

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Inmarsat Inc.
SOUTHBURY, CT
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
November 12, 2021

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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 09/15/2021.

Company

AT&T Corp.
American Broadcasting Companies, Inc.
Bergen, County of
Bloomfield Center Fire District
Blue Blazer (DE) LLC
Blueline Communications
Borough of Fort Lee, New Jersey
Business Only Broadband, LLC
CBS Communications Services Inc
CSC Holdings LLC
Cablevision Lightpath, Inc.
Cellco Partnership - (W-NY)
Central Hudson Gas & Electric Corp.
Chevra Hatzalah Inc.
City of New York
City of Springfield Police Department
City of Westfield
City of Yonkers, NY (Dept of Public Works)
Clearwire Spectrum Holdings III, LLC
Community Products, LLC
Electric Railroad, LLC
Entercom License, LLC
Federal Home Loan Bank of New York
Geodesic Networks LLC
Greenwich, Town of (CT)
Hauppauge Fire District
High Voltage Communications LLC (CFN)
Highway Networks, LLC
Hoboken Fire Department
Holtec Decommissioning International, LL
Holyoke, City of
Jefferson Microwave, LLC
Lawrence School District
Lehman College
MTA - Long Island Railroad
Mahwah Township New Jersey
Manchester Town Police Department
Marcus Spectrum Holdings, LLC
Middletown, City of
Mineola Union Free School District

Mount Sinai Hospital
NBC Telemundo License LLC
NW Technologies, LLC
Nassau County Government
Nassau County Police Department
New Cingular Wireless PCS LLC - NJ
New Cingular Wireless PCS, LLC (NY)
New Line Networks, LLC
New York City Police TARU
New York Communications Co., Inc
New York Methodist Hospital
New York Power Authority
New York SMSA Limited Partnership
New York State Electric & Gas Corp
New York, State of Div of State Police
Pierce Broadband, LLC
Portland, Town of
Sachem Central School District
Sesame Workshop
Simsbury Fire District
Simsbury, Town Of
South Windsor Police
Sprint Spectrum LLC
Sprintcom, Inc
St. Lukes Cornwall Hospital
T-Mobile License LLC
Towerstream Corp.
Town Of Berlin
Town of Greenburgh
Town of North Hempstead
Town of Smithtown Dept of Public Safety
Town of Westport Connecticut
Town of Wethersfield
Verizon Wireless (VAW) LLC (NY)
Vernon Police Department
Vernon, Town of
Weehawken, Township of
West Springfield, Town of Fire Dept
Westchester, County of
Widmo Holdings LLC
William Paterson University
Windsor Town Connecticut
Wireless Internetnetwork LLC
Xchange Telecom Corporation
Zen Networks, 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: 11/12/2021
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

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

Receive - FCC32

General Dynamics
13.2 Ka
65.6 dBi / 13.2 m
0.09° / 0.17°

Transmit - FCC32

General Dynamics
13.2 Ka
68.9 dBi / 13.2 m
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 Short Term
-156.7 dBW/MHz 20%
-146.7 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

10K0G7W - 320MG7W / 17700.0 - 19700.0

Transmit 28.0 GHz

10K0G7W - 320MG7W / 27500.0 - 29500.0

Max Great Circle Coordination Distance: 101.3 km / 63.0 mi
Precipitation Scatter Contour Radius: 100.0 km / 62.1 mi

100.0 km / 62.1 mi
100.0 km / 62.1 mi

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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 Transmit 28.0 GHz
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%
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

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Coordination Values

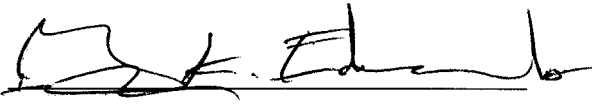
SOUTHBURY, CT

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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)
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. 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
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: November 12, 2021