This attachment contains the following items:

Model 8060 At-A-Glance

- Compliant with FCC, ASIASAT, INTELSAT, EUTELSAT ITU and more
- Meets INTELSAT Standard F-2 and E-3 requirements
- High-efficiency shaped Cassegrain optics
- Use with C-, Extended C-, or Ku-band systems (optional combined feed — dichroic)
- Add our 8860/8861A/8862 Antenna Controller with patented AdaptTrack for accurate tracking
- Minimal satellite repointing time with high-speed motorized option
- Protected environment for LNAs/LNBs in hub
- CE compliant

Model 8060 6.1 Meter Earth Station Antenna

Model 8060 is a 6.1 meter earth station antenna that provides superior performance through the use of precision stretch-formed reflector panels and a dual-shaped Cassegrain feed. Corrugated conical feed horns ensure excellent antenna gain and sidelobe performance. Sixteen high-strength aluminum panels are durable enough to withstand a range of environmental conditions. Antenna panels mount to radial trusses attached to a central hub.

The hub also provides a protective enclosure for sensitive electronics. The high-strength structural steel tripod mount employs an elevation-over-azimuth geometry for easy pointing to any satellite within the visible orbital arc. The mount's stiff, rugged construction provides pointing accuracy for continuous operation, even under adverse wind conditions.

Model 8060 includes a galvanized structural steel tripod mount with a continuous 115° of motorized azimuth coverage in three overlapping sectors. An optional TORQUETUBE™ configuration adds continuous 180° motorized azimuth coverage.

Options

- 180° continuous azimuth
- Multiband feeds
- Cross-axis transmit waveguide (2 kW C-band, 700 W Ku-band)
- Waveguide loads
- Crossguide couplers
- Hub cover
- Hub heater
- Lightning protection
- De-icing

SPECIFICATIONS

ELECTRICAL

	C-band	Ku-band
Operating Frequency (GHz):		
Transmit	5.850 – 6.425	14.0 – 14.5
Receive	3.625 – 4.2	10.95 –12.75
Gain (Midband, Ref. Feed Horn):		
Transmit	49.8 dBi[3]	57.3 dBi[4]
Receive	46.0 dBi[1]	56.1 dBi[2]
Feed Insertion Loss (dB):		
DP – 2-Port RX/RX Linear:		
Receive	0.051 dB	0.12 dB
RT – 2-Port RX/TX Linear:		
Transmit	0.10 dB	0.10 dB
Receive	0.10 dB	0.12 dB
4PL – 4-Port RX/TX Linear:		
Transmit	0.15 dB	0.27 dB
Receive	0.15 dB	0.27 dB
4PC – 4-Port RX/TX Circular:		
Transmit	0.17 dB	N/A
Receive	0.17 dB	N/A
VSWR:		
TX	1.3:1	1.3:1
RX	1.3:1	1.3:1
Beamwidth (-3 dB):		
Transmit	0.56°	0.25°
Receive	0.86°	0.30°
First Sidelobe Level:		
	14.0 dB	14.0 dB

Radiation Pattern:
C- and Ku-band: Meets standards set by FCC, INTELSAT, ASIASAT, EUTELSAT, ITU and others.

Antenna Noise Temp (Typical, Ref. Feed Horn):

Elevation	C-band	Ku-band
10°	27 K	36 K
20°	20 K	27 K
30°	17 K	25 K
40°	14 K	24 K

Power Handling Per TX Port:		
	5 kW (CW)	2 kW (CW)
Cross Pol Isolation (on axis, min.) (Linear):		
Transmit	35 dB	35 dB
Receive	35 dB	35 dB
Feed Port Isolation (4-Port Linear):		
RX/TX (RX-band)	85 dB	50 dB
TX/RX (TX-band)	85 dB	85 dB
TX/TX	21 dB	35 dB
RX/RX	18 dB	35 dB
Axial Ratio:		
(Circular Polarization)	1.06:1	

MECHANICAL

Antenna Diameter: 6.15 meters (242 inches)
Antenna Type: shaped dual reflector
Reflector Construction: 16 precision stretch formed steel panels on galvanized steel hub and truss structure
Mount Type: elevation-over-azimuth
Antenna Travel:
Elevation: 0° to 90° continuous[5]
Azimuth: 225° in 3 overlapping 120° sectors
Optional 180° continuous
Polarization Adjustment:
Manual: 360°
Motorized: ±90°
Antenna Travel Rate (Motorized):
Various — consult factory
Feed Interface:
Transmit C-band: CPR-137G
Transmit Ku-band: WR-75
Receive C-band: CPR-229G
Receive Ku-band: WR-75
Weight C-band:
Net: 1,360 kg (3,000 lb.)
Ship: 2,630 kg (5,800 lb.)
Shipping Volume: 14.2 cubic meters (500 cubic feet)

