

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

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

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
October 06, 2021

## TABLE OF CONTENTS

1. CONCLUSIONS .....	3
2. SUMMARY OF RESULTS .....	4
3. SUPPLEMENTAL SHOWING .....	5
4. EARTH STATION COORDINATION DATA.....	8
5. CERTIFICATION.....	12

## **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 09/30/2021.

Company

AT&T Corp.  
Affiniti PA, LLC  
Allentown, City of  
American Broadcasting Companies, Inc.  
Bergen, County of  
Blue Blazer (DE) LLC  
Blueline Communications  
Boeing Company  
Borough of Sayreville  
Business Only Broadband, LLC  
CBS Communications Services Inc  
Camden County Metro Police  
Camp Hill School District  
Carlisle Area School District  
Cellco Partnership - E-MA, NH, RI  
Cellco Partnership- PA Region  
Cellco Partnership-Northern New Jersey  
Chevra Hatzalah Inc.  
City of Bethlehem  
City of Jersey City  
City of Lebanon Authority  
City of New York  
Clearwire Spectrum Holdings III, LLC  
Cobham Advanced Electronic Solutions Inc  
Conterra Ultra Broadband, LLC  
County of Camden  
County of Hunterdon  
Crownsnest Broadband LLC  
Cumberland Valley School District  
DELAWARE RIVER PORT AUTHORITY  
Diocese of Camden  
ECW Wireless, LLC  
East Pennsboro Area School  
Eastern Lancaster County School District  
Electric Railroad, LLC  
Entercom License, LLC  
Federal Communication Commission  
Federal Home Loan Bank of New York  
Freehold Township Police Department  
Geodesic Networks LLC

Greater Boston Radio Inc.  
Guard Insurance Group  
High Voltage Communications LLC (CFN)  
Highway Networks, LLC  
Hispanic Information and Telecomm Netwrk  
Hoboken Fire Department  
ICON Technologies Inc.  
In The Stix Broadband LLC  
Jackson Twp. Police Department  
Jefferson Microwave, LLC  
Lakewood Municipal Utilities Authority  
MPS Communications  
Middlesex, County of  
NBC Telemundo License Co.  
NBC Telemundo License LLC  
NW Technologies, LLC  
NYC DOT Staten Island Ferry  
Neptune Police Department  
New Cingular Wireless PCS LLC - NJ  
New Cingular Wireless PCS, LLC (NY)  
New Cingular Wireless PCS, LLC - PA  
New Jersey, State of -NJ Transit  
New Line Networks, LLC  
New York City Police Department  
New York City Police TARU  
New York City Transit Authority  
New York Methodist Hospital  
Ocean County of - Div of Wireless Tech.  
Ocean, County of  
Office of Emergency Mng, City of Newark  
Parsippany Troy Hills Township  
Pennsylvania Turnpike Commission  
Philadelphia, City of  
Pierce Broadband, LLC  
Plymouth Township Police Department  
Pottsville Area School District  
R. Fritz Enterprises Inc  
Reading Hospital & Medical Center  
Robin Wesstrom  
Rutgers, The State University of N.J.  
Secom Net  
Sesame Workshop  
Somerset County (M.I.S.)  
Sonshine Family Television Corporation  
Sprint Spectrum LLC  
Sprintcom, Inc  
St. Joseph Medical Center  
Standard Backhaul Communications LLC  
State of New Jersey  
State of New Jersey Infomation Technolog  
Susquehanna Township School District  
T-Mobile License LLC  
Telecom Transport Management, Inc  
The Goldman Sachs Group, Inc.  
Total Recall Corp  
Towerstream Corp.

Township of Aberdeen  
Township of Lakewood  
Township of Lower Merion  
Township of Middletown  
WPHL, LLC  
WaveNET LLC  
Webline Holdings LLC  
Weehawken, Township of  
West Orange, Township of  
Widmo Holdings LLC  
William Paterson University  
Wireless Internetwork LLC  
XMG Inc.  
XO Communications, LLC  
Xchange Telecom Corporation  
Zen Networks, Inc  
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: 10/06/2021  
Job Number: 210930COMSGE05

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**Administrative Information**

Status	TEMPORARY (Operation from 10/01/2021 to 04/01/2022)
Call Sign	E7541
Licensee Code	RCASTR
Licensee Name	Lockheed Martin Corporation-Phillipsburg

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**Site Information**

<b>CARPENTERSVI, NJ</b>	
Venue Name	
Latitude (NAD 83)	40° 38' 39.1" N
Longitude (NAD 83)	75° 11' 27.8" 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**

<b>Transmit - FCC32</b>	
Manufacturer	TIW SYSTEMS
Model	FCC STD 14.2-MET
Gain / Diameter	63.9 dBi / 14.2 m
3-dB / 15-dB Beamwidth	0.12° / 0.22°
Max Available RF Power	(dBW/4 kHz) 1.1 (dBW/MHz) 25.1
Maximum EIRP	(dBW/4 kHz) 65.0 (dBW/MHz) 89.0
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**

