Harris Corporation
Request For Special Temporary Authority
2.4m C Band Temporary Transportable Earth Station
Anchorage, AK; Lat. 61-09-16.9 N, Long. 149-50-05.4 W

Harris Corporation ("Harris") hereby requests Special Temporary Authority ("STA") for a thirty day period[1] beginning no later than January 8, 2016 to deploy a temporary fixed AvL Technologies 2.4M SNG, 2.4 meter antenna C-Band terminal to a location in Anchorage, Alaska in order to support time-critical engineering development work on the FAA's[2] Alaska Satellite Telecommunication Infrastructure (ASTI) modernization program which serves to modernize the National Airspace (NAS) surveillance and FAA Air-to-Ground communications in Alaska. The temporary fixed AvL Technologies 2.4M SNG, 2.4 meter antenna C-Band terminal would communicate with the AMC-8 Satellite.

Harris has experienced technical issues with the multiplexer used in conjunction with the ASTI program which is resulting in timing and synch loss issues. The temporary installation of the AvL Technologies 2.4M SNG, 2.4 meter antenna C-Band terminal in Anchorage, Alaska will provide a platform to evaluate the technical issues associated with the technologies that are being deployed as part of the ASTI program.

On November 19, 2015 Harris requested STA for a temporary fixed C-Band terminal located in Prospect, Connecticut (*See File No. SES-STA-20151119-00854*).[3] That request was also obtained to evaluate and rectify the technical issues associated with the technologies being deployed under the ASTI program. The Anchorage, Alaska temporary fixed C-Band terminal will be utilized in conjunction with the Prospect, Connecticut C-Band terminal.

Harris submits that a grant of this application will serve the public interest because it will assist the FAA's mission of ensuring flight safety and will further the ASTI and NAS modernization programs.

[1] If Harris is unable to rectify the underlying issues subject to this STA request an additional extension will be sought.
[2] Harris Corporation, serves as the current FAA Telecommunications Infrastructure contractor (see attached letter).
[3] On December 22, 2015 Harris filed an STA extension request under Submission ID No. IB2015002477.

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FAA CONCURRENCE

U.S. Department
of Transportation

800 Independence Ave., S.W.
Washington, D.C. 20591

**Federal Aviation
Administration**

ASU330-FTI-06-6219
18 January 2006

Harris Corporation
Attn: Elizabeth Briscoe
Mail Stop F- 11A
1025 West NASA Boulevard
Melbourne, FL 32919

Subject: FAA Concurrence for Harris C-Band and Ku-Band License Submissions

Dear Ms. Briscoe:

This letter serves to affirm that Harris Corporation, the FAA Telecommunications Infrastructure contractor, requires C-Band and Ku-Band Satellite Frequency Licenses to meet the FAA's data and voice service requirements from remote locations. FAA Satellite communications are essential to the air traffic control and safety of flight within the National Airspace System (NAS). These licenses will also be used in response to emergency operations such as disaster recovery. Granting these licenses is considered in the best interest of the flying public.

If you have any questions regarding matter, please call me at 202.493.5963.

Sincerely,

//s//

Susan Eicher
FTI Contracting Officer

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COORDINATION / DATASHEET

Micronet Communications, Inc.
720 F Avenue, Suite 100
Plano, Texas 75074
972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: M1532409 5.93 GHz
Licensee: HARRIS CORPORATION

Pursuant to Parts 25.203 and 101.103(d) of the FCC Rules and Regulations, a frequency coordination study was conducted by Micronet Communications, Inc. for the following proposed earth station:

CDLS, AK

The results of the study indicate that no unacceptable interference will result with existing, proposed or prior coordinated radio facilities.

Coordination was performed with existing, proposed and prior coordinated carriers within coordination range on the following dates:

12/07/2015 Original PCN (Expedited response requested by 12/21/2015)
There were no unresolved interference objections.