ENVIRONMENTAL

Wind Loading:
Operational: Drive-to-stow 129 km/h (80 MPH)
177 km/h (110 MPH) any position, 15° C, no ice
Survival: 201 km/h (125 MPH), stowed, 15° C, no ice
Temperature Range:
Operational: -40° C to +65° C (-40° F to +150° F)
Atmospheric Conditions:
Salt, pollutants and corrosive contaminants as found in coastal and industrial areas

NOTES:

[1] Referenced at 3.95 GHz
[2] Referenced at 11.95 GHz
[3] Referenced at 6.175 GHz
[4] Referenced at 14.25 GHz
[5] Minimum elevation angle is 5° with the hot air de-icing option installed

ViaSat®

atlanta beijing new delhi rome san diego sydney

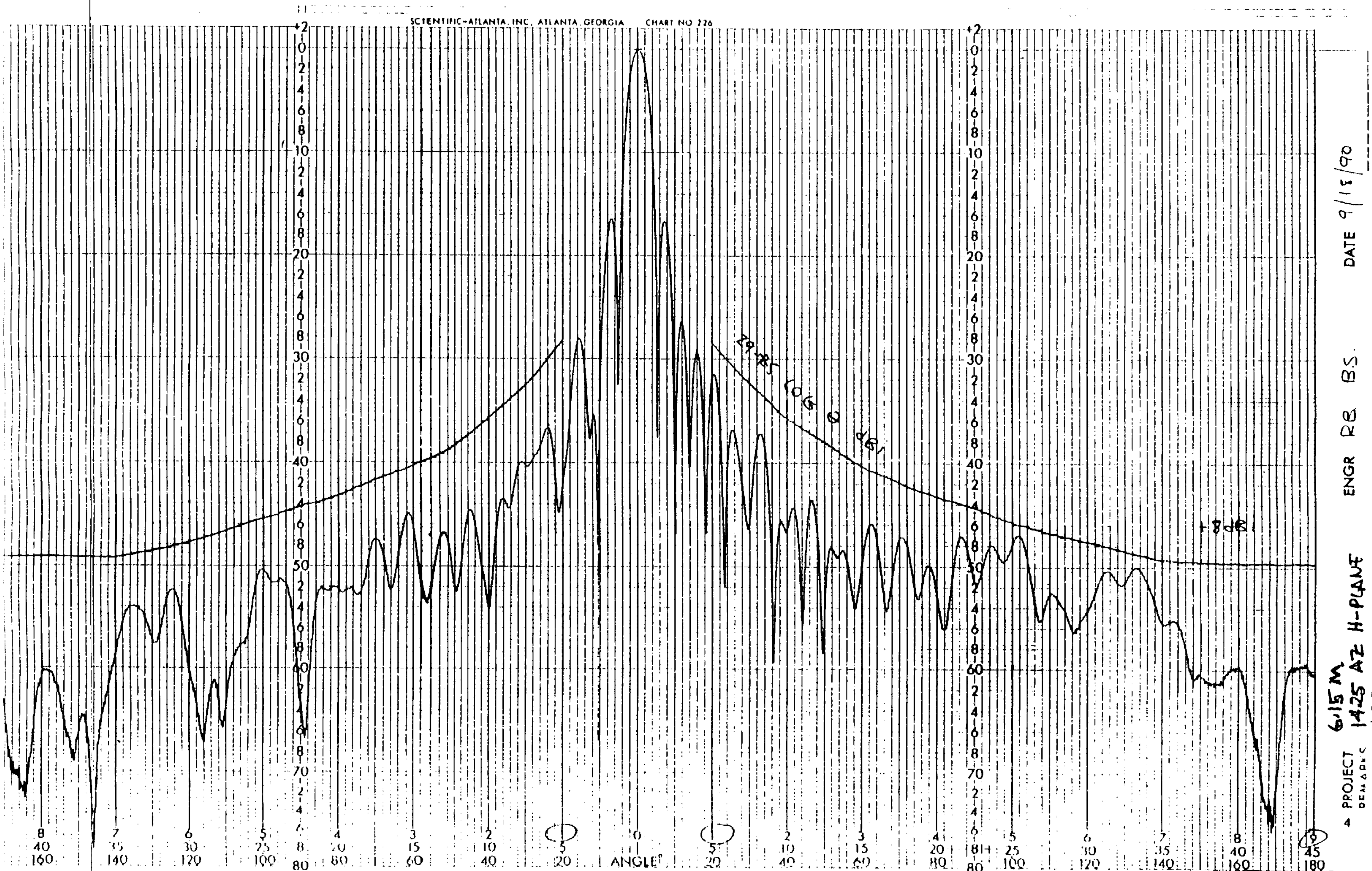
4356 Communications Drive • Norcross, Georgia • 30093 • USA

