave, LLC
South Bay Regional Public Comm Authority
South Orange County Community College Di
Southern California Gas Company
Southern California Telephone Company
Spectrum Link, Inc.
Station Venture Operations, LP
Sun Microwave
Sweetwater Authority

T-Mobile MW LLC
Te Conectamos LLC
Tejon Ranch Co
Towerstream Corp.
Tribune Media Company
Turn Wireless, LLC
Ultimate Internet Access, Inc
Union Pacific Railroad Company
Valley Strong Credit Union
Ventura County Office of Education
Ventura, County of
Vivid-Hosting, LLC
Walnut Valley Water District
Warp2Biz
Webpass Inc.
Weigel Broadcasting Company
West End Communications Authority
Western Broadband Inc.
Western Municipal Water District
WiLogic, Inc
Wiline Spectrum Holdings LLC
WirelessGuys, Inc.
Wisprenn
XO Communications, LLC
ZRay Technologies Corporation
iHM Licenses, LLC
unWired Broadband, 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: 260327COMSGE11

Administrative Information

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

Site Information

ONTARIO, CA
Venue Name: ORANGE EMPIRE
Latitude (NAD 83): 34° 3' 46.2" N
Longitude (NAD 83): 117° 38' 2.4" W
Climate Zone: A
Rain Zone: 4
Ground Elevation (AMSL): 300.39 m / 985.5 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%
		-151.0 dBW/4 kHz 20%
		-128.0 dBW/4 kHz 0.0025%

Frequency Information

Emission / Frequency Range (MHz)	Receive 18.0 GHz	Transmit 28.0 GHz
	60M0D7W - 480MD7W / 17300.0 - 17800.0	60M0D7W - 480MD7W / 27500.0 - 29100.0
	60M0D7W - 480MD7W / 17800.0 - 18600.0	60M0D7W - 480MD7W / 29100.0 - 29500.0
	60M0D7W - 480MD7W / 18600.0 - 18800.0	60M0D7W - 480MD7W / 29500.0 - 30000.0
	60M0D7W - 480MD7W / 18800.0 - 19300.0	60M0D7W - 480MD7W / 30000.0 - 31000.0
	60M0D7W - 480MD7W / 19300.0 - 19700.0	
	60M0D7W - 480MD7W / 19700.0 - 20200.0	
	60M0D7W - 480MD7W / 20200.0 - 21200.0	
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

ONTARIO, CA

Licensee Name SpaceX Services, Inc
Latitude (NAD 83) 34° 3' 46.2" N
Longitude (NAD 83) 117° 38' 2.4" W
Ground Elevation (AMSL) 300.39 m / 985.5 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	1.43	76.13	0.00	225.00	0.00	100.00
5	1.36	71.92	0.00	225.00	0.00	100.00
10	1.30	67.75	0.00	225.00	0.00	100.00
15	1.42	63.68	0.00	225.00	0.00	100.00
20	1.20	59.59	0.00	225.00	0.00	100.00
25	0.96	55.55	0.00	225.00	0.00	100.00
30	0.82	51.65	0.00	225.00	0.00	100.00
35	0.71	47.89	0.00	225.00	0.00	100.00
40	0.62	44.32	0.00	225.00	0.00	100.00
45	0.56	41.00	0.00	225.00	0.00	100.00
50	0.49	37.97	0.00	225.00	0.00	100.00
55	0.42	35.31	0.00	225.00	0.00	100.00
60	0.35	33.12	0.00	225.00	0.00	100.00
65	0.28	31.49	0.00	225.00	0.00	100.00
70	0.00	30.32	0.00	225.00	0.00	100.00
75	0.00	30.14	0.00	225.00	0.00	100.00
80	0.00	30.71	0.00	225.00	0.00	100.00
85	0.00	31.99	0.00	225.00	0.00	100.00
90	0.00	33.89	0.00	225.00	0.00	100.00
95	0.00	36.32	0.00	225.00	0.00	100.00
100	0.00	39.18	0.00	225.00	0.00	100.00
105	0.00	42.37	0.00	225.00	0.00	100.00
110	0.00	45.83	0.00	225.00	0.00	100.00
115	0.00	49.50	0.00	225.00	0.00	100.00
120	0.00	53.33	0.00	225.00	0.00	100.00
125	0.00	57.29	0.00	225.00	0.00	100.00
130	0.00	61.35	0.00	225.00	0.00	100.00
135	0.00	65.49	0.00	225.00	0.00	100.00
140	0.00	69.69	0.00	225.00	0.00	100.00
145	0.00	73.93	0.00	225.00	0.00	100.00
150	0.00	78.21	0.00	225.00	0.00	100.00
155	0.00	82.52	0.00	225.00	0.00	100.00
160	0.00	86.83	0.00	225.00	0.00	100.00
165	0.00	91.16	0.00	225.00	0.00	100.00
170	0.00	95.48	0.00	225.00	0.00	100.00
175	0.00	99.79	0.00	225.00	0.00	100.00
180	0.00	104.09	0.00	225.00	0.00	100.00
185	0.00	108.35	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

