

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Telemundo NBC Universal
MIAMI, FL
(4.8 meter C-band T/R)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
April 22, 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.

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 03/26/2018.

Company

Broward County Board of Commissioners
CBS Radio East, LLC.
COLLIER, COUNTY OF
Computer Office Solutions, Inc.
Embarq Florida, Inc.
Entercom Miami License, LLC
Florida Power and Light Company
Florida State
GM Consulting Group, Inc.
HiQ Data Corporation
Miami-Dade County
New Cingular Wireless PCS LLC - S FL
Olympic Wireless, LLC
Palm Beach, County of
South Florida Water Management District
Sprint Spectrum L.P.
T-Mobile License LLC
Verizon Wireless (VAW) LLC - S Florida
Verizon Wireless Personal Comm, LP(S FL)

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: 04/22/2018
Job Number: 180326COMSGE15

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code TELNBC
Licensee Name Telemundo NBC Universal

Site Information

MIAMI, FL

Venue Name
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 3.3 m / 10.8 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 67° W to 143° West Longitude
Azimuth Range 151.3° to 257.3°
Corresponding Elevation Angles 56.3° / 16.1°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

Receive - FCC32

Transmit - FCC32

Manufacturer	Vertex	Vertex
Model	4.8 KPC	4.8 KPC
Gain / Diameter	44.2 dBi / 4.8 m	48.1 dBi / 4.8 m
3-dB / 15-dB Beamwidth	1.14° / 2.39°	0.68° / 1.43°
Max Available RF Power (dBW/4 kHz)		-24.9
(dBW/MHz)		-0.9
Maximum EIRP (dBW/4 kHz)		23.2
(dBW/MHz)		47.2
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)	36M0G7W / 3700.0 - 4200.0	36M0G7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	585.7 km / 363.9 mi	149.2 km / 92.7 mi
Precipitation Scatter Contour Radius	594.0 km / 369.0 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

MIAMI, FL

Licensee Name Telemundo NBC Universal
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Ground Elevation (AMSL) 3.3 m / 10.8 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model Vertex 4.8 meter
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 -24.9 (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)
0	0.00	102.20	-10.00	412.20	-10.00	113.95
5	0.00	106.99	-10.00	412.20	-10.00	113.95
10	0.00	111.77	-10.00	412.20	-10.00	113.95
15	0.00	113.63	-10.00	412.20	-10.00	113.95
20	0.00	111.46	-10.00	412.20	-10.00	113.95
25	0.00	109.16	-10.00	412.20	-10.00	113.95
30	0.00	106.74	-10.00	412.20	-10.00	113.95
35	0.00	104.22	-10.00	412.20	-10.00	113.95
40	0.00	101.62	-10.00	412.20	-10.00	113.95
45	0.00	98.96	-10.00	412.20	-10.00	113.95
50	0.00	96.25	-10.00	412.20	-10.00	113.95
55	0.00	93.50	-10.00	412.20	-10.00	113.95
60	0.00	90.73	-10.00	412.20	-10.00	113.95
65	0.00	87.96	-10.00	412.20	-10.00	113.95
70	0.00	85.20	-10.00	412.20	-10.00	113.95
75	0.00	82.47	-10.00	412.20	-10.00	113.95
80	0.00	79.78	-10.00	412.20	-10.00	113.95
85	0.00	77.14	-10.00	412.20	-10.00	113.95
90	0.00	74.57	-10.00	412.20	-10.00	113.95
95	0.00	72.10	-10.00	412.20	-10.00	113.95
100	0.00	69.73	-10.00	412.20	-10.00	113.95
105	0.00	67.49	-10.00	412.20	-10.00	113.95
110	0.00	65.40	-10.00	412.20	-10.00	113.95
115	0.00	63.48	-10.00	412.20	-10.00	113.95
120	0.00	61.74	-10.00	412.20	-10.00	113.95
125	0.00	60.21	-10.00	412.20	-10.00	113.95
130	0.00	58.92	-10.00	412.20	-10.00	113.95
135	0.00	57.87	-10.00	412.20	-10.00	113.95
140	0.00	57.08	-10.00	412.20	-10.00	113.95
145	0.00	56.57	-10.00	412.20	-10.00	113.95
150	0.00	56.35	-10.00	412.20	-10.00	113.95
155	0.00	56.42	-10.00	412.20	-10.00	113.95
160	0.00	56.78	-10.00	412.20	-10.00	113.95
165	0.00	57.42	-10.00	412.20	-10.00	113.95
170	0.00	58.33	-10.00	412.20	-10.00	113.95
175	0.00	59.41	-10.00	412.20	-10.00	113.95
180	0.00	59.85	-10.00	412.20	-10.00	113.95
185	0.00	59.41	-10.00	412.20	-10.00	113.95

