

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Harte Satellite Consultants
TAMPA, FL
Satellite Earth Station

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

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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

<Companies Responding with Cases>

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 04/24/2019.

Company

3G Wireless, LLC
AB Indiana, LLC
Access Media Holdings, LLC
Aerial Video Systems
Affiniti LLC
Alascom Inc
Alltel Communications LLC - S Florida
Alternative Choice Wireless, LLC
Altius Communications
Ascent Media Network Services, LLC
Beasley Media Group Licenses, LLC
Bellsouth Telecommunications, Inc.
Bethesda Memorial Hospital
Borgeson, Tom R.
Brevard County Sheriffs Office
Brevard, County of
Broadcast Sports Inc.
Broadwave, LLC
Broward County Board of Commissioners
Broward County Telecommunications Div
Business Only Broadband, LLC
Cape Coral, City of
Carolina Telephone and Telegraph Co
Casper, John
Cbs Operations Investments, Inc.
Cellco Partnership - Florida
CenturyTel of the Southwest, Inc.
Charlotte County Board of County Comm
Chesapeake-Portsmouth Broadcasting Corp
Chicago Comnet Corp
Cincinnati Bell Wireless LLC
Citrus County Sheriff's Office
City of Hollywood, Florida
City of Melbourne
City of Miami Beach
City Of Miami Police Dept
City of Palm Bay
City of Pompano Beach Florida
Citywide News Network, Inc.
Clay County of (FL)

Clear Channel Broadcasting Licenses, Inc
Clearsurf International
Clearwater, City of
Clearwire Spectrum Holdings II, LLC
Clearwire Spectrum Holdings III, LLC
Clearwire Spectrum Holdings LLC
Coconut Creek, City of
COLLIER, COUNTY OF
Compass BroadBand Networks
Computer Office Solutions, Inc.
Conterra Ultra Broadband, LLC
Coral Gables, City of
Cowboys Stadium LP
Cox Radio, LLC
DCI II, INC.
Dedicated Professionals, LLC
Direct Broadcast Services, Inc.
DNC Parks & Resorts at KSC Inc
Echo Technologies
Embarq Florida, Inc.
Entercom License, LLC
FastNet Internet & Computer Services
FiberX LLC
Fixed Wireless Holdings, LLC
FL Courts 18th Judicial Circuit
Florida High Speed Internet
Florida Mobile Telecom, Inc.
Florida Rural Broadband Alliance, LLC
Florida, State of
Fort Lauderdale City Florida
Frontier California Inc.
Gigabit Squared Telecom LLC
Global Telecom & Technology Americas
Graham Media Group, Florida, Inc.
Greater Orlando Public Safety Coop
Hallco Unlimited, Inc.
Hardee County - IDA
Hawaiian Telcom, Inc.
Hearst Properties Inc.
Heiden, William
HF Enterprises, Inc
Hialeah Housing Authority
Highlands County
Hillsborough County Clerk Circuit Court
Hillsborough County Sheriffs Office
Hillsborough, County of
HiQ Data Corporation
Hotwire Communications
Illinois Bell Telephone Company
Indian River Community College
Indian River, County of
Indiana Bell Telephone Company
Information & Display Systems, Inc.
Information Super Station, LLC
International Communications Group, Inc.
Jacksonville, City of

Kentucky RSA #3 Cellular General Partner
Kentucky RSA #4 Cellular General Partner
L3Harris Technologies, Inc
Lake City, City of
Lee County - BOCC
Manatee, County of
Mb Development I/C Grand Beach Hotel
MERCURY COMMUNICATIONS
Miami City of
Miami-Dade County
Michigan Bell Telephone Company
Moreen, Steven K
Mosaic Fertilizer LLC
Mun Public Safety Comm Consortium(MPSCC)
Navajo Communications Company
NBC Telemundo License LLC
New Cingular Wireless PCS LLC - N FL
New Cingular Wireless PCS LLC - S FL
NEW ENGLAND DIGITAL DISTRIBUTION, INC.
New World Communications of Tampa, Inc.
Nexogy, Inc
NEXSTAR BROADCASTING, INC.
Nextlink Wireless, LLC
North Florida Broadband Authority
NorthWest Suburbs Community Access Corp
NSM Surveillance
Ohio Bell GTelephone Company
Okeechobee County Fire Department
Olympic Wireless, LLC
Onboard Images
Orange County Government
Orlando City Police Department
Orlando Telephone Company Inc.
Pacific and Southern, LLC
Pacific Bell Tel Com dba AT&T California
Palm Beach, County of
Pdmnet Inc.
Peace River Electric Cooperative Inc.
Penn Service Microwave Co., Inc.
Pinellas Park Police Department
Pinellas, County of
Plantation, City of
Plateau Telecommunications, Inc.
Plum TV, LLC
Polk, County of
Production & Satellite Services, Inc.
Quick Link Connections Inc.
Qwest Corporation
Radiofone, Inc.
Randy Hermes Production
Rapid Systems, Inc
RCC Minnesota Inc. - MN NE ND SD
Reedy Creek Improvement District
Remote Broadcasts, Inc.
REMOTE FACILITIES CONSULTING SERVICES
RF Central, LLC

