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
	SUMMARY OF RESULTS	
	SUPPLEMENTAL SHOWING	
	EARTH STATION COORDINATION DATA	
	CERTIFICATION 1	

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.

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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)

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	Horizon	Antenna	Horizon	Coordination
Azimuth (°)	Elevation (°)	Discrimination (°)	Gain (dBi)	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

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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)

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	Horizon	Antenna	Horizon	Coordination
Azimuth (°)	Elevation (°)	Discrimination (°)	Gain (dBi)	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

Jeffrey E. Cowler

DATED: December 22, 2011