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Earth Station Data Sheet

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

Coordination Values

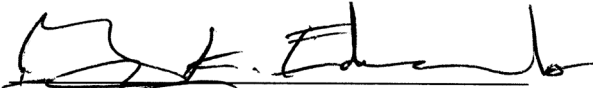
MIAMI, FL

Licensee Name	Telemundo NBC Universal			
Latitude (NAD 83)	25° 47' 40.6" N			
Longitude (NAD 83)	80° 23' 27.7" W			
Ground Elevation (AMSL)	3.3 m / 10.8 ft			
Antenna Centerline (AGL)	2.74 m / 9.0 ft			
Antenna Model	Vertex 4.8 meter			
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			-24.9 (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	58.15	-10.00	412.20	-10.00	113.95
195	0.00	56.15	-10.00	412.20	-10.00	113.95
200	0.00	53.56	-10.00	412.20	-10.00	113.95
205	0.00	50.51	-10.00	412.20	-10.00	113.95
210	0.00	47.11	-9.83	414.35	-9.83	114.38
215	0.00	43.44	-8.95	425.49	-8.95	116.58
220	0.00	39.56	-7.93	438.71	-7.93	117.27
225	0.00	35.53	-6.76	454.42	-6.76	120.41
230	0.00	31.38	-5.42	472.64	-5.42	124.28
235	0.00	27.26	-3.89	494.92	-3.89	128.99
240	0.00	23.47	-2.26	519.85	-2.26	134.41
245	0.00	20.17	-0.62	546.25	-0.62	140.28
250	0.00	17.65	0.83	570.52	0.83	145.79
255	0.00	16.27	1.71	585.74	1.71	149.17
260	0.00	16.34	1.67	585.01	1.67	149.00
265	0.00	17.82	0.73	568.73	0.73	145.38
270	0.00	20.42	-0.75	544.06	-0.75	139.79
275	0.00	23.77	-2.40	517.69	-2.40	133.93
280	0.00	27.60	-4.02	492.96	-4.02	128.57
285	0.00	31.73	-5.54	470.91	-5.54	123.92
290	0.00	36.06	-6.93	452.20	-6.93	119.96
295	0.00	40.53	-8.19	435.23	-8.19	116.59
300	0.00	45.09	-9.35	420.31	-9.35	115.56
305	0.00	49.72	-10.00	412.20	-10.00	113.95
310	0.00	54.40	-10.00	412.20	-10.00	113.95
315	0.00	59.12	-10.00	412.20	-10.00	113.95
320	0.00	63.86	-10.00	412.20	-10.00	113.95
325	0.00	68.63	-10.00	412.20	-10.00	113.95
330	0.00	73.41	-10.00	412.20	-10.00	113.95
335	0.00	78.20	-10.00	412.20	-10.00	113.95
340	0.00	83.00	-10.00	412.20	-10.00	113.95
345	0.00	87.80	-10.00	412.20	-10.00	113.95
350	0.00	92.60	-10.00	412.20	-10.00	113.95
355	0.00	97.40	-10.00	412.20	-10.00	113.95

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: April 22, 2018

COMSEARCH

Earth Station Data Sheet

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

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Telemundo NBC Universal
MIAMI, FL
(3.8 meter Ku-band T/R)
Satellite Earth Station

Prepared By:
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April 22, 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

Clearwire Spectrum Holdings III, LLC
Verizon Wireless (VAW) LLC - S Florida
Verizon Wireless Personal Comm, LP(S FL)
XO Communications, LLC

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 03/26/2018.

Company

AB Indiana, LLC
Alltel Communications LLC - S Florida
Alternative Choice Wireless, LLC
Altius Communications
Beasley Media Group Lienses, LLC
Bethesda Memorial Hospital
Brevard, County of
Broadwave, LLC
Broward County Board of Commissioners
CBS Radio East, LLC.
CBS Radio Stations Inc.
COLLIER, COUNTY OF
Cape Coral, City of
Cape Coral, City of
Charlotte County Board of County Comm
City of Hollywood, Florida
City of Melbourne
City of Miami Beach
City of Palm Bay
City of Pompano Beach Florida
Clearsurf International
Clearwire Spectrum Holdings III, LLC
Coconut Creek, City of
Computer Office Solutions, Inc.
Coral Gables, City of
Cox Radio, Inc. (Hollywood, FL)
Cyprexx
DNC Parks & Resorts at KSC Inc
Echo Technologies
Entercom Miami License, LLC
FL Courts 18th Judicial Circuit
Florida Department of Transportation
Florida High Speed Internet
Florida Keys Electric Cooperative Associ
Florida Mobile Telecom, Inc.
Florida Rural Broadband Alliance, LLC
Florida State
Florida, State of
Fort Lauderdale City Florida

