

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**Global Crossing Americas Solutions, Inc
Ponce, Puerto Rico
(E110154)
Satellite Earth Station**

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
January 16, 2016

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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 Coordination Data (Section 4).

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.

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 September 22, 2015.

Company

ALL AMERICAN CABLE AND RADIO INC
AT&T Mobility Puerto Rico
AT&T Mobility Virgin Islands, Inc.
Aeronet Wireless Broadband Corp.
Broadband Telecommunications Network
Critical Hub Networks, Inc.
EVERTEC, INC
INTERISLAND TELEPHONE CORPORATION
Iniciativa Tecnologica Centro Oriental
Neptuno Media
Osnet Wireless Corporation
PR Wireless, Inc.
PREPA Networks, LLC.
Puerto Rico Commonwealth
Puerto Rico Commonwealth of State Police
Puerto Rico Electric Power Authority
Puerto Rico Telephone Company, Inc.
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: 09/22/2015
Job Number: <PCNJobCode>

Administrative Information

Status: ENGINEER PROPOSAL
Call Sign: E110154
Licensee Code: GLOAME
Licensee Name: Global Crossing Americas Solutions, Inc

Site Information

PONCE, PR
Venue Name: PLAZA DEL CARIBE
Latitude (NAD 83): 17° 59' 43.7" N
Longitude (NAD 83): 66° 36' 29.6" W
Climate Zone: B
Rain Zone: 1
Ground Elevation (AMSL): 7.32 m / 24.0 ft

Link Information

Satellite Type: Geostationary
Mode: TR - Transmit-Receive
Modulation: Digital
Satellite Arc: 45° W to 56° West Longitude
Azimuth Range: 128.0° to 148.8°
Corresponding Elevation Angles: 57.5° / 65.6°
Antenna Centerline (AGL): 5.79 m / 19.0 ft

Antenna Information

	Receive - FCC32	Transmit - FCC32
Manufacturer	Prodelin	Prodelin
Model	1251	1251
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)	-20.7 3.3
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)	21.3 45.3
Interference Objectives:	Long Term Short Term	-156.0 dBW/MHz 20% -146.0 dBW/MHz 0.01%
		-154.0 dBW/4 kHz 20% -131.0 dBW/4 kHz 0.0025%

Frequency Information

	Receive 4.0 GHz	Transmit 6.1 GHz
Emission / Frequency Range (MHz)	750KG7D - 8M45G7D / 3700.0 - 4200.0	750KG7D - 750KG7D / 6110.0 - 6136.0 750KG7D - 750KG7D / 6382.0 - 6423.0
Max Great Circle Coordination Distance	412.2 km / 256.1 mi	123.1 km / 76.5 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi	100.0 km / 62.1 mi

