



LEVENTHAL SENTER & LERMAN PLLC

June 29, 2007

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BY HAND DELIVERY

Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, D.C. 20554

Re: HNS License Sub, LLC, Call Sign E060382, Castle Rock, CO

Dear Ms. Dortch:

By this letter, HNS License Sub, LLC (“Hughes”), licensee of a new earth station at Castle Rock, Colorado (Call Sign E060382, issued March 6, 2007), through counsel, provides the Commission with the results of antenna performance verification measurements in accordance with Section 25.138(d) of the Commission’s Rules. The antenna performance verification measurements are provided pursuant to Condition 253 of the authorization of E060382. (See SES-LIC-20061017-01852, as amended by SES-AMD-20061103-01954 and SES-AMD-20070207-00204, granted March 6, 2007.) The result of these performance verification measurements demonstrate the antenna complies fully with the requirements of Sections 25.209(a) and (b) of the Commission’s Rules.

Hughes applied for authority to establish the earth station at Castle Rock, Colorado as part of its telemetry, tracking, and control (“TT&C”) system for the soon-to-be-launch Ka-band fixed-satellite service space station, SPACEWAY 3, that is licensed to Hughes’ corporate parent. In addition, Hughes requested authority for a second back-up earth station located at Fillmore, California (Call Sign E060383) as part of its TT&C system for SPACEWAY 3 in the interest of redundancy, both in terms of number and site diversity, should a problem arise with one of the antennas. Antenna performance verification measurements for the Fillmore, California TT&C earth station are provided under separate cover.

In preparing the attached antenna performance verification measurements, Hughes selected frequencies in accordance with Section 25.138(d) of the Commission’s Rules that were based upon the availability of Ka-band spectrum that was simultaneously visible from Castle Rock, Colorado and Fillmore, California. The transmit frequencies used for the attached antenna



Marlene H. Dortch
June 29, 2007
Page -2-

measurements are 29.681 GHz, 29.708 GHz, and 29.931 GHz, and the receive frequencies used for the antenna measurements are 19.779 GHz, 19.892 GHz, and 20.074 GHz.

The cross polarization radiation diagrams in the attached document show two plots on the same page. The top plot consists of the co-polarization patterns while the lower plot consists of the cross-polarization patterns. Both of these plots were included on the same diagram in order to allow Hughes to assess the cross-polarization isolation performance of the antenna. For the purpose of the Commission's review, the lower plot on the page is the pertinent cross-polarization diagram.

Should you have any questions in regard to the attached antenna performance measurements, please do not hesitate to contact the undersigned.

Respectfully submitted,

Raul R. Rodriguez
Counsel to HNS License Sub, LLC

cc (by email): Mr. Scott Kotler
Mr. Steven Doiron

GENERAL DYNAMICS

C4 Systems

**Installation and Test Services
Field Test Report
of
9.0 m THKa Cassegrain
Antenna System**

**Feed Model #: K90KCFMS1
Feed Serial #: AA284-101
RF Specification: 975-3550B
Sidelobe Specification: FCC
Test Plan: 900-0126 / 0135
Test Engineer: T. West**

Field Test Report #: 7016
Job #: 5349
01 June 2007

For
INTELSAT

Prepared By: T. W. West



**GDC4S / SATCOM Technologies
2600 North Longview Street
Kilgore, Texas 75662
(903) 984-0555**

TABLE OF CONTENTS

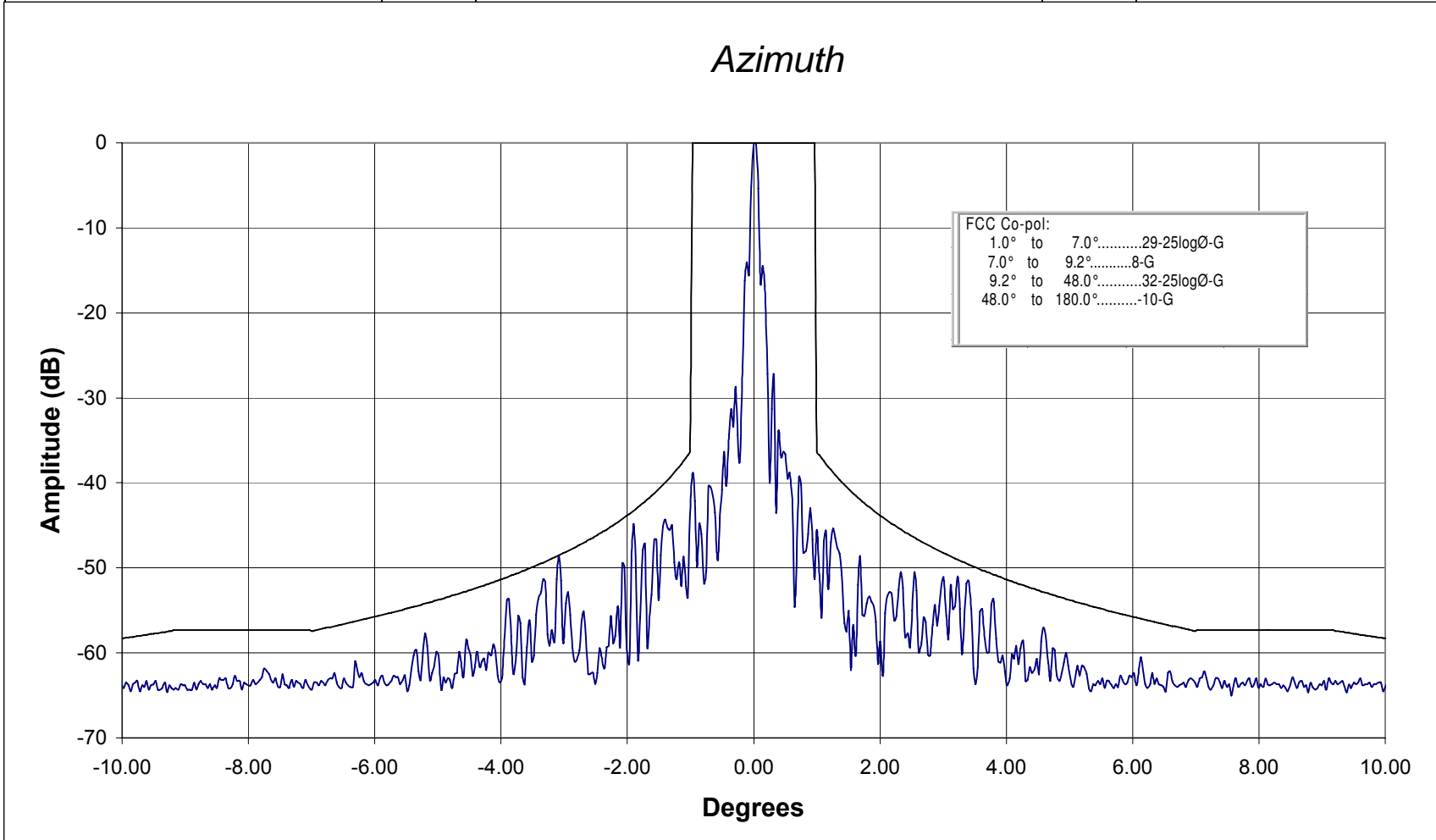
Section 1	1
Transmit Patterns @ 29.681 GHz	2
Section 2	8
Transmit Patterns @ 29.708 GHz	9
Section 3	15
Transmit Patterns @ 29.931 GHz	16
Section 4	22
Receive Patterns @ 19.779 GHz	23
Section 5	29
Receive Patterns @ 19.892 GHz	30
Section 6	36
Receive Patterns @ 20.074 GHz	37

Section 1
TX Patterns @ 29.681 GHz

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	14-May-07

Gain at 29,681 MHz = 65.30 dBi
Sidelobe Envelope = FCC
CRK-A61

Antenna Dia. (m):	9.0
Efficiency (%):	43.30
Axis Recorded:	Azimuth
Direction of Travel:	CW



Spacecraft:	Spaceway 2
Frequency (MHz):	29,681
Polarization:	LHCP
Local Time of Day:	1:15:00
Feed Insertion Loss:	0.73 dB

Azimuth Angle:	171.12
Elevation Angle:	44.16
Polariz. Angle:	0.0
% sidelobes exceeding envelope:	0.17
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

Resolution BW:	300.0 Hz
Frequency Span:	0.0 Hz
Video BW:	1.0 Hz
Input Attenuation:	10.0 dB
Sweep Time:	240.0 Sec
Log Scale:	10.0 dB/Div
Ref Level:	0.0 dBm
TEMP(°F):	56
Note:	RX in RHCP

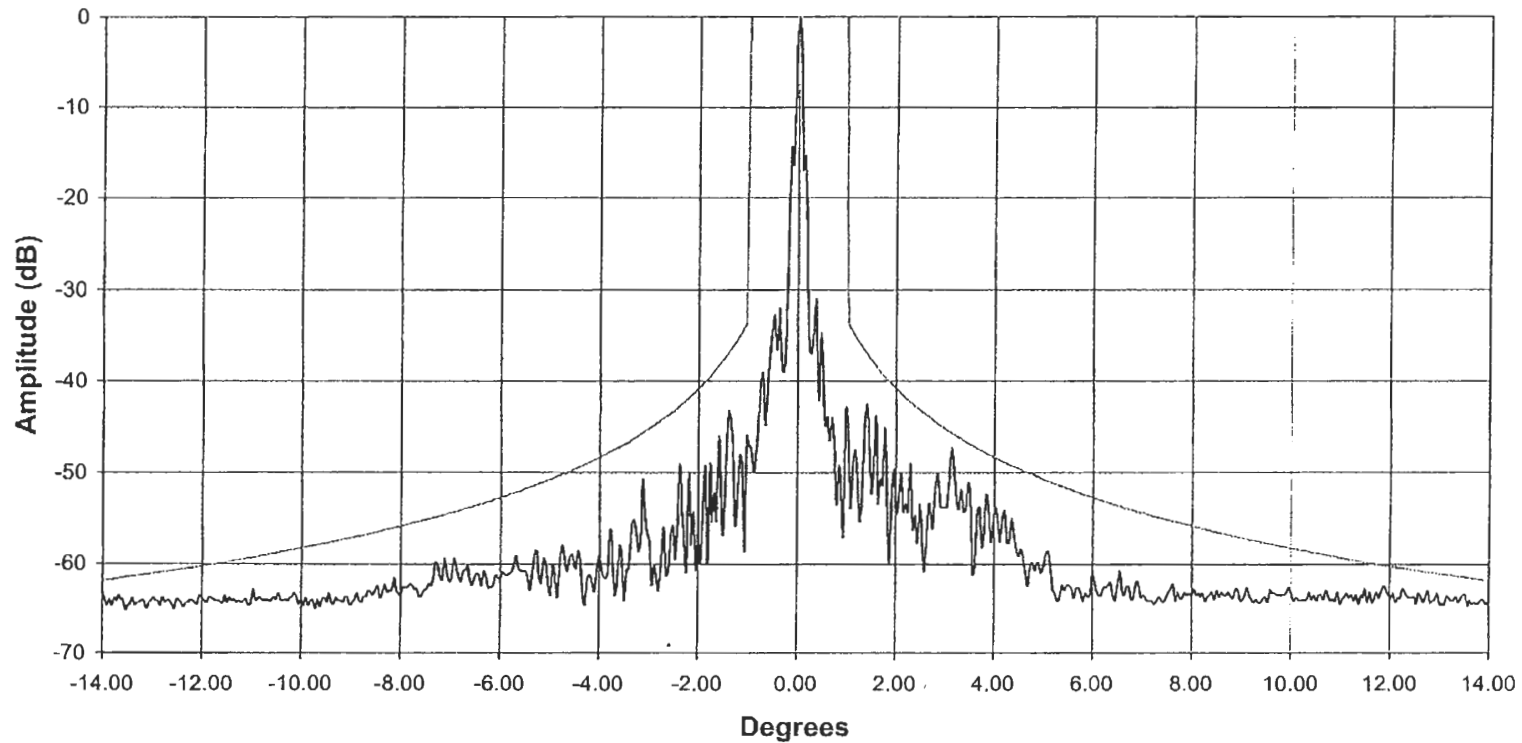
Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	14-May-07

Gain at 29,681 MHz =	65.30 dBi
Sidelobe Envelope =	32 -25Log(Θ) dBi

Antenna Dia. (m):	9.0
Efficiency (%):	35.21
Axis Recorded:	Elevation
Direction of Travel:	UP

CRK-A61

Elevation



Spacecraft:	Spaceway 2
Frequency (MHz):	29,681
Polarization:	LHCP
Local Time of Day:	1:25:00
Feed Insertion Loss:	0.73 dB

Azimuth Angle:	171.12
Elevation Angle:	44.16
Polariz. Angle:	0.0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

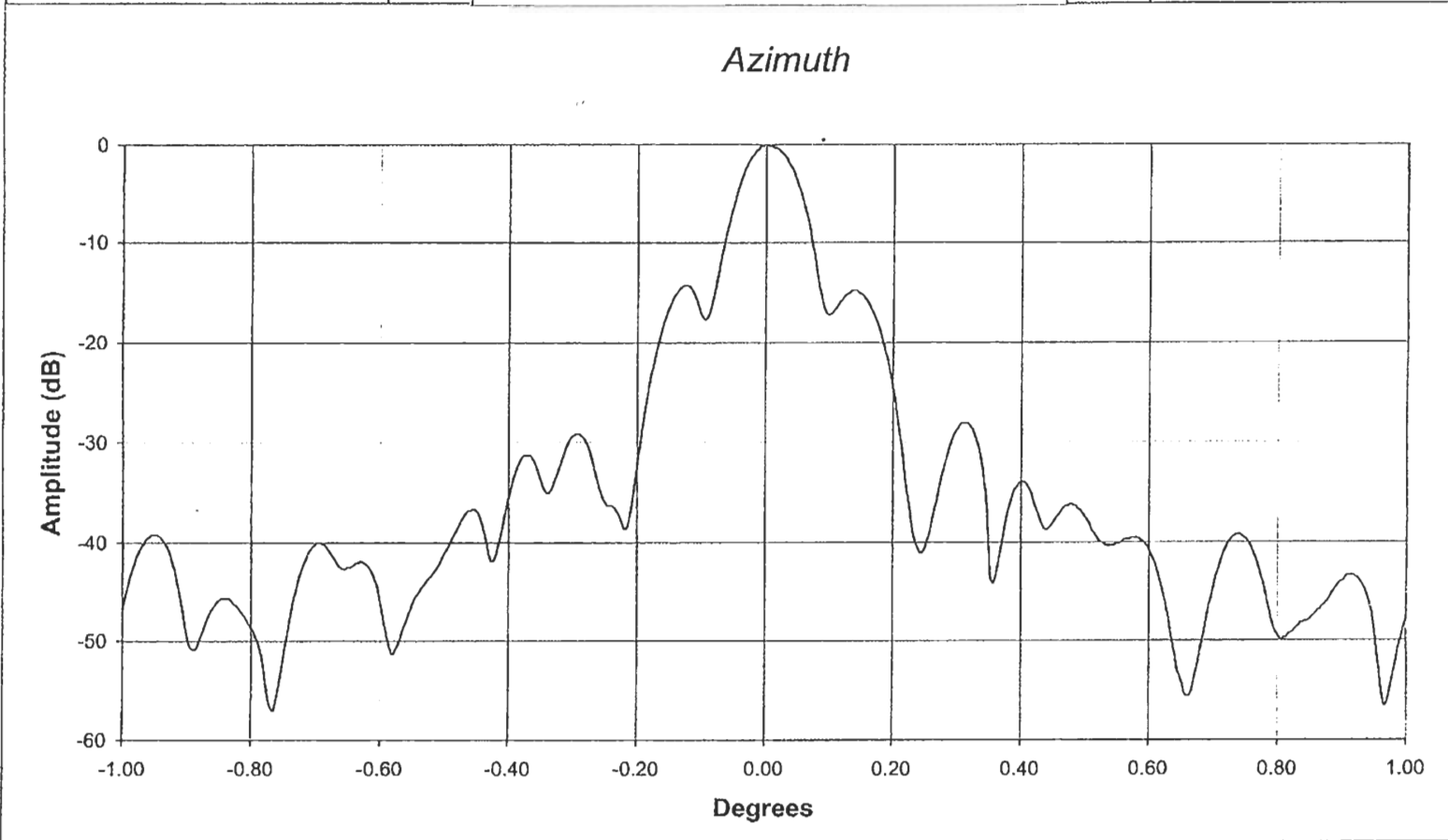
Resolution BW:	300.0 Hz
Frequency Span:	0.0 Hz
Video BW:	1.0 Hz
Input Attenuation:	10.0 dB
Sweep Time:	280.0 Sec
Log Scale:	10.0 dB/Div
Ref Level:	0.0 dBm
TEMP(°F):	56
Note:	RX in RHCP