The attached coordination data was forwarded on the latest date to the following parties within coordination range or their authorized coordination agents:

ACS LONG DISTANCE LICENSE SUB INC
ACS OF ANCHORAGE LICENSE SUB INC
ACS WIRELESS LICENSE SUB INC
ALASCOM INC
ALASKA ELECTRIC GENERATION AND TRANSMISSION INC.
ALASKA PIPELINE COMPANY
ALASKA PUBLIC TELECOMMUNICATIONS, INC
ALASKA STATE OF
AT&T ALASKA
CHUGACH ELECTRIC ASSOCIATION INC.
COMSEARCH INC
ENSTAR NATURAL GAS CO
GCI COMMUNICATION CORP
GCI COMMUNICATION CORP.
MATANUSKA SUSITNA, BOROUGH OF
MATANUSKA TELEPHONE ASSOCIATION INC
MICRONET COMMUNICATIONS INC
MTA COMMUNICATIONS INC DBA MTA WIRELESS INC
NEW CINGULAR WIRELESS PCS LLC - ALASKA
NORSTAR PIPELINE COMPANY
RADIO DYNAMICS
SINCLAIR BOISE LICENSE LLC
THE ALASKA WIRELESS NETWORK, LLC
VERIZON WIRELESS (VAW) LLC
WIRELESS APPLICATIONS CORP

Micronet Communications, Inc.
720 F Avenue, Suite 100
Plano, Texas 75074
972-422-7200

SUPPLEMENTAL SHOWING PART 101.103(D)

File Number: M1532409 5.93 GHz
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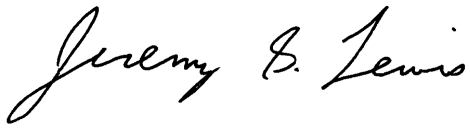
Respectfully Submitted,



Jeremy Lewis
Systems Engineer

Attached: 1 data sheet

Micronet Communications, Inc.
720 F Avenue, Suite 100
Plano, Texas 75074
972-422-7200

File: M1532409

TECHNICAL CHARACTERISTICS OF TRANSMIT RECEIVE EARTH STATION

Company:		HARRIS CORPORATION	
Site Name, State:		CDLS, AK	
Call Sign:			
Latitude	(NAD83)	61 9 16.9 N	
Longitude	(NAD83)	149 50 5.4 W	
Elevation AMSL	(ft/m)	186.00	56.69
Receive Frequency Range	(MHz)	3700-4200	
Transmit Frequency Range	(MHz)	5925-6065/6125-6425	
Range of Satellite Orbital Long.	(deg W)	138.00	140.00
Range of Azimuths from North	(deg)	166.55	168.80
Antenna Centerline	(ft/m)	10.00	3.05
Antenna Elevation Angles	(deg)	20.02	20.24

Equipment Parameters		Receive	Transmit
Antenna Gain, Main Beam	(dbI)	38.00	41.60
15 DB Half Beamwidth	(deg)	1.75	1.00

Antennas Receive: AVL TECHNOLOGIES 2.4M
Transmit: AVL TECHNOLOGIES 2.4M

Max Transmitter Power	(dbW/4KHz)		-11.70
Max EIRP Main Beam	(dbW/4KHz)		29.90
Modulation / Emission Designator		DIGITAL 136KG7W	

Coordination Parameters		Receive	Transmit
Max Greater Circle Distances	(km)	310.17	168.48
Max Rain Scatter Distances	(km)	276.87	100.00
Max Interference Power Long Term	(dbW)	-140.60	-154.00
Max Interference Power Short Term	(dbW)	-118.40	-130.80
Rain Zone / Radio Zone		3	A

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RADIATION HAZARD ANALYSIS

ANALYSIS OF NON-IONIZING RADIATION
for HARRIS CORPORATION
Site: CDLS State: AK
Latitude: 61 9 16.9 Longitude: 149 50 5.4 (NAD83)
12-22-2015

The Office of Science and Technology Bulletin, No. 65, October 1985 and revised August 1997, specifies that the maximum level of non-ionizing radiation that a person may be exposed to over a six minute period is an average power density equal to 5 mW/cm**2 (five milliwatts per centimeter squared) for a controlled environment. For an uncontrolled environment, the maximum level of non-ionizing radiation that a person may be exposed to over a thirty minute period is an average power density equal to 1 mW/cm**2 (one milliwatt per centimeter squared). It is the purpose of this report to determine the maximum power flux densities of the earth station in the far zone, near zone, transition zone, at the main reflector surface, and between the antenna edge and the ground.

