

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**Lockheed Martin Corporation-Phillipsburg**  
**CARPENTERSVI, NJ**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
October 14, 2020

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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 09/03/2020.

Company

AQ2AT LLC  
AT&T Corp.  
AT&T Mobility Spectrum LLC-GA/WV/NC/SC  
AT&T Wireless Services 3 LLC - PA  
Adams County Department of Emergency Svc  
Affiniti PA, LLC  
Algonquin Gas Transmission, LLC  
Allentown SMSA Limited Partnership  
Atlantic, County of  
Auburn Data Systems, LLC  
Baltimore Gas and Electric Company  
Beaver Springs Faith Baptist Church, Inc  
Bedford County of  
Berks County Department of Emergency Ser  
Blair County 911  
Blueline Communications  
Bucks County Dept. of Emergency Comm  
Capital Communications of America  
Carbon, County of 911 Center  
Cellco Partnership - Bridgeville, PA/WV  
Cellco Partnership- PA Region  
Cellco Prtnrshp - Phil. Tri-State Rgn  
Chester, County of  
City of New York  
Cobham Advanced Electronic Solutions Inc  
Columbia, County  
Commonwealth of Pennsylvania-Radio Proj.  
Consolidated Edison Company of New York  
Conterra Ultra Broadband, LLC  
County of Burlington, Public Safety Cntr  
County of Camden  
County of Fayette  
County of Pike  
County of Warren, NJ  
County of York  
DELAWARE RIVER PORT AUTHORITY  
Dauphin County Emergency Management  
Delaware County (PA) Emergency Services  
Delaware Division of Communications  
Direct Broadcast Services, Inc.

Dominion Energy Transmission, Inc.  
EMS of Northeast Pennsylvania  
Eastern MLG LLC  
Eastern Pennsylvania EMS Council  
Electric Railroad, LLC  
Essex County Sheriff's Office (NJ)  
Exelon Generation Company, LLC  
FELHC, Inc.  
FM Radio License, LLC  
Federal Communication Commission  
Frascozna, Carl  
Fulton County PA  
Fundamental Broadcasting LLC  
GTT Americas LLC  
Garden State Transmissions  
Gloucester, County of  
Greene, County of (PA)  
Hammarlund Research LLC  
Hardy Cellular Telephone Company  
High Voltage Communications LLC (CFN)  
Higher Ground LLC  
Huntingdon, County of  
In The Stix Broadband LLC  
Jefferson Microwave, LLC  
Juniata County Emergency Services  
Kryptick Technologies  
Lackawanna, County of  
Lancaster County-Wide Communications  
Luzerne County of PA  
Maryland Public Broadcasting Commission  
Maryland, State of - Dept.of Info & Tech  
Middlesex, County of  
Mifflin County  
Monmouth, County of  
Monroe County Control Center (PA)  
Montgomery County Of  
Morris, County of  
Nassau County Police Department  
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  
Norfolk Southern Railway Company  
Northeast Pennsylvania SMSA LTD Prtnrsh  
Northumberland County DPS/911  
Ocean County of - Div of Wireless Tech.  
Office of Emergency Telecom Services, NJ  
Orange County Dept of Emergency Services  
Orange and Rockland Utilities, Inc.  
PSEG Services Corporation  
Peco Energy Company  
Pennsylvania Turnpike Commission  
Perry, County of

Pike County Commissioners  
Pittsburgh SMSA Limited Partnership  
Port Authority of New York & New Jersey  
Qoncept Holdings LLC  
Radio License Holding CBC, LLC  
SW Networks  
Shenandoah Personal Communications, LLC  
Snyder, County of  
Somerset, County of  
South Central Task Force (SCTFNET)  
Spectrum Holding Company LLC  
State of Maryland, MIEMSS  
Suffolk County Police Department  
Sullivan County DPW  
T-Mobile License LLC  
Texas Eastern Communications, LLC  
Thought Transmissions, LLC  
Transcontinental Gas Pipe Line Co., LLC  
Transwave Communication Systems, Inc.  
USCOC of Cumberland, Inc.  
USOC of Pennsylvania RSA No 10 B2 Inc.  
Uniti Fiber LLC  
Ursa Navigation Solutions, Inc.  
Verizon Wireless (VAW) LLC - Delaware/NJ  
Verizon Wireless (VAW) LLC-Pennsylvania  
Virginia Electric & Power Company  
WITF Inc.  
WV DHSEM, SIRN System  
Wayne, County of  
Weblin Holdings LLC  
Westchester, County of  
Wireless Internetwork LLC  
World Class Wireless, LLC  
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: 10/14/2020  
Job Number: 200903COMSGE01

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### Administrative Information

Status: TEMPORARY (Operation from 10/01/2020 to 04/01/2021)  
Call Sign: E7541  
Licensee Code: RCASTR  
Licensee Name: Lockheed Martin Corporation-Phillipsburg

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### Site Information

#### CARPENTERSVI, NJ

Venue Name: SXM 7/8  
Latitude (NAD 83): 40° 38' 41.0" N  
Longitude (NAD 83): 75° 11' 28.0" W  
Climate Zone: A  
Rain Zone: 2  
Ground Elevation (AMSL): 54.86 m / 180.0 ft

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### Link Information

Satellite Type: Geostationary  
Mode: TO - Transmit-Only  
Modulation: Analog and Digital  
Satellite Arc: 4° W to 147° West Longitude  
Azimuth Range: 102.5° to 257.9°  
Corresponding Elevation Angles: 5.5° / 5.0°  
Antenna Centerline (AGL): 9.14 m / 30.0 ft