US Sales Telephone +1 678.924.2632 Int. Sale Telephone +1 678.924.2633

facsimile +1 770.935.3285

www.viasat.com

SCIENTIFIC-ATLANTA, INC., ATLANTA, GEORGIA CHART NO 226
DATE 9/18/90
ENGR RR
PROJECT
REMARKS
6.15M
1425 AZ E-PLANE
190
ANGLE


SCIENTIFIC-ATLANTA, INC, ATLANTA, GEORGIA
CHART NO 226
ANGLE°
29-25 LOG Θ dB
+8dB
DATE 9/18/90
ENGR RB BS.
PROJECT
6.15 M
1425 AZ H-PLANE
+90

SCIENTIFIC-ATLANTA, INC., ATLANTA, GEORGIA CHART NO 226
29-25 log θ dB
+8 dB
ANGLE°
DATE 9/18/90
ENGR RB
PROJECT 6.15 M
REMARKS 11.95 AZ E-PLANE
21
+90

SCIENTIFIC-ATLANTA, INC., ATLANTA, GEORGIA CHART NO 226

PROJECT 22
REMARKS 6.15 M
11.95 AZ
H-PLANE
±9°

ENGR RB B.S.

DATE 9/18/90

SCIENTIFIC-ATLANTA, INC. ATLANTA, GEORGIA CHART NO 226
ANGLE
DATE 11/2/90
ENGR R.B. & S.B.
PROJECT 6.15 M
REMARKS 11.95 X 90 L
TX HORIZ RX VERT

SCIENTIFIC-ATLANTA, INC., ATLANTA, GEORGIA CHART NO. 226
ANGLE?
DATE
ENGR
PROJECT 6.15 M
REMARKS 14.25 AZ X-POL
±90 TX HORIZ E-PLANE