Parameters which were used in the calculations:
==========

Antenna Diameter, (D) = 2.4000 m

Antenna Surface Area (Sa) = pi(D**2)/4 = 4.5239 m**2

Wavelength at 6.1750 GHz (lambda) = 0.0485 m

Transmit Power at Flange (P) = 2.3000 Watts

Antenna Gain at Earth Site (GES) = 41.6000 dBi = 14454.3977
Power Ratio:
AntiLog(GES/10)

pi = 3.1415927

Antenna Aperture Efficiency (n) = 0.6000

1. FAR ZONE CALCULATIONS

Distance to the Far Zone (Df) = $\frac{(n)(D^{**}2)}{\text{lambda}}$ = 71.2577 m

Far Zone Power Density (Rf) = $\frac{(GES)(P)}{4*pi*(Df^{**}2)}$ = 0.5210 W/m**2

= 0.0521 mW/cm**2

2. NEAR ZONE CALCULATIONS

Power Flux Density is considered to be at a maximum value throughout the entire length of this Zone. The Zone is contained within a cylindrical volume which has the same diameter as the antenna. Beyond the Near Zone, the Power Flux Density will decrease with distance from the Antenna.

Distance to the Near Zone (Dn) = $\frac{D^{**}2}{4*\text{lambda}}$ = 29.6907 m

Near Zone Power Density (Rn) = $\frac{16.0(n)P}{pi(D^{**}2)}$ = 1.2202 W/m**2

= 0.1220 mW/cm**2

3. TRANSITION ZONE CALCULATIONS

The Power Density begins to decrease with distance in the Transition Zone. While the Power Density decreases inversely with distance in the Transition Zone, the Power Density decreases inversely with the square of the distance in the Far Zone. Since the maximum Power Density in the Transition Zone will not exceed the Near Zone values, it is not calculated.

4. MAIN REFLECTOR ZONE

Main Reflector Power Density = $\frac{2(P)}{Sa}$ = 1.0168 W/m**2

= 0.1017 mW/cm**2

5. ZONE BETWEEN THE MAIN REFLECTOR AND THE GROUND

Applying uniform illumination of the Main Reflector Surface:

Main to Ground Power Density = $\frac{P}{Sa}$ = 0.5084 W/m**2

= 0.0508 mW/cm**2

CALCULATED SAFETY MARGINS SUMMARY
AND EVALUATION

Controlled Safety Margin = 5.0 - Calculated Zone Value (mW/cm**2)

Zones	Safety Margins (mW/cm**2)	Conclusions
1. Far Zone	4.9479	Complies with ANSI
2. Near Zone	4.8780	Complies with ANSI
3. Transition Zone	Rf < Rt < Rn	Complies with ANSI
4. Main Reflector Surface	4.8983	Complies with ANSI
5. Main Reflector to Ground	4.9492	Complies with ANSI

Uncontrolled Safety Margin = 1.0 - Calculated Zone Value (mW/cm**2)

Zones	Safety Margins (mW/cm**2)	Conclusions
1. Far Zone	0.9479	Complies with ANSI
2. Near Zone	0.8780	Complies with ANSI
3. Transition Zone	Rf < Rt < Rn	Complies with ANSI
4. Main Reflector Surface	0.8983	Complies with ANSI
5. Main Reflector to Ground	0.9492	Complies with ANSI

