

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**SES Americom, Inc.**  
**CEDAR HILL, TX**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
May 22, 2017

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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 04/19/2017.

Company

3 Rooms Communications LLC  
AMA Communications, LLC  
AMG Technology Investment Group LLC  
AT&T Corp.  
AT&T Mobility Spectrum LLC - North Texas  
Air Canopy Internet Services, Inc.  
BNSF Railway Company  
BelWave Communications  
BlueStone Natural Resources II  
CBS Radio Texas Inc  
Carrollton City of Texas/ACS  
Cingular Wireless of Texas RSA #16 LP  
City of Allen, Texas  
City of Dallas  
City of Denton Water Production Division  
City of Farmers Branch Texas  
City of Grand Prairie  
City of Irving  
City of Plano  
City of Richardson  
City of University Park  
Clearwire Spectrum Holdings III, LLC  
Collin, County of  
Conterra Ultra Broadband, LLC  
Dallas Area Rapid Transit Authority  
Denton County  
Digitex.com  
GTT America LLC  
GameStop Inc  
Garland, City of  
Genco, Inc.  
Global Telecom & Technology Americas  
HILCO Electric Cooperative, Inc.  
Legacy ISP, LLC  
Legacy Texas Bank  
MHO Networks  
Mica Corporation  
Midlothian Independent School District  
NW Communications of Texas, Inc.  
NeXXCom Wireless LLC

New Cingular Wireless PCS LLC - N Texas  
New Source Broadband I LLC  
Nextlink Wireless, LLC  
Olympic Wireless, LLC  
One Ring Networks, Inc.  
Ovilla, City of TX  
Prosper, City of  
Quinlan Independent School District  
Red Oak, City of  
Rhino Communications, Inc  
Rockwall, City of  
SBB Holding, LLC  
SmartBurst LLC  
Speed of Light Broadband  
Sprint Communications Company, LP  
Sprint Spectrum L.P.  
Sprintcom, Inc  
T-Mobile License LLC  
TMN, Inc.  
Tarrant County  
Technical Chemical Corporation  
Texas New Mexico Power Company  
Towerstream Corp.  
Union Pacific Railroad Company  
Univ of Texas Southwestern Medical  
Universal Display& Fixture Company  
Verizon Wireless (VAW) LLC-C TX/LA/AR  
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: 05/22/2017  
Job Number: 170419COMSGE04

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### Administrative Information

Status ENGINEER PROPOSAL  
Call Sign  
Licensee Code P3210  
Licensee Name SES Americom, Inc.

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### Site Information CEDAR HILL, TX

Venue Name  
Latitude (NAD 83) 32° 34' 41.8" N  
Longitude (NAD 83) 96° 58' 57.2" W  
Climate Zone A  
Rain Zone 2  
Ground Elevation (AMSL) 201.32 m / 660.5 ft

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### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 30° W to 164° West Longitude  
Azimuth Range 102.9° to 257.1°  
Corresponding Elevation Angles 10.7° / 10.7°  
Antenna Centerline (AGL) 3.66 m / 12.0 ft

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### Antenna Information

	Receive - FCC32	Transmit - FCC32
Manufacturer	GD Satcom	GD Satcom
Model	6.3 meter	6.3 meter
Gain / Diameter	59.5 dBi / 6.3 m	62.8 dBi / 6.3 m
3-dB / 15-dB Beamwidth	0.16° / 0.32°	0.11° / 0.22°
Max Available RF Power (dBW/4 kHz)		-20.5
(dBW/MHz)		3.5
Maximum EIRP (dBW/4 kHz)		42.3
(dBW/MHz)		66.3
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%

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### Frequency Information

	Receive 18.0 GHz	Transmit 28.0 GHz
Emission / Frequency Range (MHz)	N0N - 250MG7W / 18550.0 - 18800.0 N0N - 250MG7W / 19700.0 - 20200.0	N0N - 250MG7W / 28350.0 - 28600.0 N0N - 250MG7W / 29500.0 - 29500.0
Max Great Circle Coordination Distance	146.5 km / 91.0 mi	100.0 km / 62.1 mi
Precipitation Scatter Contour Radius	100.0 km / 62.1 mi	100.0 km / 62.1 mi



# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### CEDAR HILL, TX

Licensee Name SES Americom, Inc.  
Latitude (NAD 83) 32° 34' 41.8" N  
Longitude (NAD 83) 96° 58' 57.2" W  
Ground Elevation (AMSL) 201.32 m / 660.5 ft  
Antenna Centerline (AGL) 3.66 m / 12.0 ft  
Antenna Model GD Satcom 6.3 meter  
Antenna Mode Receive 18.0 GHz Transmit 28.0 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 -20.5 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	4.26	102.78	-10.00	100.00	-10.00	100.00
5	5.13	97.85	-10.00	100.00	-10.00	100.00
10	4.56	92.87	-10.00	100.00	-10.00	100.00
15	3.78	87.90	-10.00	100.00	-10.00	100.00
20	3.49	82.94	-10.00	100.00	-10.00	100.00
25	3.52	77.98	-10.00	100.00	-10.00	100.00
30	3.76	73.02	-10.00	100.00	-10.00	100.00
35	3.28	68.08	-10.00	100.00	-10.00	100.00
40	2.70	63.17	-10.00	100.00	-10.00	100.00
45	2.92	58.22	-10.00	100.00	-10.00	100.00
50	2.95	53.28	-10.00	100.00	-10.00	100.00
55	2.97	48.35	-10.00	100.00	-10.00	100.00
60	2.92	43.45	-8.95	100.00	-8.95	100.00
65	2.82	38.57	-7.66	100.00	-7.66	100.00
70	2.80	33.72	-6.20	100.00	-6.20	100.00
75	2.59	28.95	-4.54	100.00	-4.54	100.00
80	1.36	24.62	-2.78	103.53	-2.78	100.00
85	1.39	20.09	-0.57	108.93	-0.57	100.00
90	1.21	15.95	1.93	120.32	1.93	100.00
95	1.60	12.01	5.01	120.78	5.01	100.00
100	1.97	9.18	7.92	122.21	7.92	100.00
105	2.27	8.69	8.53	118.78	8.53	100.00
110	2.43	10.88	6.08	107.53	6.08	100.00
115	2.63	14.51	2.96	100.00	2.96	100.00
120	2.48	18.60	0.26	100.00	0.26	100.00
125	3.20	22.08	-1.60	100.00	-1.60	100.00
130	4.41	25.13	-3.00	100.00	-3.00	100.00
135	6.02	27.73	-4.07	100.00	-4.07	100.00
140	7.21	30.35	-5.05	100.00	-5.05	100.00
145	7.47	33.33	-6.07	100.00	-6.07	100.00
150	8.83	35.15	-6.65	100.00	-6.65	100.00
155	9.24	37.27	-7.28	100.00	-7.28	100.00
160	7.38	40.95	-8.31	100.00	-8.31	100.00
165	6.45	43.47	-8.95	100.00	-8.95	100.00
170	5.86	45.25	-9.39	100.00	-9.39	100.00
175	4.85	46.99	-9.80	100.00	-9.80	100.00
180	4.52	47.57	-9.93	100.00	-9.93	100.00
185	4.81	47.02	-9.81	100.00	-9.81	100.00

# COMSEARCH

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### Coordination Values

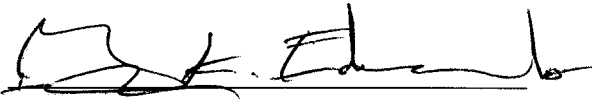
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Short Term -146.0 dBW/MHz 0.01% -128.0 dBW/4 kHz 0.0025%  
Max Available RF Power -20.5 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Receive 18.0 GHz		Transmit 28.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	4.44	46.61	-9.71	100.00	-9.71	100.00
195	3.86	45.82	-9.53	100.00	-9.53	100.00
200	4.06	43.81	-9.04	100.00	-9.04	100.00
205	3.75	41.76	-8.52	100.00	-8.52	100.00
210	3.91	38.93	-7.76	100.00	-7.76	100.00
215	4.02	35.82	-6.85	100.00	-6.85	100.00
220	4.32	32.33	-5.74	100.00	-5.74	100.00
225	5.43	28.12	-4.22	100.00	-4.22	100.00
230	5.82	24.24	-2.61	100.00	-2.61	100.00
235	6.07	20.32	-0.70	100.00	-0.70	100.00
240	5.99	16.51	1.56	100.00	1.56	100.00
245	5.74	12.69	4.42	100.00	4.42	100.00
250	5.31	8.91	8.25	100.00	8.25	100.00
255	4.38	6.63	11.46	100.00	11.46	100.00
260	4.23	7.04	10.81	100.00	10.81	100.00
265	4.13	10.21	6.77	100.00	6.77	100.00
270	3.68	14.61	2.88	100.00	2.88	100.00
275	2.88	19.43	-0.21	100.00	-0.21	100.00
280	1.71	24.47	-2.71	100.00	-2.71	100.00
285	0.42	29.54	-4.76	132.67	-4.76	100.00
290	0.00	34.37	-6.40	146.54	-6.40	100.00
295	0.00	39.12	-7.81	142.36	-7.81	100.00
300	0.00	43.92	-9.07	138.77	-9.07	100.00
305	0.00	48.75	-10.00	136.18	-10.00	100.00
310	0.00	53.61	-10.00	136.18	-10.00	100.00
315	0.39	58.44	-10.00	122.11	-10.00	100.00
320	0.46	63.33	-10.00	117.21	-10.00	100.00
325	0.62	68.22	-10.00	109.02	-10.00	100.00
330	1.57	73.09	-10.00	100.00	-10.00	100.00
335	1.76	78.01	-10.00	100.00	-10.00	100.00
340	2.61	82.94	-10.00	100.00	-10.00	100.00
345	2.59	87.89	-10.00	100.00	-10.00	100.00
350	2.27	92.84	-10.00	100.00	-10.00	100.00
355	2.32	97.78	-10.00	100.00	-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: May 22, 2017