

Prepared By

COMSEARCH

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Prepared For

**SES Space & Defense
MOUNTAIN VIEW, CA**

Temporary Transmit-Only Earth Station

Operation Dates: 07/05/2023 - 08/04/2023

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. Verbal and written coordination was conducted with the below listed carriers on April 04, 2023.

Company

AT&T Mobility Spectrum LLC - N CA
Alameda County Water District
Alameda County of California
Broadcom Corporation
CBS Broadcasting Inc
CBS Communications Services Inc
California Internet, L.P
California RSA NO. 4 Limited Partnership
California, State of
City & County of San Francisco PUC
City and County of San Francisco
Contra Costa, County of
County of Monterey
County of San Mateo
Crystal Smr Inc.
EXPOHL, LLC
East Bay Municipal Utility District
Encina Communications Corporation
Etheric Networks, Inc.
Federal Communication Commission
Field, David J
GTE Mobilnet of California LTD Partnersh
Hearst Stations, Inc.
Higher Ground LLC
ION Television License, LLC
KDTV License Partnership, G.P.
KGO Television, Inc.
KVIE, Inc.
M.U.T. Licensing, LLC
MHO Networks
Marin, County of
Modesto Irrigation District
Modesto Peace/Life Center
Monterey County Superintendent of School

Morgan Communications LLC
NBC Telemundo License LLC
NPG of Monterey-Salinas CA, LLC
Napa, County of
New Cingular Wireless PCS LLC - N CAL
Olympic Wireless, LLC
Pacific Bell Tel Com dba AT&T California
Pacific Coast Wireless Internet
Pacific Gas and Electric Company
Radio License Holding CBC, LLC
Radio License Holding SRC LLC
Razzo Link, Inc
Ridge Wireless
Sacramento Municipal Utility District
Sacramento Valley Limited Partnership
Sacramento, County of
Sail Internet
San Francisco, City and County of
San Joaquin County
San Jose, City of (ECOMM)
Santa Clara Valley Water District
Santa Clara, County of
Santa Clara, County of (SVRIA)
Santa Cruz, County of
Solano, County of
T-Mobile License LLC
The Internet Store, Inc.
Union Pacific Railroad Company
Wiline Spectrum Holdings LLC
iHM Licenses, LLC

There are no unresolved interference objections with the station contained in these applications.

The following section presents the data pertinent to frequency coordination of the earth station that was circulated to all carriers within its coordination contours.

COMSEARCH

Earth Station Data Sheet

Date: 04/04/2023
 Job Number: 230404COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
 Call Sign TEMP08
 Licensee Code SESSPD
 Licensee Name SES Space & Defense

Site Information MOUNTAIN VIEW, CA

Venue Name
 Latitude (NAD 83) 37° 24' 29.0" N
 Longitude (NAD 83) 122° 4' 21.0" W
 Climate Zone B
 Rain Zone 4
 Ground Elevation (AMSL) 12.06 m / 39.6 ft

Link Information

Satellite Type Geostationary
 Mode TO - Transmit-Only
 Modulation Digital
 Satellite Arc 177° W to 177° West Longitude
 Azimuth Range 246.9° to 246.9°
 Corresponding Elevation Angles 18.9° / 18.9°
 Antenna Centerline (AGL) 0.91 m / 3.0 ft

Antenna Information

Manufacturer Planet Labs
 Model Quadrifilar Helix
 Gain / Diameter 4.0 dBi / 1.0 m (approximate)
 3-dB / 15-dB Beamwidth 0.40° / 0.80°

Transmit - FCC32

Max Available RF Power	(dBW/4 kHz)	-25.0	
	(dBW/MHz)	-1.0	
Maximum EIRP	(dBW/4 kHz)	-21.0	
	(dBW/MHz)	3.0	
Interference Objectives:	Long Term	-154.0 dBW/4 kHz	20%
	Short Term	-131.0 dBW/4 kHz	0.0025%

Frequency Information

Emission / Frequency Range (MHz) 1M00G7W / 6307.0 - 6423.0

Transmit 6.3 GHz

Max Great Circle Coordination Distance 118.5 km / 73.7 mi
 Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

Coordination Values		MOUNTAIN VIEW, CA	
Licensee Name	SES Space & Defense		
Latitude (NAD 83)	37° 24' 29.0" N		
Longitude (NAD 83)	122° 4' 21.0" W		
Ground Elevation (AMSL)	12.06 m / 39.6 ft		
Antenna Centerline (AGL)	0.91 m / 3.0 ft		
Antenna Mode	Transmit 6.3 GHz		
Interference Objectives: Long Term	-154.0 dBW/4 kHz	20%	
Short Term	-131.0 dBW/4 kHz	0.0025%	
Max Available RF Power	-25.0 (dBW/4 kHz)		

