

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
TerreStar License Inc.
N LAS VEGAS, NV
(9.3 Meter)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
April 20, 2009

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1. CONCLUSIONS

An interference study for the proposed temporary testing considering all existing, proposed and prior coordinated microwave facilities within the coordination contours demonstrates that this earth station 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 most every case. Those cases that did not clear with terrain profiles will be resolved by either uplink power reduction, or frequency offset.

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 04/10/2009.

Company

Baja Broadband Operating Company, LLC
CRANSTON ACQUISITION LLC
Clark County School Dist., KLVX TV
ENTRAVISION HOLDINGS, LLC
JOURNAL BROADCASTING CORPORATION
KUPN Licensee, LLC
KVVU BROADCASTING CORPORATION
LAS VEGAS TV PARTNERS LLC
MOHAVE COUNTY BOARD OF SUPERVISORS
NEVADA CHANNEL 3, INC
NPG Cable, Inc dba Cablvsn Bullhead City
Rio Virgin Telephone Company Inc
TELEMUNDO LAS VEGAS LICENSE LLC
TRI-STATE BROADCASTING, LLC
UNA VEZ MAS ARIZONA, LLC
VALLEY BROADCASTING COMPANY

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: 04/10/2009
Job Number: <PCNJobCode>

Administrative Information

Status ENGINEER PROPOSAL
Call Sign <PCNCallSign>
Licensee Code TERNET
Licensee Name TerreStar License Inc..

Site Information

N LAS VEGAS, NV

Venue Name
Latitude (NAD 83) 36° 14' 9.9" N
Longitude (NAD 83) 115° 7' 1.3" W
Climate Zone A
Rain Zone 5
Ground Elevation (AMSL) 585.22 m / 1920.0 ft

Link Information

Satellite Type Inclined Geo Orbit
Mode TO - Transmit-Only
Modulation Digital
Minimum Elevation Angle 47.0° (+/- 10 degrees)
Azimuth Range 106.5 degrees West Longitude (+/- 2 degrees)
Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information

Transmit - FCC32

Manufacturer Vertex/RSI
Model 9.3 Meter
Gain / Diameter 60.2 dBi / 9.3 m
3-dB / 15-dB Beamwidth 0.15° / 0.32°

Max Available RF Power	(dBW/4 kHz)	-0.2	
	(dBW/MHz)	23.8	
Maximum EIRP	(dBW/4 kHz)	60.0	
	(dBW/MHz)	84.0	
Interference Objectives:	Long Term	-151.0 dBW/4 kHz	20%
	Short Term	-128.0 dBW/4 kHz	0.0025%

Frequency Information

Transmit 13.0 GHz

Emission / Frequency Range (MHz) N0N / 13240.5 - 13245.5

Max Great Circle Coordination Distance 161.6 km / 100.4 mi
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

COMSEARCH

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Coordination Values	N LAS VEGAS, NV		
Licensee Name	TerreStar License Inc..		
Latitude (NAD 83)	36° 14' 9.9" N		
Longitude (NAD 83)	115° 7' 1.3" W		
Ground Elevation (AMSL)	585.22 m / 1920.0 ft		
Antenna Centerline (AGL)	5.49 m / 18.0 ft		
Antenna Model	Vertex/RSI 9.3 meter		
Antenna Mode	Transmit 13.0 GHz		
Interference Objectives: Long Term	-151.0 dBW/4 kHz	20%	
Short Term	-128.0 dBW/4 kHz	0.0025%	
Max Available RF Power	-0.2 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	76.33	-10.00	124.40
5	0.00	71.95	-10.00	123.50
10	0.00	67.61	-10.00	121.90
15	0.00	63.31	-10.00	121.60
20	0.00	59.08	-10.00	122.50
25	0.00	54.92	-10.00	124.70
30	0.00	50.86	-10.00	127.60
35	0.00	46.93	-10.00	131.60
40	0.00	43.16	-10.00	139.00
45	0.00	39.61	-10.00	147.70
50	0.00	36.35	-10.00	154.60
55	0.00	33.45	-10.00	157.50
60	0.00	31.02	-10.00	157.50
65	0.00	29.18	-10.00	157.50
70	0.00	28.05	-10.00	157.50
75	0.00	27.72	-10.00	157.50
80	0.00	28.21	-10.00	157.50
85	0.00	29.49	-10.00	157.50
90	0.00	31.45	-10.00	157.50
95	0.00	33.98	-10.00	157.50
100	0.00	36.95	-10.00	157.50
105	0.00	40.28	-10.00	157.50
110	0.00	43.88	-10.00	157.50
115	0.00	47.68	-10.00	157.50
120	0.00	51.64	-10.00	157.50
125	0.00	55.72	-10.00	157.50
130	0.00	59.89	-9.75	158.50
135	0.00	64.14	-9.39	159.90
140	0.00	68.45	-9.13	160.80
145	0.00	72.80	-8.97	161.40
150	0.00	77.18	-8.92	161.60
155	0.00	81.59	-8.99	161.40
160	0.00	86.00	-9.17	160.70
165	0.00	90.43	-9.44	159.60
170	0.00	94.85	-9.76	158.40
175	0.00	99.27	-9.95	157.70
180	0.00	103.67	-10.00	157.50
185	0.00	108.05	-10.00	157.50