RF Film, Inc
Saga South Communications, LLC
Sarasota, County of
Scientel Solutions, LLC
Scripps Media, Inc. - WFTS TV
SEC Networks
Sling Broadband, LLC
South Florida Water Management District
Southeastern Construction & Maintenance
Southern Company Services, Inc.
Southern Light, LLC
Southwestern Bell Telephone L.P.
Speedshotz, Inc
Sprint Communications Company, LP
Sprint Spectrum L.P.
Sprintcom, Inc
St. Lucie County Fire District
Sumter County Board of County Commission
Tampa City of
TampaBay DSL Inc
T-Mobile License LLC
Towerstream Corp.
TTWN Networks, LLC
Unisat, Inc.
United States Sugar Corporation
United Telephone - Southeast
Verizon Maryland, Inc.
Verizon New England Inc.
Verizon New Jersey, Inc.
Verizon New York, Inc.
Verizon North Inc.
Verizon Northwest Inc.
Verizon Pennsylvania, Inc.
VERIZON SOUTH INC.
Verizon Virginia, Inc.
Verizon Washington DC, Inc.
Verizon Wireless (VAW) LLC - S Florida
Verizon Wireless Personal Comm, LP(S FL)
Vyvx, LLC
Wavetech Systems, LLC
Webpass Inc.
West Palm Beach, City of
Westar Satellite Services LP
Winged Vision Inc
Wisconsin Bell Telephone Company
Wolfe Air Aviation
XO Communications, 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: 02/06/2021
Job Number: 190424COMSGE04

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code HARSAT
Licensee Name Harte Satellite Consultants

Site Information TAMPA, FL

Venue Name
Latitude (NAD 83) 27° 59' 59.3" N
Longitude (NAD 83) 82° 32' 54.9" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 4.73 m / 15.5 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 15° W to 30° West Longitude
Azimuth Range 101.0° to 109.8°
Corresponding Elevation Angles 11.2° / 24.6°
Antenna Centerline (AGL) 7.01 m / 23.0 ft

Antenna Information

	Receive - FCC32	Transmit - FCC32
Manufacturer	TTI	TTI
Model	27E01-1000-A	27E01-1000-A
Gain / Diameter	30.1 dBi / 0.45 m	30.6 dBi / 0.45 m
3-dB / 15-dB Beamwidth	4.40° / 9.0°	3.90° / 7.60°
Max Available RF Power (dBW/4 kHz) (dBW/MHz)		-20.1 3.9
Maximum EIRP (dBW/4 kHz) (dBW/MHz)		10.5 34.5
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

	Receive 11.0 GHz	Transmit 13.0 GHz
Emission / Frequency Range (MHz)	36M0G7W / 10700.0 - 10950.0 36M0G7W / 11200.0 - 11450.0	7M00G7W / 12750.0 - 13250.0
Max Great Circle Coordination Distance	470.4 km / 292.3 mi	158.4 km / 98.4 mi
Precipitation Scatter Contour Radius	575.0 km / 357.3 mi	100.0 km / 62.1 mi