6. EVALUATION

A. Controlled Environment
B. Uncontrolled Environment
All Zones comply with ANSI Standards.

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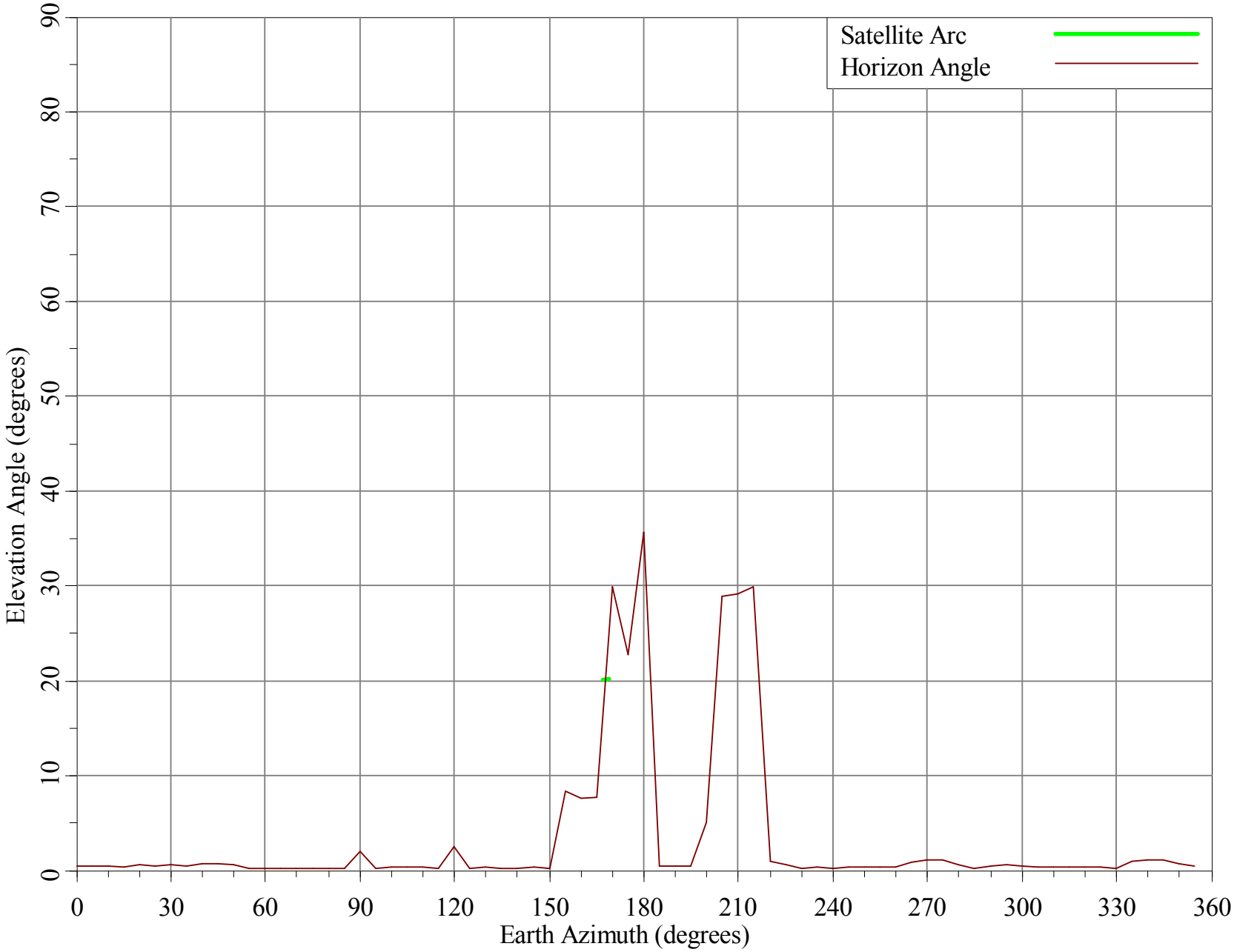
