

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Globecomm License Sub LLC
HAUPPAUGE, NY
(AOT-22 and AOT-25, 4.8 meter)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
December 08, 2015

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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.

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 08/21/2015.

Company

256Q Networks
ALBANY, COUNTY OF
ALGONQUIN GAS TRANSMISSION, LLC
AMFM Radio Licenses, LLC
AT&T Corporation
AWC Networks
Adams County Department of Emergency Svc
Affiniti PA, LLC
Allentown SMSA Limited Partnership
Appalachian Broadcasting
Archdiocese of New York Dept of Educatio
Atlantic Telecommunications
Atlantic, County of
Auburn Data Systems, LLC
BFI Licenses, LLC
BJ'S Wholesale Club, Inc
Bergen, County of
Berks County Department of Emergency Ser
Binghamton MSA Limited Partnership(PA)
Blueline Communications
Buckeye Partners
Bucks County Dept. of Emergency Comm
Business Only Broadband, LLC
CBS Communication Services Inc
CMEEC
CONNECTICUT STATE OF
Capital Communications of America
Cellco Partnership - (W-NY)
Cellco Partnership - CT, W-MA, VT
Cellco Partnership - E-MA, NH, RI
Cellco Partnership-Northern New Jersey
Cellco Prtnrshp - Phil. Tri-State Rgn
Central Massachusetts Emergency Medical
Chester, County of
China Cat Productions LLC
City of Albany
City of Bristol Mayor's Office
City of Jersey City
City of New Haven Police Services
City of New York

City of Providence RI Public Safety Comm
City of Springfield Police Department
Clarity Connect, Inc.
Clearwire Spectrum Holdings III, LLC
Columbia, County of
Community Products, LLC
Comprehensive Wireless LLC
Connect-Vision Ltd.
Connecticut State Police Department
Conterra Ultra Broadband, LLC
Converge Towers LLC
Coralinks
County of Burlington
County of Burlington, Public Safety Cntr
County of Camden
County of Mercer
County of Warren, NJ
County of York
D&E Communications, Inc.
Delaware County (PA) Emergency Services
Delaware Division of Communications
Direct Broadcast Services, Inc.
EAST HAMPTON TOWN POLICE DEPARTMENT
ECW Wireless, LLC
EG Broadcast Newco Corp
East Brunswick, Township of, NJ
Eastern MLG LLC
Egg Harbor Township Board of Education
Electric Railroad, LLC
Essex County Sheriff's Office (NJ)
Eversource Energy Service Company
Exelon Generation Company, LLC
FORDHAM UNIVERSITY(WFUV)
FiberTower Network Services Corp.-DIP
Fishers Island Telephone
Franklin County Dept. of Emergency Servi
Fundamental Broadcasting LLC
GAW High Speed Internet
Garden State Transmissions
Geodesic Networks LLC
Global Crossing Telecommunications, Inc.
Global Telecom & Technology Americas
Gloucester Township
Gloucester, County of
Goosetown Network Services, LLC
Greater Boston Police Council
Greater Philadelphia Radio, Inc.
Green Line Networks
Greenwich, Town of (CT)
High Voltage Communications LLC (CFN)
Highway Networks, LLC
Holy Name Hospital
Hopewell Radiology Group
Hudson County MIS Department
Hudson County Prosecutors Office
Industrial Tower and Wireless, LLC