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Gigabit Squared Telecom LLC
Global Telecom & Technology Americas
HARRIS CORPORATION
Hardee County - IDA
Harris Corporation - Florida
HiQ Data Corporation
Hialeah City Fire Department
Hialeah Housing Authority
Highlands County
Hillsborough County Sheriffs Office
Hollywood, City of fl
Hometown Broadband Orlando, LLC
Indian River Community College
Indian River, County of
Mb Development I/C Grand Beach Hotel
Miami City of
Miami-Dade County
Mosaic Fertilizer LLC
Mun Public Safety Comm Consortium(MPSCC)
New Cingular Wireless PCS LLC - N FL
New Cingular Wireless PCS LLC - S FL
Nextlink Wireless, LLC
Okeechobee County Fire Department
Olympic Wireless, LLC
Orlando City Police Department
Orlando Utilities Commission
Palm Beach, County of
Pdmnet Inc.
Plantation, City of
Rapid Systems, Inc
SkyNet360
Sling Broadband, LLC
South Florida Water Management District
Southeastern Construction & Maintenance
Sprint Communications Company, LP
Sprint PCS
Sprint Spectrum L.P.
Sprintcom, Inc
St. Lucie County Fire District
Sun Hydraulics Corp
T-Mobile License LLC
Towerstream Corp.
United States Sugar Corporation
Verizon Wireless (VAW) LLC - S Florida
Verizon Wireless Personal Comm, LP(S FL)
Wavetech Systems, LLC
Webpass Inc.
West Palm Beach, City of
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.

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19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Date: 04/22/2018
Job Number: 180326COMSGE16

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code TELNBC
Licensee Name Telemundo NBC Universal

Site Information MIAMI, FL

Venue Name
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 3.3 m / 10.8 ft

Link Information

Satellite Type Geostationary
Mode TR - Transmit-Receive
Modulation Digital
Satellite Arc 55° W to 143° West Longitude
Azimuth Range 132.5° to 257.3°
Corresponding Elevation Angles 48.7° / 16.1°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information

		Receive - FCC32		Transmit - FCC32	
Manufacturer		Vertex		Vertex	
Model		3.8 meter		3.8 meter	
Gain / Diameter		53.4 dBi / 3.8 m		52.5 dBi / 3.8 m	
3-dB / 15-dB Beamwidth		1.28° / 2.69°		0.85° / 1.79°	
Max Available RF Power	(dBW/4 kHz) (dBW/MHz)			-20.6 3.4	
Maximum EIRP	(dBW/4 kHz) (dBW/MHz)			31.9 55.9	
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%

Frequency Information

	Receive 11.0 GHz	Transmit 14.0 GHz
Emission / Frequency Range (MHz)	36M0G7W / 10950.0 - 11200.0 36M0G7W / 11450.0 - 12200.0	36M0G7W / 14000.0 - 14500.0
Max Great Circle Coordination Distance	423.0 km / 262.8 mi	168.0 km / 104.4 mi
Precipitation Scatter Contour Radius	552.8 km / 343.5 mi	100.0 km / 62.1 mi

COMSEARCH

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Coordination Values

MIAMI, FL

Licensee Name Telemundo NBC Universal
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Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model Vertex 3.8 meter
Antenna Mode Receive 11.0 GHz Transmit 14.0 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 -20.6 (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)
0	0.00	102.20	-10.00	307.68	-10.00	125.11
5	0.00	106.99	-10.00	307.68	-10.00	125.11
10	0.00	110.78	-10.00	307.68	-10.00	125.11
15	0.00	107.75	-10.00	307.68	-10.00	125.11
20	0.00	104.64	-10.00	307.68	-10.00	125.11
25	0.00	101.46	-10.00	307.68	-10.00	125.11
30	0.00	98.22	-10.00	307.68	-10.00	125.11
35	0.00	94.95	-10.00	307.68	-10.00	125.11
40	0.00	91.66	-10.00	307.68	-10.00	125.11
45	0.00	88.36	-10.00	307.68	-10.00	125.11
50	0.00	85.07	-10.00	307.68	-10.00	125.11
55	0.00	81.80	-10.00	307.68	-10.00	125.11
60	0.00	78.56	-10.00	307.68	-10.00	125.11
65	0.00	75.38	-10.00	307.68	-10.00	125.11
70	0.00	72.27	-10.00	307.68	-10.00	125.11
75	0.00	69.24	-10.00	307.68	-10.00	125.11
80	0.00	66.32	-10.00	307.68	-10.00	125.11
85	0.00	63.53	-10.00	307.68	-10.00	125.11
90	0.00	60.89	-10.00	307.68	-10.00	125.11
95	0.00	58.43	-10.00	307.68	-10.00	125.11
100	0.00	56.18	-10.00	307.68	-10.00	125.11
105	0.00	54.17	-10.00	307.68	-10.00	125.11
110	0.00	52.43	-10.00	307.68	-10.00	125.11
115	0.00	51.00	-10.00	307.68	-10.00	125.11
120	0.00	49.89	-10.00	307.68	-10.00	125.11
125	0.00	49.13	-10.00	307.68	-10.00	125.11
130	0.00	48.75	-10.00	307.68	-10.00	125.11
135	0.00	48.75	-10.00	307.68	-10.00	125.11
140	0.00	49.13	-10.00	307.68	-10.00	125.11
145	0.00	49.88	-10.00	307.68	-10.00	125.11
150	0.00	50.99	-10.00	307.68	-10.00	125.11
155	0.00	52.42	-10.00	307.68	-10.00	125.11
160	0.00	54.16	-10.00	307.68	-10.00	125.11
165	0.00	56.17	-10.00	307.68	-10.00	125.11
170	0.00	58.15	-10.00	307.68	-10.00	125.11
175	0.00	59.41	-10.00	307.68	-10.00	125.11
180	0.00	59.85	-10.00	307.68	-10.00	125.11
185	0.00	59.41	-10.00	307.68	-10.00	125.11

