

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
GlobeCast North America Incorporated
CULVER CITY, CA
(5.6 meter)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
July 18, 2018

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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

Aerionet, Inc.
Bel Air Internet, LLC
Clearwire Spectrum Holdings III, LLC
Global Telecom & Technology Americas
Los Angeles City Info Technology Agency
MHO Networks
Pacific Television Center
San Bernardino County of California
Santa Monica, City of
Southern California Gas Company
Towerstream Corp.
Venture Technologies Group, LLC
Wiline Spectrum Holdings LLC

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 07/18/2018.

Company

ABC Holding Company Inc.
AT&T Mobility Spectrum LLC - N CA
AT&T Mobility Spectrum LLC - Southern CA
Aerioconnect Inc
Aerioconnect, Inc.
Aerionet, Inc.
Affiniti LLC
Air Sites 2000 LLC
Airlink Internet Inc.
Alarmlink, Inc.
Anacapa Micro Products, Inc.
Antelecom, Inc.
BNSF Railway Company
Bakersfield, City of
Bay City Television, Inc.
Bel Air Internet, LLC
Beta Operating Company LLC
CBS Broadcasting Inc
CBS Radio Stations Inc.
California Internet Solutions, Inc.
California Internet, L.P.
California Lutheran University
California Resources Corporation
California Water Service Company
California, State of
Caritas Telecommunications
Catalina Broadband Solutions, LLC
CenturyTel of Eagle, Inc.
Chevron USA Inc.
Citicasters Licenses, Inc.
City of Los Angeles Dept Water & Power
City of Monrovia
City of Montebello
City of Newport Beach
City of Oceanside
City of Pasadena, California
City of Santa Barbara
City of Santa Barbara Fire Department
City of Santa Barbara Water Resources De
City of Santa Maria

Clearwire Spectrum Holdings III, LLC
Communication Services, Inc.
Confire, JPA
Conterra Ultra Broadband, LLC
Corona, City of, Dept of Water & Power
DM Ventures, Inc. dba Warp2Biz
DRS Global Enterprise Solutions, Inc.
Desert Winds Wireless
Desert Wireless Internet
EDF Renewable Services, Inc.
Eastern Municipal Water District
Educational Media Foundation
Elementis Global LLC
Exxon Communications Company
Financial Partners Credit Union
Fireline Network Solutions Inc.
Focused Internet
Franklin Technology Systems, Inc.
Frazier Mountain Internet Service, Inc.
Fresno MSA Limited Partnership
Frontier California Inc.
GTE Mobilnet of California LTD Partnersh
GTE Mobilnet of Santa Barbara LTD Ptsh
Gilcomm LLC
Gilmond, Daniel
Glendale City California
Global Telecom & Technology Americas
Global Telecom & Technology Americas, In
Go Creative Wireless
Grimmay Enterprises, Inc
H.F. Cox, Inc
Iberdrola Renewables, LLC
Impulse Advanced Communications
J G BOSWELL COMPANY
Kern County Superintendent of Schools
Kern Ed Telecom Consortium
Kern Schools Federal Credit Union
Kern, County of
Kimtron, Inc.
Kiza, Inc
LT-WR, LLC
LasVegas.Net
Lightwave Broadband LLC
Lockheed Martin Corp - California
Long Beach, City of (WCD)
Los Angeles City Info Technology Agency
Los Angeles County Dept of Public Works
Los Angeles County FCC Licensing Section
Los Angeles County Metro Transit Auth
Los Angeles Regional Interoperable Comm
Los Angeles SMSA Ltd. Partnership
Los Angeles Unified School District
Los Angeles, City of (ITA)
MHO Networks
MJM Telecom Corp
Metropolitan Water Dist of So California

Midland School
NRJ TV III CA License Co, LLC
New Cingular Wireless PCS - Los Angeles
New Cingular Wireless PCS LLC - N CAL
New Cingular Wireless PCS LLC -San Diego
New Cingular Wireless PCS, LLC - SE Cal
Nextel of California Inc.
Nextlink Wireless, LLC
Nextweb Inc
North County Transit District
Nrj TV La License Co, LLC
Olympic Wireless, LLC
Orange County Public Works
Orange County Transportation Authority
Orange, County of, CA
Pacific Bell Tel Com dba AT&T California
Pacific Gas and Electric Company
Pacific Television Center
Palomar Broadband
Polly Butte Networks
Port of Los Angeles
Qualcomm Inc.
RPM Wireless Internet, LLC
Race Communications
Regents of the University of California
Regional 3Cs
Rincon Broadband
Riverside, City of
Riverside, County of
San Antonio Regional Hospital
San Bernardino Community Col Dis KVCR-TV
San Bernardino County of California
San Diego Broadband
San Diego County Super. of Schools
San Diego Gas & Electric Company
San Diego Unified School District
San Diego, City of
San Diego, County of
Santa Barbara Cellular Systems, Ltd.
Santa Barbara, County of
Santa Monica, City of
Sentinel Peak Resources California LLC
Siteserver, Inc.
Skyriver Communications
SmartSky Networks, LLC
South Bay Regional Public Comm Authority
Southern California Edison Company
Southern California Gas Company
Southern California Regional Rail Auth.
Sprint Spectrum L.P.
Sprint Telephony PCS, L.P.
Sprintcom, Inc
T-Mobile License LLC
Te Conectamos LLC dba Tekwerks
Tejon Ranch Co
Temecula Valley Real Estate, Inc

