

Ka-Band Earth Station – Southbury, CT

Frequency Coordination Report

28 GHz



Prepared on Behalf of
INMARSAT INC.

November 17, 2021



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1. Summary of Results

On behalf of INMARSAT INC., 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 Ka-Band earth station in Southbury, CT, 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 November 17, 2021.

No objections were received from any of the incumbent 28 GHz licensees.

2. 28 GHz Common Carrier and LTTS Coordination

In accordance with FCC Rules and Regulations, the Ka-Band earth station in Southbury, CT 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 Ka-Band earth station in Southbury, CT were also sent to the following 28 GHz local television transmission licensee. This licensee is authorized to operate temporary fixed operations from 27.5 – 29.5 GHz on a nationwide basis.

Licensee	Authorized Geographic Area
None Identified	

No objections were received from the common carrier or local television transmission service incumbents.

¹ The proposed earth station will operate in the 27.5 – 29.5 GHz portion of the Ka-Band.

3. 28 GHz UMFUS/LMDS Coordination

There were four 28 GHz UMFUS/LMDS licensees identified within the coordination distance of the proposed earth station. The proposed earth station will operate on frequencies that 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

LMDS Frequencies: 29.100 – 29.250 GHz

Licensee	Authorized Geographic Area
McKay Brothers (UMFUS)	Market Based
T-Mobile (UMFUS)	Market Based
US Cellular (UMFUS)	Market Based
Verizon (UMFUS/LMDS)	Market Based

No objections were received from the UMFUS/LMDS incumbents within coordination distance.

4. Earth Station Coordination Data

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

Job Number:		210915COMSGE03			
Administrative Information					
Status	ENGINEER PROPOSAL				
Call Sign					
Licensee Code	INMSAT				
Licensee Name	Inmarsat Inc.				
Site Information					
Venue Name	SOUTHBURY, CT				
Latitude (NAD 83)	41° 27' 6.7" N				
Longitude (NAD 83)	73° 17' 23.6" W				
Climate Zone	A				
Rain Zone	2				
Ground Elevation (AMSL)	44.32 m / 145.4 ft				
Link Information					
Satellite Type	Geostationary				
Mode	TR - Transmit-Receive				
Modulation	Digital				
Satellite Arc	28° W to 55° West Longitude				
Azimuth Range	123.2° to 153.5°				
Corresponding Elevation Angles	23.9° / 38.6°				
Antenna Centerline (AGL)	9.14 m / 30.0 ft				
Antenna Information		Receive - FCC32		Transmit - FCC32	
Manufacturer		General Dynamics		General Dynamics	
Model		13.2 Ka		13.2 Ka	
Gain / Diameter		65.6 dBi / 13.2 m		68.9 dBi / 13.2 m	
3-dB / 15-dB Beamwidth		0.09° / 0.17°		0.06° / 0.13°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-27.9 -3.9	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			41.0 65.0	
Interference Objectives:	Long Term	-156.7 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
	Short Term	-146.7 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%
Frequency Information		Receive 18.0 GHz		Transmit 28.0 GHz	
Emission / Frequency Range (MHz)		10K0G7W - 320MG7W / 17700.0 - 19700.0		10K0G7W - 320MG7W / 27500.0 - 29500.0	
Max Great Circle Coordination Distance		101.3 km / 63.0 mi		100.0 km / 62.1 mi	
Precipitation Scatter Contour Radius		100.0 km / 62.1 mi		100.0 km / 62.1 mi	