Jefferson Microwave, LLC
Kryptick Technologies
LANline Communications, Inc.
Lackawanna County Dept. of Emergency Ser
Lackawanna, County of
Lancaster County-Wide Communications
Lehigh, County of
Limitless Mobile, LLC
Local Media TV Philadelphia
MB Microwave, LLC
MONMOUTH, COUNTY OF
MVC Research. LLC
Mahwah Communications
Manchester, Township of
Massachusetts Commonwealth of
Massachusetts Water Resources Authority
Massachusetts, Commonwealth of
Metro Networks Communications, Inc.
Mid-Hudson Data Corp
Middlesex, County of
Monroe County Control Center (PA)
Montgomery County Of
Morris, County of
NBC Telemundo License LLC
NSTAR Electric Company
NY Dept of Health and Mental Hygiene
NYC DOT Staten Island Ferry
Nassau County Police Department
National Grid USA Service Company, Inc
National Tower Company LLC
NeXXCom Wireless LLC
Nep Cellcorp Inc
Netrepid, Inc.
New Britain, City of
New Cingular Wireless PCS LLC -NJ
New Cingular Wireless PCS - Maryland
New Cingular Wireless PCS LLC - DC
New Cingular Wireless PCS LLC - MA
New Cingular Wireless PCS LLC-DE/NH/RI
New Cingular Wireless PCS of PA LLC
New Cingular Wireless PCS, LLC (NY)
New Cingular Wireless PCS, LLC - PA
New Jersey State Police
New Jersey Transit Rail Operations, Inc.
New Jersey Turnpike Authority-Pkwy Div
New Jersey, State of -NJ Transit
New Line Networks, LLC
New York City Police Department TARU
New York Communications Co., Inc
New York SMSA LP (Northern NJ)
New York SMSA Limited Partnership
New York, City of (Police Department)
Newark Police Department
Norcom Communications Corp.
Northeast Pennsylvania SMSA LTD Prtnrsh
Northrop Grumman Systems Corp.

Northrop Grumman Systems Corporation Inc
Norton, Douglas R
Ocean, County of - Div of Wireless Tech.
Office of Emergency Telecom Services, NJ
OpenCape Corporation
Orange Poughkeepsie SMSA LTD Partnership
Orange and Rockland Utilities, Inc.
Orangetown, Town of
PEG Bandwidth, LLC
PISCATAWAY, TOWNSHIP OF
PSEG Services Corporation
Peco Energy Company
Pennsylvania Turnpike Commission
PhillieCo, L.P.
Philly Sports Wireless
Pines Pantry, Inc.
Pitt Power
Port Authority of New York & New Jersey
QUALCOMM INC.
Qoncept Holdings LLC
Rendezvous Communications LLC
Rensselaer County
Rockland, County of
SANOFI PASTEUR
SCHENECTADY COUNTY LAW ENF MOB RADIO
SCHUYLKILL, COUNTY OF
SCS Networks
SECOM NET
STAMFORD, CITY OF
STATE OF NEW JERSEY - OFFICE OF PUBLIC
SUFFOLK, COUNTY OF
SW Networks
Salem County Information Technology
Saratoga County Office of Emergency Svcs
Shenandoah Personal Communications, LLC
Somerset, County of - Emergency Manageme
Southeastern Pennsylvania Transit Auth
Spot On Networks
Sprint Spectrum L.P.
Standard Backhaul Communications LLC
State of Maryland, MIEMSS
State of New Jersey
State of New Jersey Infomation Technolog
State of New York, Div of State Police
Suffolk County Police Department
Sullivan County DPW
Sussex County Sheriffs Office
T-Mobile License LLC
THE BROOKLYN HOSPITAL CENTER
Telecom Transport Management, Inc
Telegia Communications Inc.
Thacher, Proffitt & Wood LLP
Towerstream Corp.
Town of Colonie Police Department
Town of Holden
Town of Narragansett, Rhode Island

Town of Thomaston
Town of Wethersfield
Town of Woodbridge, Police Department
Township of Jackson
Township of Middletown
Townsquare Media Atlantic City III Licen
Townsquare Media Monmouth-Ocean License
Transcontinental Gas Pipeline Corp.
Turtle Networks 6562
USCOC of Cumberland, Inc.
Union County New Jersey
VTel Wireless, Inc.
Verizon New England Inc.
Verizon New Jersey, Inc.
Verizon Wireless (VAW) LLC (NY)
Verizon Wireless (VAW) LLC - NJ
Verizon Wireless (VAW) LLC-Pennsylvania
WESTCHESTER, COUNTY OF
WHYY, Inc.
WORCESTER, CITY OF
Washington County Board of Education
Wayne County - DHS-EM
Wayne, Township of
Weblin Holdings LLC
West Haven, City of
White Rabbit Networks
Wireless Holdings Network, LLC
Wireless Internetwork LLC
World Class Wireless, LLC
Zen Networks, Inc
iSignal
xWave Engineering 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: 12/08/2015
Job Number: 150821COMSJC08

Administrative Information

Status ENGINEER PROPOSAL
Call Sign E070227
Licensee Code SWSITE
Licensee Name Globecom License Sub LLC

