

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for

**PanAmSat Licensee Corp  
Ellenwood, Georgia  
(Call Sign: E7465)  
9.1 Meter**

**Satellite Earth Station**

Prepared By:  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, Virginia 20147  
September 30, 2009

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## **1. CONCLUSIONS**

An interference study considering all existing, proposed and prior coordinated microwave facilities within the coordination contours of the 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 transmit-receive earth station.

### Company

ALLTEL Communications, LLC  
Athens Cellular, Inc.  
Cellco Partnership – Newark-Dallas Verizon  
Cellco Partnership dba Verizon Wire (GA)  
Jackson Electric Membership Corporation  
Norfolk Southern Railway  
Southwestco Wireless LP (Georgia 5)  
Verizon Wireless of the East LP – (GA)  
Verizon Wireless (VAW) LLC (Georgia)

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.

Expedited coordination data for this earth station was emailed and sent to the below listed carriers with a letter dated September 18, 2009.

Company

ALLTEL Communications, LLC  
Athens Cellular, Inc.  
Bell Atlantic Mobile Allentown-Verizon W  
Blue Ridge Electric Cooperative Inc  
CALHOUN COUNTY COMMISSIONERS  
CALHOUN, COUNTY OF  
COBB COUNTY  
Cellco Partnership - Alabama  
Cellco Partnership dba Verizon Wire (GA  
Cellco Partnership-Newark-Dallas Verizon  
Conterra Ultra Broadband, LLC  
DeKalb County Police Department  
FLINT ELECTRIC MEMBERSHIP CORPORATION  
FULTON, COUNTY OF  
GWINNETT, COUNTY OF  
Gadsden Celltelco  
Georgia Public Web  
Georgia System Operations Corporation  
HOUSTON, COUNTY OF  
Hall County 9-1-1  
International Communications Group, Inc.  
Jackson Electric Membership Corporation  
METROPOLITAN AREA NETWORKS, INC.  
National Radio Astronomy Observatory  
New Cingular Wireless PCS LLC - AL, MS,  
Norfolk Southern Railway  
PATHNET, INC. - DEBTOR IN POSSESSION  
Public Service Telephone Company  
SOUTHERN COMPANY SERVICES INC  
Southwestco Wireless LP (Georgia 5)  
Talladega County Emergency Mangement Age  
Verizon Wireless (VAW) LLC (Georgia)  
Verizon Wireless of The East LP - (GA)  
Verizon Wireless of the East LP- Alabama

## 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: 09/30/2009  
Job Number: 090918COMSJC05

### Administrative Information

Status: ENGINEER PROPOSAL  
Call Sign: E7465  
Licensee Code: PANAS  
Licensee Name: PanAmSat Licensee Corp

### Site Information

ELLENWOOD, GEORGIA

Venue Name:  
Latitude (NAD 83): 33° 39' 50.4" N  
Longitude (NAD 83): 84° 16' 18.7" W  
Climate Zone: A  
Rain Zone: 1  
Ground Elevation (AMSL): 237.74 m / 780.0 ft

### Link Information

Satellite Type: Geostationary  
Mode: TR - Transmit-Receive  
Modulation: Analog and Digital  
Satellite Arc: 24° W to 150° West Longitude  
Azimuth Range: 107.6° to 256.0°  
Corresponding Elevation Angles: 16.0° / 11.5°  
Antenna Centerline (AGL): 5.49 m / 18.0 ft

### Antenna Information

Manufacturer:  
Model:  
Gain / Diameter:  
3-dB / 15-dB Beamwidth:

**Receive - A40911**  
ANDREW CORPORATION  
ESA91-46  
50.7 dBi / 9.1 m  
0.50° / 1.00°

**Transmit - A6091E**  
ANDREW CORPORATION  
ESA91-46  
53.9 dBi / 9.1 m  
0.32° / 0.62°

36M0F8F and 36M0F9W

Max Available RF Power (dBW/4 kHz)  
(dBW/MHz)

4.1 -8.4  
28.1 15.6

Maximum EIRP (dBW/4 kHz)  
(dBW/MHz)  
(dBW)

58.0 45.5  
82.0 69.5  
85.0 85.0

Interference Objectives: Long Term: -156.0 dBW/MHz 20%  
Short Term: -144.0 dBW/MHz 0.01%

-154.0 dBW/4 kHz 20%  
-131.0 dBW/4 kHz 0.0025%

### Frequency Information

Emission / Frequency Range (MHz)