Towerstream Corp.
Turn Wireless, LLC
Ultimate Internet Access, Inc
Union Pacific Railroad Company
United Water Conservation District
University of California, HPWREN
Vectus, Inc
Venoco, Inc.
Ventura County Office of Education
Ventura Regional Sanitation District
Ventura, County of
Venture Technologies Group, LLC
Verizon Wireless (VAW) LLC (Southern CA)
Verizon Wireless (VAW) LLC-N CA/NV
Vernon City of
WT Consulting Group, LLC
Wancomm Technologies
West Covina, City of
Western Broadband Inc.
Wiline Spectrum Holdings LLC
Wisprenn
XO Communications, LLC
Zray Technologies Inc.
enXco Services Corporation
unWired Broadband, Inc

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: 07/18/2018
Job Number: 180718COMSGE01

Administrative Information

Status ENGINEER PROPOSAL
Call Sign KA224
Licensee Code P4775
Licensee Name GlobeCast North America Incorporated

Site Information CULVER CITY, CA

Venue Name
Latitude (NAD 83) 34° 1' 5.4" N
Longitude (NAD 83) 118° 24' 14.2" W
Climate Zone B
Rain Zone 4
Ground Elevation (AMSL) 24.67 m / 80.9 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 60° W to 186° West Longitude
Azimuth Range 109.0° to 257.0°
Corresponding Elevation Angles 17.4° / 9.8°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

	Receive - A80561	Transmit - A90561
Manufacturer	ANDREW CORPORATION	ANDREW CORPORATION
Model	ESA56-124	ESA56-124
Gain / Diameter	55.3 dBi / 5.6 m	56.7 dBi / 5.6 m
3-dB / 15-dB Beamwidth	0.32° / 0.64°	0.26° / 0.54°
Max Available RF Power (dBW/4 kHz)		-14.0
(dBW/MHz)		10.0
Maximum EIRP (dBW/4 kHz)		42.7
(dBW/MHz)		66.7
Interference Objectives:		
Long Term	-154.1 dBW/MHz 20%	-151.0 dBW/4 kHz 20%
Short Term	-142.8 dBW/MHz 0.01%	-128.0 dBW/4 kHz 0.0025%

Frequency Information

	Receive 11.0 GHz	Transmit 14.0 GHz
Emission / Frequency Range (MHz)	200KF3E - 36M0G7W / 10950.0 - 11200.0 200KF3E - 36M0G7W / 11450.0 - 11700.0	200KF3E - 36M0G7W / 14000.0 - 14500.0
Max Great Circle Coordination Distance	360.0 km / 223.7 mi	153.5 km / 95.3 mi
Precipitation Scatter Contour Radius	375.8 km / 233.5 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

CULVER CITY, CA

Licensee Name	GlobeCast North America Incorporated			
Latitude (NAD 83)	34° 1' 5.4" N			
Longitude (NAD 83)	118° 24' 14.2" W			
Ground Elevation (AMSL)	24.67 m / 80.9 ft			
Antenna Centerline (AGL)	2.74 m / 9.0 ft			
Antenna Model	Andrew Corporation ESA56-124			
Antenna Mode	Receive 11.0 GHz		Transmit 14.0 GHz	
Interference Objectives: Long Term	-154.1 dBW/MHz	20%	-151.0 dBW/4 kHz	20%
Short Term	-142.8 dBW/MHz	0.01%	-128.0 dBW/4 kHz	0.0025%
Max Available RF Power			-14.0 (dBW/4 kHz)	