SCIENTIFIC-ATLANTA, INC., ATLANTA, GEORGIA CHART NO. 226

ANGLE

DATE 9/13/90 1:30P

ENGR RR BS

PROJECT 6.15 M

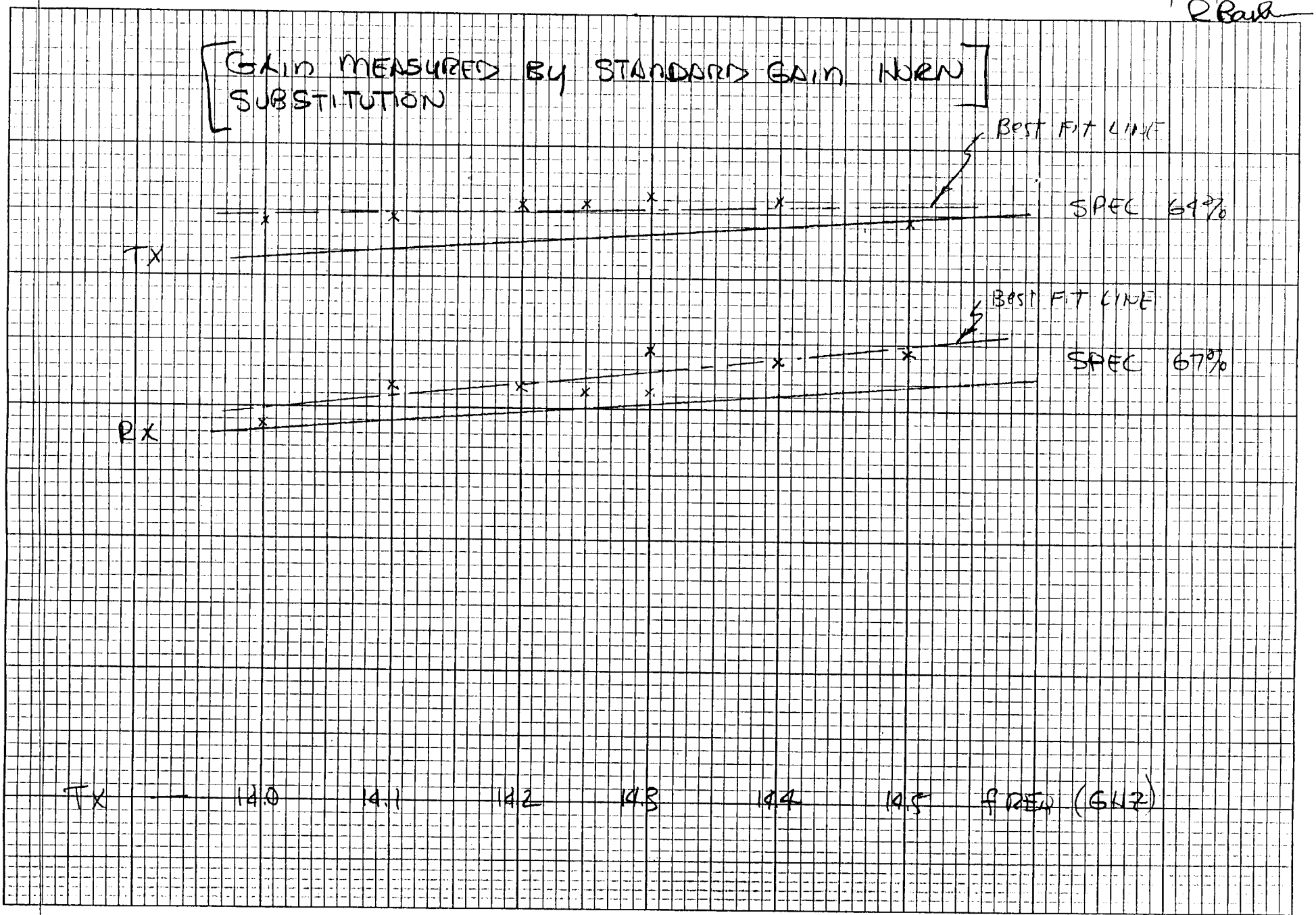
REMARKS 14.25 AZ X-POL

TX-VERT RX-HORIZ H-PLANE

GAIN 6.15 METER MODEL 8060

9/19/90
R Bank

[GAIN MEASURED BY STANDARD GAIN HORN SUBSTITUTION]



RADIATION HAZARD EVALUATION

For

Clear Channel Hub Station - 6.1M Viasat 8060 C-Band Antenna

1 Overview

Determining the region around an antenna where radiation hazardous to human health is a consideration of many factors. With a parabolic dish antenna, the region is highly directional and the actual hazardous region is dependent on the antenna elevation angle. The following formulae are used to determine the near and far field regions. These regions are in the main beam of the radiation pattern, which we will assume consists of a conical angle extending +/- 3 degrees from the center axis of the antenna.

The analysis contained herein predicts the radiation levels around the proposed antenna. The calculations contained in this report are in accordance with FCC guidelines as contained in CFR 47 Part 1.1310 and OET Bulletin 65. The maximum level of non-ionizing radiation to which the general public is exposed is defined for controlled and uncontrolled environments as follows:

Environment	Exposure Limit Power	Exposure Limit Duration
Controlled - (applicable to system operators and technicians in the service area of the antenna):	**5 mW/cm^2**	**6 Minutes**
Uncontrolled - (applicable to general public in proximity of the antenna):	**1 mW/cm^2**	**30 Minutes**

2.1 Earth Station Technical Parameters - Input Data

1A	Antenna Diameter - Standard Parabola	6.1	meters
1B	Antenna Diameter - Elliptical Reflector		meters
1B1	Major Axis Diameter		meters
1B2	Minor Axis Diameter		meters
2	G = Antenna Isotropic Gain	49.8	dBi
3	h = Nominal Antenna Efficiency	65	Percent
4	Nominal Frequency	6	GHz
5	Maximum Transmit Power Amplifier Size	398	Watts
6	Number of Carriers	2	each
7	W/G Loss from Transmitter to Feed	0.5	dB
8	Multicarrier Fixed Backoff	3	dB
9	Desired Object Clearance Height	3	meters