Emission / Frequency Range (MHz)	<b>Transmit 18.0 GHz</b> 800KF8D / 17302.048 800KF8D / 17305.051
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Max Great Circle Coordination Distance	459.4 km / 285.4 mi
Precipitation Scatter Contour Radius	222.1 km / 138.0 mi

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**Coordination Values**

Licensee Name: Lockheed Martin Corporation-Phillipsburg  
 Latitude (NAD 83): 40° 38' 39.1" N  
 Longitude (NAD 83): 75° 11' 27.8" 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 18.0 GHz  
 Interference Objectives: Long Term -154.0 dBW/4 kHz 20%  
 Short Term -131.0 dBW/4 kHz 0.0025%  
 Max Available RF Power: 1.1 (dBW/4 kHz)

**CARPENTERSVI, NJ**

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 18.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	3.26	102.08	-10.00	100.00
5	3.41	97.51	-10.00	100.00
10	3.64	92.51	-10.00	100.00
15	3.01	87.51	-10.00	100.00
20	3.43	82.52	-10.00	100.00
25	3.08	77.52	-10.00	100.00
30	3.38	72.52	-10.00	100.00
35	3.54	67.53	-10.00	100.00
40	3.62	62.53	-10.00	100.00
45	3.73	57.53	-10.00	100.00
50	3.54	52.54	-10.00	100.00
55	3.34	47.55	-9.93	100.00
60	3.42	42.55	-8.72	100.00
65	3.40	37.56	-7.37	100.00
70	3.23	32.58	-5.82	100.00
75	3.06	27.61	-4.03	100.00
80	3.06	22.64	-1.87	100.00
85	3.12	17.67	0.82	101.69
90	3.26	12.71	4.40	112.05
95	3.25	7.84	9.64	129.46
100	3.17	3.42	18.64	168.76
105	3.17	3.41	18.67	289.33
110	3.34	6.96	10.93	132.69
115	3.33	10.54	6.43	117.89
120	3.13	14.20	3.19	109.84
125	2.91	17.77	0.76	105.11
130	2.07	21.70	-1.41	112.86
135	2.27	24.72	-2.82	104.55
140	2.75	27.33	-3.92	100.00
145	2.28	30.48	-5.10	100.00
150	2.22	33.07	-5.99	100.00
155	1.94	35.55	-6.77	100.00
160	2.21	37.23	-7.27	100.00
165	2.69	38.31	-7.58	100.00
170	2.53	39.57	-7.93	100.00
175	1.98	40.79	-8.27	100.00
180	1.91	41.10	-8.35	100.00
185	1.89	40.89	-8.29	100.00

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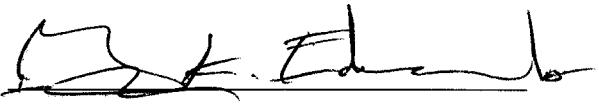
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<b>Coordination Values</b>		<b>CARPENTERSVI, NJ</b>
Licensee Name		Lockheed Martin Corporation-Phillipsburg
Latitude (NAD 83)		40° 38' 39.1" N
Longitude (NAD 83)		75° 11' 27.8" W
Ground Elevation (AMSL)		54.86 m / 180.0 ft
Antenna Centerline (AGL)		9.14 m / 30.0 ft
Antenna Model		TIW SYSTEMS FCC STD 14.2-MET
Antenna Mode		Transmit 18.0 GHz
Interference Objectives: Long Term		-154.0 dBW/4 kHz 20%
Short Term		-131.0 dBW/4 kHz 0.0025%
Max Available RF Power	1.1 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 18.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	1.23	40.84	-8.28	111.05
195	1.33	39.59	-7.94	109.65
200	2.36	37.10	-7.23	100.00
205	1.81	35.67	-6.81	101.63
210	1.81	33.41	-6.10	103.63
215	2.22	30.53	-5.12	100.00
220	3.01	27.13	-3.83	100.00
225	3.69	23.64	-2.34	100.00
230	4.93	19.57	-0.29	100.00
235	4.41	16.68	1.44	100.00
240	4.52	13.21	3.98	100.00
245	3.81	10.21	6.78	111.24
250	2.56	7.49	10.13	143.71
255	2.28	4.01	16.91	313.38
260	2.61	3.20	19.37	459.38
265	3.06	7.35	10.34	135.37
270	3.65	12.16	4.87	107.33
275	2.79	17.23	1.10	108.36
280	2.80	22.19	-1.65	100.00
285	3.05	27.15	-3.84	100.00
290	3.50	32.12	-5.67	100.00
295	4.29	37.09	-7.23	100.00
300	5.04	42.08	-8.60	100.00
305	5.37	47.08	-9.82	100.00
310	5.66	52.09	-10.00	100.00
315	5.56	57.09	-10.00	100.00
320	4.83	62.08	-10.00	100.00
325	4.01	67.09	-10.00	100.00
330	3.37	72.09	-10.00	100.00
335	3.13	77.09	-10.00	100.00
340	3.05	82.09	-10.00	100.00
345	2.99	87.09	-10.00	100.00
350	3.24	92.08	-10.00	100.00
355	3.48	97.08	-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: October 06, 2021