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 11.0 GHz		Transmit 14.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	49.22	-9.70	284.77	-10.30	124.14
195	0.00	47.73	-9.70	284.77	-10.30	124.14
200	0.00	45.74	-9.70	284.77	-10.30	124.14
205	0.00	43.33	-9.03	289.87	-10.30	124.14
210	0.00	40.55	-7.92	298.56	-10.30	124.14
215	0.00	37.49	-7.70	300.34	-10.30	124.14
220	0.00	34.19	-7.70	300.34	-9.81	125.72
225	0.00	30.70	-7.70	300.34	-7.72	132.68
230	0.00	27.05	-6.52	310.00	-6.12	138.16
235	0.00	23.28	-5.01	322.89	-4.61	143.48
240	0.00	19.42	-3.35	337.52	-3.07	147.16
245	0.00	15.48	-0.99	359.98	-1.49	153.46
250	0.33	11.80	2.50	358.23	1.90	150.72
255	0.45	9.61	4.69	347.16	4.09	144.89
260	0.56	9.75	4.55	323.42	3.95	136.61
265	0.53	12.25	2.05	305.64	1.45	129.67
270	0.46	15.98	-1.29	291.36	-1.69	125.08
275	0.47	20.21	-3.79	269.71	-3.39	118.28
280	0.68	24.66	-5.56	235.00	-5.16	100.17
285	0.58	29.36	-7.45	233.61	-7.05	100.07
290	0.60	34.12	-7.70	230.01	-9.77	100.00
295	0.63	38.93	-7.70	226.58	-10.30	100.00
300	0.62	43.78	-9.21	218.63	-10.30	100.00
305	1.03	48.60	-9.70	171.76	-10.30	100.00
310	1.22	53.48	-9.70	163.52	-11.00	100.00
315	1.30	58.39	-9.70	160.35	-12.65	100.00
320	1.14	63.33	-11.70	157.24	-13.97	100.00
325	1.02	68.26	-12.70	157.10	-14.95	100.00
330	0.94	73.20	-12.70	162.87	-15.30	100.00
335	1.08	78.13	-12.70	154.86	-15.30	100.00
340	1.23	83.07	-12.70	149.39	-15.30	100.00
345	1.17	88.01	-12.70	151.55	-15.30	100.00
350	1.09	92.95	-12.70	154.67	-15.30	100.00
355	1.15	97.90	-12.70	152.22	-15.30	100.00

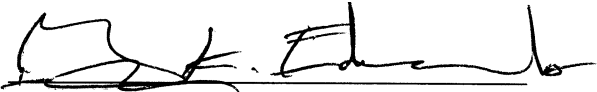
COMSEARCH

Earth Station Data Sheet

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

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: July 18, 2018

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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.

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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

Los Angeles County Metro Transit Auth
Los Angeles Regional Interoperable Comm
Southern California Gas Company
Southern California Regional Rail Auth.

No other carriers reported potential interference cases.

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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 06/13/2018.

Company

ABC Holding Company Inc.
AT&T Mobility Spectrum LLC - Southern CA
Air Sites 2000 LLC
American Tower, LLC
Anaheim City, of
BNS Electronics, Inc.
BNSF Railway Company
CCO SoCal I, LLC
California Internet Solutions, Inc.
California Internet, L.P.
California, State of
Calvary Chapel of Costa Mesa
City of Los Angeles Dept Water & Power
City of Montebello
Coast Community College District
Communication Services, Inc.
DM Ventures, Inc. dba Warp2Biz
Entravision Holdings, LLC
Fresno MSA Limited Partnership
Frontier California Inc.
Glendale City California
Global Telecom & Technology Americas, In
Go Creative Wireless
ION Media Los Angeles License, Inc.
KTLA, LLC
LDM Engineering
Los Angeles City Info Technology Agency
Los Angeles County Dept of Public Works
Los Angeles County FCC Licensing Section
Los Angeles County Metro Transit Auth
Los Angeles Regional Interoperable Comm
Los Angeles SMSA Ltd. Partnership
Los Angeles Unified School District
MHO Networks
Metropolitan Water Dist of So California
Mobile Relay Associates Inc.
New Cingular Wireless PCS - Los Angeles
Nextel of California Inc.

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Nextweb Inc
Northrop Grumman Systems Corp.
Nrj TV La License Co, LLC
Olympic Wireless, LLC
Orange, County of, CA
Pacific Bell Tel Com dba AT&T California
Regents of the University of California
Riverside, County of
San Bernardino County of California
San Diego Gas & Electric Company
Santa Barbara, County of
Skyriver Communications
Southern California Edison Company
Southern California Gas Company
Southern California Regional Rail Auth.
Spectrum Link, Inc.
Sprint Telephony PCS, L.P.
T-Mobile License LLC
TV Microwaves Company
Turn Wireless, LLC
Ultimate Internet Access, Inc
Union Pacific Railroad Company
University of California, HPWREN
Vectus, Inc
Ventura, County of
Verizon Wireless (VAW) LLC (Southern CA)
Wiline Spectrum Holdings LLC
Wisprenn