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19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Coordination Values

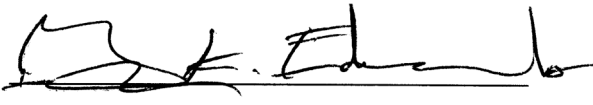
MIAMI, FL

Licensee Name	Telemundo NBC Universal			
Latitude (NAD 83)	25° 47' 40.6" N			
Longitude (NAD 83)	80° 23' 27.7" W			
Ground Elevation (AMSL)	3.3 m / 10.8 ft			
Antenna Centerline (AGL)	2.74 m / 9.0 ft			
Antenna Model	Vertex 3.8 meter			
Antenna Mode	Receive 11.0 GHz		Transmit 14.0 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			-20.6 (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	58.15	-10.00	307.68	-10.00	125.11
195	0.00	56.15	-10.00	307.68	-10.00	125.11
200	0.00	53.56	-10.00	307.68	-10.00	125.11
205	0.00	50.51	-10.00	307.68	-10.00	125.11
210	0.00	47.11	-9.83	309.11	-9.83	125.68
215	0.00	43.44	-8.95	316.55	-8.95	128.57
220	0.00	39.56	-7.93	325.36	-7.93	131.96
225	0.00	35.53	-6.76	335.57	-6.76	135.94
230	0.00	31.38	-5.42	348.13	-5.42	140.63
235	0.00	27.26	-3.89	362.96	-3.89	144.08
240	0.00	23.47	-2.26	379.49	-2.26	150.31
245	0.00	20.17	-0.62	396.96	-0.62	157.20
250	0.00	17.65	0.83	412.97	0.83	163.77
255	0.00	16.27	1.71	422.99	1.71	167.98
260	0.00	16.34	1.67	422.51	1.67	167.78
265	0.00	17.82	0.73	411.79	0.73	163.28
270	0.00	20.42	-0.75	395.51	-0.75	156.62
275	0.00	23.77	-2.40	378.06	-2.40	149.76
280	0.00	27.60	-4.02	361.65	-4.02	143.60
285	0.00	31.73	-5.54	346.98	-5.54	140.20
290	0.00	36.06	-6.93	334.09	-6.93	135.38
295	0.00	40.53	-8.19	323.04	-8.19	131.07
300	0.00	45.09	-9.35	313.09	-9.35	127.23
305	0.00	49.72	-10.00	307.68	-10.00	125.11
310	0.00	54.40	-10.00	307.68	-10.00	125.11
315	0.00	59.12	-10.00	307.68	-10.00	125.11
320	0.00	63.86	-10.00	307.68	-10.00	125.11
325	0.00	68.63	-10.00	307.68	-10.00	125.11
330	0.00	73.41	-10.00	307.68	-10.00	125.11
335	0.00	78.20	-10.00	307.68	-10.00	125.11
340	0.00	83.00	-10.00	307.68	-10.00	125.11
345	0.00	87.80	-10.00	307.68	-10.00	125.11
350	0.00	92.60	-10.00	307.68	-10.00	125.11
355	0.00	97.40	-10.00	307.68	-10.00	125.11

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: April 22, 2018

COMSEARCH

Earth Station Data Sheet

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

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Telemundo NBC Universal
MIAMI, FL
(3.8 meter R/O)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
April 22, 2018

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COMSEARCH

Earth Station Data Sheet

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

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.

COMSEARCH

Earth Station Data Sheet

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

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.

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

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 03/26/2018.

Company
Comsearch

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: 04/22/2018
Job Number: 180326COMSGE17

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code TELNBC
Licensee Name Telemundo NBC Universal

Site Information MIAMI, FL

Venue Name
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 3.3 m / 10.8 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 15° W to 139° West Longitude
Azimuth Range 101.3° to 255.1°
Corresponding Elevation Angles 13.6° / 19.8°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information Receive - FCC32

Manufacturer Prodelin
Model 3.8 meter
Gain / Diameter 42.1 dBi / 3.8 m
3-dB / 15-dB Beamwidth 1.28° / 2.69°

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Frequency Information Receive 4.0 GHz

Emission / Frequency Range (MHz) 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 620.3 km / 385.4 mi
Precipitation Scatter Contour Radius 605.9 km / 376.5 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