**Receive 4.0 GHz**  
36M0F8F / 3700.0 - 4200.0  
36M0F9W / 3700.0 - 4200.0

**Transmit 6.1 GHz**  
36M0F8F / 5925.0 - 6425.0  
36M0F9W / 5925.0 - 6425.0

Max Great Circle Coordination Distance  
Precipitation Scatter Contour Radius

342.5 km / 212.8 mi  
613.7 km / 381.3 mi

212.5 km / 132.0 mi  
313.4 km / 194.7 mi

# COMSEARCH

## Earth Station Data Sheet

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### Coordination Values

### ELLENWOOD, GA

Licensee Name PanAmSat Licensee Corp  
Latitude (NAD 83) 33° 39' 50.4" N  
Longitude (NAD 83) 84° 16' 18.7" W  
Ground Elevation (AMSL) 237.74 m / 780.0 ft  
Antenna Centerline (AGL) 5.49 m / 18.0 ft  
Antenna Model ANDREW CORPORATION ESA91-46  
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 -144.0 dBW/MHz 0.01% -131.0 dBW/4 kHz 0.0025%  
Max Available RF Power 4.1 (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	2.07	103.84	-10.30	181.83	-10.10	112.41
5	1.50	102.16	-10.30	197.61	-10.10	126.09
10	0.37	97.28	-10.30	251.03	-10.10	179.35
15	0.39	92.47	-10.30	248.70	-10.10	177.34
20	0.42	87.66	-10.30	245.75	-10.10	174.60
25	0.33	82.85	-10.30	255.60	-10.10	183.43
30	0.35	78.04	-10.30	253.11	-10.10	181.22
35	0.32	73.24	-10.30	256.82	-10.10	184.50
40	0.32	68.45	-10.30	256.54	-10.10	184.25
45	0.50	63.65	-10.30	236.85	-10.10	164.39
50	0.52	58.88	-10.30	235.77	-10.10	163.32
55	0.57	54.13	-10.30	232.41	-10.10	160.02
60	0.54	49.44	-10.19	235.04	-10.10	162.01
65	0.32	44.85	-9.27	262.76	-10.10	184.39
70	0.39	40.24	-8.35	259.82	-10.10	177.00
75	0.33	35.77	-7.45	272.45	-10.10	183.22
80	0.40	31.38	-6.58	269.83	-10.10	176.28
85	0.71	27.04	-5.71	249.49	-10.10	152.00
90	0.89	23.03	-4.91	243.40	-10.10	142.89
95	0.97	19.51	-4.20	243.00	-9.71	140.67
100	0.75	17.00	-3.70	259.67	-7.70	160.12
105	0.85	15.38	-3.38	255.52	-6.41	160.43
110	1.02	15.19	-3.34	245.52	-6.25	152.31
115	1.31	16.44	-3.59	233.94	-7.25	139.77
120	1.33	19.15	-4.13	230.13	-9.42	132.59
125	1.24	22.70	-4.84	229.21	-10.10	132.61
130	1.16	26.52	-5.60	227.63	-10.10	133.38
135	1.43	30.00	-6.30	215.65	-10.10	127.80
140	1.64	33.34	-6.97	206.52	-10.10	122.58
145	2.09	36.31	-7.56	194.50	-10.10	111.94
150	1.69	39.62	-8.22	201.80	-10.10	121.26
155	1.35	42.61	-8.82	205.93	-10.10	129.72
160	1.24	45.08	-9.32	206.97	-10.12	132.67
165	1.08	47.15	-9.73	209.43	-10.53	133.95
170	1.37	48.33	-9.97	202.83	-10.77	127.15
175	1.06	49.50	-10.20	208.03	-11.00	133.05
180	0.74	50.12	-10.30	222.94	-11.12	146.80
185	0.61	49.94	-10.29	230.10	-11.09	153.66



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Antenna Centerline (AGL)	5.49 m / 18.0 ft		
Antenna Model	ANDREW CORPORATION ESA91-46		
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	-144.0 dBW/MHz 0.01%	-131.0 dBW/4 kHz	0.0025%
Max Available RF Power		4.1 (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	0.60	49.04	-10.11	231.67	-10.91	154.98
195	0.63	47.55	-9.81	231.85	-10.61	154.85
200	0.67	45.54	-9.41	231.48	-10.21	154.10
205	0.80	43.03	-8.91	226.56	-10.10	147.44
210	1.17	40.00	-8.30	213.69	-10.10	133.22
215	1.15	36.96	-7.69	217.09	-10.10	133.60
220	0.50	34.10	-7.12	255.49	-10.10	164.77
225	0.47	30.62	-6.42	262.97	-10.10	169.37
230	0.41	26.99	-5.70	273.85	-10.10	174.96
235	0.39	23.22	-4.94	281.99	-10.10	177.74
240	0.30	19.39	-4.18	297.51	-9.61	188.19
245	0.21	15.67	-3.43	314.78	-6.64	206.80
250	0.26	12.69	0.32	335.80	-4.10	212.46
255	0.39	11.13	3.43	342.55	-3.23	205.45
260	0.55	11.65	2.40	317.28	-3.75	190.85
265	0.95	13.84	-1.14	263.25	-4.94	161.31
270	0.98	17.47	-3.79	244.71	-8.07	146.39
275	1.03	21.62	-4.62	237.45	-10.10	136.80
280	1.14	26.04	-5.51	228.81	-10.10	133.90
285	1.38	30.60	-6.42	216.40	-10.10	128.95
290	2.37	35.09	-7.32	189.33	-10.10	106.41
295	3.05	39.79	-8.26	168.94	-10.10	100.00
300	3.92	44.55	-9.21	144.13	-10.10	100.00
305	4.63	49.39	-10.18	130.95	-10.10	100.00
310	5.45	54.27	-10.30	121.30	-10.10	100.00
315	6.20	59.18	-10.30	113.76	-10.10	100.00
320	6.46	64.14	-10.30	110.89	-10.10	100.00
325	6.64	69.11	-10.30	108.97	-10.10	100.00
330	5.79	74.12	-10.30	118.01	-10.10	100.00
335	5.38	79.10	-10.30	121.99	-10.10	100.00
340	5.08	84.07	-10.30	124.87	-10.10	100.00
345	4.53	89.04	-10.30	131.90	-10.10	100.00
350	4.18	94.00	-10.30	135.35	-10.10	100.00
355	3.43	98.95	-10.30	148.65	-10.10	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.



Jeffrey E. Cowles  
Principal Frequency Planner  
COMSEARCH  
19700 Janelia Farm Boulevard  
Ashburn, Va. 20147

DATED: September 30, 2009