4. EARTH STATION COORDINATION DATA

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

Date: 07/18/2018
Job Number: 180613COMSGE05

Administrative Information

Status ENGINEER PROPOSAL
Call Sign KA224
Licensee Code P4775
Licensee Name GlobeCast North America Incorporated

Site Information CULVER CITY, CA

Venue Name
Latitude (NAD 83) 34° 1' 5.4" N
Longitude (NAD 83) 118° 24' 14.2" W
Climate Zone B
Rain Zone 4
Ground Elevation (AMSL) 24.67 m / 80.9 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 84° W to 119° West Longitude
Azimuth Range 129.2° to 181.1°
Corresponding Elevation Angles 36.1° / 50.5°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

	Receive - A40461	Transmit - A60461
Manufacturer	ANDREW CORPORATION	ANDREW CORPORATION
Model	ES46-CCP2	ES46-CCP2
Gain / Diameter	44.4 dBi / 4.6 m	48.2 dBi / 4.6 m
3-dB / 15-dB Beamwidth	0.92° / 1.82°	0.62° / 1.20°
Max Available RF Power (dBW/4 kHz)		-7.9
(dBW/MHz)		16.1
Maximum EIRP (dBW/4 kHz)		40.3
(dBW/MHz)		64.3
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)	200KF3E - 36M0G7W / 3700.0 - 4200.0	200KF3E - 36M0G7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	559.8 km / 347.8 mi	184.0 km / 114.3 mi
Precipitation Scatter Contour Radius	358.4 km / 222.7 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

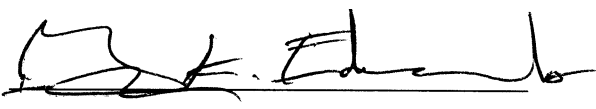
CULVER CITY, CA

Licensee Name	GlobeCast North America Incorporated		
Latitude (NAD 83)	34° 1' 5.4" N		
Longitude (NAD 83)	118° 24' 14.2" W		
Ground Elevation (AMSL)	24.67 m / 80.9 ft		
Antenna Centerline (AGL)	2.74 m / 9.0 ft		
Antenna Model	Andrew Corporation ES46-CCP2		
Antenna Mode	Receive 4.0 GHz	Transmit 6.1 GHz	
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz
Max Available RF Power			-7.9 (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	51.02	0.20	559.82	-7.80	183.95
195	0.00	51.83	0.20	559.82	-7.80	183.95
200	0.00	52.97	0.20	559.82	-7.80	183.95
205	0.00	54.41	0.20	559.82	-7.80	183.95
210	0.00	56.14	0.20	559.82	-7.80	183.95
215	0.00	58.11	0.20	559.82	-7.80	183.95
220	0.00	60.31	0.20	559.82	-7.80	183.95
225	0.00	62.71	0.20	559.82	-7.80	183.95
230	0.00	65.28	0.20	559.82	-7.80	183.95
235	0.00	67.99	0.20	559.82	-7.80	183.95
240	0.00	70.82	0.20	559.82	-7.80	183.95
245	0.00	73.76	0.20	559.82	-7.80	183.95
250	0.33	76.68	0.20	502.76	-8.00	163.14
255	0.45	79.76	0.20	455.80	-8.00	147.35
260	0.56	82.90	0.20	423.55	-8.00	136.97
265	0.53	86.10	0.20	429.40	-8.00	138.83
270	0.46	89.32	0.20	450.42	-8.00	145.59
275	0.47	92.53	-0.91	430.66	-8.00	144.02
280	0.68	95.76	-2.33	368.23	-8.00	129.03
285	0.58	98.93	-3.73	370.52	-8.00	135.23
290	0.60	102.08	-6.93	335.11	-8.00	134.07
295	0.63	105.18	-10.99	292.55	-8.00	132.08
300	0.62	108.18	-14.94	262.69	-8.00	133.09
305	1.03	111.30	-16.40	208.23	-9.74	108.91
310	1.22	114.23	-16.40	198.69	-13.67	100.00
315	1.30	116.99	-16.40	194.92	-17.37	100.00
320	1.14	119.44	-16.40	202.88	-20.65	100.00
325	1.02	121.72	-16.40	208.80	-21.40	100.00
330	0.94	123.79	-16.40	216.29	-21.40	100.00
335	1.08	125.80	-16.40	205.81	-21.40	100.00
340	1.23	127.55	-16.40	198.32	-21.40	100.00
345	1.17	128.82	-16.40	201.32	-21.40	100.00
350	1.09	128.33	-16.40	205.56	-21.40	100.00
355	1.15	124.87	-16.40	202.23	-21.40	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
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DATED: July 18, 2018