Site Information HAUPPAUGE, NY

Venue Name
Latitude (NAD 83) 40° 48' 54.2" N
Longitude (NAD 83) 73° 14' 12.2" 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 3° W to 143° West Longitude
Azimuth Range 103.2° to 256.4°
Corresponding Elevation Angles 6.2° / 6.5°
Antenna Centerline (AGL) 5.2 m / 17.1 ft

Antenna Information

Receive - FCC32
Manufacturer Vertex/RSI
Model 4.8 meter
Gain / Diameter 53.4 dBi / 4.8 m
3-dB / 15-dB Beamwidth 0.37° / 0.76°

Transmit - FCC32

Vertex/RSI
4.8 meter
54.9 dBi / 4.8 m
0.32° / 0.64°

Max Available RF Power (dBW/4 kHz)
(dBW/MHz)

-14.0
10.0

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

40.9
64.9

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

-151.0 dBW/4 kHz 20%
-128.0 dBW/4 kHz 0.0025%

Frequency Information

Emission / Frequency Range (MHz)

Receive 11.0 GHz

44K0G7W - 36M0G7W / 10950.0 - 11200.0
44K0G7W - 36M0G7W / 11450.0 - 12200.0

Transmit 14.0 GHz

44K0G7W - 36M0G7W / 14000.0 - 14500.0

Max Great Circle Coordination Distance

437.0 km / 271.5 mi

199.9 km / 124.2 mi

Precipitation Scatter Contour Radius

584.8 km / 363.3 mi

100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Coordination Values

HAUPPAUGE, NY

Licensee Name Globecom License Sub LLC
Latitude (NAD 83) 40° 48' 54.2" N
Longitude (NAD 83) 73° 14' 12.2" W
Ground Elevation (AMSL) 32.0 m / 105.0 ft
Antenna Centerline (AGL) 5.2 m / 17.1 ft
Antenna Model Vertex 4.8 meter
Antenna Mode Receive 11.0 GHz Transmit 14.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20% -151.0 dBW/4 kHz 20%
Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%
Max Available RF Power -14.0 (dBW/4 kHz)

Azimuth (°)	Antenna		Receive 11.0 GHz		Transmit 14.0 GHz	
	Horizon Elevation (°)	Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	103.14	-10.00	231.37	-10.00	115.80
5	0.00	98.17	-10.00	231.37	-10.00	115.80
10	0.00	93.20	-10.00	231.37	-10.00	115.80
15	0.00	88.23	-10.00	231.37	-10.00	115.80
20	0.00	83.26	-10.00	231.37	-10.00	115.80
25	0.00	78.29	-10.00	231.37	-10.00	115.80
30	0.00	73.32	-10.00	231.37	-10.00	115.80
35	0.00	68.35	-10.00	231.37	-10.00	115.80
40	0.00	63.39	-10.00	231.37	-10.00	115.80
45	0.00	58.42	-10.00	231.37	-10.00	115.80
50	0.00	53.47	-10.00	231.37	-10.00	115.80
55	0.00	48.52	-10.00	231.37	-10.00	115.80
60	0.00	43.57	-8.98	235.88	-8.98	118.35
65	0.00	38.64	-7.68	241.84	-7.68	121.63
70	0.00	33.72	-6.20	248.95	-6.20	125.39
75	0.00	28.83	-4.50	257.30	-4.50	129.77
80	0.00	23.98	-2.50	267.51	-2.50	133.87
85	0.31	19.11	-0.03	269.54	-0.03	131.94
90	0.39	14.41	3.03	277.45	3.03	133.49
95	0.49	9.99	7.02	291.01	7.02	137.67
100	0.32	6.68	11.38	338.90	11.38	171.24
105	0.00	6.43	11.79	437.01	11.79	199.87
110	0.00	9.17	7.95	328.21	7.95	170.85
115	0.00	12.78	4.34	303.03	4.34	155.77
120	0.48	15.99	1.91	262.47	1.91	124.92
125	0.67	19.30	-0.14	240.10	-0.14	110.42
130	0.75	22.56	-1.84	227.56	-1.84	102.58
135	0.46	25.96	-3.36	236.84	-3.36	112.37
140	0.67	28.82	-4.49	219.09	-4.49	100.00
145	0.41	31.84	-5.57	230.71	-5.57	110.30
150	0.49	34.36	-6.40	220.45	-6.40	102.80
155	0.00	37.07	-7.23	243.94	-7.23	122.77
160	0.24	38.83	-7.73	237.21	-7.73	118.06
165	0.00	40.66	-8.23	239.29	-8.23	120.23
170	0.26	41.60	-8.48	232.64	-8.48	115.23
175	0.21	42.36	-8.67	235.90	-8.67	118.04
180	0.23	42.59	-8.73	234.04	-8.73	116.62
185	0.44	42.13	-8.62	214.83	-8.62	100.63