ONTARIO, CA

Licensee Name SpaceX Services, Inc

Latitude (NAD 83) 34° 3' 46.2" N

Longitude (NAD 83) 117° 38' 2.4" W

Ground Elevation (AMSL) 300.39 m / 985.5 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%

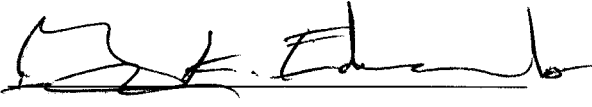
Max Available RF Power

-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	0.00	112.57	0.00	225.00	0.00	100.00
195	0.00	116.74	0.00	225.00	0.00	100.00
200	0.00	120.84	0.00	225.00	0.00	100.00
205	0.00	124.85	0.00	225.00	0.00	100.00
210	0.00	128.74	0.00	225.00	0.00	100.00
215	0.00	132.49	0.00	225.00	0.00	100.00
220	0.00	136.05	0.00	225.00	0.00	100.00
225	0.00	139.38	0.00	225.00	0.00	100.00
230	0.00	142.40	0.00	225.00	0.00	100.00
235	0.00	145.04	0.00	225.00	0.00	100.00
240	0.00	147.20	0.00	225.00	0.00	100.00
245	0.00	148.78	0.00	225.00	0.00	100.00
250	0.00	149.68	0.00	225.00	0.00	100.00
255	0.00	149.86	0.00	225.00	0.00	100.00
260	0.00	149.29	0.00	225.00	0.00	100.00
265	0.00	148.01	0.00	225.00	0.00	100.00
270	0.00	146.11	0.00	225.00	0.00	100.00
275	0.00	143.68	0.00	225.00	0.00	100.00
280	0.27	140.63	0.00	225.00	0.00	100.00
285	0.38	137.39	0.00	225.00	0.00	100.00
290	0.43	133.92	0.00	225.00	0.00	100.00
295	0.48	130.26	0.00	225.00	0.00	100.00
300	0.56	126.42	0.00	225.00	0.00	100.00
305	0.67	122.46	0.00	225.00	0.00	100.00
310	0.77	118.40	0.00	225.00	0.00	100.00
315	0.93	114.26	0.00	225.00	0.00	100.00
320	1.10	110.07	0.00	225.00	0.00	100.00
325	1.21	105.86	0.00	225.00	0.00	100.00
330	1.32	101.62	0.00	225.00	0.00	100.00
335	1.40	97.37	0.00	225.00	0.00	100.00
340	1.42	93.12	0.00	225.00	0.00	100.00
345	1.38	88.86	0.00	225.00	0.00	100.00
350	1.35	84.60	0.00	225.00	0.00	100.00
355	1.41	80.35	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 “Orange Empire” Gateway (Ontario, CA)
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. AT&T Enterprises, LLC
2. Abelli Enterprises, LLC
3. Alpha Omega Wireless, Inc.
4. Aviat Networks
5. BAIconnect
6. Baltic Networks USA
7. Baxter, John
8. Bel Air Internet, LLC
9. Boingo Wireless, Inc.
10. Bowles, Phyllis
11. Brek Manufacturing
12. CITY OF TORRANCE
13. California Internet, L.P. d/b/a GeoLinks
14. Cellco Partnership