Coordination Values	SOUTHBURY, CT			
Licensee Name	Inmarsat Inc.			
Latitude (NAD 83)	41° 27' 6.7" N			
Longitude (NAD 83)	73° 17' 23.6" W			
Ground Elevation (AMSL)	44.32 m / 145.4 ft			
Antenna Centerline (AGL)	9.14 m / 30.0 ft			
Antenna Model	General Dynamics 13.2 meter			
Antenna Mode	Receive 18.0 GHz			
Interference Objectives: Long Term	-156.7 dBW/MHz	20%	Transmit 28.0 GHz	-151.0 dBW/4 kHz 20%
Short Term	-146.7 dBW/MHz	0.01%		-128.0 dBW/4 kHz 0.0025%
Max Available RF Power	-27.9 (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	4.62	121.16	-10.00	100.00	-10.00	100.00
5	4.48	116.51	-10.00	100.00	-10.00	100.00
10	4.12	111.80	-10.00	100.00	-10.00	100.00
15	3.47	107.06	-10.00	100.00	-10.00	100.00
20	3.80	102.42	-10.00	100.00	-10.00	100.00
25	3.78	97.74	-10.00	100.00	-10.00	100.00
30	3.73	93.04	-10.00	100.00	-10.00	100.00
35	3.85	88.35	-10.00	100.00	-10.00	100.00
40	3.82	83.65	-10.00	100.00	-10.00	100.00
45	3.67	78.97	-10.00	100.00	-10.00	100.00
50	3.29	74.34	-10.00	100.00	-10.00	100.00
55	2.87	69.75	-10.00	100.00	-10.00	100.00
60	2.74	65.17	-10.00	100.00	-10.00	100.00
65	2.21	60.71	-10.00	100.00	-10.00	100.00
70	2.07	56.24	-10.00	100.00	-10.00	100.00
75	2.24	51.75	-10.00	100.00	-10.00	100.00
80	2.20	47.39	-9.89	100.00	-9.89	100.00
85	2.03	43.19	-8.89	100.00	-8.89	100.00
90	1.96	39.11	-7.81	100.00	-7.81	100.00
95	1.96	35.18	-6.66	100.00	-6.66	100.00
100	1.91	31.55	-5.48	100.00	-5.48	100.00
105	1.70	28.41	-4.34	100.00	-4.34	100.00
110	1.48	25.84	-3.31	101.33	-3.31	100.00
115	2.37	22.96	-2.02	100.00	-2.02	100.00
120	3.67	20.45	-0.77	100.00	-0.77	100.00
125	4.80	19.15	-0.06	100.00	-0.06	100.00
130	5.88	19.18	-0.07	100.00	-0.07	100.00
135	5.81	21.45	-1.29	100.00	-1.29	100.00
140	5.51	24.49	-2.73	100.00	-2.73	100.00
145	5.96	26.76	-3.69	100.00	-3.69	100.00
150	5.93	29.16	-4.62	100.00	-4.62	100.00
155	5.64	31.50	-5.46	100.00	-5.46	100.00
160	5.02	33.83	-6.23	100.00	-6.23	100.00
165	4.03	36.20	-6.97	100.00	-6.97	100.00
170	3.30	38.50	-7.64	100.00	-7.64	100.00
175	4.06	39.97	-8.04	100.00	-8.04	100.00
180	4.02	42.54	-8.72	100.00	-8.72	100.00
185	3.49	45.77	-9.52	100.00	-9.52	100.00

Coordination Values		SOUTHBURY, CT				
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Antenna Centerline (AGL)		9.14 m / 30.0 ft				
Antenna Model		General Dynamics 13.2 meter				
Antenna Mode		Receive 18.0 GHz				
Interference Objectives:	Long Term	-156.7 dBW/MHz	20%	Transmit 28.0 GHz		
	Short Term	-146.7 dBW/MHz	0.01%	-151.0 dBW/4 kHz	20%	-128.0 dBW/4 kHz 0.0025%
Max Available RF Power		-27.9 (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	2.98	49.20	-10.00	100.00	-10.00	100.00
195	2.82	52.59	-10.00	100.00	-10.00	100.00
200	2.99	55.98	-10.00	100.00	-10.00	100.00
205	3.30	59.48	-10.00	100.00	-10.00	100.00
210	3.52	63.17	-10.00	100.00	-10.00	100.00
215	3.59	67.01	-10.00	100.00	-10.00	100.00
220	3.22	71.05	-10.00	100.00	-10.00	100.00
225	2.81	75.10	-10.00	100.00	-10.00	100.00
230	2.05	79.21	-10.00	100.00	-10.00	100.00
235	1.46	83.26	-10.00	100.00	-10.00	100.00
240	1.43	87.23	-10.00	100.00	-10.00	100.00
245	1.80	91.23	-10.00	100.00	-10.00	100.00
250	2.04	95.24	-10.00	100.00	-10.00	100.00
255	1.89	99.22	-10.00	100.00	-10.00	100.00
260	2.10	103.22	-10.00	100.00	-10.00	100.00
265	2.46	107.24	-10.00	100.00	-10.00	100.00
270	2.61	111.19	-10.00	100.00	-10.00	100.00
275	2.60	115.04	-10.00	100.00	-10.00	100.00
280	2.92	118.92	-10.00	100.00	-10.00	100.00
285	3.01	122.63	-10.00	100.00	-10.00	100.00
290	3.26	126.31	-10.00	100.00	-10.00	100.00
295	4.10	130.20	-10.00	100.00	-10.00	100.00
300	3.95	133.34	-10.00	100.00	-10.00	100.00
305	4.63	136.82	-10.00	100.00	-10.00	100.00
310	4.98	139.82	-10.00	100.00	-10.00	100.00
315	4.57	141.84	-10.00	100.00	-10.00	100.00
320	5.23	144.32	-10.00	100.00	-10.00	100.00
325	5.20	145.69	-10.00	100.00	-10.00	100.00
330	4.80	146.07	-10.00	100.00	-10.00	100.00
335	4.42	143.29	-10.00	100.00	-10.00	100.00
340	4.17	138.96	-10.00	100.00	-10.00	100.00
345	4.06	134.57	-10.00	100.00	-10.00	100.00
350	4.18	130.17	-10.00	100.00	-10.00	100.00
355	4.39	125.70	-10.00	100.00	-10.00	100.00

5. Contact Information

For questions or information regarding the 28 GHz Frequency Coordination Report, please contact:

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