2.2 Earth Station Technical Parameters - Calculated Data

10	A = Antenna Surface Area	29.22	sq meters		
10A	Standard Parabolic Reflector	29.22466566	sq meters		
10B	Elliptical Reflector	0.00	sq meters		
11	D = Effective Antenna Diameter	6.1	meters		
12	Total Transmit Power	796	Watts		
13	P = Total Feed Input Power (watts)	177.78	Watts		
14	E = Maximum E/S EIRP - Calculated	72.30	dBW		
15	λ = Wavelength (= c/f in m/GHz)	0.0500	m/GHz		
16	p = Pi	3.14159			
17	R_{nf} = Near Field Limit ($D^2/4\lambda$)	186	meters	610	feet
18	R_{ff} = Far Field Limit (R_{ff}=0.6D2/λ)	447	meters	1467	feet
19	R_{nf} to R_{ff} = Transition Region	186 to 447	meters	610 to 1467	feet

3 Power Density at the Antenna Surface

The power density at the reflector surface is expected to exceed the safe limits. The reflector is not accessible to the public and will not present a hazard. Terminal operators and technicians receive training identifying the area as presenting high exposure levels. Procedures are incorporated requiring that transmitters are not operating when access to the reflector surface is required.

The power density at the antenna reflector surface can be calculated by the expression:

$PD_{REFL} = 4P/A =$ **2.43 mW/cm^2**

Where: P = Total power at the feed, milliwatts
A = Total area of reflector, sq cm

Evaluation:

Controlled Environment (less than 5 mW/cm^2 in 6 minutes): **SAFE**

Uncontrolled environment (less than 1 mW/cm^2 in 30 minutes): **Mitigation Required**

4 On-Axis Power Density in the Near Field Region

The Radiating Near Field Region for a parabolic, circular reflector, is defined as extending from the reflector to a distance equal to the diameter squared divided by twice the wavelength. This distance is referred to as the Rayleigh distance. In this region the power is nearly all contained within a cylinder of radius 0.5D. As a safety measure the highest possible power density is applied to the whole of this region.

The power density in the Near Field Region of the antenna can be calculated by the expression:

$16*P*h/\pi*D^2 =$ **1.58 mW/cm^2**

Where: P = Total power at the feed, milliwatts
h = Nominal antenna efficiency
D = Effective antenna diameter, meters

Evaluation:

Controlled Environment (less than 5 mW/cm^2 in 6 minutes): **SAFE**

Uncontrolled environment (less than 1 mW/cm^2 in 30 minutes): **Mitigation Required**

5 On-Axis Power Density in the Transition Region

The transition region is located between the Near Field and Far Field regions. The power density begins to vary inversely with distance from the antenna in the transition region. The maximum power density in this region will not exceed the power density calculated for the Near Field region. Once again the power density figures are for the On-Axis and contained with a cylinder extending within +/- 1 degree of beam center. Where the antennas are normally operated at an elevation angle typically greater than 10°, the actual safe distance in front of the antenna may be found in paragraph 10. The formula for the calculation is used to evaluate the power density at any given distance in the transition as expressed below:

The power density in the On-Axis Transition Region can be calculated by the expression:

$PD_t=(PD_{nf})(R_{nf}/R$

Where: PD_{nf} = The Near Field power density, mW/cm^2
R_{nf} = Near Field maximum distance, meters
R = Distance to point of interest

For: 186 < R < 447 meters

Evaluation:

Controlled Environment Safe Operating Distance, meters: **59 meters**

Uncontrolled environment Safe Operating Distance, meters: **294 meters**

6 On-Axis Power Density in the Far Field Region

The On-Axis power density in the far field region (PD_{ff}) varies inversely with the square of the distance. The calculation is performed below:

The Power Density at the start of the Far Field region can be calculated by the expression:

$E-10\log(4\pi R^2)$	8.30 dBW/m^2
$\text{antilog}((E-10\log(4\pi R^2))/10)/10$	**0.68 mW/cm^2**

Evaluation:

Controlled Environment (less than 5 $mW/cm^{2\ in}$ 6 minutes):	**SAFE**
Uncontrolled environment (less than 1 mW/cm^2 in 30 minutes):	**SAFE**

7 Off-Axis Power Density Levels at the Far Field Limit and Beyond

In the far field region, the power is distributed in a pattern of sidelobes as a function of the off-axis angle between the antenna center line and the point of interest. Off-axis power density in the far field can be estimated using the antenna radiation patterns prescribed for the antenna in use. Usually this will correspond to the antenna gain pattern envelope defined by the FCC or the ITU, which takes the form of:

