

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**Universal Space Network, Inc.
Clewiston, Florida**

Satellite Earth Station

Prepared By:
COMSEARCH

19700 Janelia Farm Boulevard
Ashburn, VA 20147
December 22, 2011

TABLE OF CONTENTS

1. CONCLUSIONS	3
2. SUMMARY OF RESULTS	4
3. SUPPLEMENTAL SHOWING	5
4. EARTH STATION COORDINATION DATA.....	9
5. CERTIFICATION.....	13

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, based upon the restrictions noted in the Summary of Results (Section 2).

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 those cases that were reported.

Although no companies reported potential great circle interference conflicts that did not meet the objectives on a line-of-sight basis, representatives from the SBE and broadcast community voiced concern over shared operations with their systems. However, at the time of this report, no actual cases had been reported that could be analyzed.

The proposed earth station will be limited to a single frequency of 2085.6875 MHz and operate at a low power level. The applicant is open to conducting tests with any shared users that operate receive systems within the contours of this site in order to abate any concerns of interference to their systems. The applicant will also provide access to 24/7 emergency contacts in the event that interference is noted while the earth station is in operation.

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 July 13, 2011, and a revised coordination was forwarded as an Information-Only letter on December 15, 2011.

An analysis was performed to adjust the Clewiston coordinates, and no new potential interference cases were identified. Therefore, an Information-only letter was forwarded for the coordinate adjustment of the Clewiston earth station.

No specific interference cases were reported by the following carriers:

Company

3G Wireless, LLC
AERIAL VIDEO SYSTEMS
ALASCOM, INC.
AT&T California
Ascent Media Network Services, LLC
BAY TELEVISION, INC.
BOARD OF TRUSTEES, UNIVERSITY OF FLORIDA
BROADCAST COMMUNICATIONS INC
Bellsouth Telecommunications, Inc.
Borgeson, Tom R.
Bright House Networks, LLC
Broadcast Sports Inc.
CBS OPERATIONS INC.
CBS Television Stations
CHANNEL 39 INC
CNG Communications, Inc.
COMMUNITY TV FOUNDATION OF SOUTH FLORIDA
Carolina Telephone and Telegraph Co
Casper, John
CenturyTel of the Southwest, Inc.
Chicago Comnet Corp
Cincinnati Bell Wireless LLC
Citywide News Network, Inc.
Cohen, Elana
Cowboys Stadium LP
DCI II, INC.
Direct Broadcast Services, Inc.
Diversified Broadcasting Inc.

Company (Continued)

FORT MYERS BROADCASTING CO
FOX TELEVISION STATIONS, INC.
FREEDOM BROADCASTING OF FLORIDA, INC.
GOODYEAR TIRE AND RUBBER COMPANY
GSN New, Inc
Gannett River States Publishing Corp.
Gray Television Licensee, Inc (WCTV)
HF Enterprises, Inc
Hallco Unlimited, Inc.
Hawaiian Telcom, Inc.
Heiden Mr., William
INDIANA BELL TELEPHONE COMPANY INC
Illinois Bell Telephone Company
Information & Display Systems, Inc.
Information Super Station, LLC
International Communications Group, Inc.
JOURNAL BROADCAST CORPORATION
Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
MAPALE LLC
MEDIA GENERAL COMMUNICATIONS HOLDINGS, L
MERCURY COMMUNICATIONS
MONTCLAIR COMMUNICATIONS INC
Metro Networks Communications, Inc.
Metro Networks Communications, Inc.
Michigan Bell Telephone Company
Moreen, Steven K
Multimedia Holdings Corporation
NBC TELEMUNDO LICENSE LLC
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
NEW ENGLAND SATELLITE SYSTEMS INC
NEXSTAR BROADCASTING, INC.
NSM Surveillance
Navajo Communications Company
New World Communications of Tampa, Inc.
Newport Television LLC
NorthWest Suburbs Community Access Corp
Ohio Bell Telephone Company
On Scene Video Production
Onboard Images
Orlando Hearst Television, Inc.
POST-NEWSWEEK STATIONS, ORLANDO, INC.
Pacific and Southern Company, Inc.
Penn Service Microwave Co., Inc.
Plateau Telecommunications, Inc.
Plum TV, LLC
Post-Newsweek Stations Florida - WJXT-TV
Post-Newsweek Stations Florida - WPLG-TV
Production & Satellite Services, Inc.
Public Television Communications Center
QUICK LINK CONNECTIONS INC
QWEST CORPORATION

Company (Continued)

RCC Minnesota Inc. - MN NE ND SD
REMOTE FACILITIES CONSULTING SERVICES
RF Central, LLC
RF Film, Inc
Radiofone, Inc.
Randy Hermes Production
Regulus Media Services, Inc.
Remote Broadcasts, Inc.
SCHOOL BOARD OF BROWARD COUNTY
Scripps Media Inc
Scripps Media, Inc.
Southwestern Bell Telephone L.P.
Speedshotz, Inc
Sunbeam Television Corp.
The School Board of Miami Dade (WLRN-FM)
Total RF Marketing Inc
UNIVERSITY OF SOUTH FLORIDA
Unisat, Inc.
United Telephone - Southeast
VERIZON SOUTH INC.
Verizon California Inc.
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.
Village Video Productions Inc
Vyvx, LLC
WATERMAN BROADCASTING CORP OF FLORIDA
WFLX LICENSE SUBSIDIARY, LLC
WFTV TV HOLDINGS, INC.
WJCT, Inc.
WLTV LICENSE PARTNERSHIP, G.P.
WPB TV LICENSEE CORP.
WPBF-TV Company
WWSB LICENSE LLC
Westar Satellite Services LP
Western Technical Services
Wexler Video, Inc.
Winged Vision
Wisconsin Bell, Inc.
Wolfe Air Aviation
Metrosat Communications, Inc.
Fishman Brothers Enterprises
Alltel Communications, LLC
Telemovil Del Caribe, Inc.
Christine Steinert
CP Communications PA, LLC