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 <http://www.comsearch.com>

Coordination Values

TAMPA, FL

Licensee Name Harte Satellite Consultants
Latitude (NAD 83) 27° 59' 59.3" N
Longitude (NAD 83) 82° 32' 54.9" W
Ground Elevation (AMSL) 4.73 m / 15.5 ft
Antenna Centerline (AGL) 7.01 m / 23.0 ft
Antenna Model TTI 0.45 meter
Antenna Mode Receive 11.0 GHz Transmit 13.0 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 -20.1 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	100.77	-10.00	307.68	-10.00	106.21
5	0.00	95.87	-10.00	307.68	-10.00	106.21
10	0.00	90.96	-10.00	307.68	-10.00	106.21
15	0.00	86.06	-10.00	307.68	-10.00	106.21
20	0.00	81.15	-10.00	307.68	-10.00	106.21
25	0.00	76.25	-10.00	307.68	-10.00	106.21
30	0.00	71.35	-10.00	307.68	-10.00	106.21
35	0.00	66.46	-10.00	307.68	-10.00	106.21
40	0.00	61.58	-10.00	307.68	-10.00	106.21
45	0.00	56.71	-10.00	307.68	-10.00	106.21
50	0.00	51.86	-10.00	307.68	-10.00	106.21
55	0.00	47.02	-9.81	309.28	-9.81	106.76
60	0.00	42.22	-8.64	319.20	-8.64	110.16
65	0.00	37.45	-7.34	330.64	-7.34	114.31
70	0.00	32.74	-5.88	343.76	-5.88	118.81
75	0.00	28.13	-4.23	359.61	-4.23	124.05
80	0.00	23.65	-2.35	378.62	-2.35	130.23
85	0.00	19.42	-0.20	401.46	-0.20	137.53
90	0.00	15.62	2.16	428.16	2.16	143.90
95	0.00	12.66	4.44	453.64	4.44	152.78
100	0.00	11.22	5.75	470.45	5.75	158.40
105	0.00	11.87	5.14	462.52	5.14	155.73
110	0.00	14.32	3.10	437.20	3.10	147.41
115	0.00	17.86	0.70	411.54	0.70	140.70
120	0.00	21.95	-1.54	387.09	-1.54	132.95
125	0.00	26.15	-3.44	367.48	-3.44	126.62
130	0.00	30.28	-5.03	351.84	-5.03	121.49
135	0.00	34.29	-6.38	339.10	-6.38	117.25
140	0.00	38.18	-7.55	328.76	-7.55	113.67
145	0.00	42.01	-8.58	319.65	-8.58	110.31
150	0.00	46.02	-9.57	311.24	-9.57	107.43
155	0.00	50.16	-10.00	307.68	-10.00	106.21
160	0.00	54.41	-10.00	307.68	-10.00	106.21
165	0.00	58.75	-10.00	307.68	-10.00	106.21
170	0.00	63.15	-10.00	307.68	-10.00	106.21
175	0.00	67.59	-10.00	307.68	-10.00	106.21
180	0.00	72.07	-10.00	307.68	-10.00	106.21
185	0.00	76.58	-10.00	307.68	-10.00	106.21

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Coordination Values

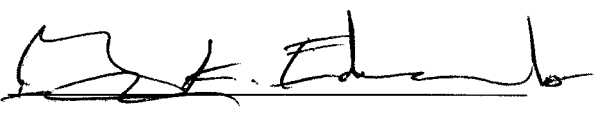
TAMPA, FL

Licensee Name	Harte Satellite Consultants		
Latitude (NAD 83)	27° 59' 59.3" N		
Longitude (NAD 83)	82° 32' 54.9" W		
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Antenna Centerline (AGL)	7.01 m / 23.0 ft		
Antenna Model	TTI 0.45 meter		
Antenna Mode	Receive 11.0 GHz		Transmit 13.0 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	-20.1 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	81.11	-10.00	307.68	-10.00	106.21
195	0.00	85.65	-10.00	307.68	-10.00	106.21
200	0.00	90.20	-10.00	307.68	-10.00	106.21
205	0.00	94.75	-10.00	307.68	-10.00	106.21
210	0.00	99.29	-10.00	307.68	-10.00	106.21
215	0.00	103.81	-10.00	307.68	-10.00	106.21
220	0.00	108.32	-10.00	307.68	-10.00	106.21
225	0.00	112.80	-10.00	307.68	-10.00	106.21
230	0.00	117.24	-10.00	307.68	-10.00	106.21
235	0.00	121.63	-10.00	307.68	-10.00	106.21
240	0.00	125.96	-10.00	307.68	-10.00	106.21
245	0.00	130.21	-10.00	307.68	-10.00	106.21
250	0.00	134.34	-10.00	307.68	-10.00	106.21
255	0.00	138.33	-10.00	307.68	-10.00	106.21
260	0.00	142.13	-10.00	307.68	-10.00	106.21
265	0.00	145.66	-10.00	307.68	-10.00	106.21
270	0.00	148.85	-10.00	307.68	-10.00	106.21
275	0.00	151.57	-10.00	307.68	-10.00	106.21
280	0.00	153.67	-10.00	307.68	-10.00	106.21
285	0.00	155.00	-10.00	307.68	-10.00	106.21
290	0.00	155.43	-10.00	307.68	-10.00	106.21
295	0.00	154.92	-10.00	307.68	-10.00	106.21
300	0.00	153.51	-10.00	307.68	-10.00	106.21
305	0.00	151.35	-10.00	307.68	-10.00	106.21
310	0.00	148.59	-10.00	307.68	-10.00	106.21
315	0.00	144.40	-10.00	307.68	-10.00	106.21
320	0.00	139.66	-10.00	307.68	-10.00	106.21
325	0.00	134.87	-10.00	307.68	-10.00	106.21
330	0.00	130.04	-10.00	307.68	-10.00	106.21
335	0.00	125.20	-10.00	307.68	-10.00	106.21
340	0.00	120.33	-10.00	307.68	-10.00	106.21
345	0.00	115.45	-10.00	307.68	-10.00	106.21
350	0.00	110.56	-10.00	307.68	-10.00	106.21
355	0.00	105.67	-10.00	307.68	-10.00	106.21

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: February 06, 2021