FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Sirius XM Radio Inc.
VERNON VLY, NJ
E080185
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
January 19, 2022

TABLE OF CONTENTS

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 12/14/2021.

Company
3G Wireless, LLC
Aerial Video Systems
Alascom Inc
American Broadcasting Companies, Inc.
Ascent Media Network Services, LLC
Bellsouth Telecommunications, Inc.
Bloomberg, L.P.
Borgeson, Tom R.
Broadcast Sports Inc.
CBS Broadcasting Inc
Carolina Telephone and Telegraph Co
Casper, John
CenturyTel of the Southwest, Inc.
Chicago Comnet Corp
Cincinnati Bell Wireless LLC
Citywide News Network, Inc.
Connecticut Public Broadcasting Inc
Cowboys Stadium LP
DCI II, INC.
Direct Broadcast Services, Inc.
Fox Television Stations Inc (MTVA LLC)
Fox Television Stations LLC - WNYW TV
Fox Television Stations, LLC
Fox Television Stations, LLC
Frontier California Inc.
Global Telecom & Technology Americas, In
HF Enterprises, Inc
Hallco Unlimited, Inc.
Hawaiian Telecom Inc.
Heiden, William
Illinois Bell Telephone Company
Indiana Bell Telephone Company
Information & Display Systems, Inc.
Information Super Station, LLC
International Communications Group, Inc.
Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
MERCURY COMMUNICATIONS
Maranatha Broadcasting Company
Michigan Bell Telephone Company

Moreen, Steven K
NBC Telemundo License LLC
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NSM Surveillance
Navajo Communications Company
New Jersey Public Broadcasting Authority
NorthWest Suburbs Community Access Corp
Ohio Bell GTelephone Company
Onboard Images
Pacific Bell Tel Com dba AT&T California
Penn Service Microwave Co., Inc.
Plateau Telecommunications, Inc.
Plum TV, LLC
Production & Satellite Services, Inc.
Quick Link Connections Inc.
Qwest Corporation
RCC Minnesota Inc. - MN NE ND SD
REMOTE FACILITIES CONSULTING SERVICES
RF Central, LLC
RF Film, Inc
Radiofone, Inc.
Rainbow News 12 Company
Randy Hermes Production
Remote Broadcasts, Inc.
SBE coordinator
Scripps Media, Inc.
Southwestern Bell Telephone L.P.
Speedshotz, Inc
TEGNA Broadcast Holdings, LLC
TTWN Networks, LLC
Unisat, Inc.
United Telephone - Southeast
Univision New York LLC
VERIZON SOUTH INC.
VYVX, LLC
Verizon Maryland, Inc.
Verizon New England Inc.
Verizon New Jersey, Inc.
Verizon New York, Inc.
Verizon North Inc.
Verizon Northwest Inc.
Verizon Pennsylvania, Inc.
Verizon Virginia, Inc.
Verizon Washington DC, Inc.
WNET
WXTV License Partnership, G.P.
Westar Satellite Services LP
Winged Vision Inc
Wisconsin Bell Telephone Company
Wolfe Air Aviation

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:	01/19/2022
Job Number:	211214COMSGE03

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	E080185
Licensee Code	SIRSAT
Licensee Name	Sirius XM Radio Inc.

Site Information — VERNON VLY, NJ

Venue Name	
Latitude (NAD 83)	41° 12' 45.0" N
Longitude (NAD 83)	74° 29' 39.0" W
Climate Zone	A
Rain Zone	2
Ground Elevation (AMSL)	128.63 m / 422.0 ft

Link Information

Satellite Type	Geostationary
Mode	TO - Transmit-Only
Modulation	Digital
Satellite Arc	80° W to 120° West Longitude
Azimuth Range	188.3° to 237.1°
Corresponding Elevation Angles	42.0° / 23.9°
Antenna Centerline (AGL)	3.66 m / 12.0 ft

Antenna Information — Transmit - FCC32

Manufacturer		General Dynamics
Model		7.2 meter
Gain / Diameter		50.5 dBi / 7.2 m
3-dB / 15-dB Beamwidth		0.40° / 0.84°
Max Available RF Power	(dBW/4 kHz)	9.4
	(dBW/MHz)	33.4
Maximum EIRP	(dBW/4 kHz)	59.9
	(dBW/MHz)	83.9
Interference Objectives:	Long Term	-154.0 dBW/4 kHz 20%
	Short Term	-131.0 dBW/4 kHz 0.0025%

Frequency Information — Transmit 7.0 GHz

Emission / Frequency Range (MHz)	800KF2D - 12M5G1E / 7025.0 - 7075.0
Max Great Circle Coordination Distance	205.0 km / 127.4 mi
Precipitation Scatter Contour Radius	444.5 km / 276.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 http://www.comsearch.com