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Coordination Values	N LAS VEGAS, NV		
Licensee Name	TerreStar License Inc..		
Latitude (NAD 83)	36° 14' 9.9" N		
Longitude (NAD 83)	115° 7' 1.3" W		
Ground Elevation (AMSL)	585.22 m / 1920.0 ft		
Antenna Centerline (AGL)	5.49 m / 18.0 ft		
Antenna Model	Vertex/RSI 9.3 meter		
Antenna Mode	Transmit 13.0 GHz		
Interference Objectives: Long Term	-151.0 dBW/4 kHz	20%	
Short Term	-128.0 dBW/4 kHz	0.0025%	
Max Available RF Power	-0.2 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	112.39	-10.00	157.50
195	0.00	116.69	-10.00	157.50
200	0.00	120.92	-10.00	157.50
205	0.00	125.08	-10.00	154.80
210	0.00	129.14	-10.00	151.20
215	0.00	133.07	-10.00	144.60
220	0.00	136.84	-10.00	130.70
225	0.00	140.39	-10.00	129.60
230	0.00	143.65	-10.00	128.30
235	0.00	146.55	-10.00	119.90
240	0.00	148.98	-10.00	118.00
245	0.00	150.82	-10.00	115.20
250	0.00	151.95	-10.00	114.70
255	0.00	152.28	-10.00	116.20
260	0.00	151.79	-10.00	115.70
265	0.00	150.51	-10.00	117.80
270	0.00	148.55	-10.00	120.60
275	0.00	146.02	-10.00	122.50
280	0.00	143.05	-10.00	123.60
285	0.00	139.72	-10.00	123.20
290	0.00	136.12	-10.00	121.80
295	0.00	132.32	-10.00	121.80
300	0.00	128.36	-10.00	121.70
305	0.00	124.28	-10.00	121.90
310	0.00	120.11	-10.00	120.80
315	0.00	115.86	-10.00	121.60
320	0.00	111.55	-10.00	122.60
325	0.00	107.20	-10.00	123.20
330	0.00	102.82	-10.00	123.70
335	0.00	98.41	-10.00	125.60
340	0.00	94.00	-10.00	129.90
345	0.00	89.57	-10.00	130.30
350	0.00	85.15	-10.00	127.40
355	0.00	80.73	-10.00	125.50

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Licensee Code TERNET
Licensee Name TerreStar License Inc..

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Longitude (NAD 83) 115° 7' 1.3" W
Climate Zone A
Rain Zone 5
Ground Elevation (AMSL) 585.22 m / 1920.0 ft

Link Information

Satellite Type Inclined Geo Orbit
Mode TO - Transmit-Only
Modulation Digital
Minimum Elevation Angle 41.7°
Azimuth Range 111.0 degrees West Longitude (+/- 6 degrees inclination)
Antenna Centerline (AGL) 5.49 m / 18.0 ft

Antenna Information

Transmit - FCC32

Manufacturer Vertex/RSI
Model 9.3 Meter
Gain / Diameter 60.2 dBi / 9.3 m
3-dB / 15-dB Beamwidth 0.15° / 0.32°