MIAMI, FL

Licensee Name Telemundo NBC Universal
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Ground Elevation (AMSL) 3.3 m / 10.8 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model Prodelin 3.8 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	100.96	-10.00	412.20
5	0.00	96.10	-10.00	412.20
10	0.00	91.24	-10.00	412.20
15	0.00	86.38	-10.00	412.20
20	0.00	81.52	-10.00	412.20
25	0.00	76.66	-10.00	412.20
30	0.00	71.81	-10.00	412.20
35	0.00	66.97	-10.00	412.20
40	0.00	62.15	-10.00	412.20
45	0.00	57.33	-10.00	412.20
50	0.00	52.54	-10.00	412.20
55	0.00	47.78	-9.98	412.42
60	0.00	43.06	-8.85	426.69
65	0.00	38.40	-7.61	443.01
70	0.00	33.81	-6.23	461.83
75	0.00	29.35	-4.69	483.12
80	0.00	25.06	-2.97	508.78
85	0.00	21.07	-1.09	538.53
90	0.00	17.57	0.88	571.34
95	0.00	14.92	2.65	602.39
100	0.00	13.62	3.64	620.28
105	0.00	14.06	3.30	614.05
110	0.00	16.09	1.84	587.95
115	0.00	19.21	-0.09	555.03
120	0.00	22.98	-2.03	523.44
125	0.00	27.13	-3.84	495.69
130	0.00	31.38	-5.41	472.64
135	0.00	35.53	-6.76	454.42
140	0.00	39.56	-7.93	438.72
145	0.00	43.43	-8.95	425.49
150	0.00	47.11	-9.83	414.35
155	0.00	50.51	-10.00	412.20
160	0.00	53.56	-10.00	412.20
165	0.00	56.15	-10.00	412.20
170	0.00	58.15	-10.00	412.20
175	0.00	59.41	-10.00	412.20
180	0.00	59.85	-10.00	412.20
185	0.00	59.41	-10.00	412.20

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

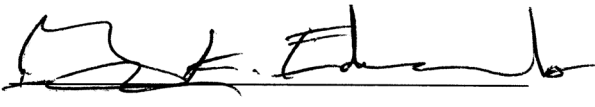
MIAMI, FL

Licensee Name Telemundo NBC Universal
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Ground Elevation (AMSL) 3.3 m / 10.8 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model Prodelin 3.8 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	58.15	-10.00	412.20
195	0.00	56.15	-10.00	412.20
200	0.00	53.56	-10.00	412.20
205	0.00	50.51	-10.00	412.20
210	0.00	47.11	-9.83	414.35
215	0.00	43.44	-8.95	425.49
220	0.00	39.56	-7.93	438.71
225	0.00	35.53	-6.76	454.42
230	0.00	31.58	-5.49	471.64
235	0.00	27.93	-4.15	491.00
240	0.00	24.72	-2.83	511.06
245	0.00	22.14	-1.63	529.90
250	0.00	20.41	-0.75	544.10
255	0.00	19.79	-0.41	549.67
260	0.00	20.35	-0.72	544.63
265	0.00	22.02	-1.57	530.77
270	0.00	24.57	-2.76	512.08
275	0.00	27.76	-4.08	492.02
280	0.00	31.39	-5.42	472.60
285	0.00	35.32	-6.70	455.29
290	0.00	39.47	-7.91	439.04
295	0.00	43.77	-9.03	424.43
300	0.00	48.18	-10.00	412.20
305	0.00	52.67	-10.00	412.20
310	0.00	57.22	-10.00	412.20
315	0.00	61.82	-10.00	412.20
320	0.00	66.45	-10.00	412.20
325	0.00	71.11	-10.00	412.20
330	0.00	75.78	-10.00	412.20
335	0.00	80.48	-10.00	412.20
340	0.00	85.18	-10.00	412.20
345	0.00	89.88	-10.00	412.20
350	0.00	94.58	-10.00	412.20
355	0.00	99.28	-10.00	412.20

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: April 22, 2018

COMSEARCH

Earth Station Data Sheet

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

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Telemundo NBC Universal
MIAMI, FL
(7.3 meter R/O)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
April 22, 2018

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COMSEARCH

Earth Station Data Sheet

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

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.

COMSEARCH

Earth Station Data Sheet

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

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.

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

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 03/26/2018.

Company
Comsearch

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: 04/22/2018
Job Number: 180326COMSGE18

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code TELNBC
Licensee Name Telemundo NBC Universal

Site Information MIAMI, FL

Venue Name
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 3.3 m / 10.8 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 15° W to 105° West Longitude
Azimuth Range 101.3° to 226.5°
Corresponding Elevation Angles 13.6° / 49.3°
Antenna Centerline (AGL) 3.66 m / 12.0 ft

Antenna Information Receive - FCC32

Manufacturer General Dynamics
Model 7.3 meter
Gain / Diameter 48.1 dBi / 7.3 m
3-dB / 15-dB Beamwidth 0.67° / 1.41°

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Frequency Information Receive 4.0 GHz