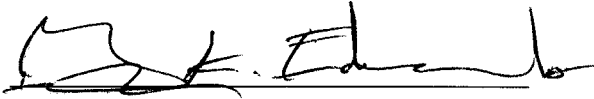
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.3 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	111.79	-10.00	113.77
5	0.00	116.46	-10.00	113.77
10	0.00	121.10	-10.00	113.77
15	0.00	125.71	-10.00	113.77
20	0.00	130.27	-10.00	113.77
25	0.00	134.75	-10.00	113.77
30	0.00	139.15	-10.00	113.77
35	0.00	143.42	-10.00	113.77
40	0.00	147.52	-10.00	113.77
45	0.00	151.36	-10.00	113.77
50	0.00	154.83	-10.00	113.77
55	0.00	157.76	-10.00	113.77
60	0.00	159.89	-10.00	113.77
65	0.00	160.98	-10.00	113.77
70	0.00	160.82	-10.00	113.77
75	0.00	159.47	-10.00	113.77
80	0.00	157.11	-10.00	113.77
85	0.77	154.58	-10.00	100.00
90	1.14	151.14	-10.00	100.00
95	3.51	148.25	-10.00	100.00
100	2.87	143.61	-10.00	100.00
105	1.26	138.57	-10.00	100.00
110	0.00	133.68	-10.00	113.77
115	2.11	129.73	-10.00	100.00
120	2.08	125.07	-10.00	100.00
125	2.04	120.37	-10.00	100.00
130	1.93	115.64	-10.00	100.00
135	0.26	110.69	-10.00	109.15
140	0.70	106.03	-10.00	100.00
145	1.09	101.32	-10.00	100.00
150	0.85	96.56	-10.00	100.00
155	0.70	91.80	-10.00	100.00
160	0.71	87.05	-10.00	100.00
165	0.44	82.32	-10.00	100.00
170	0.62	77.57	-10.00	100.00
175	0.48	72.86	-10.00	100.00
180	0.56	68.14	-10.00	100.00
185	0.66	63.43	-10.00	100.00

Coordination Values		MOUNTAIN VIEW, CA	
Licensee Name		SES Space & Defense	
Latitude (NAD 83)		37° 24' 29.0" N	
Longitude (NAD 83)		122° 4' 21.0" W	
Ground Elevation (AMSL)		12.06 m / 39.6 ft	
Antenna Centerline (AGL)		0.91 m / 3.0 ft	
Antenna Mode		Transmit 6.3 GHz	
Interference Objectives: Long Term		-154.0 dBW/4 kHz	20%
	Short Term	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power		-25.0 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.3 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.67	58.76	-10.00	100.00
195	0.89	54.08	-10.00	100.00
200	1.05	49.44	-10.00	100.00
205	1.12	44.88	-9.30	100.00
210	1.14	40.41	-8.16	100.00
215	1.10	36.08	-6.93	100.00
220	1.19	31.85	-5.58	100.00
225	1.04	27.99	-4.18	100.00
230	0.99	24.45	-2.71	100.00
235	0.99	21.42	-1.27	100.00
240	1.04	19.14	-0.05	100.00
245	1.11	17.92	0.67	100.00
250	1.01	18.18	0.51	100.00
255	0.91	19.70	-0.36	100.00
260	0.62	22.39	-1.75	104.60
265	0.69	25.48	-3.15	100.00
270	0.46	29.26	-4.66	105.74
275	0.36	33.26	-6.05	111.01
280	0.00	37.59	-7.38	118.55
285	0.00	41.90	-8.55	117.38
290	0.00	46.32	-9.64	114.66
295	0.00	50.83	-10.00	113.77
300	0.00	55.39	-10.00	113.77
305	0.26	59.96	-10.00	108.56
310	0.00	64.66	-10.00	113.77
315	0.00	69.34	-10.00	113.77
320	0.00	74.04	-10.00	113.77
325	0.00	78.75	-10.00	113.77
330	0.00	83.48	-10.00	113.77
335	0.26	88.20	-10.00	108.93
340	0.00	92.93	-10.00	113.77
345	0.00	97.66	-10.00	113.77
350	0.00	102.38	-10.00	113.77
355	0.00	107.09	-10.00	113.77