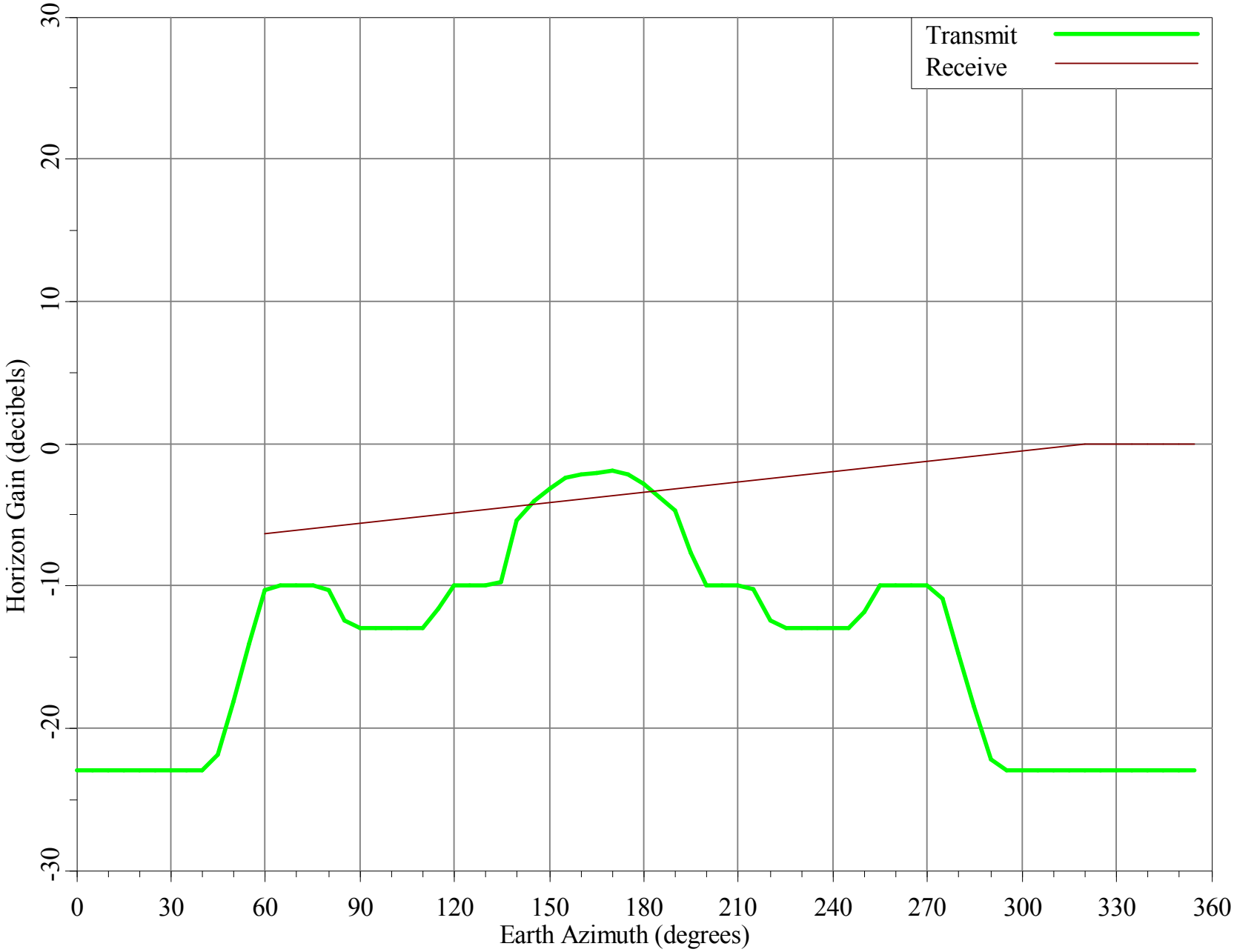
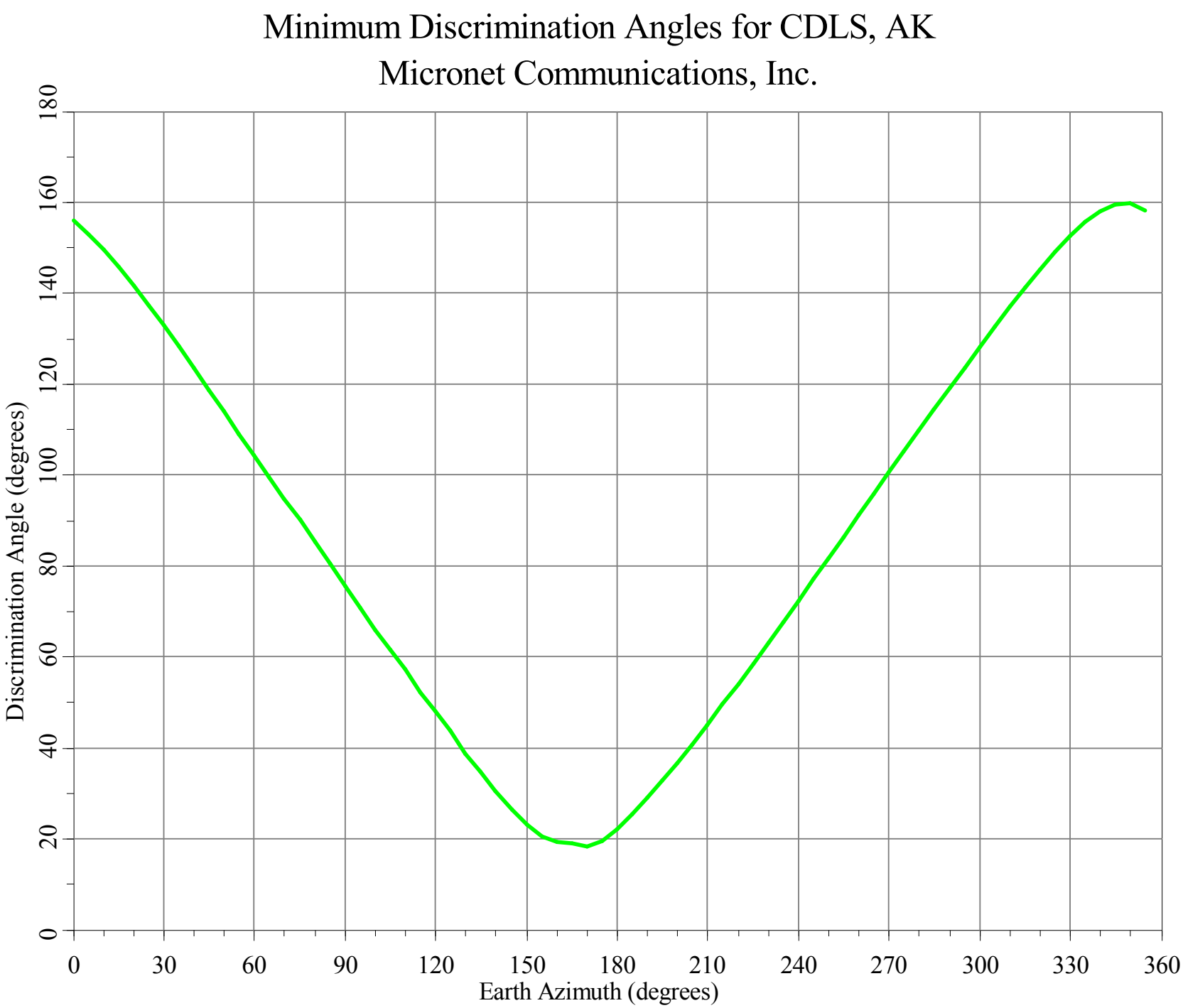
GRAPHS