Emission / Frequency Range (MHz) 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 620.3 km / 385.4 mi
Precipitation Scatter Contour Radius 605.9 km / 376.5 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

MIAMI, FL

Licensee Name Telemundo NBC Universal
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Ground Elevation (AMSL) 3.3 m / 10.8 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model GD 7.3 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	100.96	-10.00	412.20
5	0.00	96.10	-10.00	412.20
10	0.00	91.24	-10.00	412.20
15	0.00	86.38	-10.00	412.20
20	0.00	81.52	-10.00	412.20
25	0.00	76.66	-10.00	412.20
30	0.00	71.81	-10.00	412.20
35	0.00	66.97	-10.00	412.20
40	0.00	62.15	-10.00	412.20
45	0.00	57.33	-10.00	412.20
50	0.00	52.54	-10.00	412.20
55	0.00	47.78	-9.98	412.42
60	0.00	43.06	-8.85	426.69
65	0.00	38.40	-7.61	443.01
70	0.00	33.81	-6.23	461.83
75	0.00	29.35	-4.69	483.12
80	0.00	25.06	-2.97	508.78
85	0.00	21.07	-1.09	538.53
90	0.00	17.57	0.88	571.34
95	0.00	14.92	2.65	602.39
100	0.00	13.62	3.64	620.28
105	0.00	14.06	3.30	614.05
110	0.00	16.09	1.84	587.95
115	0.00	19.21	-0.09	555.03
120	0.00	22.98	-2.03	523.44
125	0.00	27.13	-3.84	495.69
130	0.00	31.38	-5.41	472.64
135	0.00	35.53	-6.76	454.42
140	0.00	39.56	-7.93	438.72
145	0.00	43.43	-8.95	425.49
150	0.00	47.11	-9.83	414.35
155	0.00	50.51	-10.00	412.20
160	0.00	53.56	-10.00	412.20
165	0.00	56.15	-10.00	412.20
170	0.00	58.15	-10.00	412.20
175	0.00	59.41	-10.00	412.20
180	0.00	59.85	-10.00	412.20
185	0.00	59.41	-10.00	412.20

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

MIAMI, FL

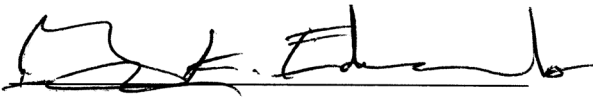
Licensee Name Telemundo NBC Universal
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Ground Elevation (AMSL) 3.3 m / 10.8 ft
Antenna Centerline (AGL) 3.66 m / 12.0 ft
Antenna Model GD 7.3 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	58.15	-10.00	412.20
195	0.00	56.19	-10.00	412.20
200	0.00	54.27	-10.00	412.20
205	0.00	52.62	-10.00	412.20
210	0.00	51.28	-10.00	412.20
215	0.00	50.26	-10.00	412.20
220	0.00	49.60	-10.00	412.20
225	0.00	49.30	-10.00	412.20
230	0.00	49.38	-10.00	412.20
235	0.00	49.83	-10.00	412.20
240	0.00	50.64	-10.00	412.20
245	0.00	51.79	-10.00	412.20
250	0.00	53.27	-10.00	412.20
255	0.00	55.03	-10.00	412.20
260	0.00	57.06	-10.00	412.20
265	0.00	59.32	-10.00	412.20
270	0.00	61.78	-10.00	412.20
275	0.00	64.41	-10.00	412.20
280	0.00	67.19	-10.00	412.20
285	0.00	70.09	-10.00	412.20
290	0.00	73.10	-10.00	412.20
295	0.00	76.19	-10.00	412.20
300	0.00	79.35	-10.00	412.20
305	0.00	82.55	-10.00	412.20
310	0.00	85.79	-10.00	412.20
315	0.00	89.04	-10.00	412.20
320	0.00	92.31	-10.00	412.20
325	0.00	95.56	-10.00	412.20
330	0.00	98.78	-10.00	412.20
335	0.00	101.97	-10.00	412.20
340	0.00	105.10	-10.00	412.20
345	0.00	108.16	-10.00	412.20
350	0.00	110.65	-10.00	412.20
355	0.00	105.81	-10.00	412.20

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: April 22, 2018

COMSEARCH

Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
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FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Telemundo NBC Universal
MIAMI, FL
(3.7 meter R/O)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
April 22, 2018

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19700 Janelia Farm Boulevard, Ashburn, VA 20147
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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.

COMSEARCH

Earth Station Data Sheet

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

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.

COMSEARCH
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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 03/26/2018.

Company
Comsearch

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.

