

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

Globecomm License Sub LLC
Hauppauge, New York
(Call Sign: E980122)

Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147
November 14, 2014

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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.

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 are considered on the interfering paths, sufficient blockage exists to negate harmful interference from occurring with the proposed transmit-receive earth station.

Company

Capital Communications of America
Connecticut State Police Department
Coralinks
Eastern MLG LLC
High Voltage Communications LLC
Suffolk, County of
World Class Wireless LLC

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 September 17, 2014.

Company

256Q Networks
AB Services LLC
ALGONQUIN GAS TRANSMISSION, LLC
AT&T Corporation
AWC Networks
Auburn Data Systems, LLC
BFI Licenses, LLC
Bucks County Dept. of Emergency Communic
CONSOLIDATED EDISON COMPANY OF NEW YORK
CTAB Holdings LLC
Capital Communications of America
Capstar TX LLC
Cellco Partnership - (W-NY)
Cellco Partnership - CT, W-MA, VT
Central Hudson Gas & Electric Corp.
China Cat Productions LLC
City of New York
Comprehensive Wireless LLC
Connecticut State Police Department
Converge Towers LLC
Coral Reef Technologies Ltd
Coralinks
County of Burlington, Public Safety Cntr
County of Warren, NJ
Direct Broadcast Services, Inc.
ECW Wireless, LLC
EG Broadcast Newco Corp
Eastern MLG LLC
Electric Railroad, LLC
Essex County Sheriff's Office (NJ)
FELHC
Firstlevel Networks
Fundamental Broadcasting LLC
Garden State Transmissions
Geodesic Networks LLC
Goosetown Network Services, LLC

Company (Continued)

High Voltage Communications LLC
Jefferson Microwave, LLC
Kryptick Technologies
MONMOUTH, COUNTY OF
MVC Research. LLC
Mahwah Communications
Mifflin Mobilecom
Morris, County of
Nassau County Police Department
NeXXCom Wireless LLC
New Cingular Wireless PCS LLC -NJ
New Cingular Wireless PCS LLC - CT
New Cingular Wireless PCS, LLC (NY)
New Jersey State Police
New Jersey Transit Rail Operations, Inc.
New Jersey Turnpike Authority-Pkwy Div
New Jersey, State of -NJ Transit
New York Communications Co., Inc
New York, City of
Newgig Networks, LLC
Northeast Utilities Service Company
OCEAN, COUNTY OF
Ocean, County of - Div of Wireless Tech.
Office of Emergency Telecom Services, NJ
Open Line Communications
Orange Poughkeepsie SMSA LTD Partnership
Orange and Rockland Utilities, Inc.
PEG Bandwidth, LLC
PSEG Services Corporation
Peco Energy Company
Pitt Power
Port Authority of New York & New Jersey
Qoncept Holdings LLC
Rendezvous Communications LLC
SCS Networks
SW Networks
Stevens Institute of Technology
Suffolk, County of
Texas Eastern Communications, LLC
Turtle Networks 6559
Turtle Networks 6562
Velox Networks LLC
Weblin Holdings LLC
White Rabbit Networks
Wireless Internetwork LLC
World Class Wireless, LLC
Zen Networks, Inc
iSignal

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: 11/14/2014
Job Number: 140917COMSJC09

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code SWSITE
Licensee Name Globecom License Sub LLC

Site Information HAUPPAUGE, NEW YORK

Venue Name
Latitude (NAD 83) 40° 48' 54.4" N
Longitude (NAD 83) 73° 14' 17.4" W
Climate Zone A
Rain Zone 2
Ground Elevation (AMSL) 32.0 m / 105.0 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 18° W to 137° West Longitude
Azimuth Range 114.4° to 252.1°
Corresponding Elevation Angles 17.3° / 11.0°
Antenna Centerline (AGL) 12.19 m / 40.0 ft

Antenna Information

	Receive	Transmit
Manufacturer	GD Satcom	GD Satcom
Model	4.8 Meter	4.8 Meter
Gain / Diameter	44.0 dBi / 4.8 m	47.9 dBi / 4.8 m
3-dB / 15-dB Beamwidth	1.08° / 2.05°	0.69° / 1.30°
Max Available RF Power (dBW/4 kHz)		-11.8
(dBW/MHz)		12.2
Maximum EIRP (dBW/4 kHz)		36.1
(dBW/MHz)		60.1
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)	51K2G7D / 3700.0 - 3700.0 174KG7D / 3700.0 - 3700.0 2M45G7W / 3700.0 - 3700.0 12M0G7D / 3700.0 - 3700.0	51K2G7D / 5925.0 - 6425.0 174KG7D / 5925.0 - 6425.0 2M45G7W / 5925.0 - 6425.0 12M0G7D / 5925.0 - 6425.0
Max Great Circle Coordination Distance	364.8 km / 226.7 mi	178.3 km / 110.8 mi
Precipitation Scatter Contour Radius	535.1 km / 332.5 mi	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