Certification

I hereby certify that I am the technically qualified person responsible for the preparation of the frequency coordination data contained in this report. I am familiar with Parts 101 and 25 of the FCC Rules and Regulations and I have either prepared or reviewed the frequency coordination data submitted with this report, 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: February 24, 2023

Ka-Band Earth Station – Mountain View, CA

Frequency Coordination Report

28 GHz



Prepared on Behalf of
SES Space & Defense

May 10, 2023



COMSEARCH
A CommScope Company



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1. Summary of Results

On behalf of SES SPACE & DEFENSE, Comsearch performed a coordination notice under Section 25.203(c) and Section 25.136(a)(4) of the FCC's rules for all existing and proposed terrestrial licenses within the coordination contours of their proposed Experimental Ka-Band earth station in Mountain View, CA, which will transmit at 28 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 10, 2023.

There were no objections from any of the incumbent 28 GHz licensees.

2. 28 GHz Common Carrier and LMDS Coordination

In accordance with FCC Rules and Regulations, the temporary Ka-Band earth station in Mountain View, CA was prior-coordinated by Comsearch. A notification letter and datasheets for this earth station were sent to the following 28 GHz common carrier fixed microwave licensees. These licensees are authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis or local basis.

Licensee	Authorized Geographic Area
None Identified	

A notification letter and datasheets for the temporary Ka-Band earth station in Mountain View, CA were also sent to the following 28 GHz LMDS licensees. These licensees are authorized to operate fixed operations from 29.1 – 29.25 GHz on a market basis.

Licensee	Authorized Geographic Area
Broadband One	Market-Based
GeoLinks	Market-Based

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

¹ The proposed earth station will operate in the 29.0975 – 29.9985 GHz portion of the Ka-Band.



3. 28 GHz UMFUS Coordination

The proposed earth station will operate on frequencies that Do Not overlap Channel L1 & L2 of the UMFUS service. The total frequency allocation for Channels L1 & L2 of the UMFUS spectrum appears below.

Channel: **L1** 27.500 - 27.925 GHz
 L2 27.925 - 28.350 GHz

Licensee	Authorized Geographic Area
Not Required	

The Earth Station will not be operating in the UMFUS bands.



4. Earth Station Coordination Data

This section presents the data pertinent to the proposed temporary Ka-Band earth station in Mountain View, CA. This data was circulated to all incumbent licensees in the shared 28 GHz frequency ranges.



SES SPACE & DEFENSE
Ka-Band Earth Station – Mountain View, CA
Frequency Coordination Report
28 GHz

Job Number: <PCNJobCode>

Administrative Information

Status ENGINEER PROPOSAL
 Call Sign <PCNCallSign>
 Licensee Code SESSPD
 Licensee Name SES Space & Defense

Site Information

MOUNTAIN VIEW, CA

Venue Name
 Latitude (NAD 83) 37° 24' 29.0" N
 Longitude (NAD 83) 122° 4' 21.0" W
 Climate Zone B
 Rain Zone 4
 Ground Elevation (AMSL) 12.06 m / 39.6 ft

Link Information

Satellite Type Low Earth Orbit
 Mode TO - Transmit-Only
 Modulation Digital
 Minimum Elevation Angle 10.0°
 Azimuth Range 0.0° to 360°
 Antenna Centerline (AGL) 0.91 m / 3.0 ft

Antenna Information

Transmit - FCC32

Manufacturer		Optysis	Intellian
Model		Horn Array	mP130 (Parabolic Dish)
Gain / Diameter		30.0 dBi / 16.5 cm (square)	49.0 dBi / 1.25
3-dB / 15-dB Beamwidth		2.30° / 4.60°	0.30° / 0.60°
Max Available RF Power	(dBW/4 kHz)	-51.0	-20.4
	(dBW/MHz)	-27.0	3.6
Maximum EIRP	(dBW/4 kHz)	-21.0	28.6
	(dBW/MHz)	3.0	52.6
Interference Objectives:	Long Term	-151.0 dBW/4 kHz	20%
	Short Term	-128.0 dBW/4 kHz	0.0025%

Frequency Information

Transmit 28.0 GHz

Emission / Frequency Range (MHz) 500KG7W / 29097.5 – 29998.5

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



SES SPACE & DEFENSE
Ka-Band Earth Station – Mountain View, CA
Frequency Coordination Report
28 GHz

