

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**Global Crossing Americas Solutions, Inc
Arecibo, Puerto Rico**

Satellite Earth Station

Prepared By:

COMSEARCH

19700 Janelia Farm Boulevard

Ashburn, Virginia 20147

October 13, 2011

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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, 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 most cases.

The following companies reported potential great circle interference conflicts that did not meet the objectives on a line-of-sight basis. When over-the-horizon losses and frequency separation are considered on the interfering paths, sufficient losses exist to negate harmful interference from occurring with the proposed transmit-receive earth station. Further, the transmit spectrum will be limited to frequencies 6094.0 to 6124.0 MHz, and 6382.0 to 6423.0 MHz.

Company

AT&T Mobility Puerto Rico
Neptuno Media

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.

Expedited coordination data for this earth station was sent to the below listed carriers with a letter dated July 22, 2011. An Information-Only letter reducing the transmit power was forwarded on October 6, 2011.

Company

ALL AMERICAN CABLE AND RADIO INC
AT&T Mobility Puerto Rico
AT&T Mobility Virgin Islands, Inc.
Aeronet Wireless Broadband Corp.
CROWN CASTLE INT CORP DE PUERTO RICO
EVERTEC, INC
INTERISLAND TELEPHONE CORPORATION
Iniciativa Tecnologica Centro Oriental
Interference Office, Arecibo Observatory
Neptuno Media
Orizon Wireless Corporation
PRWireless, Inc.
PUERTO RICO ELECTRIC POWER AUTHORITY
PUERTO RICO HIGHWAY AUTHORITY
Puerto Rico Commonwealth of State Police
Puerto Rico Telephone Company
Sprintcom, Inc. Puerto Rico
T-Mobile Puerto Rico 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: 10/13/2011
Job Number: 111006COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code GLOAME
Licensee Name Global Crossing Americas Solutions, Inc

Site Information

ARECIBO, PR
Venue Name MIRAMAR ARECIBO
Latitude (NAD 83) 18° 28' 37.8" N
Longitude (NAD 83) 66° 45' 16.3" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 16.15 m / 53.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 45° W to 56° West Longitude
Azimuth Range 128.5° to 149.1°
Corresponding Elevation Angles 57.0° / 65.1°
Antenna Centerline (AGL) 6.4 m / 21.0 ft

Antenna Information

		Receive - FCC32		Transmit - FCC32	
Manufacturer		Prodelin		Prodelin	
Model		2.4 Meter		2.4 Meter	
Gain / Diameter		38.0 dBi / 2.4 m		42.0 dBi / 2.4 m	
3-dB / 15-dB Beamwidth		2.30° / 4.60°		1.50° / 3.00°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-17.6 6.4	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			24.4 48.4	
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%

Frequency Information

	Receive 4.0 GHz	Transmit 6.1 GHz
Emission / Frequency Range (MHz)	230KG7D - 2M23G7D / 3700.0 - 4200.0	230KG7D - 1M30G7D / 6094.0 - 6124.0 230KG7D - 1M30G7D / 6382.0 - 6423.0
Max Great Circle Coordination Distance	412.2 km / 256.1 mi	132.9 km / 82.6 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi	100.0 km / 62.1 mi