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Earth Station Data Sheet

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

Date: 04/22/2018
Job Number: 180326COMSGE19

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code TELNBC
Licensee Name Telemundo NBC Universal

Site Information MIAMI, FL

Venue Name
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 3.3 m / 10.8 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 15° W to 139° West Longitude
Azimuth Range 101.3° to 255.1°
Corresponding Elevation Angles 13.6° / 19.8°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information Receive - FCC32

Manufacturer General Dynamics
Model 3.7 meter
Gain / Diameter 40.9 dBi / 3.7 m
3-dB / 15-dB Beamwidth 1.45° / 2.90°

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Frequency Information Receive 4.0 GHz

Emission / Frequency Range (MHz) 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 620.3 km / 385.4 mi
Precipitation Scatter Contour Radius 605.9 km / 376.5 mi

COMSEARCH

Earth Station Data Sheet

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

Coordination Values

MIAMI, FL

Licensee Name Telemundo NBC Universal
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Ground Elevation (AMSL) 3.3 m / 10.8 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model GD 3.7 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	100.96	-10.00	412.20
5	0.00	96.10	-10.00	412.20
10	0.00	91.24	-10.00	412.20
15	0.00	86.38	-10.00	412.20
20	0.00	81.52	-10.00	412.20
25	0.00	76.66	-10.00	412.20
30	0.00	71.81	-10.00	412.20
35	0.00	66.97	-10.00	412.20
40	0.00	62.15	-10.00	412.20
45	0.00	57.33	-10.00	412.20
50	0.00	52.54	-10.00	412.20
55	0.00	47.78	-9.98	412.42
60	0.00	43.06	-8.85	426.69
65	0.00	38.40	-7.61	443.01
70	0.00	33.81	-6.23	461.83
75	0.00	29.35	-4.69	483.12
80	0.00	25.06	-2.97	508.78
85	0.00	21.07	-1.09	538.53
90	0.00	17.57	0.88	571.34
95	0.00	14.92	2.65	602.39
100	0.00	13.62	3.64	620.28
105	0.00	14.06	3.30	614.05
110	0.00	16.09	1.84	587.95
115	0.00	19.21	-0.09	555.03
120	0.00	22.98	-2.03	523.44
125	0.00	27.13	-3.84	495.69
130	0.00	31.38	-5.41	472.64
135	0.00	35.53	-6.76	454.42
140	0.00	39.56	-7.93	438.72
145	0.00	43.43	-8.95	425.49
150	0.00	47.11	-9.83	414.35
155	0.00	50.51	-10.00	412.20
160	0.00	53.56	-10.00	412.20
165	0.00	56.15	-10.00	412.20
170	0.00	58.15	-10.00	412.20
175	0.00	59.41	-10.00	412.20
180	0.00	59.85	-10.00	412.20
185	0.00	59.41	-10.00	412.20

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19700 Janelia Farm Boulevard, Ashburn, VA 20147
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Coordination Values

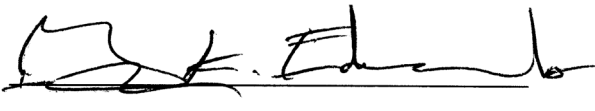
MIAMI, FL

Licensee Name Telemundo NBC Universal
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Ground Elevation (AMSL) 3.3 m / 10.8 ft
Antenna Centerline (AGL) 2.74 m / 9.0 ft
Antenna Model GD 3.7 meter
Antenna Mode Receive 4.0 GHz
Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	58.15	-10.00	412.20
195	0.00	56.15	-10.00	412.20
200	0.00	53.56	-10.00	412.20
205	0.00	50.51	-10.00	412.20
210	0.00	47.11	-9.83	414.35
215	0.00	43.44	-8.95	425.49
220	0.00	39.56	-7.93	438.71
225	0.00	35.53	-6.76	454.42
230	0.00	31.58	-5.49	471.64
235	0.00	27.93	-4.15	491.00
240	0.00	24.72	-2.83	511.06
245	0.00	22.14	-1.63	529.90
250	0.00	20.41	-0.75	544.10
255	0.00	19.79	-0.41	549.67
260	0.00	20.35	-0.72	544.63
265	0.00	22.02	-1.57	530.77
270	0.00	24.57	-2.76	512.08
275	0.00	27.76	-4.08	492.02
280	0.00	31.39	-5.42	472.60
285	0.00	35.32	-6.70	455.29
290	0.00	39.47	-7.91	439.04
295	0.00	43.77	-9.03	424.43
300	0.00	48.18	-10.00	412.20
305	0.00	52.67	-10.00	412.20
310	0.00	57.22	-10.00	412.20
315	0.00	61.82	-10.00	412.20
320	0.00	66.45	-10.00	412.20
325	0.00	71.11	-10.00	412.20
330	0.00	75.78	-10.00	412.20
335	0.00	80.48	-10.00	412.20
340	0.00	85.18	-10.00	412.20
345	0.00	89.88	-10.00	412.20
350	0.00	94.58	-10.00	412.20
355	0.00	99.28	-10.00	412.20

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: April 22, 2018

COMSEARCH

Earth Station Data Sheet

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

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Telemundo NBC Universal
MIAMI, FL
(4.8 meter R/O)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
April 22, 2018

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2. SUMMARY OF RESULTS 4
3. SUPPLEMENTAL SHOWING 5
4. EARTH STATION COORDINATION DATA..... 6
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Earth Station Data Sheet

19700 Janelia Farm Boulevard, Ashburn, VA 20147
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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.