Coordination Values	MOUNTAIN VIEW, CA	
Licensee Name	SES Space & Defense	
Latitude (NAD 83)	37° 24' 29.0" N	
Longitude (NAD 83)	122° 4' 21.0" W	
Ground Elevation (AMSL)	12.06 m / 39.6 ft	
Antenna Centerline (AGL)	0.91 m / 3.0 ft	
Antenna Mode	Transmit 28.0 GHz	
Interference Objectives:	Long Term	-151.0 dBW/4 kHz 20%
	Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-20.4 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	72.50	8.21	100.00
5	0.00	68.38	8.21	100.00
10	0.00	64.32	8.21	100.00
15	0.00	60.34	8.21	100.00
20	0.00	56.44	8.21	100.00
25	0.00	52.67	8.21	100.00
30	0.00	49.05	8.21	100.00
35	0.00	45.62	8.21	100.00
40	0.00	42.42	8.21	100.00
45	0.00	39.53	8.21	100.00
50	0.00	37.01	8.21	100.00
55	0.00	34.95	8.21	100.00
60	0.00	33.43	8.21	100.00
65	0.00	32.53	8.21	100.00
70	0.00	32.30	8.21	100.00
75	0.00	32.76	8.21	100.00
80	0.00	33.88	8.21	100.00
85	0.00	35.59	8.21	100.00
90	0.00	37.81	8.21	100.00
95	0.00	40.46	8.21	100.00
100	0.00	43.46	8.21	100.00
105	0.00	46.74	8.21	100.00
110	0.00	50.24	8.21	100.00
115	0.00	53.92	8.21	100.00
120	0.00	57.73	8.21	100.00
125	0.00	61.66	8.21	100.00
130	0.00	65.67	8.21	100.00
135	0.00	69.76	8.21	100.00
140	0.00	73.89	8.21	100.00
145	0.00	78.06	8.21	100.00
150	0.00	82.26	8.21	100.00
155	0.00	86.48	8.21	100.00
160	0.00	90.71	8.21	100.00
165	0.00	94.93	8.21	100.00
170	0.00	99.15	8.21	100.00
175	0.00	103.34	8.21	100.00
180	0.00	107.50	8.21	100.00
185	0.00	111.62	8.21	100.00



SES SPACE & DEFENSE
Ka-Band Earth Station – Mountain View, CA
Frequency Coordination Report
28 GHz

Coordination Values	MOUNTAIN VIEW, CA	
Licensee Name	SES Space & Defense	
Latitude (NAD 83)	37° 24' 29.0" N	
Longitude (NAD 83)	122° 4' 21.0" W	
Ground Elevation (AMSL)	12.06 m / 39.6 ft	
Antenna Centerline (AGL)	0.91 m / 3.0 ft	
Antenna Mode	Transmit 28.0 GHz	
Interference Objectives: Long Term	-151.0 dBW/4 kHz	20%
	Short Term	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-20.4 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	115.68	8.21	100.00
195	0.00	119.66	8.21	100.00
200	0.00	123.56	8.21	100.00
205	0.00	127.33	8.21	100.00
210	0.00	130.95	8.21	100.00
215	0.00	134.38	8.21	100.00
220	0.00	137.58	8.21	100.00
225	0.00	140.47	8.21	100.00
230	0.00	142.99	8.21	100.00
235	0.00	145.05	8.21	100.00
240	0.00	146.57	8.21	100.00
245	0.00	147.47	8.21	100.00
250	0.00	147.70	8.21	100.00
255	0.00	147.24	8.21	100.00
260	0.00	146.12	8.21	100.00
265	0.00	144.41	8.21	100.00
270	0.00	142.19	8.21	100.00
275	0.00	139.54	8.21	100.00
280	0.00	136.54	8.21	100.00
285	0.00	133.26	8.21	100.00
290	0.00	129.76	8.21	100.00
295	0.00	126.08	8.21	100.00
300	0.00	122.27	8.21	100.00
305	0.00	118.34	8.21	100.00
310	0.00	114.33	8.21	100.00
315	0.00	110.24	8.21	100.00
320	0.00	106.11	8.21	100.00
325	0.00	101.94	8.21	100.00
330	0.00	97.74	8.21	100.00
335	0.00	93.52	8.21	100.00
340	0.00	89.29	8.21	100.00
345	0.00	85.07	8.21	100.00
350	0.00	80.85	8.21	100.00
355	0.00	76.66	8.21	100.00



5. Contact Information

For questions or information regarding the 28 GHz 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
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