Company (Continued)

Global Microwave Systems Inc.
Express Lane Traffic LLC
Anthony J. Ryan
Lancellotti, Inc.
Total Video Houston, LLC
RF Technology, LLC

Society of Broadcast Engineers (SBE)

Central Florida & Gainesville Region (Mr. Lou Mueller)
Ft. Myers – TV Region (Mr. Steve Satkowski)
Miami Region (Mr. Bill Murdoch)
Palm Beach Region (Mr. Jim Johnson)
Tampa Region (Mr. Ralph Beaver)

Mr. Christopher Imlay SBE Attorney

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: 12/22/2011
Job Number: 111215COMSJC01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code UNSPNE
Licensee Name Universal Space Network, Inc.

Site Information CLEWISTON, FLORIDA

Venue Name
Latitude (NAD 83) 26° 44' 50.2" N
Longitude (NAD 83) 81° 2' 56.7" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 5.49 m / 18.0 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) 6.1 m / 20.0 ft

Antenna Information

Transmit

Manufacturer ViaSat
Model 9.1 Meter
Gain / Diameter 43.0 dBi / 9.1 m
3-dB / 15-dB Beamwidth 1.20° / 2.30°

Max Available RF Power (dBW/4 kHz) -15.2
(dBW/MHz) 8.8

Maximum EIRP (dBW/4 kHz) 27.8
(dBW/MHz) 51.8

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) 1M32G1D / 2085.6875

Max Great Circle Coordination Distance 455.8 km / 283.2 mi
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

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Coordination Values

CLEWISTON, FL

Licensee Name Universal Space Network, Inc.
Latitude (NAD 83) 26° 44' 50.2" N
Longitude (NAD 83) 81° 2' 56.7" W
Ground Elevation (AMSL) 5.49 m / 18.0 ft
Antenna Centerline (AGL) 6.1 m / 20.0 ft
Antenna Model ViaSat 9.1 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 -15.2 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	94.06	9.00	455.80
5	0.00	89.06	9.00	455.80
10	0.00	84.06	9.00	455.80
15	0.00	79.06	9.00	455.80
20	0.00	74.06	9.00	455.80
25	0.00	69.06	9.00	455.80
30	0.00	64.06	9.00	455.80
35	0.00	59.06	9.00	455.80
40	0.00	54.06	9.00	455.80
45	0.00	49.06	9.00	455.80
50	0.00	44.06	9.00	455.80
55	0.00	39.06	9.00	455.80
60	0.00	34.06	9.00	455.80
65	0.00	29.06	9.00	455.80
70	0.00	24.07	9.00	455.80
75	0.00	19.07	9.00	455.80
80	0.00	14.07	9.00	455.80
85	0.00	9.08	9.00	455.80
90	0.00	4.12	9.00	455.80
95	0.00	1.18	9.00	455.80
100	0.00	5.99	9.00	455.80
105	0.00	10.97	9.00	455.80
110	0.00	15.96	9.00	455.80
115	0.00	20.95	9.00	455.80
120	0.00	25.95	9.00	455.80
125	0.00	30.95	9.00	455.80
130	0.00	35.95	9.00	455.80
135	0.00	40.95	9.00	455.80
140	0.00	45.95	9.00	455.80
145	0.00	50.95	9.00	455.80
150	0.00	55.95	9.00	455.80
155	0.00	60.95	9.00	455.80
160	0.00	65.95	9.00	455.80
165	0.00	70.94	9.00	455.80
170	0.00	75.94	9.00	455.80
175	0.00	80.94	9.00	455.80
180	0.00	85.94	9.00	455.80

COMSEARCH

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Coordination Values

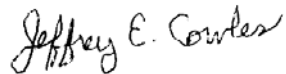
CLEWISTON, FL

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Max Available RF Power -15.2 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 2.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
185	0.00	90.94	9.00	455.80
190	0.00	95.94	9.00	455.80
195	0.00	100.94	9.00	455.80
200	0.00	105.94	9.00	455.80
205	0.00	110.94	9.00	455.80
210	0.00	115.94	9.00	455.80
215	0.00	120.94	9.00	455.80
220	0.00	125.94	9.00	455.80
225	0.00	130.94	9.00	455.80
230	0.00	135.94	9.00	455.80
235	0.00	140.94	9.00	455.80
240	0.00	145.94	9.00	455.80
245	0.00	150.94	9.00	455.80
250	0.00	155.93	9.00	455.80
255	0.00	160.93	9.00	455.80
260	0.00	165.93	9.00	455.80
265	0.00	170.92	9.00	455.80
270	0.00	175.88	9.00	455.80
275	0.00	178.82	9.00	455.80
280	0.00	174.01	9.00	455.80
285	0.00	169.03	9.00	455.80
290	0.00	164.04	9.00	455.80
295	0.00	159.05	9.00	455.80
300	0.00	154.05	9.00	455.80
305	0.00	149.05	9.00	455.80
310	0.00	144.05	9.00	455.80
315	0.00	139.05	9.00	455.80
320	0.00	134.05	9.00	455.80
325	0.00	129.05	9.00	455.80
330	0.00	124.05	9.00	455.80
335	0.00	119.05	9.00	455.80
340	0.00	114.05	9.00	455.80
345	0.00	109.06	9.00	455.80
350	0.00	104.06	9.00	455.80
355	0.00	99.06	9.00	455.80

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.



Jeffrey E. Cowles
Engineer III, Telecommunications
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: December 22, 2011