

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**RCN License Subsidiary, Inc.**  
**SUNLAND PARK, NM**  
**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147  
March 27, 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

New Cingular Wireless PCS, LLC - NM

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 01/12/2018.

Company

AT&T Mobility Spectrum LLC - NM, N TX  
Alltel Comm Southwest Holdings Inc.  
Chaparral CableVision Inc,  
County of El Paso  
Dallas MTA, L.P.  
Dona Ana County Sheriff Dept  
El Paso Electric Company  
El Paso Natural Gas Company, LLC  
El Paso Water Utililities, Pub Ser Board  
Hudspeth County Sheriffs Office  
Krwg TV  
Mesilla Valley Regional Dispatch Auth  
New Cingular Wireless PCS LLC - N Texas  
New Cingular Wireless PCS, LLC - NM  
New Mexico RSA #5 Limited Partnership  
New Mexico RSA 6-I Partnership  
New Mexico, State of  
Nextel License Holdings 4 Inc.  
Olympic Wireless, LLC  
Public Service Company of New Mexico  
Southwestern Bell Telephone L.P.  
T-Mobile License LLC  
Transtelco Inc.  
Transworld Network Corp  
Tri-State Generation & Transmission Assn  
Union Pacific Railroad Company  
Verizon Wireless (VAW) LLC - Texas  
Verizon Wireless(VAW) LLC-AZ/CO/NM/NV/UT

## **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: 03/27/2018  
Job Number: 180112COMSTC06

### Administrative Information

Call Sign E040004  
Licensee Code RCNJVZ  
Licensee Name RCN License Subsidiary, Inc.

### Site Information **SUNLAND PARK, NM**

Venue Name SUNLAND PARK  
Latitude (NAD 83) 31° 48' 16.6" N  
Longitude (NAD 83) 106° 33' 31.7" W  
Climate Zone A  
Rain Zone 5  
Ground Elevation (AMSL) 1137.54 m / 3732.1 ft

### Link Information

Satellite Type Geostationary  
Mode TR - Transmit-Receive  
Modulation Digital  
Satellite Arc 60° W to 139° West Longitude  
Azimuth Range 116.5° to 230.3°  
Corresponding Elevation Angles 28.1° / 39.1°  
Antenna Centerline (AGL) 2.13 m / 7.0 ft

### Antenna Information

	Receive	Transmit
Manufacturer	PRODELIN	PRODELIN
Gain / Diameter	41.8 dBi / 3.8 m	46.8 dBi / 3.8 m
3-dB / 15-dB Beamwidth	0.60° / 1.20°	0.40° / 0.80°

		<u>1M20G7W - 36M0G7W</u>	
Max Available RF Power	(dBW/4 kHz)	-14.0	-14.77
	(dBW/MHz)	10.0	9.23
Maximum EIRP	(dBW/4 kHz)	32.8	32.0
	(dBW/MHz)	56.8	56.0
	(dBW)	57.57	71.57

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 <b>4.0 GHz</b>	Transmit <b>6.1 GHz</b>
Emission / Frequency Range (MHz)	1M20G7W - 36M0G7W / 3700.0 - 4200.0	1M20G7W - 36M0G7W / 5925.0 - 6425.0

Max Great Circle Coordination Distance	285.3 km / 177.2 mi	132.8 km / 82.5 mi
Precipitation Scatter Contour Radius	388.1 km / 241.1 mi	100.0 km / 62.1 mi

# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### SUNLAND PARK, NM

Licensee Name RCN License Subsidiary, Inc.  
Latitude (NAD 83) 31° 48' 16.6" N  
Longitude (NAD 83) 106° 33' 31.7" W  
Ground Elevation (AMSL) 1137.54 m / 3732.1 ft  
Antenna Centerline (AGL) 2.13 m / 7.0 ft  
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 -14.0 (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	0.78	113.38	-10.00	232.30	-10.00	100.00
5	1.05	109.08	-10.00	218.67	-10.00	100.00
10	1.15	104.69	-10.00	215.75	-10.00	100.00
15	1.32	100.28	-10.00	210.69	-10.00	100.00
20	1.47	95.83	-10.00	206.46	-10.00	100.00
25	1.57	91.37	-10.00	206.17	-10.00	100.00
30	1.80	86.89	-10.00	200.05	-10.00	100.00
35	2.12	82.39	-10.00	191.89	-10.00	100.00
40	2.71	77.85	-10.00	178.20	-10.00	100.00
45	3.32	73.28	-10.00	162.20	-10.00	100.00
50	4.35	68.62	-10.00	142.63	-10.00	100.00
55	5.41	63.90	-10.00	130.89	-10.00	100.00
60	5.75	59.33	-10.00	127.62	-10.00	100.00
65	5.81	54.85	-10.00	127.02	-10.00	100.00
70	5.36	50.61	-10.00	131.36	-10.00	100.00
75	5.45	46.30	-9.64	131.93	-9.64	100.00
80	4.97	42.35	-8.67	139.46	-8.67	100.00
85	4.74	38.50	-7.64	147.28	-7.64	100.00
90	4.21	35.10	-6.63	160.84	-6.63	100.00
95	3.41	32.30	-5.73	184.16	-5.73	100.00
100	2.87	29.85	-4.88	199.93	-4.88	100.00
105	1.75	28.59	-4.40	226.58	-4.40	100.00
110	0.88	27.93	-4.15	261.45	-4.15	107.25
115	1.18	26.96	-3.77	249.58	-3.77	100.00
120	1.50	26.81	-3.71	238.83	-3.71	100.00
125	2.47	26.90	-3.74	211.56	-3.74	100.00
130	1.47	29.61	-4.79	233.25	-4.79	100.00
135	3.02	30.78	-5.21	195.05	-5.21	100.00
140	4.43	32.84	-5.91	160.80	-5.91	100.00
145	5.28	35.57	-6.78	144.30	-6.78	100.00
150	6.68	37.55	-7.37	128.27	-7.37	100.00
155	5.09	41.45	-8.44	139.06	-8.44	100.00
160	4.13	44.54	-9.22	149.39	-9.22	100.00
165	3.32	47.14	-9.84	163.15	-9.84	100.00
170	2.45	49.36	-10.00	184.24	-10.00	100.00
175	1.52	51.14	-10.00	205.09	-10.00	100.00
180	1.18	51.80	-10.00	214.84	-10.00	100.00
185	1.59	51.08	-10.00	205.68	-10.00	100.00



# COMSEARCH

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### Coordination Values

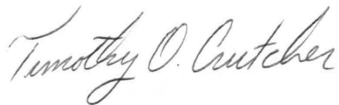
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Antenna Centerline (AGL)	2.13 m / 7.0 ft				
Antenna Mode	Receive 4.0 GHz		Transmit 6.1 GHz		
Interference Objectives: Long Term	-156.0 dBW/MHz	20%	-154.0 dBW/4 kHz	20%	
Short Term	-146.0 dBW/MHz	0.01%	-131.0 dBW/4 kHz	0.0025%	
Max Available RF Power				-14.0 (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	1.76	50.00	-10.00	200.99	-10.00	100.00
195	1.64	48.62	-10.00	204.24	-10.00	100.00
200	1.63	46.60	-9.71	205.87	-9.71	100.00
205	1.62	44.16	-9.13	206.26	-9.13	100.00
210	1.82	41.74	-8.51	206.21	-8.51	100.00
215	1.60	40.07	-8.07	211.85	-8.07	100.00
220	1.53	38.75	-7.71	215.78	-7.71	100.00
225	1.80	37.60	-7.38	209.45	-7.38	100.00
230	2.15	36.93	-7.19	204.21	-7.19	100.00
235	1.53	37.80	-7.44	217.04	-7.44	100.00
240	1.55	38.58	-7.66	215.37	-7.66	100.00
245	1.57	39.88	-8.02	212.90	-8.02	100.00
250	1.34	41.87	-8.55	217.13	-8.55	100.00
255	1.56	43.89	-9.06	208.42	-9.06	100.00
260	1.49	46.49	-9.68	207.21	-9.68	100.00
265	1.47	49.34	-10.00	206.32	-10.00	100.00
270	1.38	52.48	-10.00	208.86	-10.00	100.00
275	0.99	55.97	-10.00	221.09	-10.00	100.00
280	0.99	59.38	-10.00	220.90	-10.00	100.00
285	0.82	62.99	-10.00	230.10	-10.00	100.00
290	0.50	66.75	-10.00	249.69	-10.00	108.72
295	0.42	70.48	-10.00	259.24	-10.00	115.36
300	0.27	74.29	-10.00	276.78	-10.00	127.26
305	0.00	78.15	-10.00	285.28	-10.00	132.84
310	0.00	82.00	-10.00	285.28	-10.00	132.84
315	0.00	85.86	-10.00	285.28	-10.00	132.84
320	0.00	89.74	-10.00	285.28	-10.00	132.84
325	0.00	93.62	-10.00	285.28	-10.00	132.84
330	0.00	97.49	-10.00	285.28	-10.00	132.84
335	0.00	101.33	-10.00	285.28	-10.00	132.84
340	0.20	105.19	-10.00	284.83	-10.00	132.55
345	0.36	109.00	-10.00	265.11	-10.00	119.40
350	0.47	112.75	-10.00	252.88	-10.00	110.90
355	0.73	116.49	-10.00	235.52	-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.



Timothy O. Crutcher  
Frequency Planner  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, VA 20147

DATED: March 27, 2018