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	14-May-07

Avg. Gain at 29,681 MHz =	65.75 dBi
Sidelobe Envelope =	29 -25Log(θ) dBi

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	65.79
Gain: Integration (dBi):	65.72
Axis Recorded:	Azimuth
Direction of Travel:	CW

CRK-A61



Spacecraft:	Spaceway 2	
Frequency (MHz):	29,681	
Polarization:	LHCP	
3dB BW:	0.079	10dB BW: 0.136
Local Time of Day:	1:35:00	
Feed Insertion Loss:	0.73 dB	

Azimuth Angle:	171.12
Elevation Angle:	44.16
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

Resolution BW:	300.0 Hz
Frequency Span:	0.0 Hz
Video BW:	1.0 Hz
Input Attenuation:	10.0 dB
Sweep Time:	24.0 Sec
Log Scale:	10.0 dB/Div
Ref Level:	0.0 dBm
TEMP(°F):	56
Note:	RX in RHCP

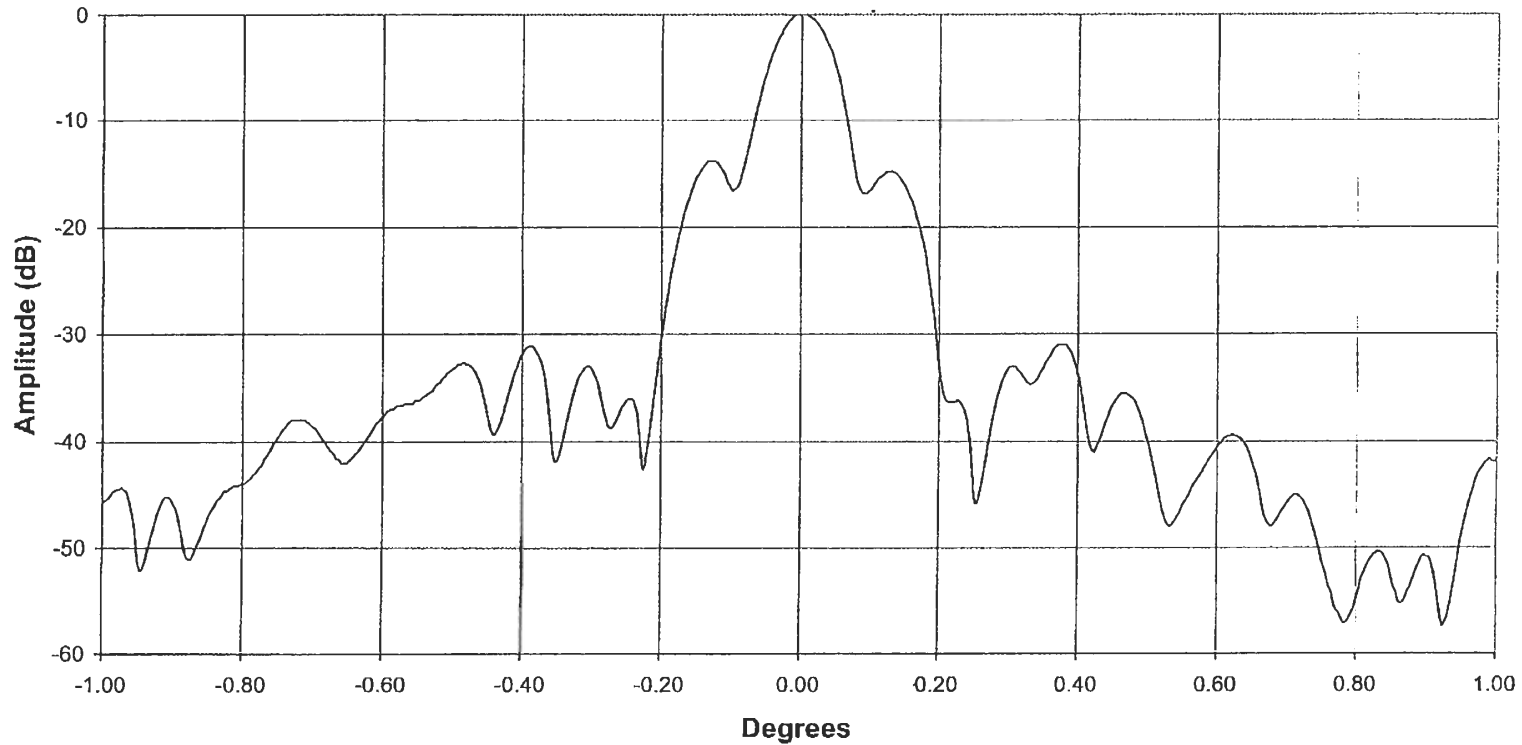
Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	14-May-07

Avg. Gain at 29,681 MHz =	65.91	dBi
Sidelobe Envelope =	32	-25Log(θ) dBi

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	66.01
Gain: Integration (dBi):	65.81
Axis Recorded:	Elevation
Direction of Travel:	UP

CRK-A61

Elevation



Spacecraft:	Spaceway 2	
Frequency (MHz):	29,681	
Polarization:	LHCP	
3dB BW:	0.077	10dB BW: 0.133
Local Time of Day:	1:45:00	
Feed Insertion Loss:	0.73 dB	

Azimuth Angle:	171.12
Elevation Angle:	44.16
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

Resolution BW:	300.0	Hz
Frequency Span:	0.0	Hz
Video BW:	1.0	Hz
Input Attenuation:	10.0	dB
Sweep Time:	20.0	Sec
Log Scale:	10.0	dB/Div
Ref Level:	0.0	dBm
TEMP(°F):	56	
Note:	RX in RHCP	

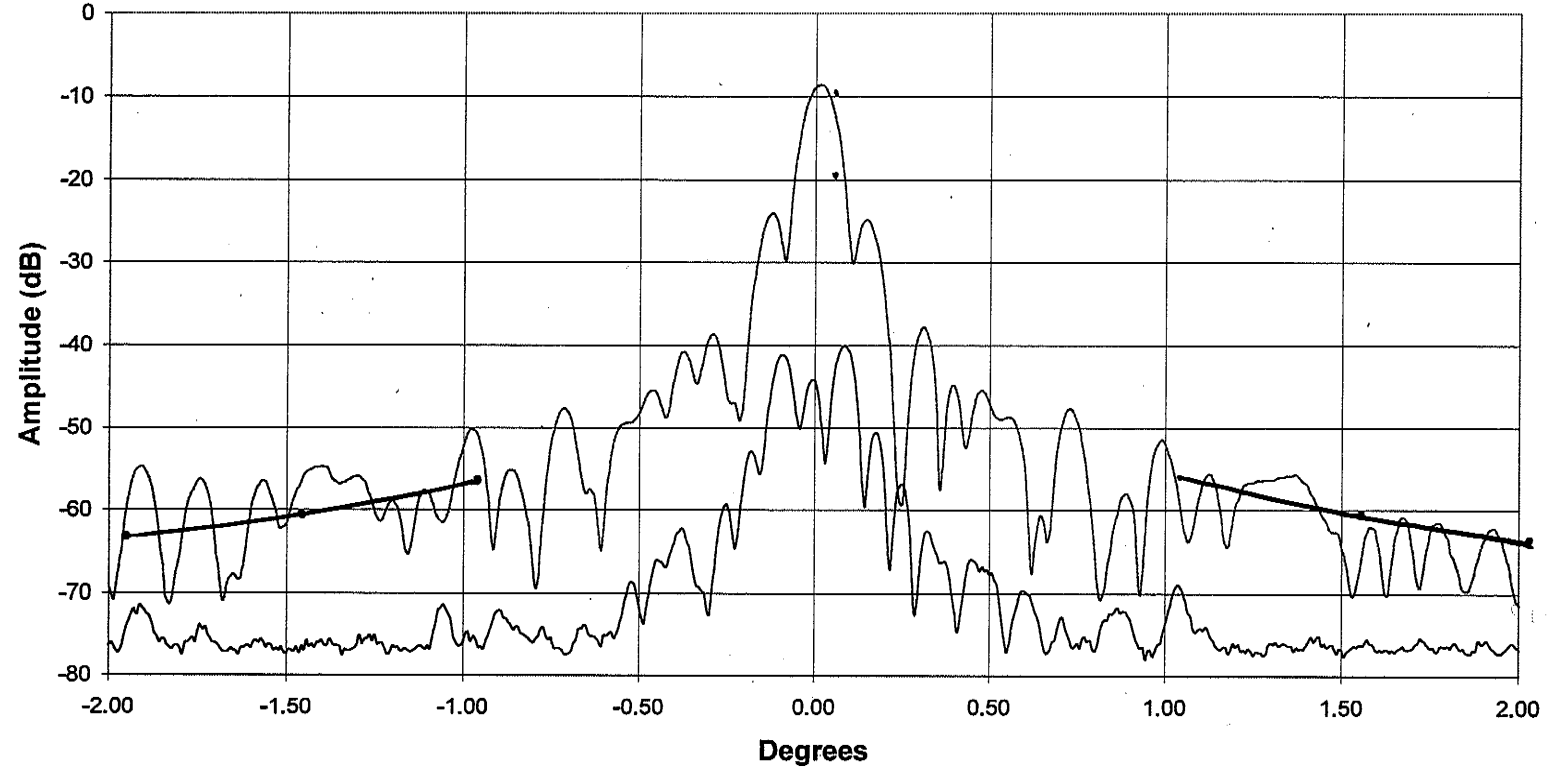
Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	16-May-07

Avg. Gain at 29,681 MHz =	65.92	dB
On Axis Isolation =	30.17	dB

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	65.81
Gain: Integration (dBi):	66.03
Axis Recorded:	Azimuth
Direction of Travel:	CW

CRK-A61

Azimuth Crosspol



Spacecraft:	Spaceway 2	
Frequency (MHz):	29,681	
Polarization:	LHCP	
3dB BW:	0.079	10dB BW: 0.136
Local Time of Day:	23:50:00	
Feed Insertion Loss:	0.73 dB	

Azimuth Angle:	171.15
Elevation Angle:	44.2
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

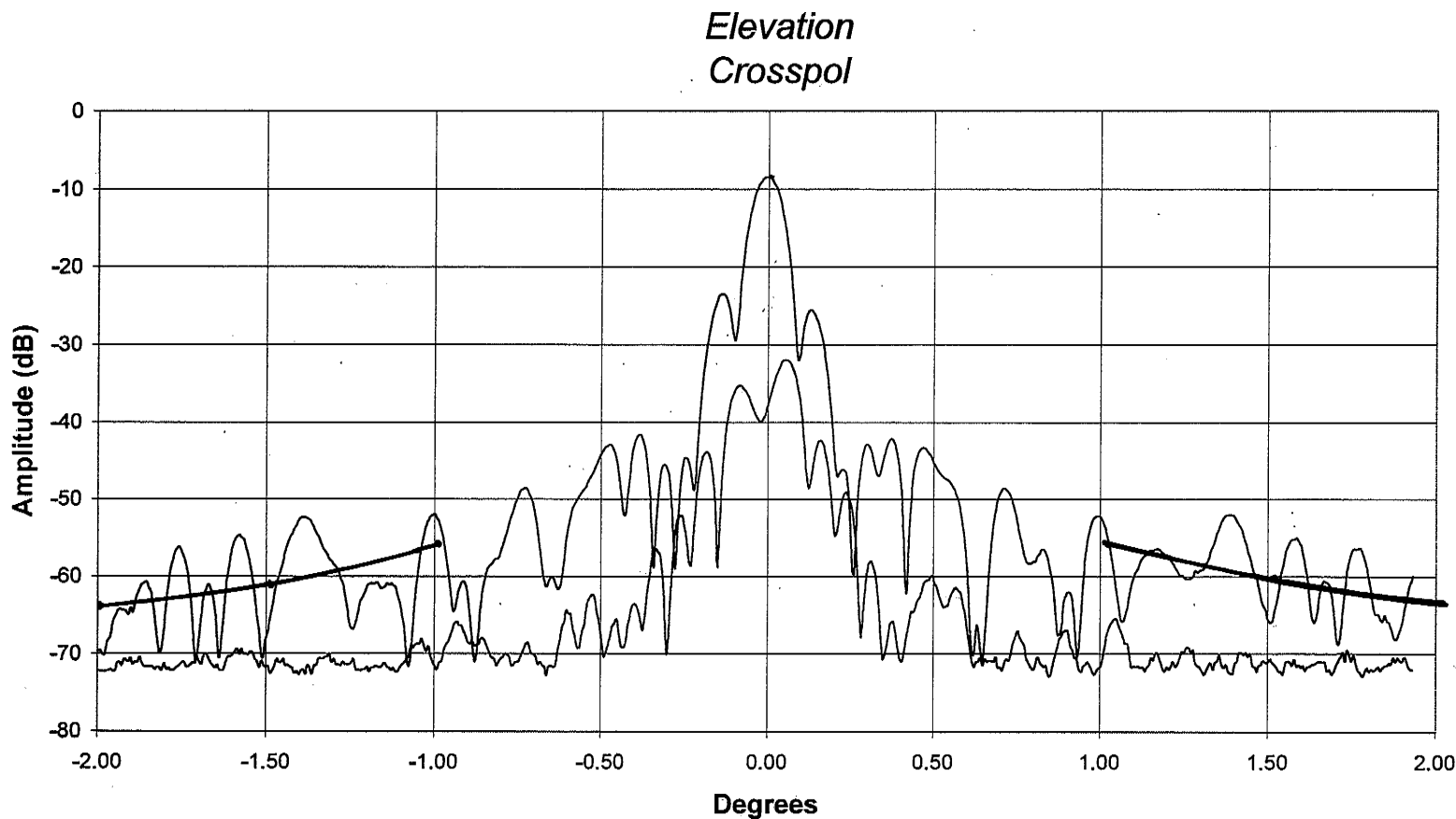
Resolution BW:	300.0	Hz
Frequency Span:	0.0	Hz
Video BW:	1.0	Hz
Input Attenuation:	10.0	dB
Sweep Time:	105.0	Sec
Log Scale:	10.0	dB/Div
Ref Level:	0.0	dBm
TEMP(°F):	56	
Note:	RX in RHCP	

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	17-May-07

Avg. Gain at 29,681 MHz =	65.94	dBi
On Axis Isolation =	30.17	dB

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	65.96
Gain: Integration (dBi):	65.92
Axis Recorded:	Elevation
Direction of Travel:	UP

CRK-A61



Spacecraft:	Spaceway 2	
Frequency (MHz):	29,681	
Polarization:	LHCP	
3dB BW:	0.079	10dB BW: 0.131
Local Time of Day:	0:00:00	
Feed Insertion Loss:	0.73	dB

Azimuth Angle:	171.16
Elevation Angle:	44.2
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

