

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Intelsat License LLC
ANDOVER C33, ME
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
December 08, 2021

TABLE OF CONTENTS

1. CONCLUSIONS	3
2. SUMMARY OF RESULTS	4
3. SUPPLEMENTAL SHOWING	5
4. EARTH STATION COORDINATION DATA.....	7
5. CERTIFICATION.....	11

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 10/27/2021.

Company

AT&T Mobility Spectrum LLC-Vermont
Axiom Technologies, LLC
BAE Systems Information & Electronic Sys
BAE Systems Information & Electronic Sys
Bangor Cellular Telephone, L.P.
Cellco Partnership - CT, W-MA, VT
Central Maine Power Company
Citizens Telecommunications of New York
Consolidated Communications of N NE Co.
Cumberland County, Maine
Encina Communications Corporation
Essex County Office of Emergency Srv-NY
Eversource Energy Service Company
HUDSON VALLEY WIRELESS
Hamilton, County of
Herkimer, County of
Hydro-Quebec Technologie
Island Telephone Company
JKL Communications LLC
Lakes Region Mutual Fire Aid
Lewis, County of
Maine RSA #1 Inc.
Maine RSA #4 Limited Partnership
NH #1 Rural Cellular, Inc.
NH Department of Safety
National Grid USA Service Company, Inc
New Cingular Wireless PCS LLC-Maine
New Cingular Wireless PCS LLC-Vermont
New Cingular Wireless PCS, LLC (NY)
New Hampshire #1 Rural Cellular Inc.
New Hampshire Dept of Transportation
New Hampshire Electric Cooperative
New York Power Authority
New York State Electric & Gas Corp
Oneida County Emergency Services
Pacific and Southern, LLC
Transwave Communication Systems, Inc.
University of New Hampshire
VTel Wireless, Inc.
Vermont Electric Power Company Inc.

Vermont RSA #2-B2, Inc.
Vermont State Dept Public Safety
Vermont Transco, LLC

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: 12/08/2021
Job Number: 211027COMSGE06

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign:
Licensee Code: INTELS
Licensee Name: Intelsat License LLC

Site Information ANDOVER C33, ME

Venue Name:
Latitude (NAD 83): 44° 38' 5.0" N
Longitude (NAD 83): 70° 41' 46.9" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 273.92 m / 898.7 ft

Link Information

Satellite Type: Geostationary
Mode: TR - Transmit-Receive
Modulation: Digital
Satellite Arc: 1° W to 141° West Longitude
Azimuth Range: 104.6° to 255.9°
Corresponding Elevation Angles: 5.6° / 5.2°
Antenna Centerline (AGL): 5.49 m / 18.0 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer	CPI Sat	CPI Sat
Model	13.1 KPC	13.1 KPC
Gain / Diameter	53.0 dBi / 13.1 m	56.6 dBi / 13.1 m
3-dB / 15-dB Beamwidth	0.38° / 0.76°	0.26° / 0.52°
Max Available RF Power (dBW/4 kHz)	5.8	5.8
(dBW/MHz)	29.8	29.8
Maximum EIRP (dBW/4 kHz)	62.4	62.4
(dBW/MHz)	86.4	86.4
Interference Objectives:	Long Term	-156.0 dBW/MHz 20%
	Short Term	-146.0 dBW/MHz 0.01%
		-154.0 dBW/4 kHz 20%
		-131.0 dBW/4 kHz 0.0025%

Frequency Information

Receive 4.0 GHz

Transmit 6.1 GHz

Emission / Frequency Range (MHz)	56K0G7W - 72M0G7W / 3625.0 - 4200.0	64K0G7W - 72M0G7W / 5850.0 - 6425.0
	500KG7D, 1M00G7D, 1M50G7D / 3630.0 - 3710.0	1M00F7D - 1M50F7D / 5850.0 - 5935.0
	500KG7D, 1M00G7D, 1M50G7D / 3945.0 - 3955.0	1M00F7D - 1M50F7D / 6170.0 - 6180.0
	500KG7D, 1M00G7D, 1M50G7D / 4190.0 - 4200.0	1M00F7D - 1M50F7D / 6415.0 - 6425.0
Max Great Circle Coordination Distance	670.9 km / 416.8 mi	488.5 km / 303.5 mi
Precipitation Scatter Contour Radius	615.3 km / 382.3 mi	377.8 km / 234.8 mi