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Coordination data for this earth station was sent to the below listed carriers with a letter dated 03/26/2018.

Company
Comsearch

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.

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Earth Station Data Sheet

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

Date: 04/22/2018
Job Number: 180326COMSGE20

Administrative Information

Status ENGINEER PROPOSAL
Call Sign
Licensee Code TELNBC
Licensee Name Telemundo NBC Universal

Site Information MIAMI, FL

Venue Name
Latitude (NAD 83) 25° 47' 40.6" N
Longitude (NAD 83) 80° 23' 27.7" W
Climate Zone B
Rain Zone 1
Ground Elevation (AMSL) 3.3 m / 10.8 ft

Link Information

Satellite Type Geostationary
Mode RO - Receive-Only
Modulation Digital
Satellite Arc 15° W to 105° West Longitude
Azimuth Range 101.3° to 226.5°
Corresponding Elevation Angles 13.6° / 49.3°
Antenna Centerline (AGL) 2.74 m / 9.0 ft

Antenna Information Receive - FCC32

Manufacturer General Dynamics
Model 4.8 meter
Gain / Diameter 44.2 dBi / 4.8 m
3-dB / 15-dB Beamwidth 1.04° / 2.08°

Interference Objectives: Long Term -156.0 dBW/MHz 20%
Short Term -146.0 dBW/MHz 0.01%

Frequency Information Receive 4.0 GHz

Emission / Frequency Range (MHz) 36M0G7W / 3700.0 - 4200.0

Max Great Circle Coordination Distance 620.3 km / 385.4 mi
Precipitation Scatter Contour Radius 605.9 km / 376.5 mi

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			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	100.96	-10.00	412.20
5	0.00	96.10	-10.00	412.20
10	0.00	91.24	-10.00	412.20
15	0.00	86.38	-10.00	412.20
20	0.00	81.52	-10.00	412.20
25	0.00	76.66	-10.00	412.20
30	0.00	71.81	-10.00	412.20
35	0.00	66.97	-10.00	412.20
40	0.00	62.15	-10.00	412.20
45	0.00	57.33	-10.00	412.20
50	0.00	52.54	-10.00	412.20
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65	0.00	38.40	-7.61	443.01
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80	0.00	25.06	-2.97	508.78
85	0.00	21.07	-1.09	538.53
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120	0.00	22.98	-2.03	523.44
125	0.00	27.13	-3.84	495.69
130	0.00	31.38	-5.41	472.64
135	0.00	35.53	-6.76	454.42
140	0.00	39.56	-7.93	438.72
145	0.00	43.43	-8.95	425.49
150	0.00	47.11	-9.83	414.35
155	0.00	50.51	-10.00	412.20
160	0.00	53.56	-10.00	412.20
165	0.00	56.15	-10.00	412.20
170	0.00	58.15	-10.00	412.20
175	0.00	59.41	-10.00	412.20
180	0.00	59.85	-10.00	412.20
185	0.00	59.41	-10.00	412.20

COMSEARCH

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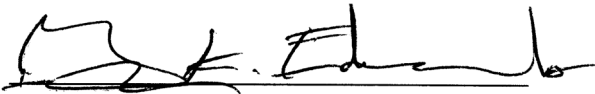
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Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 4.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	58.15	-10.00	412.20
195	0.00	56.19	-10.00	412.20
200	0.00	54.27	-10.00	412.20
205	0.00	52.62	-10.00	412.20
210	0.00	51.28	-10.00	412.20
215	0.00	50.26	-10.00	412.20
220	0.00	49.60	-10.00	412.20
225	0.00	49.30	-10.00	412.20
230	0.00	49.38	-10.00	412.20
235	0.00	49.83	-10.00	412.20
240	0.00	50.64	-10.00	412.20
245	0.00	51.79	-10.00	412.20
250	0.00	53.27	-10.00	412.20
255	0.00	55.03	-10.00	412.20
260	0.00	57.06	-10.00	412.20
265	0.00	59.32	-10.00	412.20
270	0.00	61.78	-10.00	412.20
275	0.00	64.41	-10.00	412.20
280	0.00	67.19	-10.00	412.20
285	0.00	70.09	-10.00	412.20
290	0.00	73.10	-10.00	412.20
295	0.00	76.19	-10.00	412.20
300	0.00	79.35	-10.00	412.20
305	0.00	82.55	-10.00	412.20
310	0.00	85.79	-10.00	412.20
315	0.00	89.04	-10.00	412.20
320	0.00	92.31	-10.00	412.20
325	0.00	95.56	-10.00	412.20
330	0.00	98.78	-10.00	412.20
335	0.00	101.97	-10.00	412.20
340	0.00	105.10	-10.00	412.20
345	0.00	108.16	-10.00	412.20
350	0.00	110.65	-10.00	412.20
355	0.00	105.81	-10.00	412.20

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: April 22, 2018