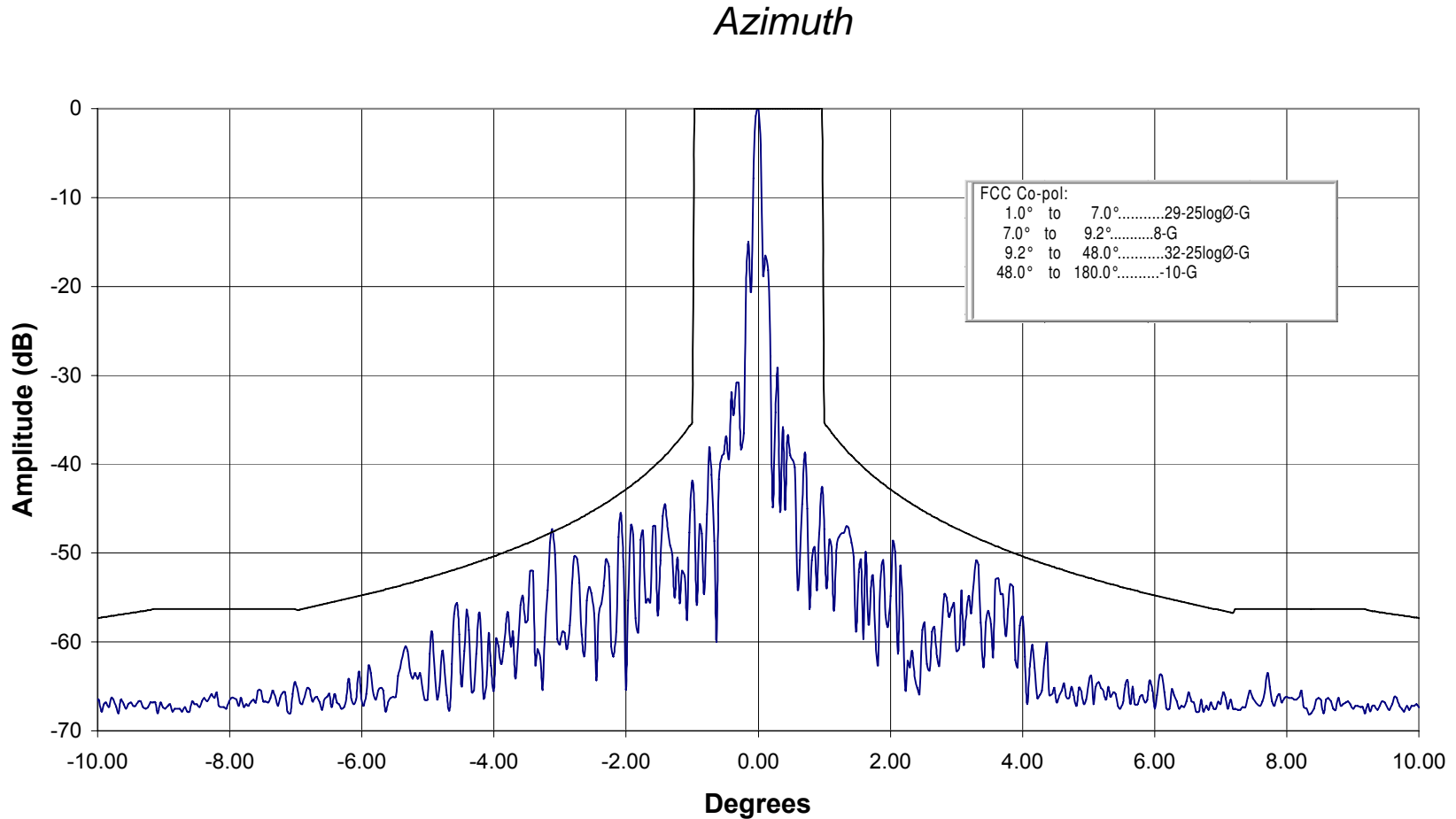
Resolution BW:	300.0	Hz
Frequency Span:	0.0	Hz
Video BW:	1.0	Hz
Input Attenuation:	10.0	dB
Sweep Time:	146.0	Sec
Log Scale:	10.0	dB/Div
Ref Level:	0.0	dBm
TEMP(°F):	48	
Note:	RX in RHCP	

Section 2
TX Patterns @ 29.708

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	21-May-07

Gain at 29,708 MHz = 64.31 dBi
Sidelobe Envelope = FCC
CRK-A61

Antenna Dia. (m):	9.0
Gain by Integration (dBi):	64.31
Efficiency (%):	34.40
Axis Recorded:	Azimuth
Direction of Travel:	CW



Spacecraft:	IA8
Frequency (MHz):	29,708
Polarization:	RHCP
Local Time of Day:	20:00:00
Feed Insertion Loss:	0.73 dB

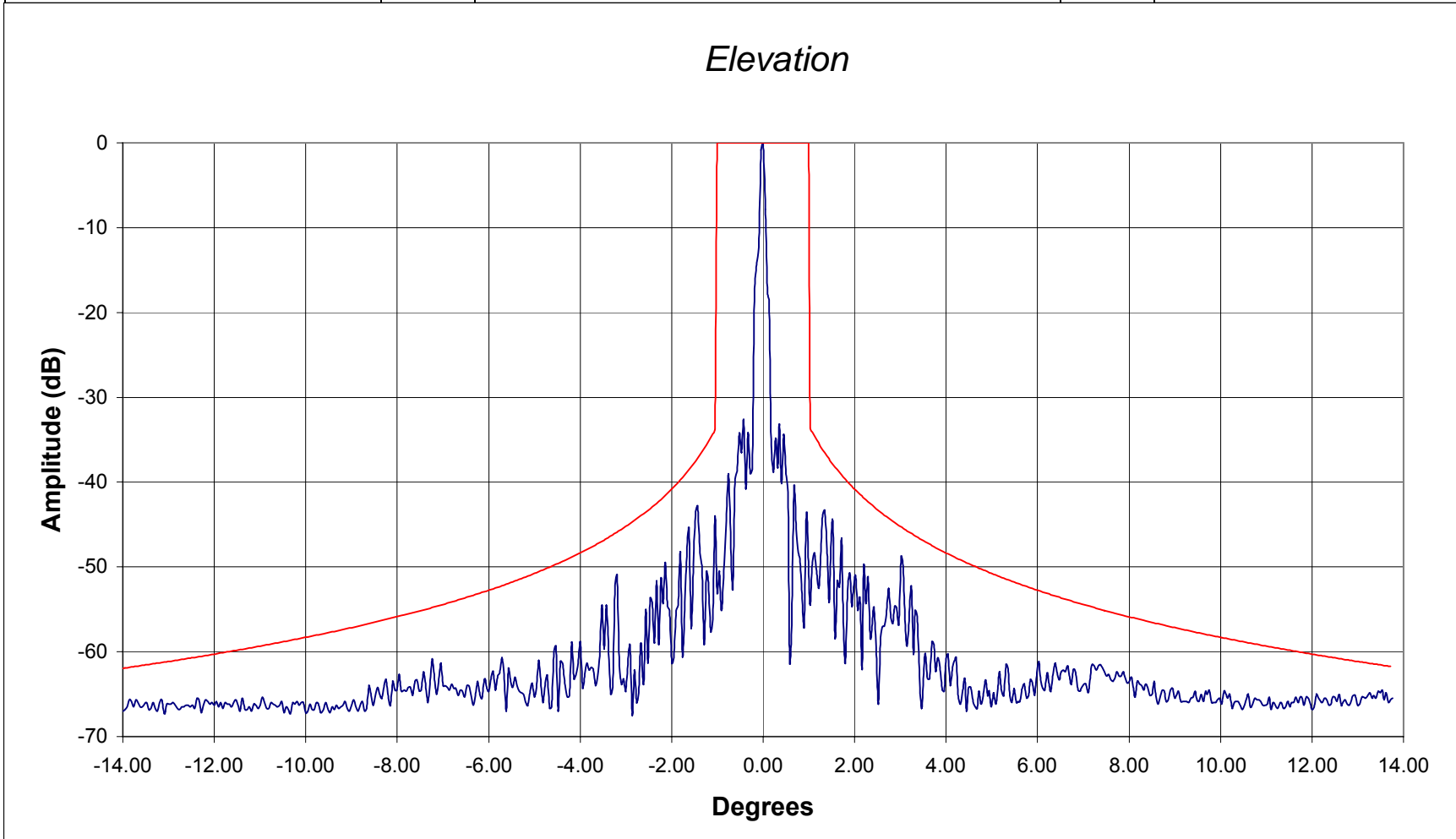
Azimuth Angle:	155.86
Elevation Angle:	41.68
Polariz. Angle:	0.0
% sidelobes exceeding envelope:	0.17
Weather:	Cloudy
RMS Surface Accuracy:	0.015 in.

Resolution BW:	300.0 Hz
Frequency Span:	0.0 Hz
Video BW:	1.0 Hz
Input Attenuation:	10.0 dB
Sweep Time:	525.0 Sec
Log Scale:	10.0 dB/Div
Ref Level:	-8.5 dBm
TEMP(°F):	56
Note:	RX in LHCP

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	21-May-07

Gain at 29,708 MHz =	65.30 dBi
Sidelobe Envelope =	32 -25Log(Θ) dBi
CRK-A61	

Antenna Dia. (m):	9.0
Efficiency (%):	26.94
Axis Recorded:	Elevation
Direction of Travel:	UP



Spacecraft:	IA8
Frequency (MHz):	29,708
Polarization:	RHCP
Local Time of Day:	20:10:00
Feed Insertion Loss:	0.60 dB

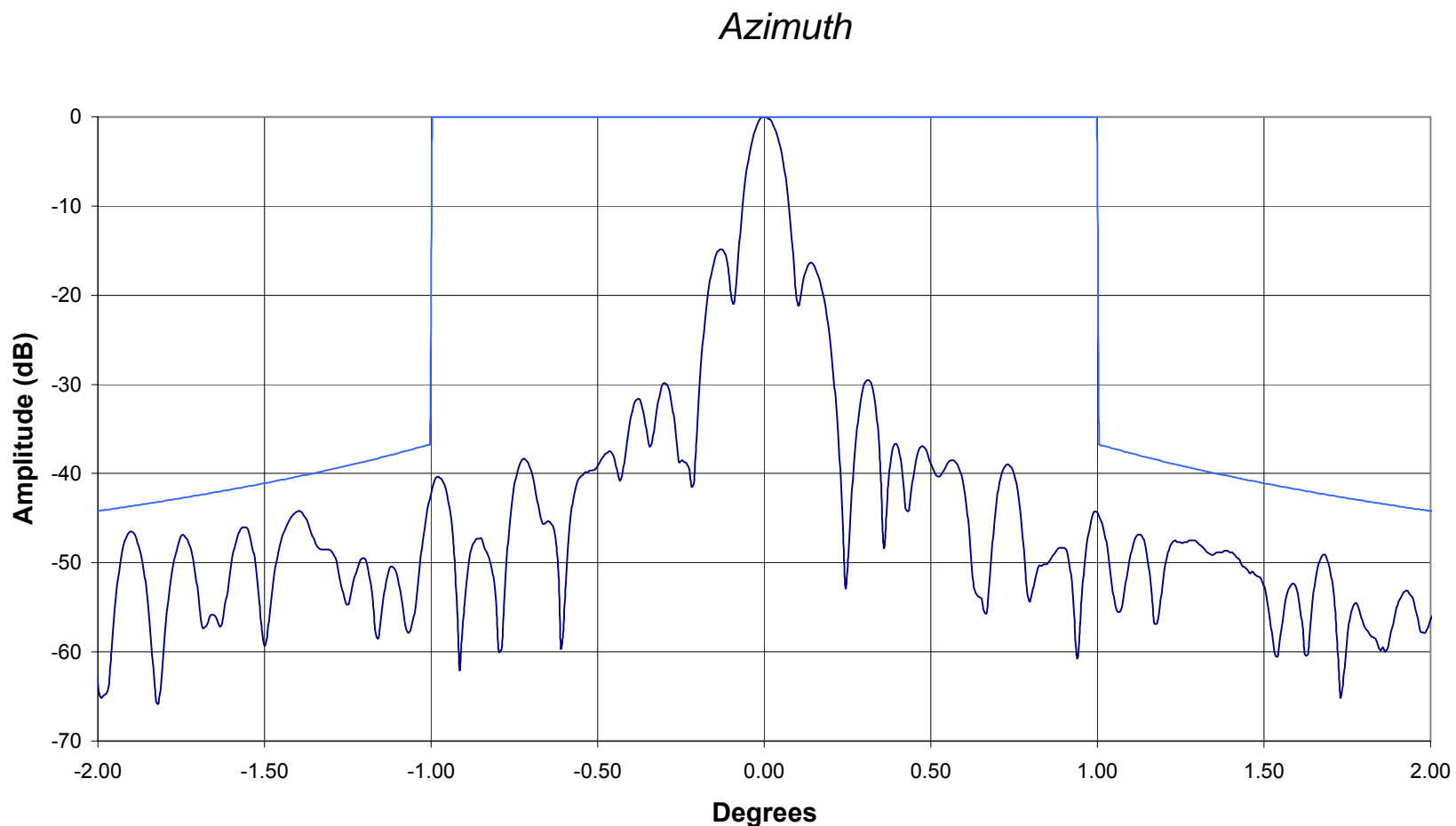
Azimuth Angle:	155.86
Elevation Angle:	41.68
Polariz. Angle:	0.0
% sidelobes exceeding envelope:	0.00
Weather:	Cloudy
RMS Surface Accuracy:	0.015 in.

Resolution BW:	300.0	Hz
Frequency Span:	0.0	Hz
Video BW:	1.0	Hz
Input Attenuation:	10.0	dB
Sweep Time:	1020.0	Sec
Log Scale:	10.0	dB/Div
Ref Level:	-8.5	dBm
TEMP(°F):	56	
Note:	RX in LHCP	

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	21-May-07

Avg. Gain at 29,708 MHz =	65.68 dBi
Sidelobe Envelope =	29 -25Log(Θ) dBi
CRK-A61	

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	65.56
Gain: Integration (dBi):	65.80
Axis Recorded:	Azimuth
Direction of Travel:	CW



Spacecraft:	IA8		
Frequency (MHz):	29,708		
Polarization:	RHCP		
3dB BW:	0.082	10dB BW:	0.142
Local Time of Day:	20:35:00		
Feed Insertion Loss:	0.60 dB		

Azimuth Angle:	155.86
Elevation Angle:	41.67
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Cloudy
RMS Surface Accuracy:	0.015 in.

Resolution BW:	300.0 Hz
Frequency Span:	0.0 Hz
Video BW:	1.0 Hz
Input Attenuation:	10.0 dB
Sweep Time:	105.0 Sec
Log Scale:	10.0 dB/Div
Ref Level:	-8.5 dBm
TEMP (°F):	56
Note:	RX in LHCP

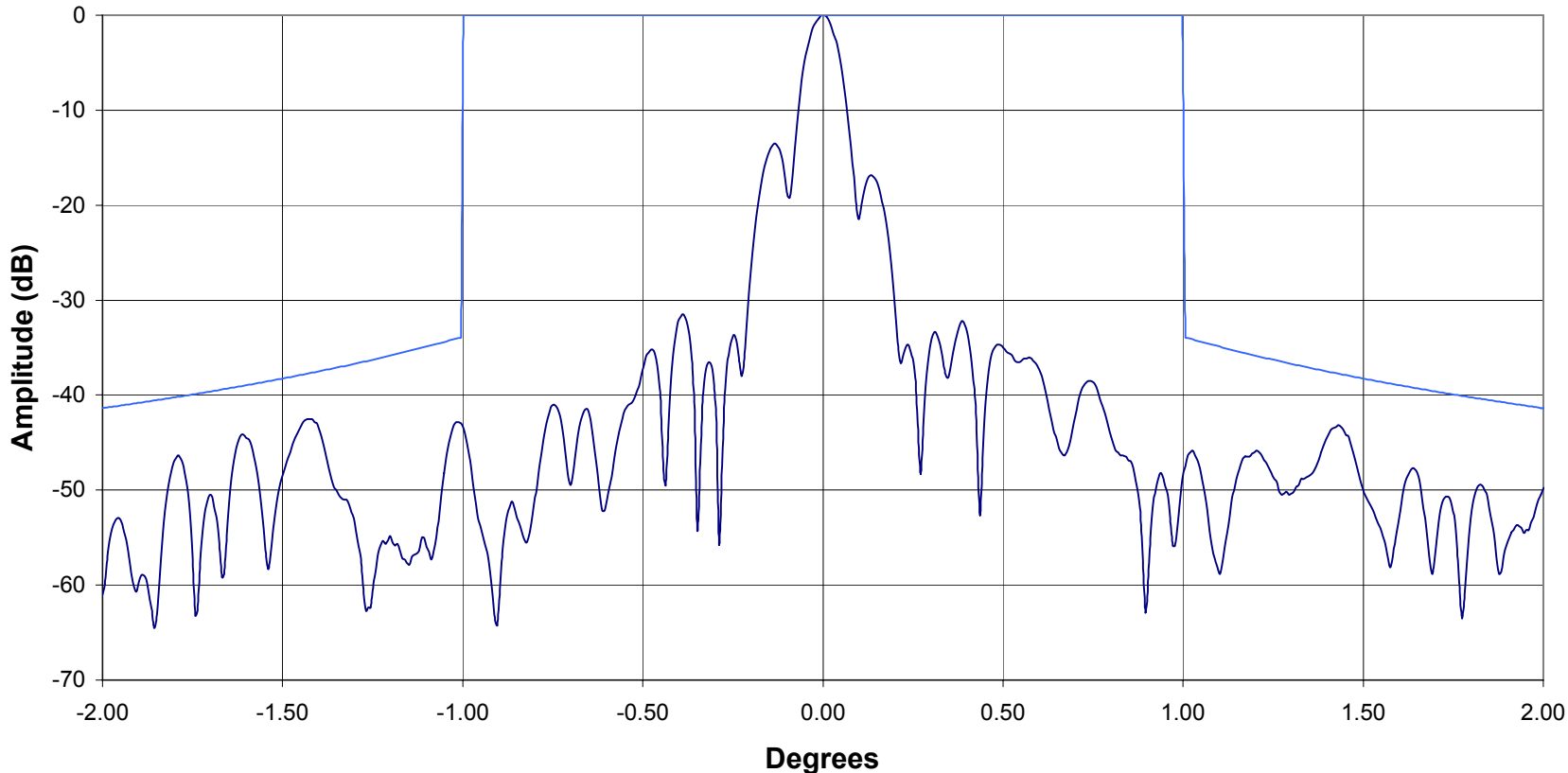
Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	21-May-07

Avg. Gain at 29,708 MHz =	65.85 dBi
Sidelobe Envelope =	32 -25Log(Θ) dBi

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	65.76
Gain: Integration (dBi):	65.94
Axis Recorded:	Elevation
Direction of Travel:	UP

CRK-A61

Elevation



Spacecraft:	IA8		
Frequency (MHz):	29,708		
Polarization:	RHCP		
3dB BW:	0.082	10dB BW:	0.136
Local Time of Day:	21:05:00		
Feed Insertion Loss:	0.60 dB		

Azimuth Angle:	155.9
Elevation Angle:	41.71
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Cloudy
RMS Surface Accuracy:	0.015 in.