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### Antenna Information

#### Transmit - T61421

Manufacturer: TIW SYSTEMS  
Model: FCC STD 14.2-MET  
Gain / Diameter: 57.5 dBi / 14.2 m  
3-dB / 15-dB Beamwidth: 0.24° / 0.46°

Max Available RF Power (dBW/4 kHz): 10.0  
(dBW/MHz): 34.0

Maximum EIRP (dBW/4 kHz): 67.5  
(dBW/MHz): 91.5  
(dBW):

Interference Objectives: Long Term: -154.0 dBW/4 kHz 20%  
Short Term: -131.0 dBW/4 kHz 0.0025%

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### Frequency Information

#### Transmit 6.1 GHz

Emission / Frequency Range (MHz): 1M00F2D - 1M00F8X / 6422.0 - 6423.0  
1M00F2D - 1M00F8X / 6424.0 - 6425.0

Max Great Circle Coordination Distance: 597.5 km / 371.2 mi  
Precipitation Scatter Contour Radius: 566.7 km / 352.1 mi

# COMSEARCH

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### Coordination Values

### CARPENTERSVI, NJ

Licensee Name Lockheed Martin Corporation-Phillipsburg  
Latitude (NAD 83) 40° 38' 41.0" N  
Longitude (NAD 83) 75° 11' 28.0" W  
Ground Elevation (AMSL) 54.86 m / 180.0 ft  
Antenna Centerline (AGL) 9.14 m / 30.0 ft  
Antenna Model TIW SYSTEMS FCC STD 14.2-MET  
Antenna Mode Transmit 6.1 GHz  
Interference Objectives: Long Term -154.0 dBW/4 kHz 20%  
Short Term -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power 10.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	3.60	102.08	-10.50	103.80
5	4.20	97.51	-10.50	100.00
10	4.37	92.51	-10.50	100.00
15	3.90	87.51	-10.50	100.00
20	3.37	82.52	-10.50	107.91
25	3.35	77.52	-10.50	108.30
30	3.56	72.52	-10.50	104.52
35	3.53	67.53	-10.50	105.02
40	3.66	62.53	-10.50	102.83
45	3.83	57.53	-10.50	100.00
50	3.96	52.53	-10.50	100.00
55	3.72	47.54	-10.01	103.62
60	3.53	42.55	-9.01	110.98
65	3.38	37.56	-7.52	119.19
70	3.14	32.59	-5.54	130.84
75	2.89	27.63	-4.03	139.97
80	2.80	22.66	-2.10	150.28
85	3.13	17.67	0.90	157.53
90	3.07	12.74	4.76	180.21
95	3.05	7.90	7.50	194.60
100	3.06	3.50	15.50	236.51
105	2.86	3.63	14.98	384.90
110	2.83	7.30	7.50	199.33
115	3.00	10.77	5.73	186.59
120	3.23	14.13	3.37	169.28
125	3.17	17.58	0.95	156.79
130	2.92	21.06	-1.14	152.12
135	2.29	24.70	-3.32	156.12
140	2.37	27.63	-4.03	151.01
145	2.34	30.43	-4.67	148.85
150	2.20	33.08	-5.73	147.27
155	1.91	35.58	-6.73	149.86
160	2.13	37.31	-7.42	141.91
165	2.55	38.45	-7.88	133.12
170	2.48	39.62	-8.35	132.65
175	1.90	40.88	-8.68	142.20
180	1.88	41.13	-8.73	142.46
185	1.87	40.91	-8.68	143.01

# COMSEARCH

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### Coordination Values

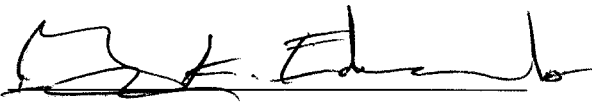
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Max Available RF Power 10.0 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.18	40.89	-8.68	163.15
195	1.40	39.52	-8.31	157.77
200	2.34	37.11	-7.35	137.82
205	1.72	35.75	-6.80	155.01
210	1.80	33.41	-5.87	156.84
215	2.64	30.19	-4.58	142.84
220	2.96	27.17	-3.93	138.98
225	3.95	23.43	-2.56	127.82
230	4.84	19.64	-0.28	124.78
235	4.19	16.85	1.39	139.09
240	4.30	13.37	4.13	149.72
245	3.41	10.49	6.01	178.88
250	2.41	7.60	7.50	206.76
255	2.30	4.00	13.50	411.08
260	2.82	3.04	17.34	597.51
265	3.37	7.28	7.50	187.69
270	2.68	12.31	5.19	191.14
275	2.56	17.26	1.15	173.75
280	2.90	22.18	-1.81	149.42
285	3.11	27.15	-3.93	136.13
290	3.80	32.11	-5.34	119.80
295	4.58	37.09	-7.33	101.04
300	5.28	42.08	-8.92	100.00
305	5.54	47.09	-9.92	100.00
310	5.72	52.09	-10.50	100.00
315	5.35	57.08	-10.50	100.00
320	4.81	62.08	-10.50	100.00
325	3.80	67.09	-10.50	100.30
330	3.40	72.09	-10.50	107.50
335	3.20	77.09	-10.50	111.04
340	3.10	82.09	-10.50	112.85
345	3.05	87.09	-10.50	113.71
350	3.32	92.08	-10.50	108.78
355	3.51	97.08	-10.50	105.51

## 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: October 14, 2020