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Coordination Values

HAUPPAUGE, NY

Licensee Name	Globecom License Sub LLC				
Latitude (NAD 83)	40° 48' 54.4" N				
Longitude (NAD 83)	73° 14' 17.4" W				
Ground Elevation (AMSL)	32.0 m / 105.0 ft				
Antenna Centerline (AGL)	12.19 m / 40.0 ft				
Antenna Model	GD Satcom 4.8 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					-11.8 (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	107.52	-10.00	285.28	-10.00	137.70
5	0.00	108.50	-10.00	285.28	-10.00	137.70
10	0.00	103.74	-10.00	285.28	-10.00	137.70
15	0.00	98.98	-10.00	285.28	-10.00	137.70
20	0.00	94.20	-10.00	285.28	-10.00	137.70
25	0.00	89.43	-10.00	285.28	-10.00	137.70
30	0.00	84.66	-10.00	285.28	-10.00	137.70
35	0.00	79.89	-10.00	285.28	-10.00	137.70
40	0.00	75.12	-10.00	285.28	-10.00	137.70
45	0.00	70.37	-10.00	285.28	-10.00	137.70
50	0.00	65.63	-10.00	285.28	-10.00	137.70
55	0.00	60.92	-10.00	285.28	-10.00	137.70
60	0.00	56.23	-10.00	285.28	-10.00	137.70
65	0.00	51.58	-10.00	285.28	-10.00	137.70
70	0.00	46.98	-9.80	286.57	-9.80	138.29
75	0.00	42.45	-8.70	293.71	-8.70	141.59
80	0.00	38.01	-7.50	301.70	-7.50	145.34
85	0.00	33.70	-6.19	310.67	-6.19	149.62
90	0.28	29.43	-4.72	310.83	-4.72	146.96
95	0.34	25.53	-3.18	314.83	-3.18	146.47
100	0.00	22.34	-1.73	343.54	-1.73	165.81
105	0.00	19.59	-0.30	354.32	-0.30	172.99
110	0.00	17.80	0.74	362.32	0.74	177.03
115	0.00	17.27	1.07	364.85	1.07	178.30
120	0.44	17.70	0.80	331.08	0.80	150.25
125	0.36	19.86	-0.45	331.91	-0.45	153.64
130	0.00	23.10	-2.09	340.82	-2.09	164.40
135	0.00	26.30	-3.50	330.47	-3.50	159.09
140	0.00	29.34	-4.69	321.92	-4.69	154.81
145	0.00	32.17	-5.69	314.83	-5.69	151.33
150	0.00	34.76	-6.53	308.33	-6.53	148.50
155	0.00	37.07	-7.23	303.54	-7.23	146.21
160	0.00	39.05	-7.79	299.72	-7.79	144.40
165	0.00	40.66	-8.23	296.80	-8.23	143.03
170	0.00	41.84	-8.54	294.73	-8.54	142.06
175	0.00	42.57	-8.73	293.50	-8.73	141.49
180	0.00	42.82	-8.79	293.09	-8.79	141.30

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Licensee Name: Globecom License Sub LLC
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Ground Elevation (AMSL): 32.0 m / 105.0 ft
Antenna Centerline (AGL): 12.19 m / 40.0 ft
Antenna Model: GD Satcom 4.8 Meter
Antenna Mode: Receive 4.0 GHz
Interference Objectives: Long Term: -156.0 dBW/MHz 20%
Short Term: -146.0 dBW/MHz 0.01%
Transmit 6.1 GHz: -154.0 dBW/4 kHz 20%
-131.0 dBW/4 kHz 0.0025%
Max Available RF Power: -11.8 (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)
185	0.26	42.32	-8.66	286.79	-8.66	136.68
190	0.39	41.46	-8.44	271.34	-8.44	127.21
195	0.50	40.19	-8.10	261.40	-8.10	119.85
200	0.37	38.72	-7.70	278.97	-7.70	131.20
205	0.20	36.90	-7.18	303.75	-7.18	146.27
210	0.00	34.76	-6.53	308.33	-6.53	148.50
215	0.00	32.17	-5.69	314.83	-5.69	151.34
220	0.00	29.34	-4.68	321.93	-4.68	154.82
225	0.00	26.30	-3.50	330.47	-3.50	159.09
230	0.25	22.92	-2.01	335.20	-2.01	159.64
235	0.37	19.51	-0.25	332.89	-0.25	153.96
240	0.54	15.94	1.94	329.93	1.94	146.88
245	0.54	12.65	4.45	350.08	4.45	156.34
250	0.55	10.68	6.29	364.84	6.29	163.58
255	0.60	10.79	6.17	360.02	6.17	160.01
260	0.54	13.06	4.10	346.89	4.10	154.68
265	0.58	16.50	1.56	323.76	1.56	143.28
270	0.35	20.71	-0.90	329.37	-0.90	152.68
275	0.53	25.03	-2.96	293.29	-2.96	133.00
280	0.68	29.57	-4.77	270.18	-4.77	120.60
285	0.43	34.34	-6.39	280.74	-6.39	130.31
290	0.25	39.14	-7.81	293.17	-7.81	139.75
295	0.00	43.98	-9.08	291.18	-9.08	140.41
300	0.00	48.81	-10.00	285.28	-10.00	137.70
305	0.00	53.65	-10.00	285.28	-10.00	137.70
310	0.00	58.52	-10.00	285.28	-10.00	137.70
315	0.00	63.40	-10.00	285.28	-10.00	137.70
320	0.00	68.29	-10.00	285.28	-10.00	137.70
325	0.00	73.18	-10.00	285.28	-10.00	137.70
330	0.00	78.09	-10.00	285.28	-10.00	137.70
335	0.00	82.99	-10.00	285.28	-10.00	137.70
340	0.00	87.90	-10.00	285.28	-10.00	137.70
345	0.00	92.81	-10.00	285.28	-10.00	137.70
350	0.00	97.71	-10.00	285.28	-10.00	137.70
355	0.00	102.62	-10.00	285.28	-10.00	137.70

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: November 14, 2014