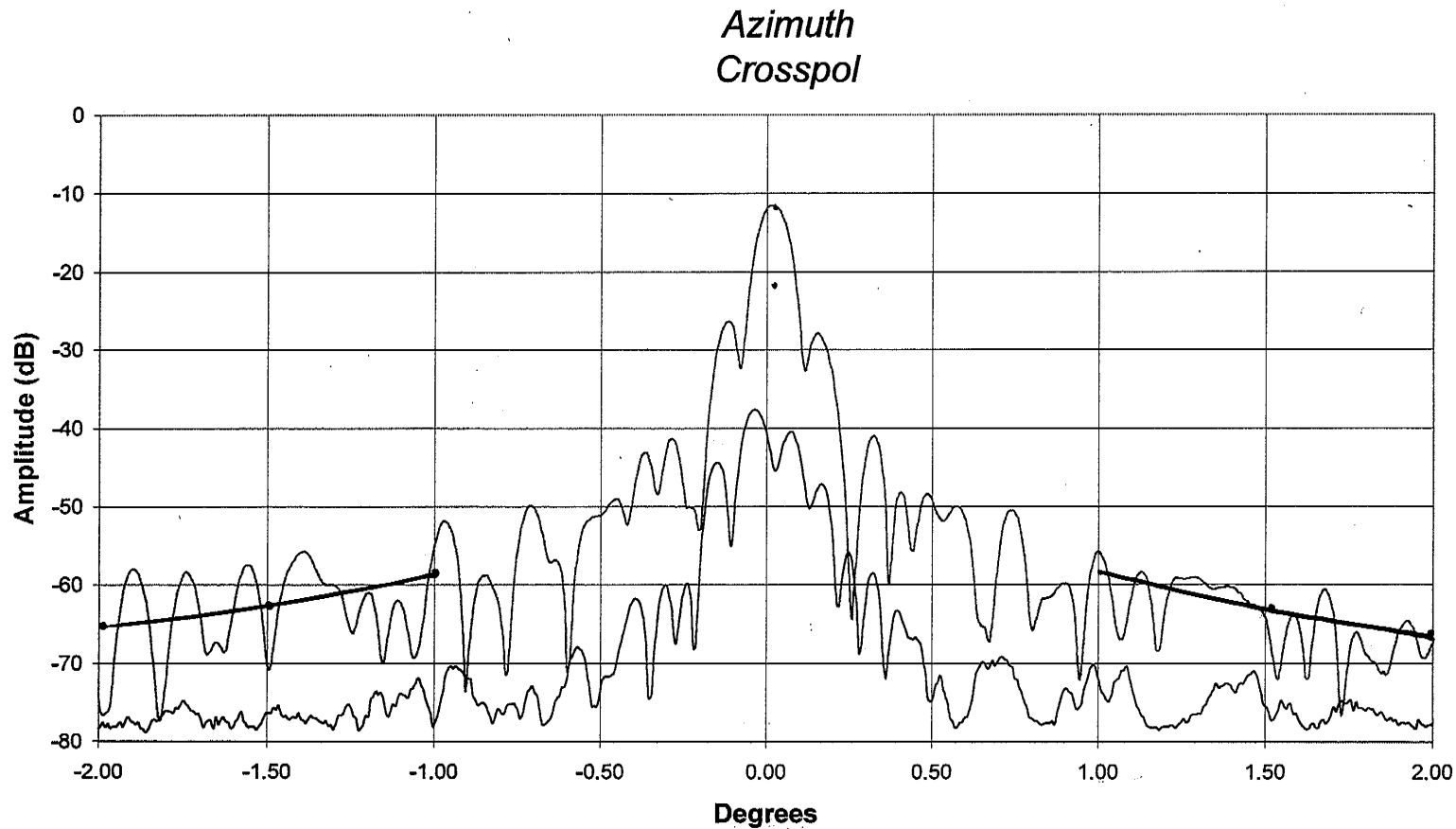
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Frequency Span:	0.0 Hz
Video BW:	1.0 Hz
Input Attenuation:	10.0 dB
Sweep Time:	146.0 Sec
Log Scale:	10.0 dB/Div
Ref Level:	-8.5 dBm
TEMP(°F):	56
Note:	RX in LHCP

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	21-May-07

Avg. Gain at 29,708 MHz =	65.68	dBi
On Axis Isolation =	33.16	dB

CRK-A61

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	65.56
Gain: Integration (dBi):	65.80
Axis Recorded:	Azimuth
Direction of Travel:	CW



Spacecraft:	IA8		
Frequency (MHz):	29,708		
Polarization:	RHCP		
3dB BW:	0.082	10dB BW:	0.142
Local Time of Day:	20:35:00		
Feed Insertion Loss:	0.60 dB		

Azimuth Angle:	155.86
Elevation Angle:	41.67
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Cloudy
RMS Surface Accuracy:	0.015 in.

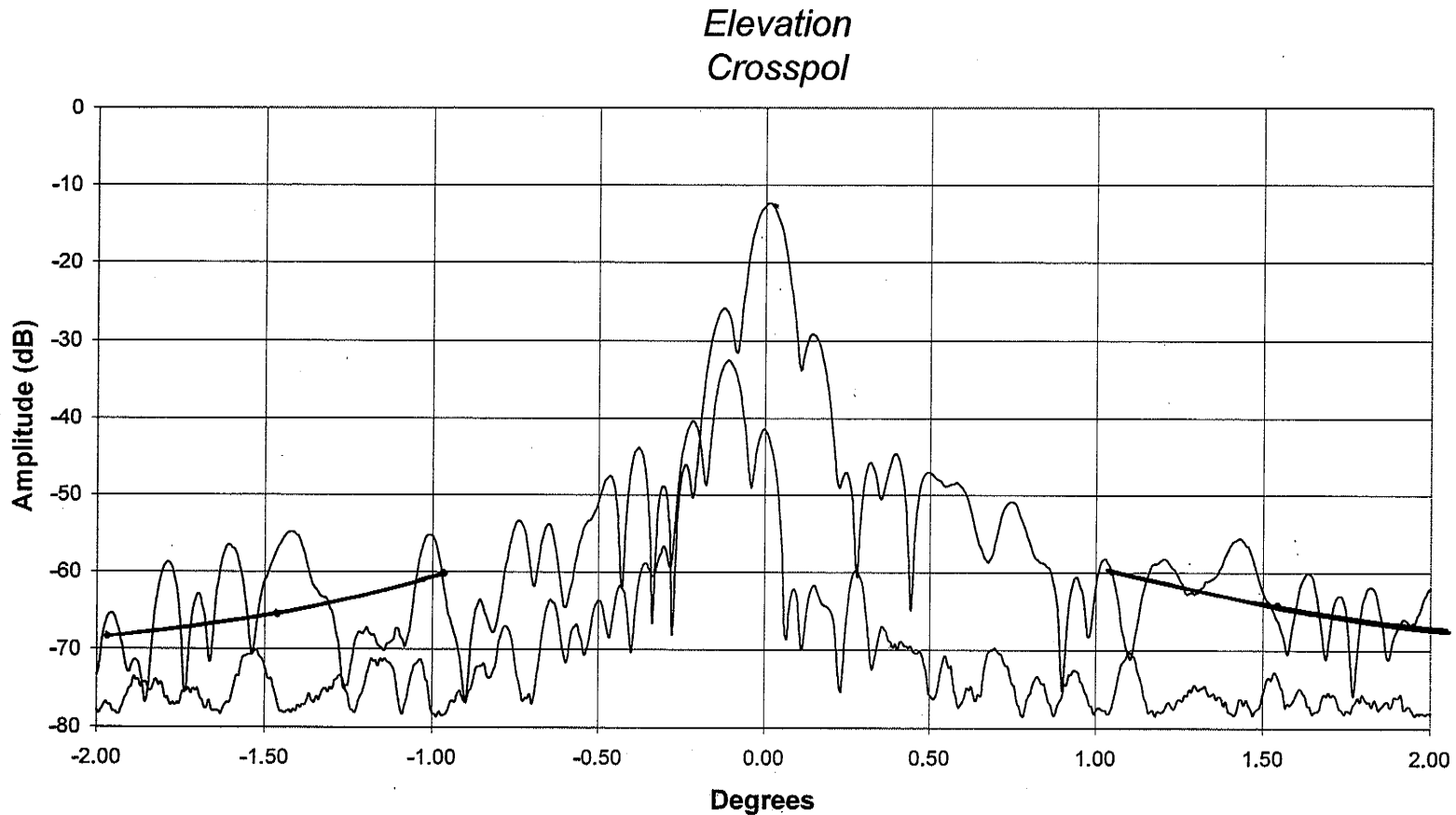
Resolution BW:	300.0	Hz
Frequency Span:	0.0	Hz
Video BW:	1.0	Hz
Input Attenuation:	10.0	dB
Sweep Time:	105.0	Sec
Log Scale:	10.0	dB/Div
Ref Level:	-8.5	dBm
TEMP(°F):	56	
Note:	RX in LHCP	

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	21-May-07

Avg. Gain at 29,708 MHz =	65.85	dBi
On Axis Isolation =	32.5	dB

CRK-A61

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	65.76
Gain: Integration (dBi):	65.94
Axis Recorded:	Elevation
Direction of Travel:	UP



Spacecraft:	IA8		
Frequency (MHz):	29,708		
Polarization:	RHCP		
3dB BW:	0.082	10dB BW:	0.136
Local Time of Day:	21:05:00		
Feed Insertion Loss:	0.60	dB	

Azimuth Angle:	155.9	
Elevation Angle:	41.71	
Polariz. Angle:	0	
% sidelobes exceeding envelope:	0.00	
Weather:	Cloudy	
RMS Surface Accuracy:	0.015	in.

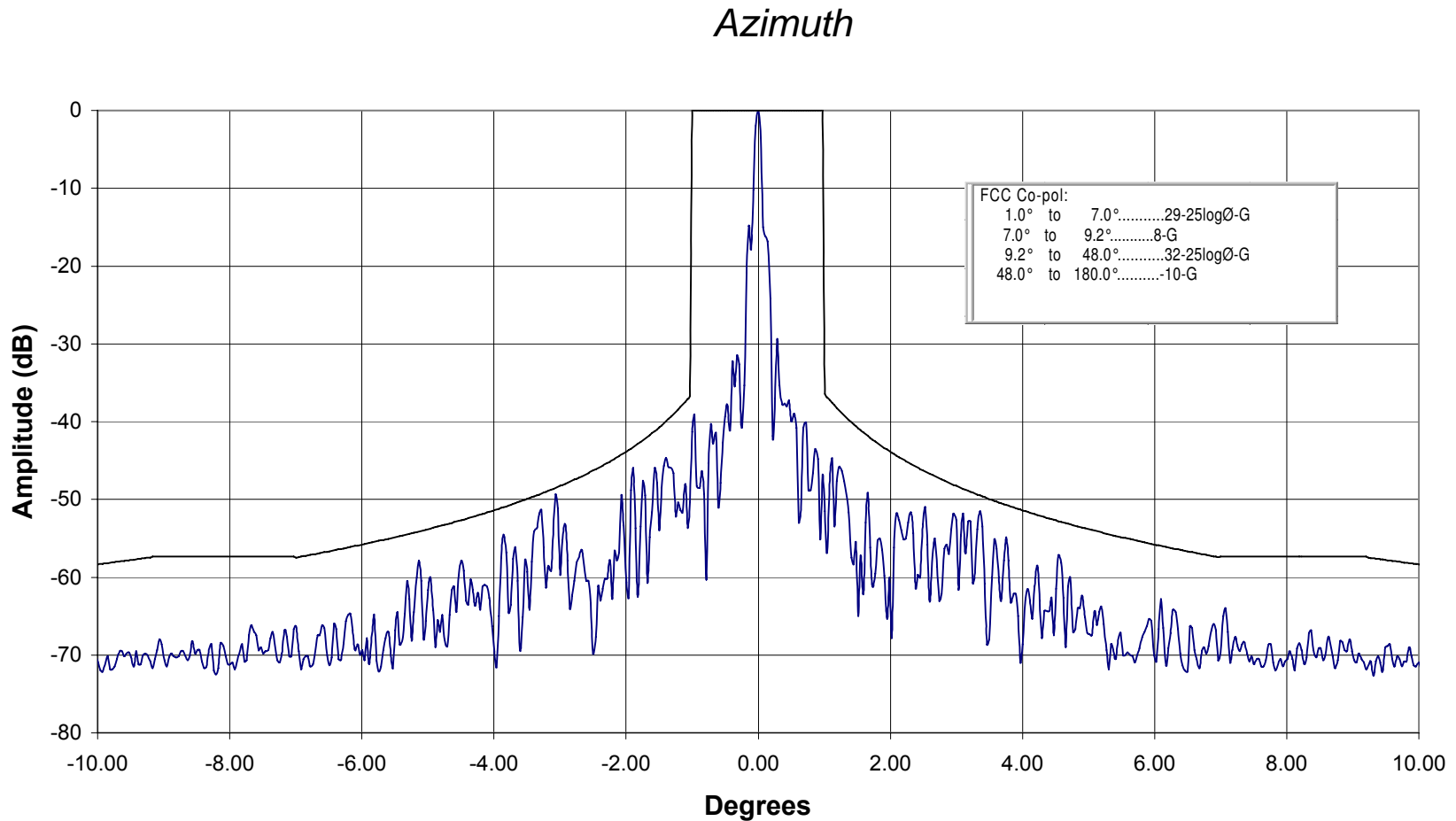
Resolution BW:	300.0	Hz
Frequency Span:	0.0	Hz
Video BW:	1.0	Hz
Input Attenuation:	10.0	dB
Sweep Time:	146.0	Sec
Log Scale:	10.0	dB/Div
Ref Level:	-8.5	dBm
TEMP(°F):	56	
Note:	RX in LHCP	

Section 3
TX Patterns @ 29.931 GHz

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	13-May-07

Gain at 29,931 MHz = 65.35 dBi
Sidelobe Envelope = FCC
CRK-A61

Antenna Dia. (m):	9.0
Efficiency (%):	43.07
Axis Recorded:	Azimuth
Direction of Travel:	CW



Spacecraft:	Spaceway 2
Frequency (MHz):	29,931
Polarization:	LHCP
Local Time of Day:	23:20:00
Feed Insertion Loss:	0.73 dB