$G_{off} = 32 - 25\log(\theta)$

for θ from 1 to 48 degrees; -10 dBi from 48 to 180 degrees
(Applicable for commonly used satellite transmit antennas)

For example: At one (1) degree off axis At the far-field limit, we can calculate the power density as:

$G_{off} = 32 - 25\log(1) = 32 - 0$ dBi =	1585 numeric
$PD_{1\ deg\ off\text{-}axis} = PD_{ff} \times 1585/G$	**0.0112 mW/cm^2**

Evaluation:

Considering that satellite antenna beams are aimed skyward, power density in the far field will usually not be a problem except at low look angles. In these cases, off axis gain reduction techniques may be used to further reduce the power density levels.

8 Off-Axis Power Density Levels at the Near Field and Transitional Regions

According to Bulletin 65, off-axis calculations in the near field may be performed as follows: assuming that the point of interest is at least one antenna diameter removed from the center of the main beam, the power density at that point is at least a factor of 100 (20 dB) less than the value calculated for the near field main beam power density. This may be calculated as follows:

$PD_{nf(off\text{-}axis)} = PD_{nf}/100 =$	**0.0158 mW/cm^2**

9 Region Between the Feed Horn and Reflector/Sub-Reflector

Transmissions from the feed horn are directed toward the main reflector or the sub-reflector depending on the type of antenna (prime focus, Gregorian or Cassegrain). The transmission is confined within a conical shape defined by the feed horn. The energy between the feedhorn and the reflector/sub-reflector is assumed to be in excess of any limit for permissible exposure. This region is not accessible to the general public, and operators and technicians should be suitable trained and procedures in place to preclude access to this region during active transmission.

10 Evaluation of Safe Occupancy Area in Front of the Antenna

The distance (L) from a vertical axis passing through the dish center to a safe off-axis point in front of the antenna can be determined based on the dish diameter. Assuming a flat terrain and a point on the horizontal plane with the center point of the antenna, the relationship is determined by the following formula:

$$L = (D/\sin a) + (2h - D - 2)/(2 \tan a)$$

Where: a = minimum elevation angle of antenna

D = Dish diameter in meters

h = Maximum height of object to be cleared, meters

For distances equal to or greater than determined by the equation above, the radiation hazard will be below safe levels

For:	D =	6.1	meters
	h=	3	meters

Safe distance for the following elevation angles (a):

a - Elevation Angle (degrees)	L - Safe Distance	
10	**29.17**	**meters**
15	**19.65**	**meters**
20	**14.95**	**meters**
25	**12.18**	**meters**
30	**10.38**	**meters**
40	**8.24**	**meters**
50	**7.08**	**meters**

11 Mitigation Analysis

Mitigation of accessibility to hazardous regions may take several forms depending on the antenna application and location. In instances such as mobile applications, the antenna may be located such that the hazardous region is not accessible during operation. An example may be in a mobile configuration where the antenna is located on top of a vehicle during operation. In other fixed installation instances the hazardous area may be fenced off to prevent access. In areas where only operators and technicians have access, training in safeguards and proper markings of hazardous areas may be sufficient. This analysis tool is designed to identify the hazardous exposure regions around an operating antenna system in accordance with the defined power density limits in CFR 47, part 1.1310 and OET bulletin 65.

FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for
Clear Channel Satellite Services
ENGLEWOOD, CO
(6.1 Meter)
Satellite Earth Station

Prepared By:
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, VA 20147
October 10, 2011

TABLE OF CONTENTS

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 -Colorado
State of Colorado
Tri State Generation & Transmission
Great Western Communications, LLC

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 09/08/2011.

Company
AT&T COMMUNICATIONS OF MOUNTAIN STATES
AT&T CORP
Adcom 911
AirLife Denver
BASIN ELECTRIC POWER COOPERATIVE
BNSF Railway Company
Boulder, County of
CBS Communications Services
CBS Television Stations
City of Colorado Springs
Colorado Interstate Gas Company
Colorado Springs Utilities
ENTRAVISION HOLDINGS, LLC
FONES WEST DIGITAL SYSTEMS INC.
Gray Television Licensee, Inc. (KKTV)
Great Western Communications, LLC
Intermountain Rural Electric Association
International Communications Group, Inc.
Larimer County Sheriff's Department
METROPOLITAN AREA NETWORKS, INC.
MHO Networks
Multimedia Holdings Corporation
NE Colorado Cellular, Inc.
New Cingular Wireless PCS LLC -Colorado
Open Range Communications
Platte River Power Authority
QWEST CORPORATION
SANGRE DE CRISTO COMMUNICATIONS, INC.
Sprint Communications Company, LP
State of Colorado
Tri State Generation & Transmission
UNITED POWER
Verizon Wireless - Mountain Region
XCEL ENERGY SERVICES INC