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. Ceragon Networks, Inc.
16. City of Adelanto
17. City of Chino Hills
18. City of Corona
19. City of Huntington Beach
20. City of Newport Beach
21. Consolidated Smart Broadband Systems, LLC
22. Crown Castle Fiber LLC
23. Denton, Elisabeth
24. Dreggors, William
25. E.I. Computer Systems Inc
26. FCL Tech, Inc.
27. Four T's LLC
28. Franklin Technology Systems, Inc.
29. Frederick, Johnny
30. Gilcomm, LLC
31. Haggerty Family Trust
32. Halo Technology
33. Hot Spot Broadband, Inc.
34. Intelpath
35. J&B Portfolio Management, LLC
36. John Paul Mitchell System
37. LONG BEACH CA, CITY OF
38. LightPointe Communications Inc
39. Lightwave Broadband LLC
40. MJM TELECOM CORP.
41. Metropolitan Water District of Southern California
42. Metropolitan Water District of Southern California
43. Micronet Communications, Inc.
44. Netunwired LLC
45. New Beginnings
46. North County Transit District
47. NuView IRA FBO Cynthia A Wollert
48. Pacific Lightwave Inc
49. Palomar Broadband
50. Port of Long Beach
51. R and A Cell Towers, LLC
52. REMEC Broadband Wireless Networks LLC DBA Bridgewave Communications
53. Reynolds, Julie
54. Rural High-Speed Communications LLC DBA Mojave Communications
55. SIAE Microelettronica, Inc.
56. Sandel, Vernon
57. Siklu, Inc



58. Skyriver Communications
59. Skywire LLC
60. Southern California Telephone Company
61. SpaceX
62. Spectrum Link, Inc
63. Sun Microwave
64. Sun Wireless
65. Sunwest Trust, Inc., Custodian FBO Joseph E. Kennedy
66. T-MOBILE LICENSE LLC
67. TORRANCE, CITY OF
68. Te Conectamos LLC dba Tekwerks Internet
69. Thieman, Marcella C
70. Towerstream Corp
71. University of Southern California
72. Verizon
73. Vubiq Networks, Inc.
74. Webpass Inc
75. Webpass, Inc
76. WiLine Spectrum Holdings LLC
77. Widmo Holdings LLC
78. Wiesler, Walter
79. WirelessGuys Inc.

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 "Orange Empire" Gateway
- Transmitting station coordinates: 34.06283, -117.634
- Ground Elevation (AMSL): 300 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	7.18
5.0	7.06
10.0	6.56
15.0	6.81
20.0	5.47
25.0	4.54
30.0	4.64
35.0	3.83
40.0	3.30
45.0	2.43
50.0	2.19
55.0	1.91
60.0	1.82
65.0	1.65
70.0	1.78
75.0	1.67
80.0	1.32
85.0	1.96
90.0	1.72
95.0	0.69
100.0	1.00
105.0	0.78
110.0	0.93
115.0	0.41
120.0	0.24
125.0	0.29
130.0	0.27
135.0	0.38
140.0	0.43
145.0	0.49
150.0	0.55
155.0	0.55
160.0	1.22
165.0	1.44
170.0	1.29
175.0	1.57
180.0	1.10
185.0	1.27
190.0	0.67
195.0	0.16



Frequency Coordination Report
E-Band Earth Station

200.0	-0.02
205.0	0.28
210.0	0.54
215.0	0.41
220.0	0.34
225.0	0.23
230.0	0.21
235.0	0.25
240.0	0.18
245.0	0.22
250.0	0.44
255.0	0.07
260.0	0.23
265.0	0.10
270.0	0.21
275.0	0.31
280.0	0.38
285.0	0.44
290.0	0.83
295.0	1.69
300.0	1.67
305.0	1.75
310.0	1.60
315.0	2.63
320.0	2.71
325.0	2.94
330.0	4.13
335.0	4.73
340.0	4.46
345.0	4.14
350.0	4.61
355.0	6.01