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Coordination Values

ANDOVER C33, ME

Licensee Name Intelsat License LLC
Latitude (NAD 83) 44° 38' 5.0" N
Longitude (NAD 83) 70° 41' 46.9" W
Ground Elevation (AMSL) 273.92 m / 898.7 ft
Antenna Centerline (AGL) 5.49 m / 18.0 ft
Antenna Model CPI Sat 13.1 meter
Antenna Mode Receive 4.0 GHz Transmit 6.1 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20% -154.0 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%
Max Available RF Power 5.8 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.54	104.07	-10.00	247.44	-10.00	171.69
5	0.97	99.54	-10.00	221.69	-10.00	145.73
10	0.49	94.56	-10.00	250.90	-10.00	174.77
15	0.67	89.58	-10.00	238.77	-10.00	161.81
20	0.99	84.59	-10.00	220.65	-10.00	144.76
25	1.19	79.61	-10.00	214.40	-10.00	139.02
30	1.95	74.61	-10.00	195.87	-10.00	121.37
35	2.52	69.61	-10.00	182.64	-10.00	109.99
40	3.32	64.60	-10.00	162.27	-10.00	100.00
45	2.61	59.62	-10.00	180.59	-10.00	108.28
50	2.67	54.63	-10.00	179.25	-10.00	107.17
55	3.03	49.62	-10.00	170.83	-10.00	100.32
60	3.30	44.62	-9.24	166.57	-9.24	100.00
65	3.29	39.63	-7.95	175.41	-7.95	103.18
70	2.81	34.68	-6.50	193.38	-6.50	117.57
75	2.34	29.74	-4.83	209.02	-4.83	132.75
80	2.73	24.73	-2.83	210.42	-2.83	132.67
85	2.99	19.75	-0.39	217.95	-0.39	135.84
90	3.21	14.77	2.77	231.98	2.77	144.63
95	2.56	10.05	6.94	280.25	6.94	181.63
100	2.28	5.67	13.16	342.90	13.16	217.04
105	2.88	2.79	20.85	637.21	20.85	463.20
110	3.17	5.50	13.48	378.47	13.48	250.24
115	2.68	9.21	7.89	284.60	7.89	183.65
120	2.37	12.71	4.40	266.06	4.40	173.42
125	1.06	16.89	1.31	289.26	1.31	195.22
130	2.01	19.20	-0.08	244.34	-0.08	158.12
135	2.72	21.54	-1.33	218.83	-1.33	137.35
140	3.34	23.74	-2.39	202.48	-2.39	123.30
145	1.84	27.52	-3.99	226.18	-3.99	145.82
150	1.30	30.29	-5.03	237.53	-5.03	156.66
155	2.76	31.01	-5.29	200.34	-5.29	123.13
160	2.69	32.76	-5.88	198.91	-5.88	122.13
165	2.38	34.41	-6.42	203.04	-6.42	126.01
170	1.37	36.39	-7.02	224.15	-7.02	145.91
175	1.51	36.86	-7.16	218.99	-7.16	141.38
180	2.50	36.08	-6.93	198.01	-6.93	121.78
185	2.20	36.18	-6.96	204.37	-6.96	127.45

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Coordination Values

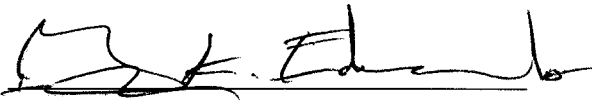
ANDOVER C33, ME

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Interference Objectives: Long Term	-156.0 dBW/MHz	20%	Transmit 6.1 GHz	-154.0 dBW/4 kHz	20%
Short Term	-146.0 dBW/MHz	0.01%		-131.0 dBW/4 kHz	0.0025%
Max Available RF Power			5.8 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz		Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	1.38	36.37	-7.02	223.75	-7.02	145.55
195	0.66	36.05	-6.92	258.08	-6.92	178.28
200	0.00	35.26	-6.68	307.27	-6.68	214.78
205	0.38	33.15	-6.01	289.14	-6.01	202.33
210	0.48	31.00	-5.28	281.39	-5.28	195.83
215	0.55	28.62	-4.42	281.93	-4.42	195.49
220	0.54	26.06	-3.40	289.33	-3.40	200.07
225	1.40	22.61	-1.86	253.92	-1.86	169.98
230	2.76	18.62	0.25	227.17	0.25	142.99
235	2.13	16.06	1.85	254.38	1.85	164.70
240	1.41	13.43	3.80	294.34	3.80	196.27
245	1.97	9.73	7.30	301.30	7.30	197.04
250	1.83	6.48	11.71	389.58	11.71	257.07
255	2.06	3.27	19.13	670.85	19.13	488.48
260	1.73	5.40	13.70	367.79	13.70	234.89
265	0.63	10.20	6.79	363.18	6.79	241.18
270	0.00	15.03	2.57	376.68	2.57	257.42
275	0.00	19.79	-0.41	353.45	-0.41	242.90
280	0.00	24.64	-2.79	335.64	-2.79	231.67
285	0.00	29.54	-4.76	321.38	-4.76	222.89
290	0.00	34.47	-6.44	308.97	-6.44	215.79
295	0.00	39.41	-7.89	299.05	-7.89	209.89
300	0.00	44.36	-9.18	290.58	-9.18	204.89
305	0.00	49.33	-10.00	285.28	-10.00	203.38
310	0.00	54.29	-10.00	285.28	-10.00	203.38
315	0.00	59.26	-10.00	285.28	-10.00	203.38
320	0.26	64.22	-10.00	277.60	-10.00	197.41
325	0.46	69.20	-10.00	253.78	-10.00	177.37
330	0.20	74.18	-10.00	284.81	-10.00	203.02
335	0.55	79.16	-10.00	246.79	-10.00	171.09
340	0.71	84.14	-10.00	236.58	-10.00	159.73
345	1.63	89.12	-10.00	204.61	-10.00	129.23
350	1.43	94.11	-10.00	207.64	-10.00	134.17
355	0.47	99.09	-10.00	253.10	-10.00	176.76

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: December 08, 2021