

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Intelsat License LLC
PISCATAWAY, NJ
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
June 24, 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. 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

DELAWARE STATE - DTI
Nassau County Police Department
New Cingular Wireless PCS LLC -NJ
New Cingular Wireless PCS of PA LLC
New Jersey, State of -NJ Transit
NEW YORK CITY POLICE DEPARTMENT
Orange Poughkeepsie SMSA LTD Partnership
Texas Eastern Communications, Inc.

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 06/24/2011.

Company

AB Services LLC
ALGONQUIN GAS TRANSMISSION CO
AT&T CORP
Allentown SMSA Limited Partnership
Appalachian Broadcasting
Atlantic City Electric Company
Auburn Data Systems, LLC
BAY BROADBAND COMMUNICATIONS LLC
BFI Licenses, LLC
Berks, County of
CHESTER, COUNTY OF
CONSOLIDATED EDISON COMPANY OF NEW YORK
Cellco Partnership - (W-NY)
Cellco Partnership - CT, W-MA, VT
Cellco Partnership- PA Region
Cellco Partnership-Newark-Dallas Verizon
Cellco Prtnrshp - Phil. Tri-State Rgn
Commonwealth of Pennsylvania-Radio Proj.
Comprehensive Wireless LLC
Coral Reef Technologies Ltd
County of Warren
DELAWARE STATE - DTI
Delmarva Power & Light Company
Direct Broadcast Services, Inc.
EASTERN PENNSYLVANIA EMS COUNCIL
Essex County Sherrif Office
Exelon Generation Company, L.L.C
FELHC, Inc.
Fibertrack, LLC
Fundamental Broadcasting LLC
Garden State Transmissions
Geneva Communications, LLC
Gloucester, County of
Goosetown Network Services, LLC
Kryptic Technologies
MB Microwave, LLC
MCI Communications Services Inc.
METROPOLITAN AREA NETWORKS, INC.
Maryland, State of - Dept.of Info & Tech
Monroe County Control Center (PA)

NBC TELEMUNDO LICENSE CO.
NEW JERSEY STATE POLICE
NEW JERSEY TRANSIT RAIL OPERATIONS,INC
NEW YORK CITY POLICE DEPARTMENT
NORTHEAST UTILITIES SERVICE COMPANY
Nassau County Police Department
New Cingular Wireless PCS LLC -NJ
New Cingular Wireless PCS LLC -NE Reg
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 Turnpike Authority-Pkwy Div
New Jersey, State of -NJ Transit
New York Communications Co., Inc
New York, City of
Northeast Pennsylvania SMSA LTD Prtnrsh
OCEAN, COUNTY OF
Ocean, County of-Div of Wireless Tech.
Open Range Communications
Orange Poughkeepsie SMSA LTD Partnership
Orange and Rockland Utilities, Inc.
PENNSYLVANIA TURNPIKE COMMISSION
PSEG Services Corporation
Peco Energy Company
Penn Service Microwave Co., Inc.
SBA Broadband Services
SCTF NET
South Canaan Cellular Communications Co.
Stevens Institute of Technology
Suffolk, County of
Texas Eastern Communications, Inc.
Thought Transmissions, 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: 06/24/2011
Job Number: 110624COMSTC01

Administrative Information

Licensee Name IntelSat License, LLC

Site Information

PISCATAWAY, NJ

Latitude (NAD 83) 40° 33' 14.1" N
Longitude (NAD 83) 74° 27' 24.3" W
Climate Zone B
Rain Zone 2
Ground Elevation (AMSL) 20.1 m / 65.9 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 27.5° W to 27.5° West Longitude
Azimuth Range 121.3° to 121.3°
Corresponding Elevation Angles 23.3° / 23.3°
Antenna Centerline (AGL) 15.24 m / 50.0 ft

Antenna Information

Receive

Transmit

Manufacturer	Prodelin 1385	Prodelin 1385
Gain / Diameter	42.5 dBi / 3.8 m	46.0 dBi / 3.8 m
3-dB / 15-dB Beamwidth	1.00° / 2.00°	0.80° / 1.60°

51K2G7W - 36M0G7W

Max Available RF Power	(dBW/4 kHz)	-6.2	-14.1		
	(dBW/MHz)	17.8	9.9		
Maximum EIRP	(dBW/4 kHz)	39.8	31.9		
	(dBW/MHz)	50.87	55.9		
	(dBW)	50.87	71.44		
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) 51K2G7W - 36M0G7W / 3700.0 - 4200.0 51K2G7W - 36M0G7W / 5925.0 - 6425.0

Max Great Circle Coordination Distance	521.2 km / 323.8 mi	226.6 km / 140.8 mi
Precipitation Scatter Contour Radius	498.1 km / 309.5 mi	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janella Farm Boulevard, Ashburn, VA 20147
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Coordination Values