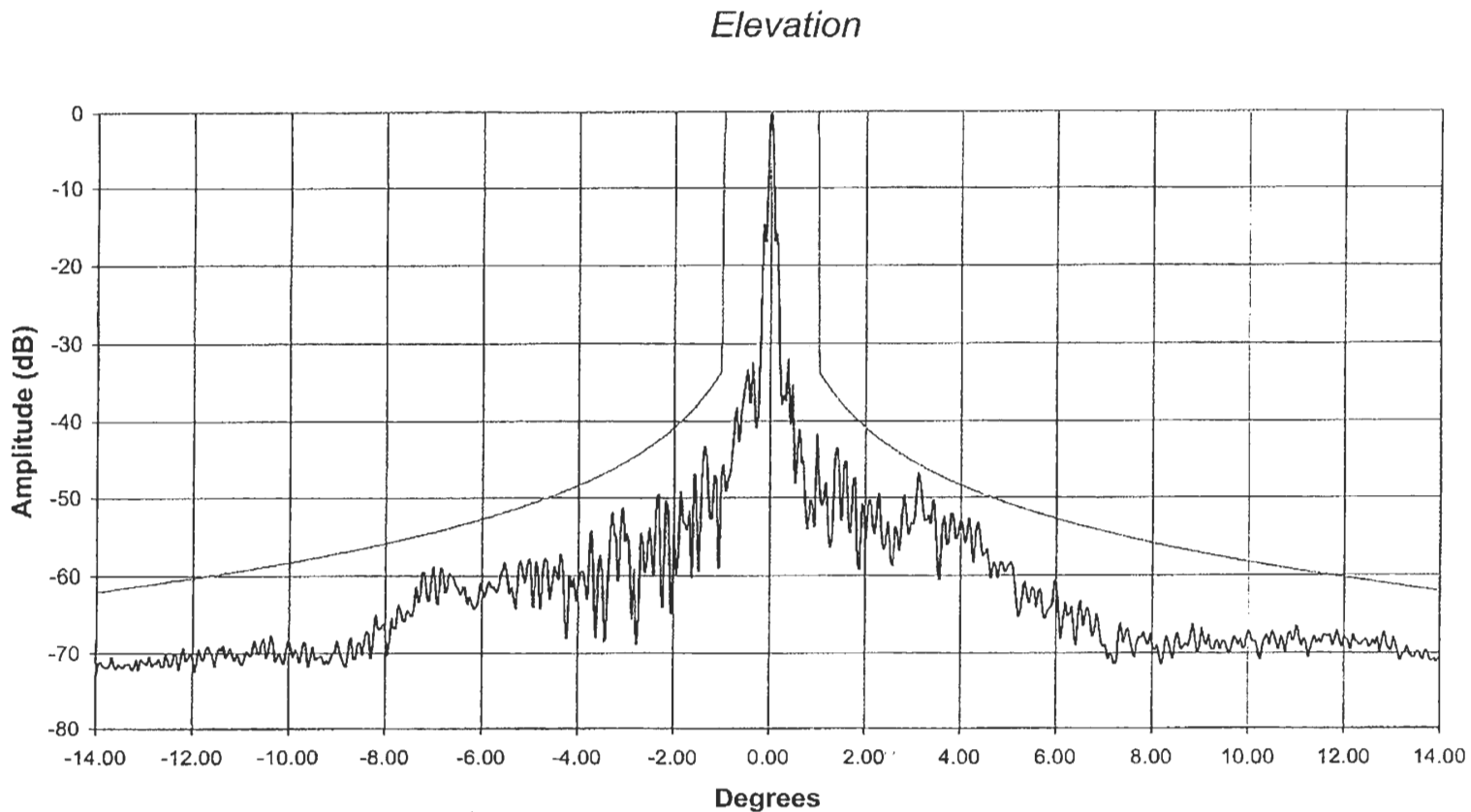
Azimuth Angle:	171.12
Elevation Angle:	44.16
Polariz. Angle:	0.0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

Resolution BW:	300.0	Hz
Frequency Span:	0.0	Hz
Video BW:	1.0	Hz
Input Attenuation:	10.0	dB
Sweep Time:	240.0	Sec
Log Scale:	10.0	dB/Div
Ref Level:	-4.0	dBm
TEMP(°F):	56	
Note:	RX in RHCP	

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	13-May-07

Gain at 29,631 MHz =	65.35 dBi
Sidelobe Envelope =	32 -25Log(θ) dBi
CRK-A61	

Antenna Dia. (m):	9.0
Efficiency (%):	40.72
Axis Recorded:	Elevation
Direction of Travel:	UP



Spacecraft:	Spaceway 2
Frequency (MHz):	29,931
Polarization:	LHCP
Local Time of Day:	23:25:00
Feed Insertion Loss:	0.73 dB

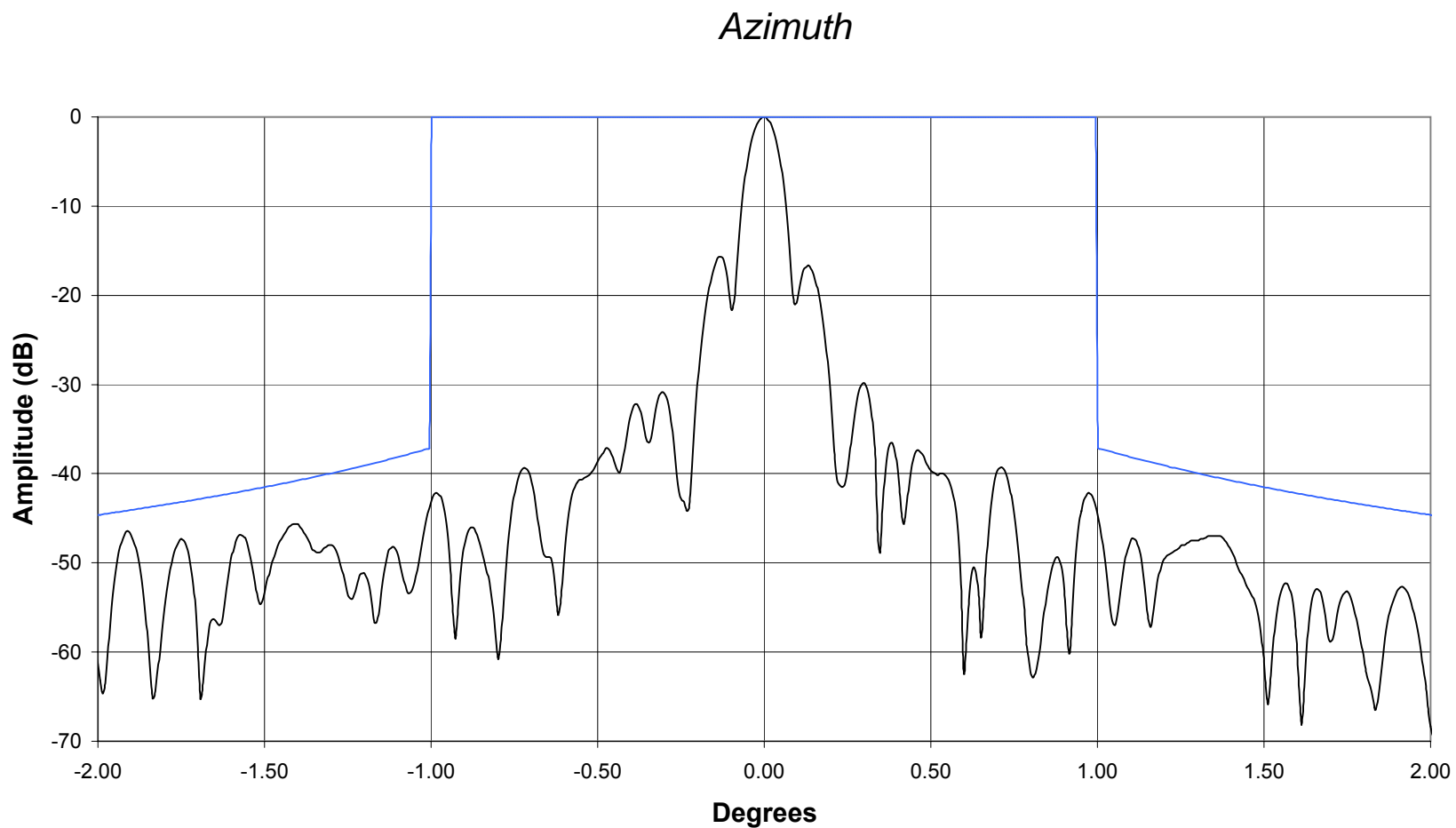
Azimuth Angle:	171.12
Elevation Angle:	44.16
Polariz. Angle:	0.0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

Resolution BW:	300.0 Hz
Frequency Span:	0.0 Hz
Video BW:	1.0 Hz
Input Attenuation:	10.0 dB
Sweep Time:	280.0 Sec
Log Scale:	10.0 dB/Div
Ref Level:	-4.0 dBm
TEMP(°F):	56
Note:	RX in RHCP

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	16-May-07

Avg. Gain at 29,931 MHz =	66.10 dBi
Sidelobe Envelope =	29 -25Log(Θ) dBi
CRK-A61	

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	66.03
Gain: Integration (dBi):	66.18
Axis Recorded:	Azimuth
Direction of Travel:	CW



Spacecraft:	Spaceway 2	
Frequency (MHz):	29,931	
Polarization:	LHCP	
3dB BW:	0.079	10dB BW: 0.129
Local Time of Day:	23:15:00	
Feed Insertion Loss:	0.73	dB

Azimuth Angle:	171.16
Elevation Angle:	44.19
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

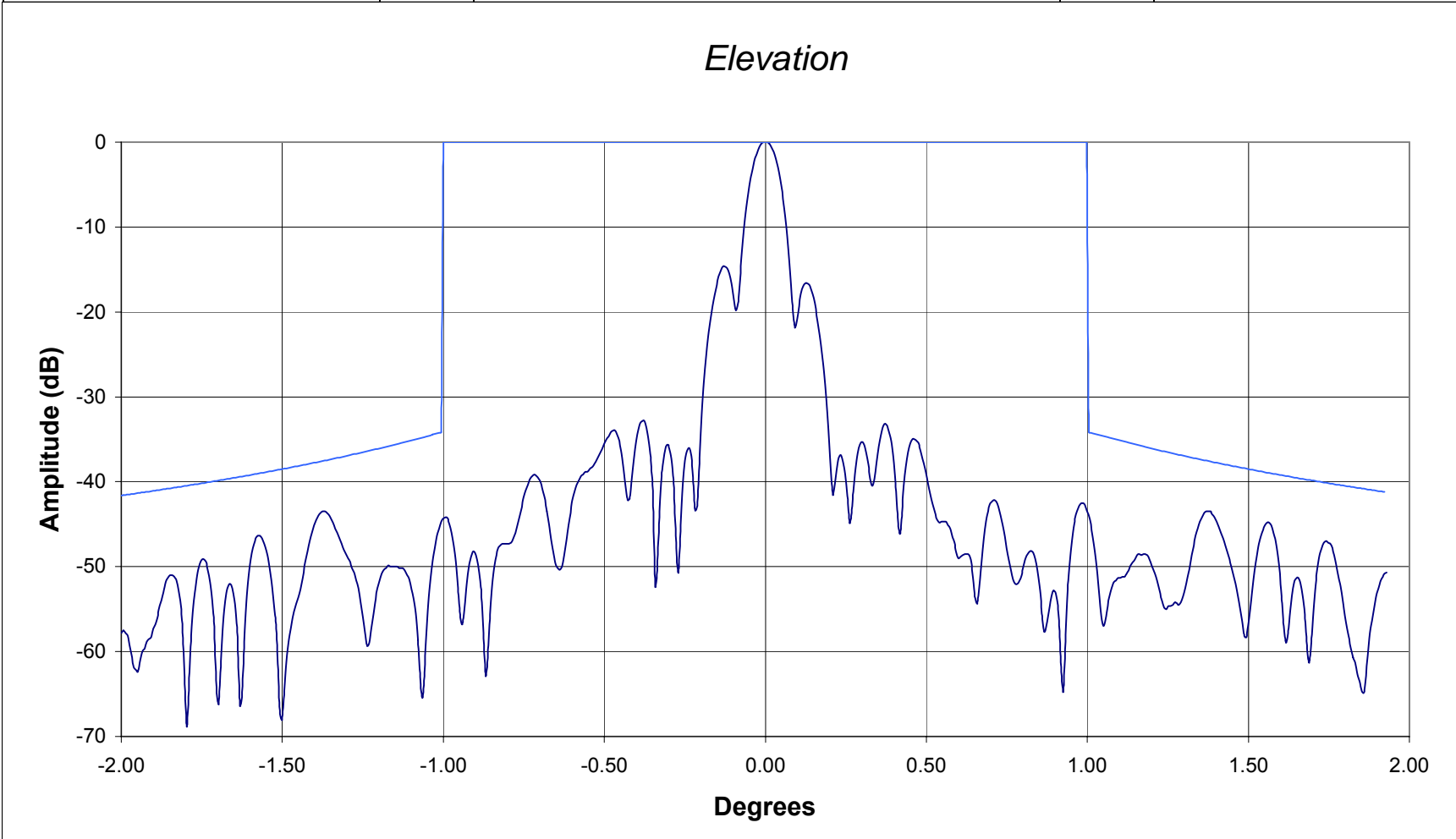
Resolution BW:	300.0 Hz
Frequency Span:	0.0 Hz
Video BW:	1.0 Hz
Input Attenuation:	10.0 dB
Sweep Time:	105.0 Sec
Log Scale:	10.0 dB/Div
Ref Level:	-5.0 dBm
TEMP(°F):	48
Note:	RX in RHCP

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	16-May-07

Avg. Gain at 29,931 MHz =	66.10 dBi
Sidelobe Envelope =	32 -25Log(Θ) dBi

CRK-A61

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	65.97
Gain: Integration (dBi):	66.23
Axis Recorded:	Elevation
Direction of Travel:	UP



Spacecraft:	Spaceway 2		
Frequency (MHz):	29,931		
Polarization:	LHCP		
3dB BW:	0.078	10dB BW:	0.131
Local Time of Day:	23:30:00		
Feed Insertion Loss:	0.73 dB		

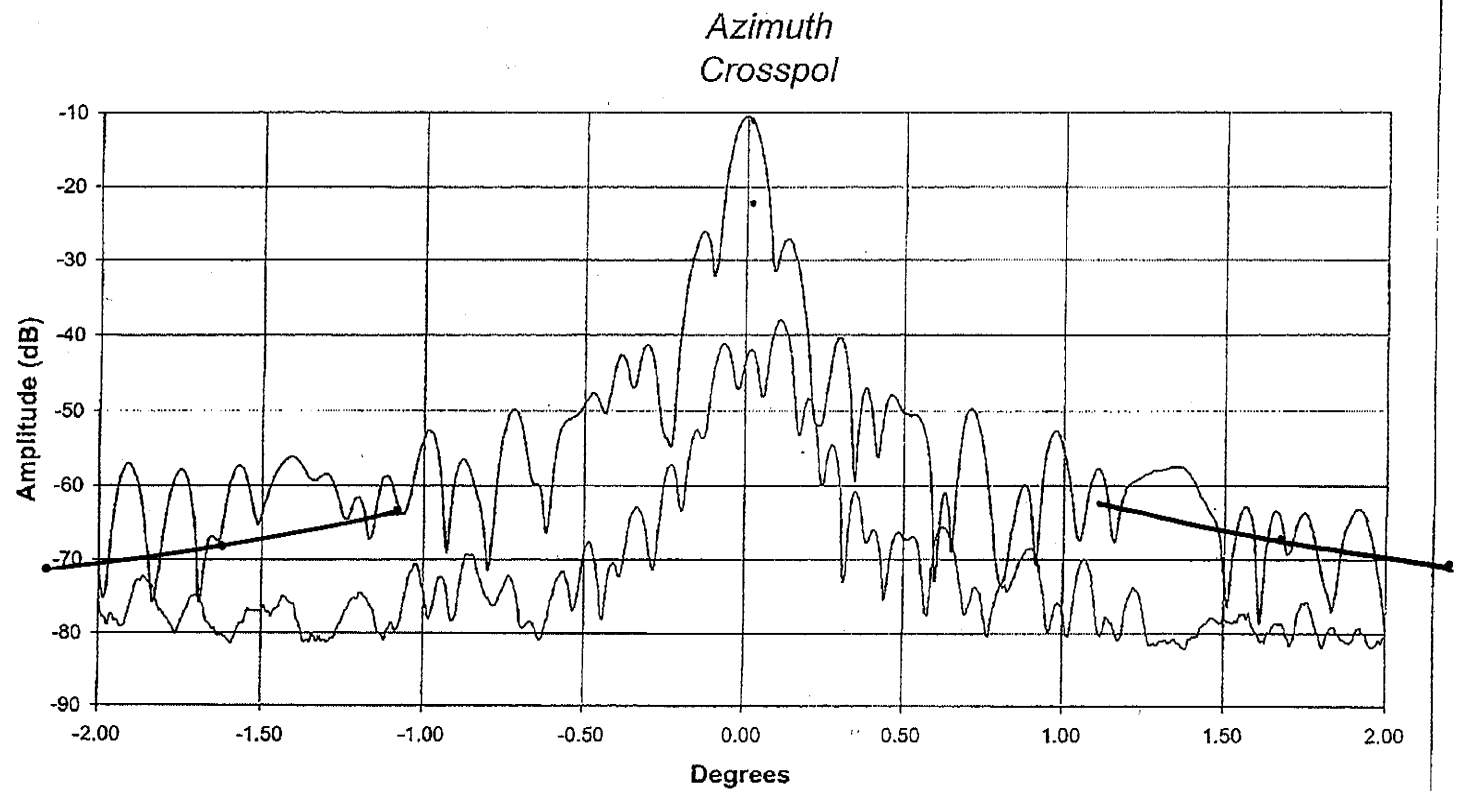
Azimuth Angle:	171.14
Elevation Angle:	44.2
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