Horizon Angle & Satellite Arc for CDLS, AK
Micronet Communications, Inc.

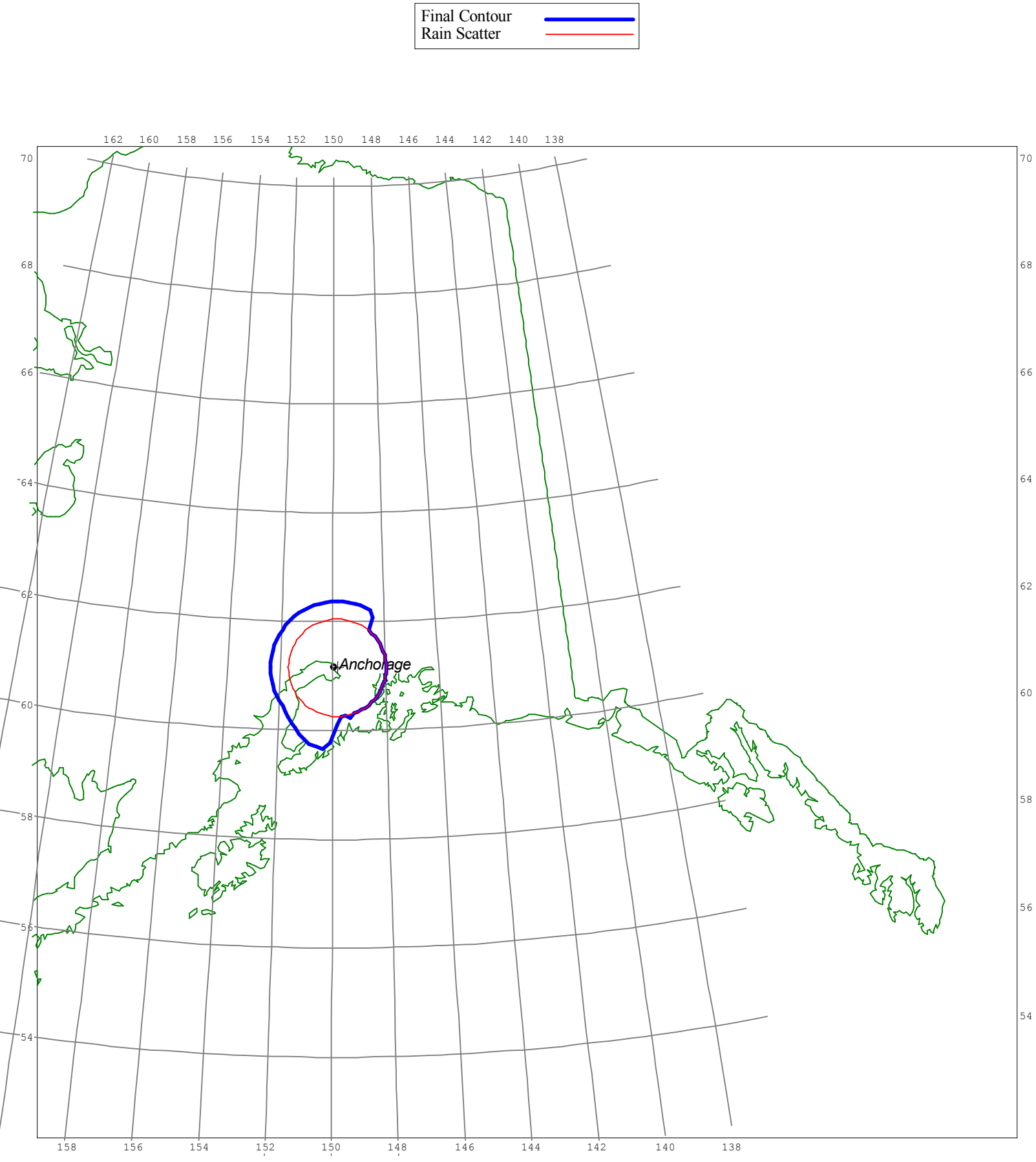


Horizon Gain for CDLS, AK
Micronet Communications, Inc.




Minimum Discrimination Angles for CDLS, AK
Micronet Communications, Inc.
Discrimination Angle (degrees)
0
20
40
60
80
100
120
140
160
180
0
30
60
90
120
150
180
210
240
270
300
330
360
Earth Azimuth (degrees)

