

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Maris Developments LLC
BOARDMAN, OR
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
August 23, 2018

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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, except for those cases, where on-site testing will determine whether sufficient losses exist to avoid interference into receivers operating by local broadcasters.

The following companies reported potential great circle interference conflicts that did not meet the objectives on a line-of-sight basis. Additional on-site testing will take place to determine if sufficient blockage exists to negate harmful interference from occurring with the proposed transmit-only earth station. Conditional clearance has been granted by these operators depending the outcome of testing.

Company

Oregon Public Broadcasting

No other carriers reported potential interference cases.

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 07/19/2018.

Company

3G Wireless, LLC
AERIAL VIDEO SYSTEMS
Alascom Inc
Apple Valley Broadcasting Inc.
Blue Mountain Translator District
Borgeson, Tom R.
Broadcast Sports Inc.
Casper, John
Chicago Comnet Corp
Citywide News Network, Inc.
Cowboys Stadium LP
CP Communications, LLC
DCI II, INC.
Direct Broadcast Services, Inc.
Frontier California Inc.
HF Enterprises, Inc
Hallco Unlimited, Inc.
Heiden, William
Im360 Entertainment
Information & Display Systems, Inc.
Information Super Station, LLC
Interlink Network Corp.
International Communications Group, Inc.
International Electronic Information Services, Inc.
KHQ, Incorporated
KIRO-TV, Inc
KPTV-KPDX Broadcasting Corporation
King Broadcasting Company
King Broadcasting Company - KREM TV
Loop Inc.
MERCURY COMMUNICATIONS
Microwave Video Systems LLC
Moreen, Steven K
Mountain Licenses, L.P.
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NEXSTAR BROADCASTING, INC.
NPG OF OREGON, INC.
NSM Surveillance
Navajo Communications Company
Onboard Images
Oregon Public Broadcasting (KOPB)

Oregon TV License Company LLC
Pacific Television Center
Penn Service Microwave Co., Inc.
Plateau Telecommunications, Inc.
Plum TV, LLC
Production & Satellite Services, Inc.
REMOTE FACILITIES CONSULTING SERVICES
RF Central, LLC
RF Film, Inc
Radiofone, Inc.
Randy Hermes Production
Remote Broadcasts, Inc.
SBE Coordinator
Sinclair Portland Licensee, LLC
Sinclair Seattle Licensee, LLC
Sinclair Yakima Licensee, LLC (WA)
Speedshotz, Inc
Spokane Television Inc.
TTWN Networks, LLC
The CW Television Stations Inc.
Unisat, Inc.
United Telephone - Southeast
Vitec Broadcast Services, Inc.
Vyvx, LLC
Westar Satellite Services LP
Winged Vision Inc
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: 08/23/2018
Job Number: 180719COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code MARDEV
Licensee Name Maris Developments LLC

Site Information BOARDMAN, OR

Venue Name
Latitude (NAD 83) 45° 51' 16.6" N
Longitude (NAD 83) 119° 37' 55.1" W
Climate Zone A
Rain Zone 5
Ground Elevation (AMSL) 96.19 m / 315.6 ft

Link Information

Satellite Type Low Earth Orbit
Mode TO - Transmit-Only
Modulation Digital
Minimum Elevation Angle 5.0°
Azimuth Range 0.0° to 360°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information Transmit - FCC32

Manufacturer ViaSat
Model 5.4 meter
Gain / Diameter 39.2 dBi / 5.4 m
3-dB / 15-dB Beamwidth 1.38° / 3.70°

Max Available RF Power (dBW/4 kHz) 9.8
(dBW/MHz) 33.8

Maximum EIRP (dBW/4 kHz) 49.0
(dBW/MHz) 73.0

Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%

Frequency Information Transmit 2.0 GHz

Emission / Frequency Range (MHz) N0N - 1M32G1D / 2025.0 - 2110.0

Max Great Circle Coordination Distance 312.0 km / 193.8 mi
Precipitation Scatter Contour Radius 154.5 km / 96.0 mi