Resolution BW:	300.0 Hz
Frequency Span:	0.0 Hz
Video BW:	1.0 Hz
Input Attenuation:	10.0 dB
Sweep Time:	146.0 Sec
Log Scale:	10.0 dB/Div
Ref Level:	-5.0 dBm
TEMP(°F):	48
Note:	RX in RHCP

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	16-May-07

Avg. Gain at 29,931 MHz =	66.10 dBi
On Axis Isolation =	31.5 dB
CRK-A61	

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	66.03
Gain: Integration (dBi):	66.18
Axis Recorded:	Azimuth
Direction of Travel:	CW



Spacecraft:	Spaceway 2		
Frequency (MHz):	29,931		
Polarization:	LHCP		
3dB BW:	0.079	10dB BW:	0.129
Local Time of Day:	23:15:00		
Feed Insertion Loss:	0.73 dB		

Azimuth Angle:	171.16
Elevation Angle:	44.19
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

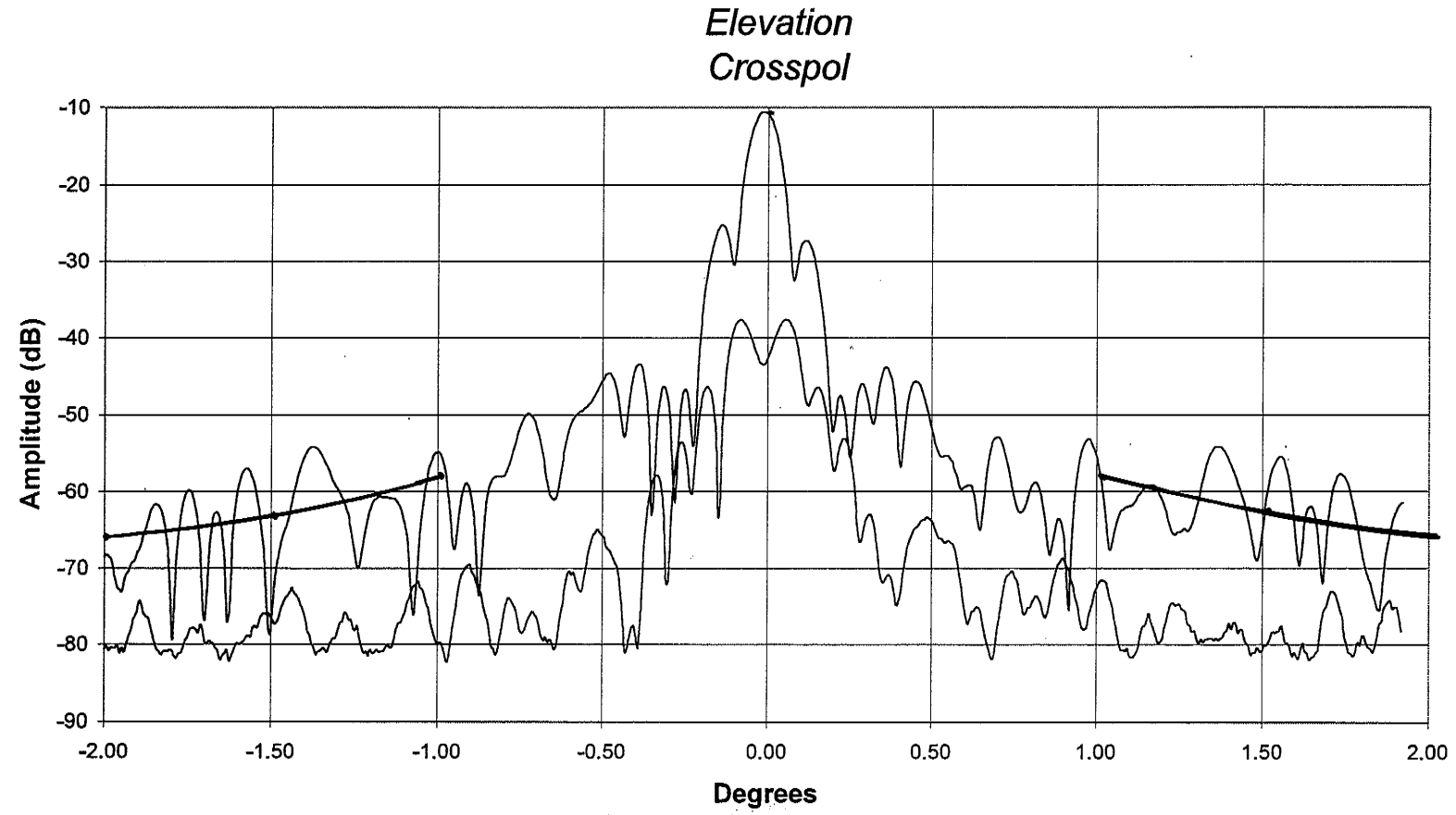
Resolution BW:	300.0 Hz
Frequency Span:	0.0 Hz
Video BW:	1.0 Hz
Input Attenuation:	10.0 dB
Sweep Time:	105.0 Sec
Log Scale:	10.0 dB/Div
Ref Level:	-5.0 dBm
TEMP(°F):	48
Note:	RX in RHCP

Customer:	Intelsat
Location:	Fillmore, CA
By:	West/Murray
Witness:	Mark Stephan
Date:	16-May-07

Avg. Gain at 29,931 MHz =	66.10	dBi
On Axis Isolation =	31.5	dB

Antenna Dia. (m):	9.0
Gain: 3/10dB BW (dBi):	65.97
Gain: Integration (dBi):	66.23
Axis Recorded:	Elevation
Direction of Travel:	UP

CRK-A61



Spacecraft:	Spaceway 2	
Frequency (MHz):	29,931	
Polarization:	LHCP	
3dB BW:	0.078	10dB BW: 0.131
Local Time of Day:	23:30:00	
Feed Insertion Loss:	0.73 dB	

Azimuth Angle:	171.14
Elevation Angle:	44.2
Polariz. Angle:	0
% sidelobes exceeding envelope:	0.00
Weather:	Clear Sky
RMS Surface Accuracy:	0.015 in.

Resolution BW:	300.0	Hz
Frequency Span:	0.0	Hz
Video BW:	1.0	Hz
Input Attenuation:	10.0	dB
Sweep Time:	146.0	Sec
Log Scale:	10.0	dB/Div
Ref Level:	-5.0	dBm
TEMP(°F):	48	
Note:	RX in RHCP	

Section 4
RX Patterns @ 19.779



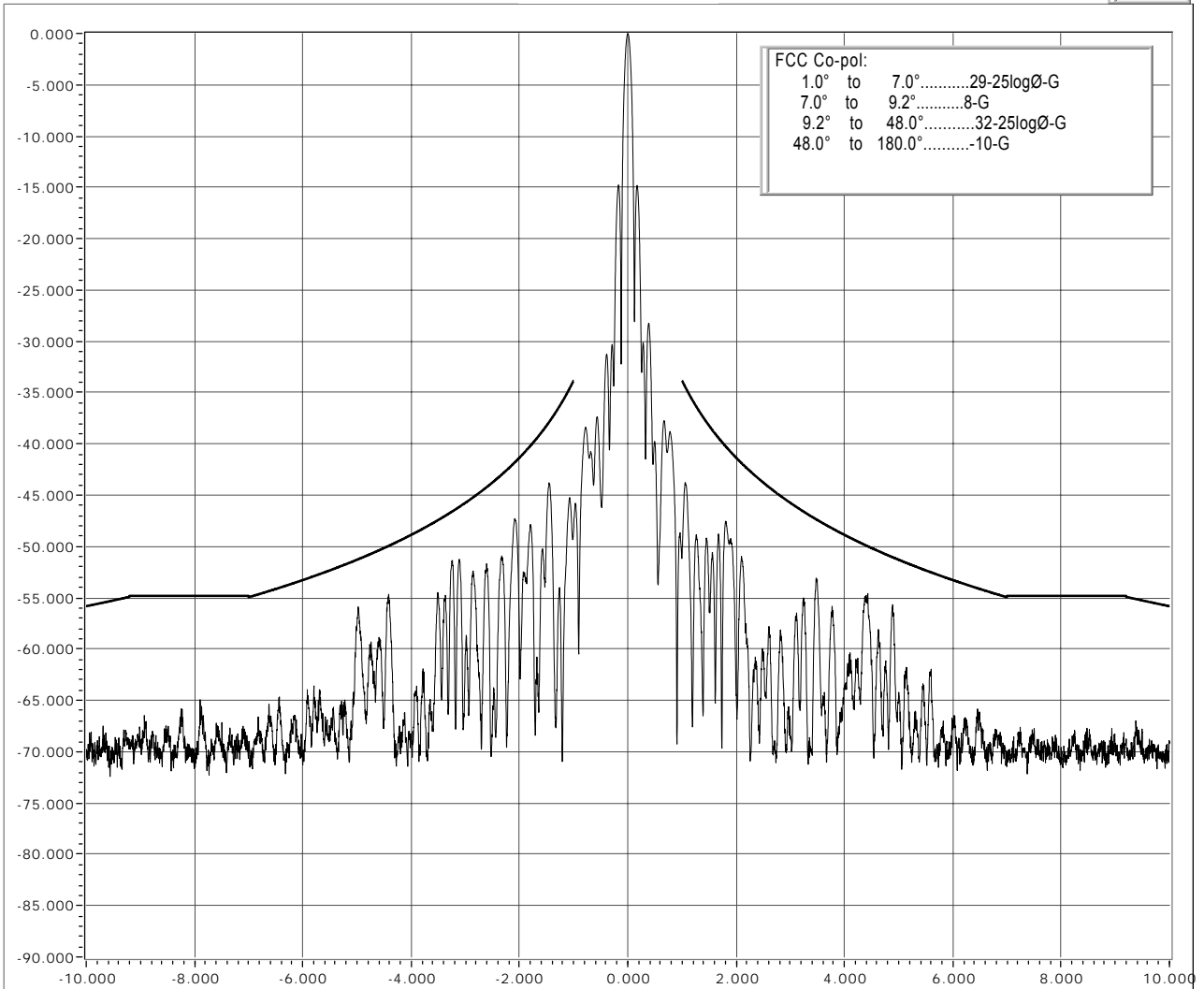
Customer..... Intelsat
 Date/Local Time..... 5-18-2007 at 021455
 Job Number..... 5348

Model.....9.0m CRK-A61
 Location..... CastleRock
 Weather..... Clear
 Test Engineer..... T. Murray/T. West
 Spacecraft..... Spaceway 2
 Transponder.....

RX...Co-pol...LHCP polarization...19.779 GHz

Azimuth

% Over Curve (not including main lobe)



Y-scale is power level (dB) relative to beam center; x-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=19779415719, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

File:

Test Frequency (GHz):

Ref. Level (dBm):

Points Displayed:

Versions
60719 FAST
60129 PACK

Specified Gain (dB):

Azimuth Beam Center (deg):

Elevation Beam Center (deg):

Margin Under Curved (dB):



Customer..... Intelsat
 Date/Local Time..... 5-18-2007 at 023448
 Job Number..... 5348

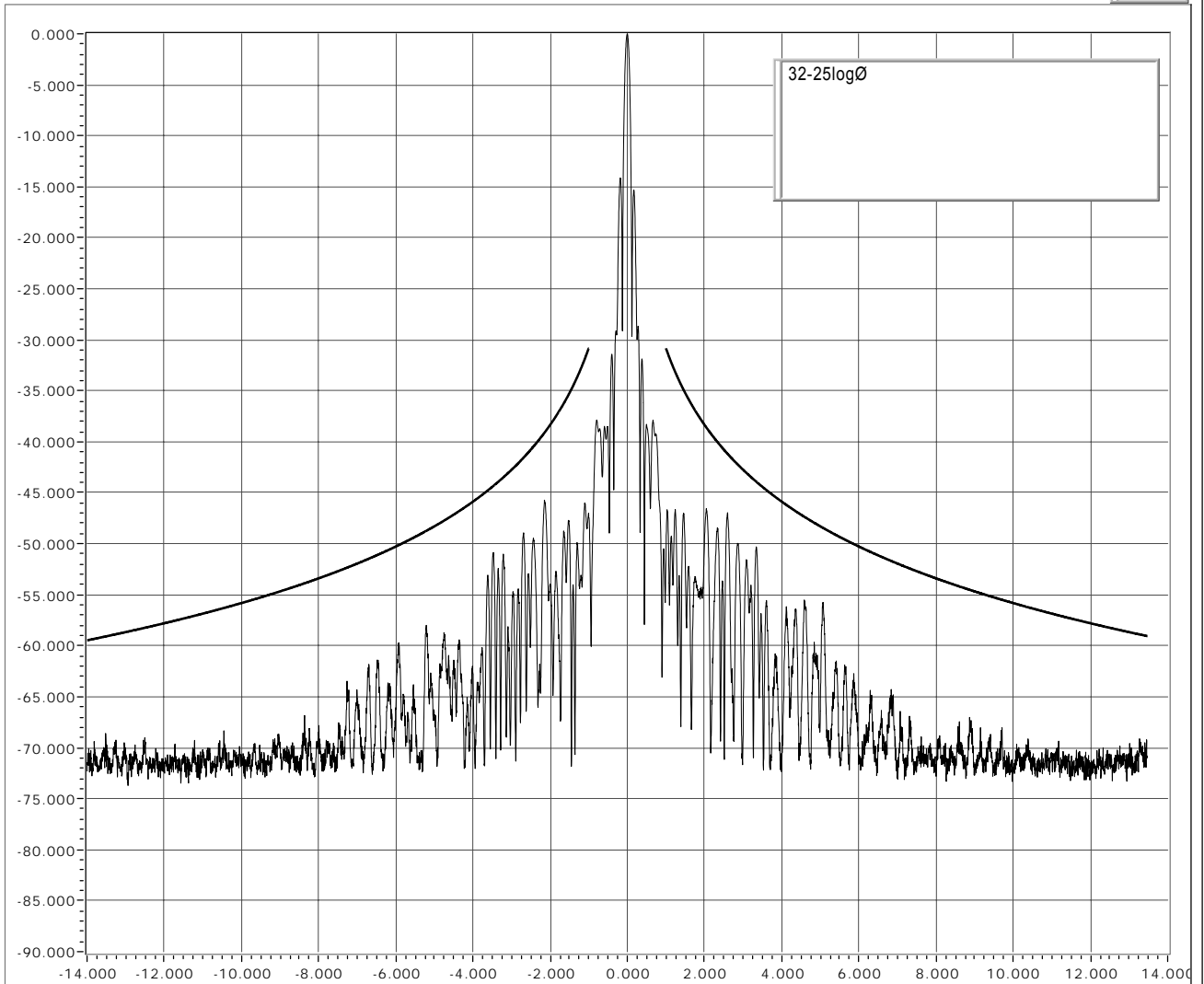
Model.....9.0m CRK-A61
 Location..... CastleRock
 Weather..... Clear
 Test Engineer..... T. Murray/T. West
 Spacecraft..... Spaceway 2
 Transponder.....