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:	10/10/2011
Job Number:	110908COMSGE02

Administrative Information

Status	ENGINEER PROPOSAL
Call Sign	
Licensee Code	CLCSAT
Licensee Name	Clear Channel Satellite Services

Site Information — ENGLEWOOD, CO

Venue Name	
Latitude (NAD 83)	39° 34' 47.0" N
Longitude (NAD 83)	104° 51' 35.0" W
Climate Zone	A
Rain Zone	2
Ground Elevation (AMSL)	1751.0 m / 5744.8 ft

Link Information

Satellite Type	Geostationary
Mode	TR - Transmit-Receive
Modulation	Digital
Satellite Arc	60° W to 143° West Longitude
Azimuth Range	122.6° to 230.9°
Corresponding Elevation Angles	25.3° / 29.8°
Antenna Centerline (AGL)	3.66 m / 12.0 ft

Antenna Information		Receive - FCC32		Transmit - FCC32	
Manufacturer		ViaSat		ViaSat	
Model		8060		8060	
Gain / Diameter		46.0 dBi / 6.1 m		49.8 dBi / 6.1 m	
3-dB / 15-dB Beamwidth		0.85° / 1.70°		0.56° / 1.20°	
Max Available RF Power	(dBW/4 kHz)			-15.8	
	(dBW/MHz)			8.2	
Maximum EIRP	(dBW/4 kHz)			34.0	
	(dBW/MHz)			58.0	
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)	11M1G1E - 22M5G7W / 3700.0 - 4200.0	11M1G1E - 22M5G7W / 5925.0 - 6425.0
Max Great Circle Coordination Distance	285.3 km / 177.2 mi	128.0 km / 79.5 mi
Precipitation Scatter Contour Radius	495.1 km / 307.6 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	**ENGLEWOOD, CO**			
Licensee Name	Clear Channel Satellite Services			
Latitude (NAD 83)	39° 34' 47.0" N			
Longitude (NAD 83)	104° 51' 35.0" W			
Ground Elevation (AMSL)	1751.0 m / 5744.8 ft			
Antenna Centerline (AGL)	3.66 m / 12.0 ft			
Antenna Model	ViaSat 6.1 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			-15.8 (dBW/4 kHz)	

			Receive 4.0 GHz		Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
0	0.00	119.19	-10.00	285.28	-10.00	128.03
5	0.00	114.80	-10.00	285.28	-10.00	128.03
10	0.00	110.37	-10.00	285.28	-10.00	128.03
15	0.00	105.90	-10.00	285.28	-10.00	128.03
20	0.00	101.41	-10.00	285.28	-10.00	128.03
25	0.00	96.90	-10.00	285.28	-10.00	128.03
30	0.00	92.38	-10.00	285.28	-10.00	128.03
35	0.00	87.86	-10.00	285.28	-10.00	128.03
40	0.00	83.34	-10.00	285.28	-10.00	128.03
45	0.42	78.79	-10.00	258.37	-10.00	110.02
50	1.21	74.18	-10.00	213.95	-10.00	100.00
55	1.55	69.61	-10.00	204.40	-10.00	100.00
60	1.67	65.08	-10.00	203.52	-10.00	100.00
65	1.94	60.55	-10.00	196.21	-10.00	100.00
70	1.99	56.11	-10.00	194.74	-10.00	100.00
75	2.06	51.73	-10.00	193.17	-10.00	100.00
80	2.07	47.44	-9.90	193.31	-9.90	100.00
85	2.01	43.31	-8.92	199.44	-8.92	100.00
90	1.96	39.33	-7.87	205.46	-7.87	100.00
95	2.07	35.47	-6.75	205.67	-6.75	100.00
100	2.25	31.83	-5.57	207.28	-5.57	100.00
105	1.94	28.93	-4.53	220.14	-4.53	100.00
110	1.96	26.33	-3.51	225.03	-3.51	100.00
115	2.02	24.39	-2.68	228.16	-2.68	100.00
120	1.96	23.43	-2.25	232.50	-2.25	100.00
125	2.18	23.19	-2.13	227.21	-2.13	100.00
130	1.90	24.43	-2.70	231.71	-2.70	100.00
135	1.71	26.43	-3.55	232.70	-3.55	100.00
140	1.40	29.20	-4.64	236.52	-4.64	100.00
145	1.44	32.03	-5.64	229.48	-5.64	100.00
150	1.39	34.70	-6.51	226.35	-6.51	100.00
155	1.31	37.11	-7.24	224.81	-7.24	100.00
160	1.05	39.35	-7.87	229.83	-7.87	100.00
165	0.84	41.17	-8.36	238.01	-8.36	100.00
170	0.99	42.22	-8.64	227.75	-8.64	100.00
175	1.09	42.86	-8.80	223.51	-8.80	100.00
180	0.95	43.24	-8.90	228.50	-8.90	100.00
185	0.94	43.01	-8.84	229.45	-8.84	100.00