PISCATAWAY, NJ

Licensee Name	IntelSat License, LLC		
Latitude (NAD 83)	40° 33' 14.1" N		
Longitude (NAD 83)	74° 27' 24.3" W		
Ground Elevation (AMSL)	20.1 m / 65.9 ft		
Antenna Centerline (AGL)	15.24 m / 50.0 ft		
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	-6.2 (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	0.81	118.67	-10.00	276.50	-10.00	120.95
5	0.28	114.05	-10.00	385.06	-10.00	168.93
10	0.00	109.47	-10.00	412.20	-10.00	181.35
15	0.00	104.92	-10.00	412.20	-10.00	181.35
20	0.00	100.34	-10.00	412.20	-10.00	181.35
25	0.00	95.76	-10.00	412.20	-10.00	181.35
30	0.00	91.17	-10.00	412.20	-10.00	181.35
35	0.00	86.57	-10.00	412.20	-10.00	181.35
40	0.00	81.98	-10.00	412.20	-10.00	181.35
45	0.00	77.40	-10.00	412.20	-10.00	181.35
50	0.00	72.84	-10.00	412.20	-10.00	181.35
55	0.00	68.30	-10.00	412.20	-10.00	181.35
60	0.00	63.79	-10.00	412.20	-10.00	181.35
65	0.00	59.32	-10.00	412.20	-10.00	181.35
70	0.00	54.91	-10.00	412.20	-10.00	181.35
75	0.00	50.57	-10.00	412.20	-10.00	181.35
80	0.00	46.32	-9.65	416.63	-9.65	183.19
85	0.00	42.20	-8.63	429.52	-8.63	188.56
90	0.00	38.25	-7.57	443.57	-7.57	194.40
95	0.00	34.52	-6.45	458.70	-6.45	201.04
100	0.00	31.11	-5.32	473.98	-5.32	207.58
105	0.00	28.12	-4.22	489.95	-4.22	214.08
110	0.00	25.70	-3.25	504.60	-3.25	219.99
115	0.00	24.04	-2.52	515.79	-2.52	224.48
120	0.00	23.28	-2.18	521.19	-2.18	226.64
125	0.00	23.53	-2.29	519.39	-2.29	225.92
130	0.00	24.75	-2.84	510.86	-2.84	222.51
135	0.00	26.81	-3.71	497.67	-3.71	217.20
140	0.00	29.53	-4.76	482.14	-4.76	210.91
145	0.00	32.74	-5.88	466.08	-5.88	204.34
150	0.00	36.33	-7.01	451.13	-7.01	197.91
155	0.00	40.17	-8.10	436.51	-8.10	191.46
160	0.00	44.21	-9.14	423.02	-9.14	185.86
165	0.00	48.40	-10.00	412.20	-10.00	181.35
170	0.00	52.70	-10.00	412.20	-10.00	181.35
175	0.00	57.08	-10.00	412.20	-10.00	181.35
180	0.00	61.52	-10.00	412.20	-10.00	181.35
185	0.00	66.01	-10.00	412.20	-10.00	181.35

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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			-6.2 (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	70.53	-10.00	412.20	-10.00	181.35
195	0.00	75.08	-10.00	412.20	-10.00	181.35
200	0.00	79.66	-10.00	412.20	-10.00	181.35
205	0.00	84.24	-10.00	412.20	-10.00	181.35
210	0.00	88.83	-10.00	412.20	-10.00	181.35
215	0.00	93.43	-10.00	412.20	-10.00	181.35
220	0.00	98.02	-10.00	412.20	-10.00	181.35
225	0.00	102.60	-10.00	412.20	-10.00	181.35
230	0.00	107.16	-10.00	412.20	-10.00	181.35
235	0.00	111.70	-10.00	412.20	-10.00	181.35
240	0.00	116.21	-10.00	412.20	-10.00	181.35
245	0.00	120.68	-10.00	412.20	-10.00	181.35
250	0.00	125.09	-10.00	412.20	-10.00	181.35
255	0.00	129.43	-10.00	412.20	-10.00	181.35
260	0.00	133.68	-10.00	412.20	-10.00	181.35
265	0.00	137.80	-10.00	412.20	-10.00	181.35
270	0.00	141.75	-10.00	412.20	-10.00	181.35
275	0.00	145.48	-10.00	412.20	-10.00	181.35
280	0.00	148.89	-10.00	412.20	-10.00	181.35
285	0.00	151.88	-10.00	412.20	-10.00	181.35
290	0.00	154.30	-10.00	412.20	-10.00	181.35
295	0.71	156.64	-10.00	290.70	-10.00	126.68
300	0.94	157.66	-10.00	260.62	-10.00	116.12
305	0.75	157.20	-10.00	284.82	-10.00	124.28
310	0.74	155.94	-10.00	285.35	-10.00	124.49
315	0.80	153.87	-10.00	277.23	-10.00	121.24
320	0.85	151.11	-10.00	271.39	-10.00	118.94
325	0.99	147.91	-10.00	255.04	-10.00	113.96
330	1.00	144.25	-10.00	253.71	-10.00	113.44
335	0.91	140.28	-10.00	263.81	-10.00	116.03
340	0.94	136.19	-10.00	261.42	-10.00	116.43
345	0.96	131.96	-10.00	258.20	-10.00	115.18
350	0.95	127.61	-10.00	260.40	-10.00	116.03
355	0.81	123.15	-10.00	275.79	-10.00	120.67

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.



Timothy O. Crutcher
Frequency Planner
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147

DATED: June 24, 2011