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Coordination Values

BOARDMAN, OR

Licensee Name Maris Developments LLC
Latitude (NAD 83) 45° 51' 16.6" N
Longitude (NAD 83) 119° 37' 55.1" W
Ground Elevation (AMSL) 96.19 m / 315.6 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model ViaSat 5.4 meter
Antenna Mode Transmit 2.0 GHz
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%
Short Term -131.0 dBW/4 kHz 0.0025%
Max Available RF Power 9.8 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	70.48	10.00	312.00
5	0.00	66.16	10.00	312.00
10	0.00	61.88	10.00	312.00
15	0.00	57.68	10.00	312.00
20	0.00	53.56	10.00	312.00
25	0.00	49.54	10.00	312.00
30	0.00	45.67	10.00	312.00
35	0.00	41.98	10.00	312.00
40	0.00	38.53	10.00	312.00
45	0.00	35.39	10.00	312.00
50	0.00	32.65	10.00	312.00
55	0.00	30.42	10.00	312.00
60	0.00	28.82	10.00	312.00
65	0.00	27.96	10.00	312.00
70	0.00	27.91	10.00	312.00
75	0.00	28.67	10.00	312.00
80	0.00	30.19	10.00	312.00
85	0.00	32.35	10.00	312.00
90	0.00	35.04	10.00	312.00
95	0.00	38.14	10.00	312.00
100	0.00	41.56	10.00	312.00
105	0.00	45.22	10.00	312.00
110	0.00	49.07	10.00	312.00
115	0.00	53.07	10.00	312.00
120	0.00	57.18	10.00	312.00
125	0.00	61.38	10.00	312.00
130	0.00	65.64	10.00	312.00
135	0.00	69.96	10.00	312.00
140	0.00	74.32	10.00	312.00
145	0.00	78.70	10.00	312.00
150	0.00	83.11	10.00	312.00
155	0.00	87.52	10.00	312.00
160	0.00	91.95	10.00	312.00
165	0.00	96.36	10.00	312.00
170	0.00	100.77	10.00	312.00
175	0.00	105.16	10.00	312.00
180	0.00	109.52	10.00	312.00
185	0.00	113.84	10.00	312.00

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Earth Station Data Sheet

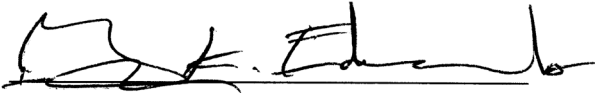
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Coordination Values	BOARDMAN, OR
Licensee Name	Maris Developments LLC
Latitude (NAD 83)	45° 51' 16.6" N
Longitude (NAD 83)	119° 37' 55.1" W
Ground Elevation (AMSL)	96.19 m / 315.6 ft
Antenna Centerline (AGL)	2.74 m / 9.0 ft
Antenna Model	ViaSat 5.4 meter
Antenna Mode	Transmit 2.0 GHz
Interference Objectives: Long Term	-154.0 dBW/4 kHz 20%
Short Term	-131.0 dBW/4 kHz 0.0025%
Max Available RF Power	9.8 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	118.12	10.00	312.00
195	0.00	122.32	10.00	312.00
200	0.00	126.44	10.00	312.00
205	0.00	130.46	10.00	312.00
210	0.00	134.33	10.00	312.00
215	0.00	138.02	10.00	312.00
220	0.00	141.47	10.00	312.00
225	0.00	144.61	10.00	312.00
230	0.00	147.35	10.00	312.00
235	0.00	149.58	10.00	312.00
240	0.00	151.18	10.00	312.00
245	0.00	152.04	10.00	312.00
250	0.00	152.09	10.00	312.00
255	0.00	151.33	10.00	312.00
260	0.00	149.81	10.00	312.00
265	0.00	147.65	10.00	312.00
270	0.00	144.96	10.00	312.00
275	0.00	141.86	10.00	312.00
280	0.00	138.44	10.00	312.00
285	0.00	134.78	10.00	312.00
290	0.00	130.93	10.00	312.00
295	0.00	126.93	10.00	312.00
300	0.00	122.82	10.00	312.00
305	0.00	118.62	10.00	312.00
310	0.00	114.36	10.00	312.00
315	0.00	110.04	10.00	312.00
320	0.00	105.68	10.00	312.00
325	0.00	101.30	10.00	312.00
330	0.00	96.89	10.00	312.00
335	0.00	92.48	10.00	312.00
340	0.00	88.05	10.00	312.00
345	0.00	83.64	10.00	312.00
350	0.00	79.23	10.00	312.00
355	0.00	74.84	10.00	312.00

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: August 24, 2018