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Coordination Values

ARECIBO, PR

Licensee Name Global Crossing Americas Solutions, Inc
Latitude (NAD 83) 18° 28' 37.8" N
Longitude (NAD 83) 66° 45' 16.3" W
Ground Elevation (AMSL) 16.15 m / 53.0 ft
Antenna Centerline (AGL) 6.4 m / 21.0 ft
Antenna Model Prodelin 2.4 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 -17.6 (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	0.00	109.78	-10.00	412.20	-10.00	132.91
5	0.00	107.46	-10.00	412.20	-10.00	132.91
10	0.00	105.03	-10.00	412.20	-10.00	132.91
15	0.00	102.51	-10.00	412.20	-10.00	132.91
20	0.00	99.92	-10.00	412.20	-10.00	132.91
25	0.00	97.28	-10.00	412.20	-10.00	132.91
30	0.00	94.59	-10.00	412.20	-10.00	132.91
35	0.00	91.88	-10.00	412.20	-10.00	132.91
40	0.00	89.16	-10.00	412.20	-10.00	132.91
45	0.00	86.45	-10.00	412.20	-10.00	132.91
50	0.00	83.75	-10.00	412.20	-10.00	132.91
55	0.00	81.09	-10.00	412.20	-10.00	132.91
60	0.00	78.47	-10.00	412.20	-10.00	132.91
65	0.00	75.93	-10.00	412.20	-10.00	132.91
70	0.00	73.46	-10.00	412.20	-10.00	132.91
75	0.00	71.10	-10.00	412.20	-10.00	132.91
80	0.00	68.85	-10.00	412.20	-10.00	132.91
85	0.00	66.73	-10.00	412.20	-10.00	132.91
90	0.00	64.78	-10.00	412.20	-10.00	132.91
95	0.00	63.00	-10.00	412.20	-10.00	132.91
100	0.00	61.42	-10.00	412.20	-10.00	132.91
105	0.00	60.05	-10.00	412.20	-10.00	132.91
110	0.94	58.05	-10.00	261.22	-10.00	100.00
115	0.94	57.14	-10.00	261.30	-10.00	100.00
120	1.47	55.98	-10.00	226.63	-10.00	100.00
125	1.89	55.21	-10.00	204.94	-10.00	100.00
130	1.98	55.07	-10.00	200.48	-10.00	100.00
135	2.20	55.09	-10.00	191.83	-10.00	100.00
140	2.53	55.33	-10.00	180.15	-10.00	100.00
145	3.07	55.67	-10.00	162.62	-10.00	100.00
150	3.88	56.09	-10.00	143.00	-10.00	100.00
155	3.52	57.86	-10.00	151.23	-10.00	100.00
160	3.56	59.52	-10.00	150.24	-10.00	100.00
165	3.56	61.43	-10.00	150.26	-10.00	100.00
170	3.59	63.37	-10.00	149.84	-10.00	100.00
175	3.19	64.91	-10.00	159.39	-10.00	100.00
180	2.81	66.46	-10.00	170.74	-10.00	100.00
185	2.81	67.85	-10.00	170.74	-10.00	100.00

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Coordination Values

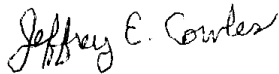
ARECIBO, PR

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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			-17.6 (dBW/4 kHz)	

Azimuth (°)	Receive 4.0 GHz		Transmit 6.1 GHz			
	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	2.81	69.41	-10.00	170.74	-10.00	100.00
195	2.75	71.15	-10.00	172.75	-10.00	100.00
200	2.73	72.99	-10.00	173.41	-10.00	100.00
205	2.73	74.92	-10.00	173.42	-10.00	100.00
210	2.73	76.96	-10.00	173.43	-10.00	100.00
215	2.12	79.31	-10.00	195.02	-10.00	100.00
220	2.38	81.38	-10.00	185.52	-10.00	100.00
225	2.85	83.49	-10.00	169.43	-10.00	100.00
230	2.81	85.79	-10.00	170.49	-10.00	100.00
235	2.71	88.11	-10.00	173.95	-10.00	100.00
240	2.55	90.43	-10.00	179.45	-10.00	100.00
245	3.15	92.79	-10.00	160.63	-10.00	100.00
250	2.88	95.08	-10.00	168.38	-10.00	100.00
255	2.23	97.20	-10.00	190.75	-10.00	100.00
260	1.44	99.13	-10.00	228.56	-10.00	100.00
265	1.06	101.05	-10.00	250.22	-10.00	100.00
270	0.95	102.97	-10.00	259.89	-10.00	100.00
275	0.95	104.85	-10.00	259.86	-10.00	100.00
280	0.70	106.47	-10.00	290.94	-10.00	100.00
285	0.49	107.97	-10.00	323.24	-10.00	108.46
290	0.00	109.11	-10.00	412.20	-10.00	132.91
295	0.00	110.44	-10.00	412.20	-10.00	132.91
300	0.28	111.86	-10.00	385.68	-10.00	124.91
305	0.20	112.83	-10.00	410.58	-10.00	132.41
310	0.00	113.49	-10.00	412.20	-10.00	132.91
315	0.00	114.14	-10.00	412.20	-10.00	132.91
320	0.00	114.61	-10.00	412.20	-10.00	132.91
325	0.00	114.87	-10.00	412.20	-10.00	132.91
330	0.00	114.94	-10.00	412.20	-10.00	132.91
335	0.00	114.80	-10.00	412.20	-10.00	132.91
340	0.00	114.46	-10.00	412.20	-10.00	132.91
345	0.00	113.92	-10.00	412.20	-10.00	132.91
350	0.00	113.19	-10.00	412.20	-10.00	132.91
355	0.00	111.98	-10.00	412.20	-10.00	132.91

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.



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

DATED: October 13, 2011