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Coordination Values

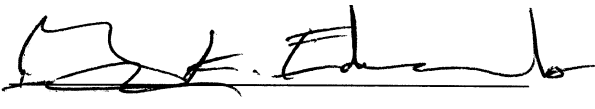
HAUPPAUGE, NY

Licensee Name: Globecom License Sub LLC
Latitude (NAD 83): 40° 48' 54.2" N
Longitude (NAD 83): 73° 14' 12.2" W
Ground Elevation (AMSL): 32.0 m / 105.0 ft
Antenna Centerline (AGL): 5.2 m / 17.1 ft
Antenna Model: Vertex 4.8 meter
Antenna Mode: Receive 11.0 GHz / Transmit 14.0 GHz
Interference Objectives: Long Term: -156.0 dBW/MHz 20% / -151.0 dBW/4 kHz 20%
Short Term: -146.0 dBW/MHz 0.01% / -128.0 dBW/4 kHz 0.0025%
Max Available RF Power: -14.0 (dBW/4 kHz)

Azimuth (°)	Receive 11.0 GHz		Transmit 14.0 GHz			
	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.64	41.22	-8.38	203.96	-8.38	100.00
195	0.86	39.85	-8.01	197.54	-8.01	100.00
200	1.14	38.03	-7.50	188.88	-7.50	100.00
205	1.23	36.01	-6.91	188.88	-6.91	100.00
210	1.21	33.76	-6.21	192.50	-6.21	100.00
215	1.03	31.35	-5.41	201.20	-5.41	100.00
220	0.82	28.70	-4.45	211.76	-4.45	100.00
225	0.76	25.73	-3.26	219.97	-3.26	100.00
230	0.79	22.53	-1.82	225.28	-1.82	100.63
235	0.70	19.27	-0.12	238.51	-0.12	109.11
240	0.78	15.77	2.05	245.21	2.05	111.20
245	0.85	12.19	4.85	256.68	4.85	116.03
250	0.83	8.60	8.64	280.11	8.64	127.72
255	0.99	5.73	13.04	421.87	13.04	181.31
260	0.89	6.66	11.41	294.18	11.41	132.11
265	0.92	10.22	6.77	263.75	6.77	118.45
270	0.71	14.73	2.80	253.42	2.80	116.59
275	0.74	19.40	-0.20	236.04	-0.20	107.22
280	0.80	24.20	-2.60	221.36	-2.60	100.00
285	0.53	29.12	-4.61	225.80	-4.61	104.99
290	0.35	34.05	-6.30	233.62	-6.30	113.55
295	0.23	38.98	-7.77	238.28	-7.77	118.95
300	0.00	43.94	-9.07	235.47	-9.07	118.12
305	0.00	48.88	-10.00	231.37	-10.00	115.80
310	0.00	53.82	-10.00	231.37	-10.00	115.80
315	0.00	58.78	-10.00	231.37	-10.00	115.80
320	0.00	63.74	-10.00	231.37	-10.00	115.80
325	0.00	68.70	-10.00	231.37	-10.00	115.80
330	0.00	73.66	-10.00	231.37	-10.00	115.80
335	0.00	78.63	-10.00	231.37	-10.00	115.80
340	0.00	83.59	-10.00	231.37	-10.00	115.80
345	0.00	88.56	-10.00	231.37	-10.00	115.80
350	0.00	93.53	-10.00	231.37	-10.00	115.80
355	0.00	98.49	-10.00	231.37	-10.00	115.80

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.

BY: 

Gary K. Edwards
Senior Manager
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: December 08, 2015