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Coordination Values

PONCE, PR

Licensee Name	Global Crossing Americas Solutions, Inc		
Latitude (NAD 83)	17° 59' 43.7" N		
Longitude (NAD 83)	66° 36' 29.6" W		
Ground Elevation (AMSL)	7.32 m / 24.0 ft		
Antenna Centerline (AGL)	5.79 m / 19.0 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	-20.7 (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	1.96	110.37	-10.00	201.30	-10.00	100.00
5	2.08	107.99	-10.00	196.33	-10.00	100.00
10	1.38	105.15	-10.00	232.01	-10.00	100.00
15	0.88	102.39	-10.00	266.77	-10.00	100.00
20	0.85	99.76	-10.00	270.77	-10.00	100.00
25	0.89	97.09	-10.00	265.44	-10.00	100.00
30	0.64	94.34	-10.00	300.32	-10.00	100.00
35	1.64	91.66	-10.00	217.65	-10.00	100.00
40	1.28	88.86	-10.00	237.69	-10.00	100.00
45	1.68	86.05	-10.00	215.61	-10.00	100.00
50	0.84	83.41	-10.00	272.50	-10.00	100.00
55	0.53	80.81	-10.00	316.72	-10.00	100.00
60	0.29	78.27	-10.00	383.10	-10.00	117.48
65	0.00	75.86	-10.00	412.20	-10.00	123.09
70	0.00	73.44	-10.00	412.20	-10.00	123.09
75	0.00	71.11	-10.00	412.20	-10.00	123.09
80	0.00	68.91	-10.00	412.20	-10.00	123.09
85	0.00	66.84	-10.00	412.20	-10.00	123.09
90	0.00	64.93	-10.00	412.20	-10.00	123.09
95	0.00	63.20	-10.00	412.20	-10.00	123.09
100	0.00	61.67	-10.00	412.20	-10.00	123.09
105	0.00	60.35	-10.00	412.20	-10.00	123.09
110	0.00	59.26	-10.00	412.20	-10.00	123.09
115	0.00	58.42	-10.00	412.20	-10.00	123.09
120	0.00	57.85	-10.00	412.20	-10.00	123.09
125	0.00	57.55	-10.00	412.20	-10.00	123.09
130	0.00	57.52	-10.00	412.20	-10.00	123.09
135	0.00	57.77	-10.00	412.20	-10.00	123.09
140	0.00	58.30	-10.00	412.20	-10.00	123.09
145	0.00	59.09	-10.00	412.20	-10.00	123.09
150	0.00	60.13	-10.00	412.20	-10.00	123.09
155	0.00	61.41	-10.00	412.20	-10.00	123.09
160	0.00	62.91	-10.00	412.20	-10.00	123.09
165	0.00	64.60	-10.00	412.20	-10.00	123.09
170	0.00	66.48	-10.00	412.20	-10.00	123.09
175	0.00	68.24	-10.00	412.20	-10.00	123.09
180	0.00	69.33	-10.00	412.20	-10.00	123.09
185	0.00	70.55	-10.00	412.20	-10.00	123.09

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Coordination Values

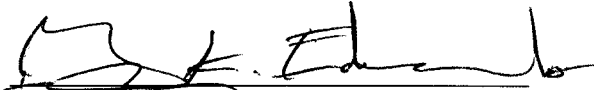
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Max Available RF Power	-20.7 (dBW/4 kHz)		

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)
190	0.00	71.91	-10.00	412.20	-10.00	123.09
195	0.00	73.41	-10.00	412.20	-10.00	123.09
200	0.00	75.02	-10.00	412.20	-10.00	123.09
205	0.00	76.73	-10.00	412.20	-10.00	123.09
210	0.00	78.54	-10.00	412.20	-10.00	123.09
215	0.00	80.42	-10.00	412.20	-10.00	123.09
220	0.00	82.37	-10.00	412.20	-10.00	123.09
225	0.00	84.36	-10.00	412.20	-10.00	123.09
230	0.00	86.39	-10.00	412.20	-10.00	123.09
235	0.00	88.44	-10.00	412.20	-10.00	123.09
240	0.00	90.50	-10.00	412.20	-10.00	123.09
245	0.00	92.56	-10.00	412.20	-10.00	123.09
250	0.00	94.61	-10.00	412.20	-10.00	123.09
255	0.41	96.73	-10.00	345.17	-10.00	107.03
260	0.52	98.77	-10.00	318.17	-10.00	100.00
265	0.66	100.78	-10.00	296.74	-10.00	100.00
270	1.14	102.90	-10.00	245.63	-10.00	100.00
275	1.41	104.89	-10.00	230.37	-10.00	100.00
280	1.13	106.49	-10.00	245.91	-10.00	100.00
285	1.18	108.15	-10.00	243.28	-10.00	100.00
290	1.20	109.67	-10.00	241.86	-10.00	100.00
295	1.27	111.08	-10.00	238.21	-10.00	100.00
300	1.64	112.61	-10.00	217.56	-10.00	100.00
305	1.11	113.19	-10.00	247.23	-10.00	100.00
310	1.39	114.31	-10.00	231.15	-10.00	100.00
315	1.63	115.21	-10.00	218.24	-10.00	100.00
320	1.76	115.81	-10.00	211.48	-10.00	100.00
325	2.19	116.51	-10.00	192.27	-10.00	100.00
330	1.97	116.34	-10.00	200.97	-10.00	100.00
335	2.13	116.34	-10.00	194.52	-10.00	100.00
340	1.85	115.69	-10.00	207.06	-10.00	100.00
345	1.74	115.00	-10.00	212.53	-10.00	100.00
350	1.80	114.28	-10.00	209.33	-10.00	100.00
355	2.06	112.74	-10.00	197.16	-10.00	100.00

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: January 16, 2016