Coordination Values	**VERNON VLY, NJ**
Licensee Name	Sirius XM Radio Inc.
Latitude (NAD 83)	41° 12' 45.0" N
Longitude (NAD 83)	74° 29' 39.0" W
Ground Elevation (AMSL)	128.63 m / 422.0 ft
Antenna Centerline (AGL)	3.66 m / 12.0 ft
Antenna Model	General Dynamics 7.2 meter
Antenna Mode	Transmit 7.0 GHz
Interference Objectives: Long Term	-154.0 dBW/4 kHz 20%
Short Term	-131.0 dBW/4 kHz 0.0025%
Max Available RF Power	9.4 (dBW/4 kHz)

			Transmit 7.0 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
0	1.96	120.28	-10.00	134.64
5	2.31	124.86	-10.00	129.59
10	2.57	129.38	-10.00	124.82
15	1.51	133.35	-10.00	146.32
20	1.00	137.31	-10.00	162.10
25	1.50	136.71	-10.00	146.74
30	1.63	135.04	-10.00	143.04
35	2.26	133.37	-10.00	130.52
40	2.25	130.84	-10.00	130.71
45	2.08	127.93	-10.00	132.30
50	2.53	125.19	-10.00	125.49
55	2.88	122.14	-10.00	119.18
60	3.17	118.86	-10.00	113.93
65	4.35	115.77	-10.00	100.00
70	3.98	111.93	-10.00	100.00
75	3.16	107.95	-10.00	114.08
80	2.48	104.02	-10.00	126.49
85	3.30	100.35	-10.00	111.49
90	3.65	96.51	-10.00	105.22
95	4.18	92.62	-10.00	100.00
100	4.27	88.67	-10.00	100.00
105	4.23	84.73	-10.00	100.00
110	4.70	80.74	-10.00	100.00
115	5.47	76.67	-10.00	100.00
120	5.48	72.74	-10.00	100.00
125	4.78	69.06	-10.00	100.00
130	5.10	65.18	-10.00	100.00
135	5.42	61.35	-10.00	100.00
140	5.35	57.78	-10.00	100.00
145	4.93	54.54	-10.00	100.00
150	4.49	51.54	-10.00	100.00
155	4.72	48.36	-10.00	100.00
160	4.47	45.75	-9.51	100.00
165	3.82	43.82	-9.04	105.97
170	3.88	41.72	-8.51	107.13
175	3.46	40.48	-8.18	115.72
180	3.89	38.91	-7.75	109.62
185	4.36	37.80	-7.44	103.90

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 http://www.comsearch.com

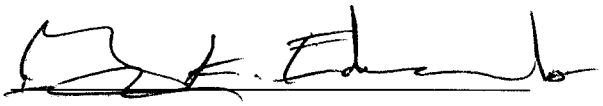
Coordination Values	**VERNON VLY, NJ**
Licensee Name	Sirius XM Radio Inc.
Latitude (NAD 83)	41° 12' 45.0" N
Longitude (NAD 83)	74° 29' 39.0" W
Ground Elevation (AMSL)	128.63 m / 422.0 ft
Antenna Centerline (AGL)	3.66 m / 12.0 ft
Antenna Model	General Dynamics 7.2 meter
Antenna Mode	Transmit 7.0 GHz
Interference Objectives: Long Term	-154.0 dBW/4 kHz 20%
Short Term	-131.0 dBW/4 kHz 0.0025%
Max Available RF Power	9.4 (dBW/4 kHz)

Transmit 7.0 GHz

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)
190	4.37	37.16	-7.25	104.49
195	4.34	36.15	-6.95	106.10
200	4.12	34.90	-6.57	110.40
205	3.00	34.08	-6.31	130.45
210	2.26	32.53	-5.81	145.02
215	1.82	30.39	-5.07	159.60
220	0.66	28.53	-4.38	205.04
225	0.75	25.93	-3.34	205.00
230	0.95	23.93	-2.47	201.40
235	1.26	22.70	-1.90	193.97
240	1.69	22.36	-1.74	182.19
245	1.81	23.37	-2.21	176.01
250	2.32	24.96	-2.93	156.52
255	3.19	27.10	-3.82	134.44
260	3.09	30.55	-5.13	133.09
265	4.07	33.76	-6.21	112.48
270	4.29	37.73	-7.42	105.05
275	3.97	42.11	-8.61	105.06
280	3.70	46.57	-9.70	105.47
285	5.04	50.63	-10.00	100.00
290	5.53	55.09	-10.00	100.00
295	6.02	59.63	-10.00	100.00
300	6.12	64.30	-10.00	100.00
305	5.55	69.09	-10.00	100.00
310	5.18	73.84	-10.00	100.00
315	5.85	78.52	-10.00	100.00
320	5.82	83.27	-10.00	100.00
325	5.02	88.03	-10.00	100.00
330	4.65	92.76	-10.00	100.00
335	4.96	97.49	-10.00	100.00
340	5.25	102.23	-10.00	100.00
345	4.73	106.90	-10.00	100.00
350	3.15	111.36	-10.00	114.24
355	2.95	115.93	-10.00	117.91

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: January 19, 2022