Max Available RF Power (dBW/4 kHz) -11.38
(dBW/MHz) 12.62

Maximum EIRP (dBW/4 kHz) 48.82
(dBW/MHz) 72.82

Interference Objectives: Long Term -151.0 dBW/4 kHz 20%
Short Term -128.0 dBW/4 kHz 0.0025%

Frequency Information

Transmit 13.0 GHz

Emission / Frequency Range (MHz) 832KG7D / 12751.0 and 12999.0

Max Great Circle Coordination Distance 161.6 km / 100.4 mi
Precipitation Scatter Contour Radius 100.0 km / 62.1 mi

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Short Term	-128.0 dBW/4 kHz	0.0025%	
Max Available RF Power	-11.38 (dBW/4 kHz)		

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 13.0 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	76.33	-10.00	124.40
5	0.00	71.95	-10.00	123.50
10	0.00	67.61	-10.00	121.90
15	0.00	63.31	-10.00	121.60
20	0.00	59.08	-10.00	122.50
25	0.00	54.92	-10.00	124.70
30	0.00	50.86	-10.00	127.60
35	0.00	46.93	-10.00	131.60
40	0.00	43.16	-10.00	139.00
45	0.00	39.61	-10.00	147.70
50	0.00	36.35	-10.00	154.60
55	0.00	33.45	-10.00	157.50
60	0.00	31.02	-10.00	157.50
65	0.00	29.18	-10.00	157.50
70	0.00	28.05	-10.00	157.50
75	0.00	27.72	-10.00	157.50
80	0.00	28.21	-10.00	157.50
85	0.00	29.49	-10.00	157.50
90	0.00	31.45	-10.00	157.50
95	0.00	33.98	-10.00	157.50
100	0.00	36.95	-10.00	157.50
105	0.00	40.28	-10.00	157.50
110	0.00	43.88	-10.00	157.50
115	0.00	47.68	-10.00	157.50
120	0.00	51.64	-10.00	157.50
125	0.00	55.72	-10.00	157.50
130	0.00	59.89	-9.75	158.50
135	0.00	64.14	-9.39	159.90
140	0.00	68.45	-9.13	160.80
145	0.00	72.80	-8.97	161.40
150	0.00	77.18	-8.92	161.60
155	0.00	81.59	-8.99	161.40
160	0.00	86.00	-9.17	160.70
165	0.00	90.43	-9.44	159.60
170	0.00	94.85	-9.76	158.40
175	0.00	99.27	-9.95	157.70
180	0.00	103.67	-10.00	157.50
185	0.00	108.05	-10.00	157.50

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Earth Station Data Sheet

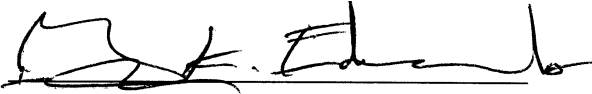
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230	0.00	143.65	-10.00	128.30
235	0.00	146.55	-10.00	119.90
240	0.00	148.98	-10.00	118.00
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250	0.00	151.95	-10.00	114.70
255	0.00	152.28	-10.00	116.20
260	0.00	151.79	-10.00	115.70
265	0.00	150.51	-10.00	117.80
270	0.00	148.55	-10.00	120.60
275	0.00	146.02	-10.00	122.50
280	0.00	143.05	-10.00	123.60
285	0.00	139.72	-10.00	123.20
290	0.00	136.12	-10.00	121.80
295	0.00	132.32	-10.00	121.80
300	0.00	128.36	-10.00	121.70
305	0.00	124.28	-10.00	121.90
310	0.00	120.11	-10.00	120.80
315	0.00	115.86	-10.00	121.60
320	0.00	111.55	-10.00	122.60
325	0.00	107.20	-10.00	123.20
330	0.00	102.82	-10.00	123.70
335	0.00	98.41	-10.00	125.60
340	0.00	94.00	-10.00	129.90
345	0.00	89.57	-10.00	130.30
350	0.00	85.15	-10.00	127.40
355	0.00	80.73	-10.00	125.50

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 20, 2009