Final Contour & Rain Scatter for CDLS, AK - Transmit



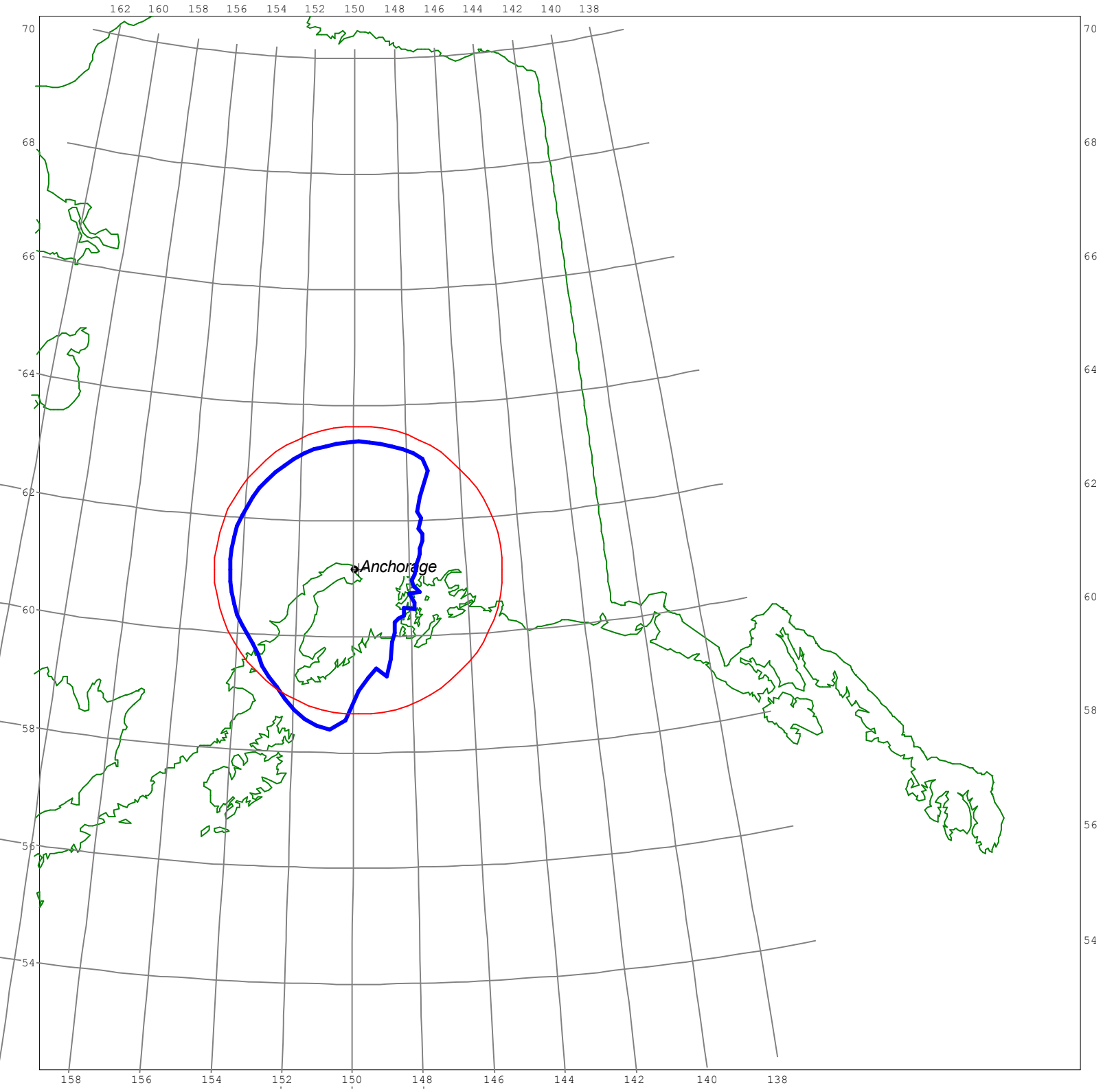
SCALE - 1:10000000 1 inch = 157.8 miles

Final Contour & Rain Scatter for CDLS, AK - Receive

SCALE - 1:10000000 1 inch = 157.8 miles

Final Contour

Rain Scatter



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NON-COMPLIANT
ANTENNA STATEMENT

HARRIS CORPORATION
APPLICATION FOR EARTH STATION
SPECIAL TEMPORARY AUTHORITY
DECEMBER 2015

Non-Compliant Antenna Statement

Re: 2.4 Meter Temporary Fixed Earth Station
C-Band: 3700 – 4200 MHz and 5925.0 – 6425.0 MHz

Harris Corporation ("Harris" or "Applicant") proposes to use a AvL Technologies model 2.4M SNG, 2.4 meter antenna for its proposed temporary fixed earth station located in Anchorage, AK at the coordinates of 61-09-16.9 N, 149-50-05.4 W. The AvL Technologies 2.4M SNG does not strictly comply with 25.209 of the FCC Rules and Regulations.

Pursuant to the *Part 25 Earth Station Fifth Report and Order*, the International Bureau (Bureau) provides a List of Approved Non-Routine Earth Station Antennas. Specifically the website http://www.fcc.gov/ib/sd/nresa lists non-routine earth station antennas licensed for use by one or more U.S. earth station operators since March 15, 2005.

"The Commission has ruled that an Earth station applicant proposing to use an antenna on this list may no longer be required to attach antenna radiation plots as an exhibit to their applications, as required by Section 25.132 (b)(3) of the Commission's rules, 47 C.F.R. § 25.132 (b)(3). Rather, they need only to provide an attachment to their applications citing the particular non-routine earth station antenna they plan to use, and an application file number and call sign of a license in which that type of non-routine antenna has been previously approved."

Accordingly, Harris submits the application file number and call sign, **File No. SES-LIC-20070427-00529** (**Call Sign: E070079**), of a previously licensed AvL Technologies model 2.4M SNG 2.4 meter earth station, which indicates that the 2.4 meter antenna proposed in this application will operate without conflict.

The applicant agrees to accept any adjacent satellite interference in the 4 GHz receive band as a result of the performance of the antenna in the 1º to 1.5º region. The applicant understands that no adjacent satellite interference protection will be available in the 1º to 1.5º regions. The applicant understands that adjacent satellite interference protection applies only to the extent of the criteria set forth in §25.209. Should the use of this antenna cause interference to other systems; the applicant agrees to terminate transmission upon notice from the Commission.