COMSEARCH

Earth Station Data Sheet

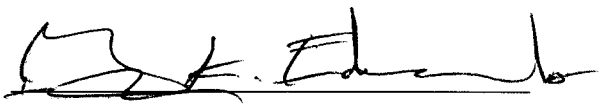
19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5500 http://www.comsearch.com

Coordination Values	**ENGLEWOOD, CO**			
Licensee Name	Clear Channel Satellite Services			
Latitude (NAD 83)	39° 34' 47.0" N			
Longitude (NAD 83)	104° 51' 35.0" W			
Ground Elevation (AMSL)	1751.0 m / 5744.8 ft			
Antenna Centerline (AGL)	3.66 m / 12.0 ft			
Antenna Model	ViaSat 6.1 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			-15.8 (dBW/4 kHz)	

			Receive 4.0 GHz		Transmit 6.1 GHz	
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Horizon Gain (dBi)	Coordination Distance (km)	Horizon Gain (dBi)	Coordination Distance (km)
190	1.28	41.94	-8.57	218.80	-8.57	100.00
195	1.34	40.70	-8.24	218.66	-8.24	100.00
200	1.33	39.09	-7.80	221.27	-7.80	100.00
205	1.40	37.03	-7.21	222.15	-7.21	100.00
210	1.53	34.59	-6.47	222.11	-6.47	100.00
215	1.67	31.98	-5.62	222.32	-5.62	100.00
220	1.69	29.98	-4.92	225.68	-4.92	100.00
225	1.70	28.65	-4.43	228.08	-4.43	100.00
230	1.56	28.23	-4.27	233.54	-4.27	100.00
235	1.55	28.49	-4.37	233.10	-4.37	100.00
240	1.67	29.42	-4.71	227.45	-4.71	100.00
245	1.75	31.10	-5.32	221.64	-5.32	100.00
250	1.68	33.51	-6.13	219.46	-6.13	100.00
255	1.57	36.41	-7.03	217.84	-7.03	100.00
260	1.60	39.60	-7.94	212.49	-7.94	100.00
265	1.57	43.10	-8.86	208.85	-8.86	100.00
270	1.55	46.83	-9.76	205.46	-9.76	100.00
275	1.23	50.85	-10.00	213.18	-10.00	100.00
280	1.15	54.89	-10.00	215.78	-10.00	100.00
285	1.18	58.98	-10.00	214.68	-10.00	100.00
290	1.24	63.15	-10.00	213.07	-10.00	100.00
295	1.14	67.42	-10.00	215.90	-10.00	100.00
300	1.05	71.73	-10.00	218.61	-10.00	100.00
305	1.03	76.07	-10.00	219.45	-10.00	100.00
310	0.90	80.43	-10.00	225.75	-10.00	100.00
315	0.76	84.81	-10.00	233.83	-10.00	100.00
320	0.65	89.18	-10.00	240.32	-10.00	100.00
325	0.51	93.54	-10.00	249.29	-10.00	103.74
330	0.22	97.87	-10.00	283.21	-10.00	126.69
335	0.29	102.21	-10.00	273.48	-10.00	120.28
340	0.00	106.47	-10.00	285.28	-10.00	128.03
345	0.00	110.72	-10.00	285.28	-10.00	128.03
350	0.00	114.94	-10.00	285.28	-10.00	128.03
355	0.00	119.09	-10.00	285.28	-10.00	128.03

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
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DATED: October 10, 2011