RX...Co-pol...LHCP polarization...19.779 GHz

Elevation

% Over Curve (not including main lobe)

0.0



Y-scale is power level (dB) relative to beam center; x-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=19779415618, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

File: % 070518 023448 5348 RC-14-LE-19.779.txt

Specified Gain: 62.820

Test Frequency (GHz): 19.779415618

Azimuth Beam Center (deg): 171.150

Ref. Level (dBm): -7.22

Elevation Beam Center (deg): 44.190

Points Displayed: 8190

Margin Under Curve (dB): 5.76

Versions
 60719 FAST
 60129 PACK



Customer..... Intelsat
 Date/Local Time..... 5-18-2007 at 021455
 Job Number..... 5348

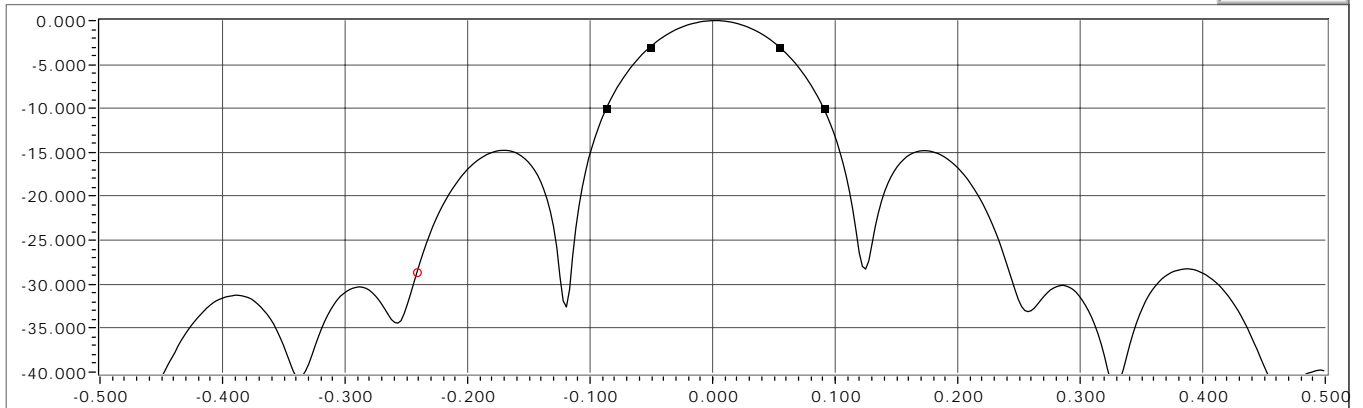
Model.....9.0m CRK-A61
 Location..... CastleRock
 Weather..... Clear
 Test Engineer..... T. Murray/T. West
 Spacecraft..... Spaceway 2
 Transponder.....

RX...LHCP Polarization...Gain by Beamwidth...19.779 GHz

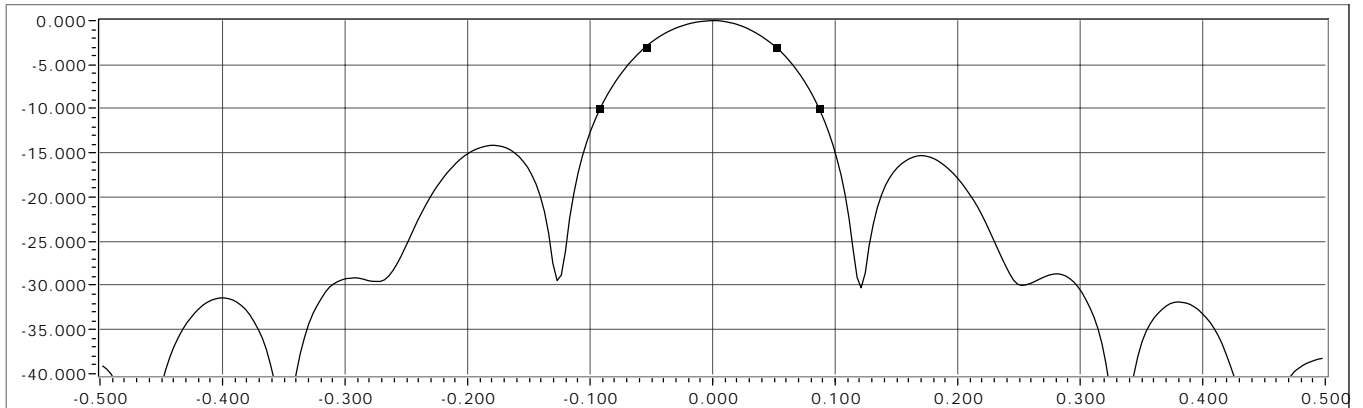
Spec. Gain (dBi): **62.820**

Calculated Gain (dB): **63.15**

AZ Pattern



EL Pattern



The Y-scale is power level (dB) relative to beam center; the X -scale is angle (degrees, AZ cosine corrected) relative to beam center.

$$\text{Gain by Beamwidth dBi} = 10 \log [((3\text{dB factor} / (\text{AZ } 3\text{dB BW} * \text{EL } 3\text{dB BW})) + (10\text{dB factor} / (\text{AZ } 10\text{dB BW} * \text{EL } 10\text{dB BW}))) / 2] - \text{Feed Loss dB} - 4.923(\text{RMS inches} * \text{Freq GHz})^2$$

SA Freq (Hz)=19779415719, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

AZ Co-pol File % 070518 021455 5348 RC-15-LA-19.779.txt

The calculated gain is greater than the specified gain by 0.33 dB.

EL Co-pol File % 070518 023448 5348 RC-14-LE-19.779.txt

Test Frequency (GHz)	19.779415719
AZ Ref. Level (dBm)	-8.90
Feed Loss (dB)	0.90
RMS (in.)	0.015
Azimuth (deg)	171.150
Elevation (deg)	44.190

AZ 3dB BW (deg)	0.1054
AZ 10dB BW (deg)	0.1775
AZ 15dB BW (deg)	0.2038
EL 3dB BW (deg)	0.1067
EL 10dB BW (deg)	0.1791
EL 15dB BW (deg)	0.2058

Points Displayed **389**

3dB Factor	31000
10dB Factor	91000

Versions
 60719 FAST
 60129 PACK



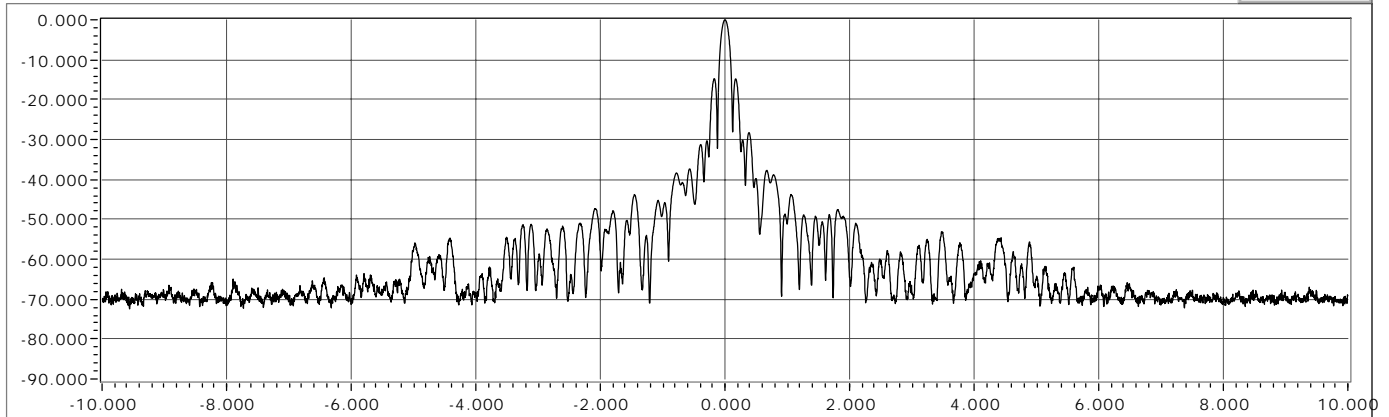
Customer..... Intelsat
 Date/Local Time..... 5-18-2007 at 021455
 Job Number..... 5348

Model.....9.0m CRK-A61
 Location..... CastleRock
 Weather..... Clear
 Test Engineer..... T. Murray/T. West
 Spacecraft..... Spaceway 2
 Transponder.....

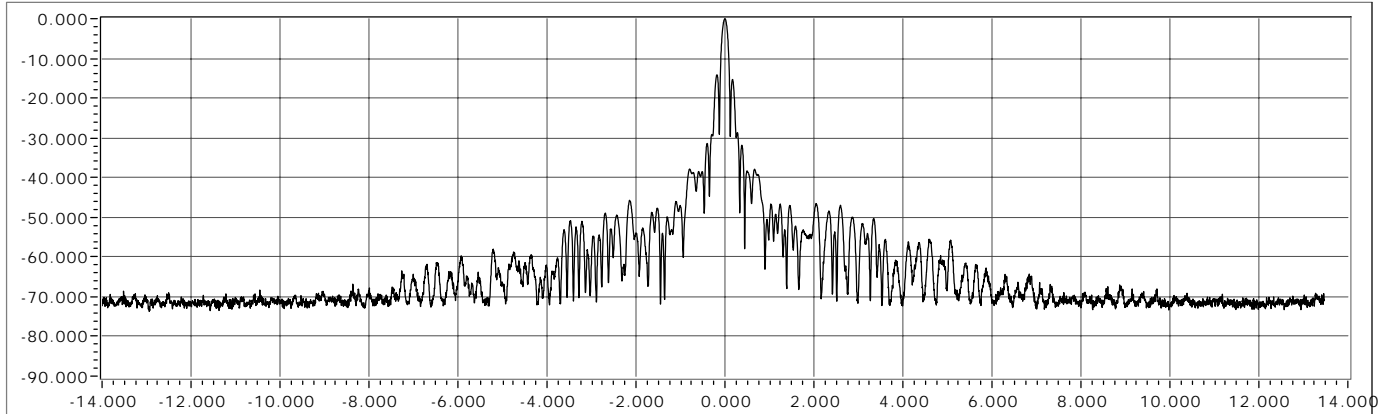
RX...LHCP Polarization...Gain by Integration...19.779 GHz

Spec. Gain (dBi):	62.820
Calculated Gain (dB):	63.58

AZ Pattern



EL Pattern



The Y-scale is power level (dB) relative to beam center; the X -scale is angle (degrees, AZ cosine corrected) relative to beam center.

Antenna Gain by Integration = $2 / (\text{Sum} [P_{\text{sub}\theta} * \sin(\theta) * \Delta\theta] - \text{FeedLoss} - \text{AngularExtentLoss} - \text{SparBlockageLoss} - \text{CrossPolLoss})$
 where the summation is performed for look angles (Theta) offset from beam center from 0 to 180 degrees (in practice the summation occurs on both sides of beam center and the average is taken) and where $P_{\text{sub}\theta}$ is the power relative to beam center power and measured at look angles offset from beam center.

SA Freq (Hz)=19779415719, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

AZ Co-pol File	% 070518 021455 5348 RC-15-LA-19.779.txt
EL Co-pol File	% 070518 023448 5348 RC-14-LE-19.779.txt
Test Frequency (GHz)	19.779415719
AZ Ref. Level (dBm)	-8.90
Azimuth (deg)	171.150
Elevation (deg)	44.190

Versions
 60719 FAST
 60129 PACK

The calculated gain is greater than the specified gain by 0.76 dB.

# Points Displayed	7707
Feed Loss (dB)	0.90
Angular Extent Loss(dB)	0.05
Spar Blockage Loss (dB)	0.03
Cross-pol Loss (dB)	0.03



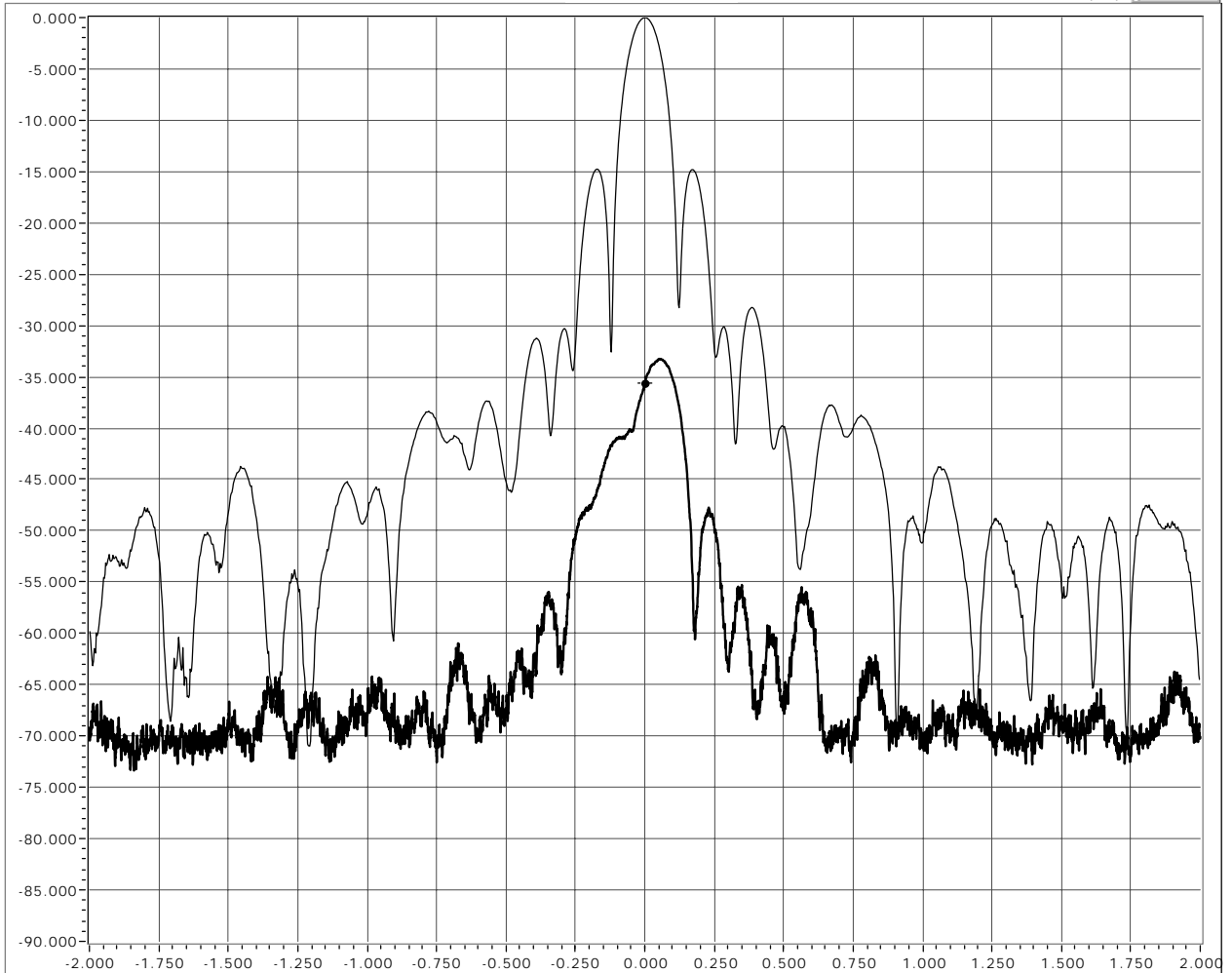
Customer..... Intelsat
 Date/Local Time.... 5-18-2007 at 024915
 Job Number..... 5348

Model.....9.0m CRK-A61
 Location..... CastleRock
 Weather..... Clear
 Test Engineer..... T. Murray/T. West
 Spacecraft..... Spaceway 2
 Transponder.....

RX...Cross-pol under Co-pol...LHCP polarization...19.779 GHz

Azimuth

On-axis Isolation (dB): 35.59



The Y-scale is power level (dB) relative to beam center; the X-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=19779415618, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

Co-pol File:	% 070518 021455 5348 RC-15-LA-19.779.txt	Azimuth Beam Center (deg):	171.150
Cross-pol File:	% 070518 024915 5348 RX-3-LA-19.779.txt	Elevation Beam Center (deg):	44.190
Test Frequency (GHz):	19.779415618	On-axis Spec. Isolation (dB):	30.800
Ref. Level (dBm):	-8.90	Off-axis Spec. Isolation (dB):	30.80
# Points Displayed:	7654		

Versions
 60719 FAST
 60129 PACK



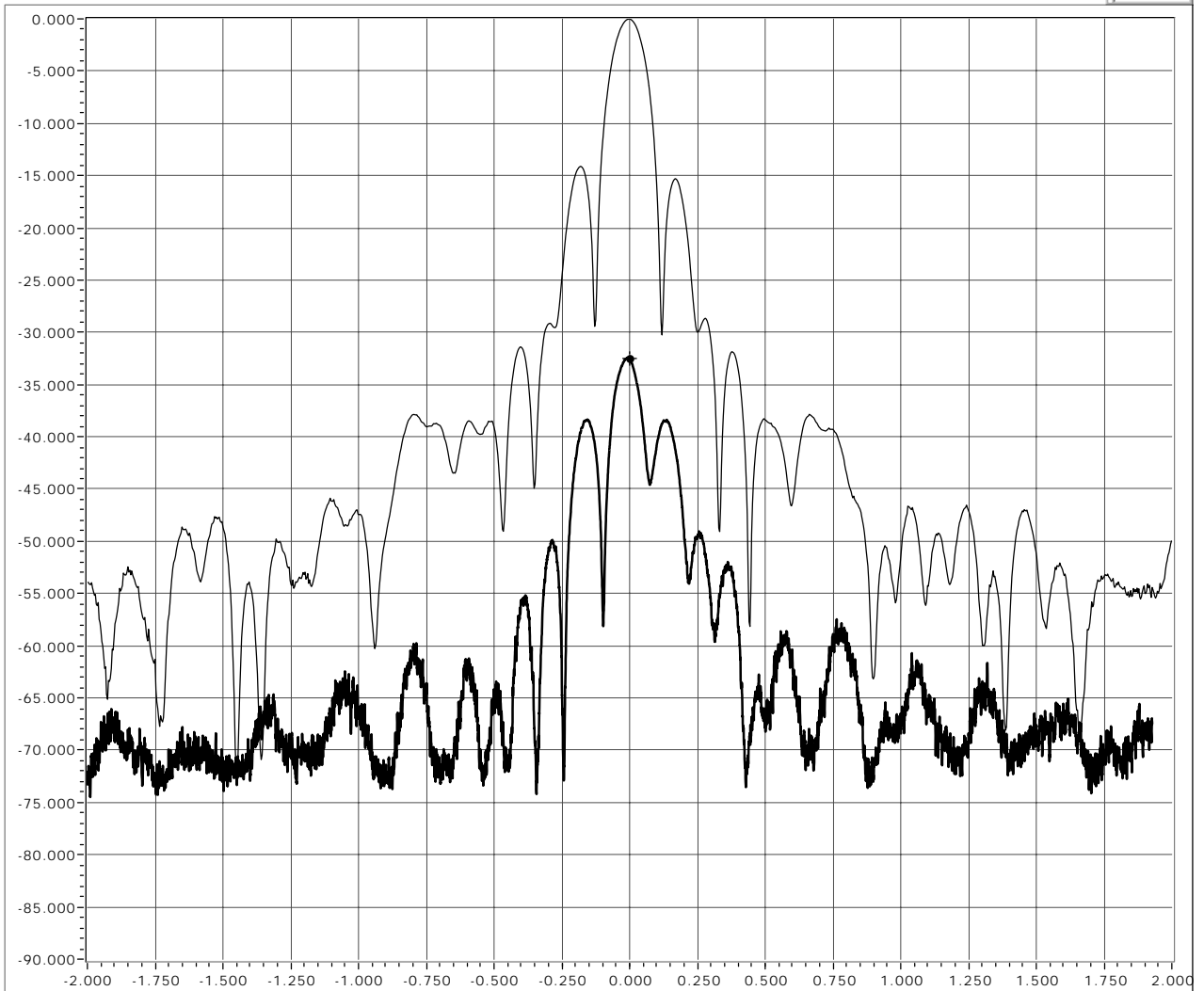
Customer..... Intelsat
 Date/Local Time..... 5-18-2007 at 023448
 Job Number..... 5348

Model.....9.0m CRK-A61
 Location..... CastleRock
 Weather..... Clear
 Test Engineer..... T. Murray/T. West
 Spacecraft..... Spaceway 2
 Transponder.....

RX...Cross-pol under Co-pol...LHCP polarization...19.779 GHz

Elevation

On Axis Isolation (dB): 32.53



The Y-scale is power level (dB) relative to beam center; the X-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=19779415618, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3			
Co-pol File:	% 070518 023448 5348 RC-14-LE-19.779.txt	Azimuth Beam Center (deg):	171.150
Cross-pol File:	% 070518 025308 5348 RX-2-LE-19.779.txt	Elevation Beam Center (deg):	44.190
Test Frequency (GHz):	19.779415618	On-axis Spec. Isolation (dB):	30.800
Ref. Level (dBm):	-8.90	Off-axis Spec. Isolation (dB):	30.80
# Points Displayed:	1193	Versions 60719 FAST 60129 PACK	

Section 5
RX Patterns @ 19.892



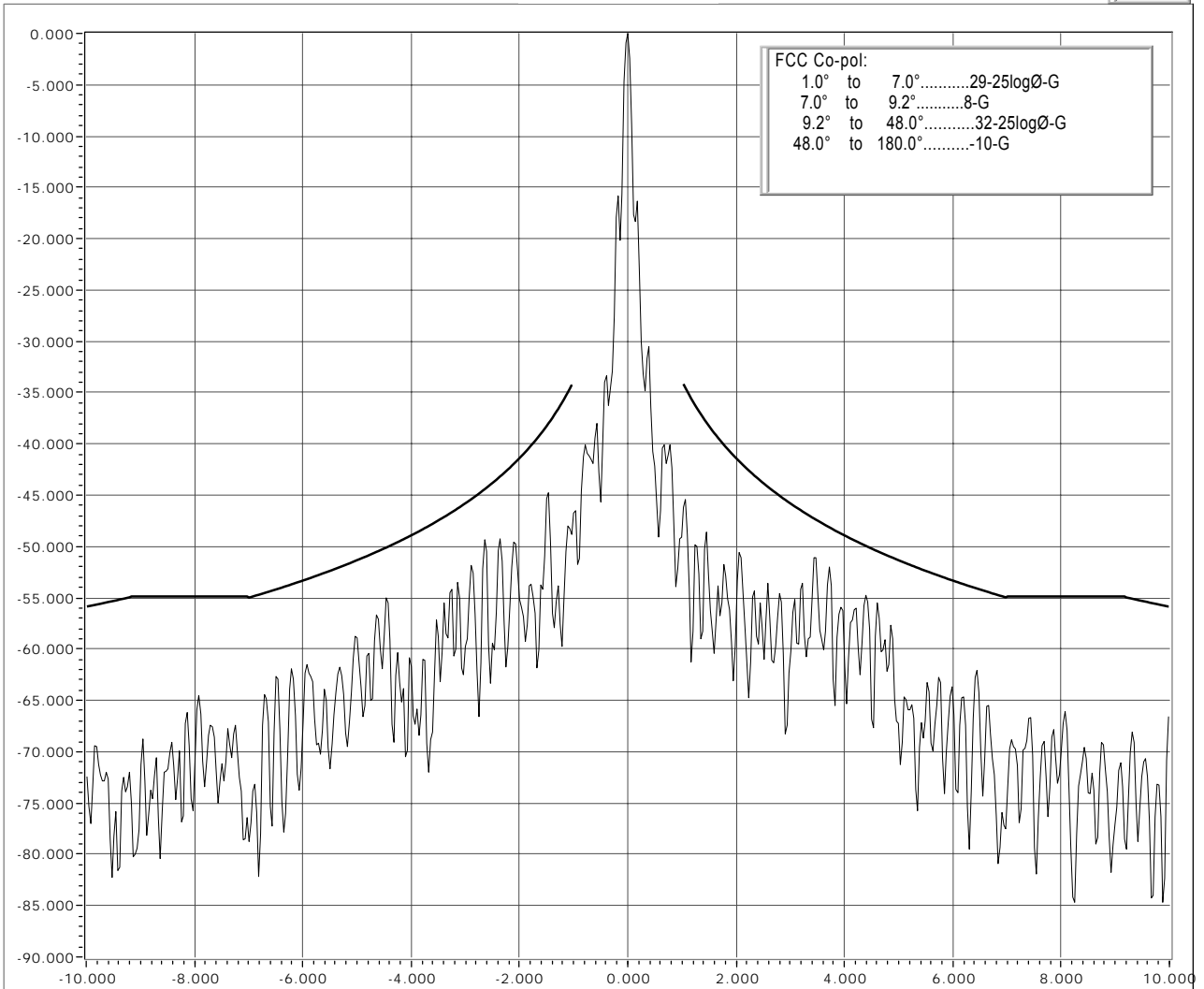
Customer..... Intelsat
 Date/Local Time..... 5-22-2007 at 014214
 Job Number..... 5349

Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, CO
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... Spaceway 2
 Transponder.....

RX...Co-pol...RHCP polarization...19.892 GHz

Azimuth

% Over Curve (not including main lobe)



Y-scale is power level (dB) relative to beam center; x-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=19891914540, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

File:

Test Frequency (GHz):

Ref. Level (dBm):

Points Displayed:

Versions
60719 FAST
60129 PACK

Specified Gain (dB):

Azimuth Beam Center (deg):

Elevation Beam Center (deg):

Margin Under Curved (dB):



Customer..... Intelsat
 Date/Local Time..... 5-22-2007 at 020224
 Job Number..... 5349

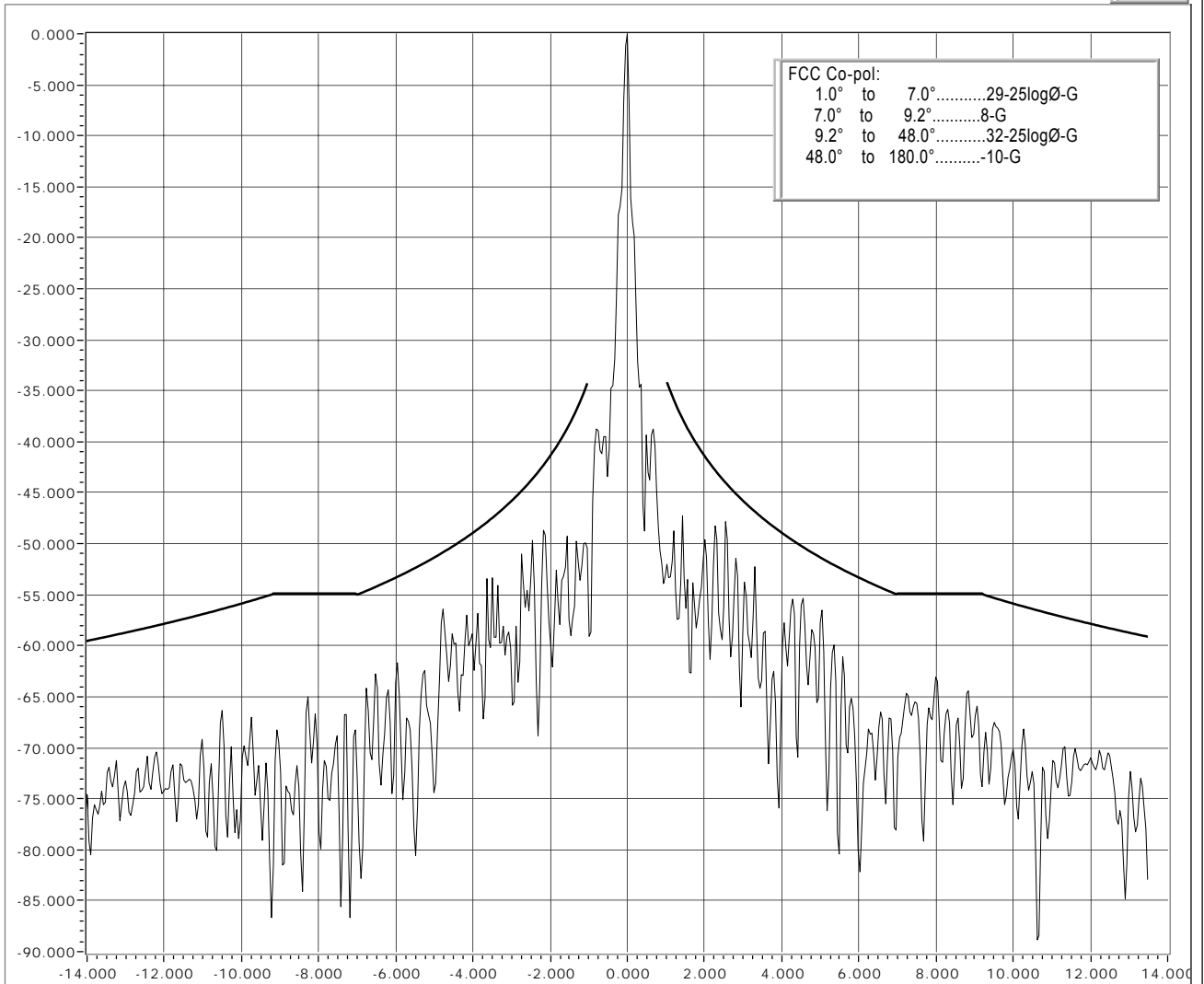
Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, CO
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... Spaceway 2
 Transponder.....

RX...Co-pol...RHCP polarization...19.892 GHz

Elevation

% Over Curve (not including main lobe)

0.0



Y-scale is power level (dB) relative to beam center; x-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=19891914540, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

File: % 070522 020224 5349 RC-14-LE-19.892.txt

Specified Gain: 62.870

Test Frequency (GHz): 19.891920000

Azimuth Beam Center (deg): 171.140

Ref. Level (dBm): -7.66

Elevation Beam Center (deg): 44.200

Points Displayed: 600

Margin Under Curve (dB): 3.83



Customer..... Intelsat
 Date/Local Time..... 5-22-2007 at 020800
 Job Number..... 5349

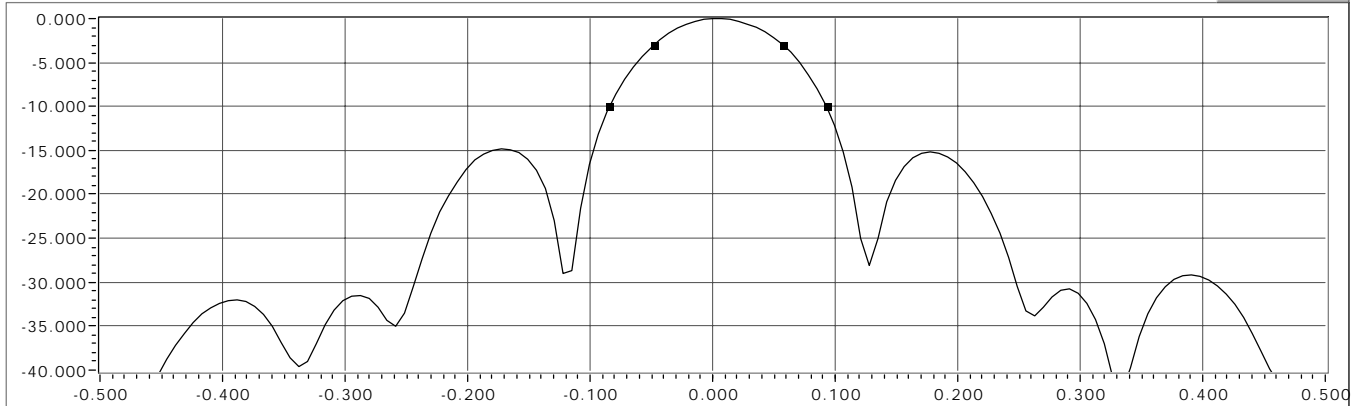
Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, CO
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... Spaceway 2
 Transponder.....

RX...LHCP Polarization...Gain by Beamwidth...19.892 GHz

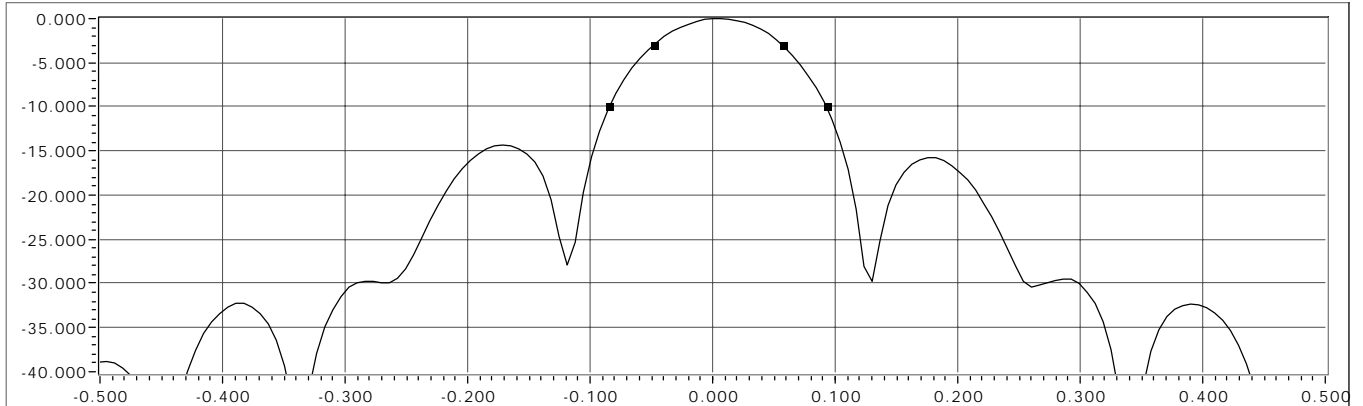
Spec. Gain (dBi): **62.870**

Calculated Gain (dB): **63.18**

AZ Pattern



EL Pattern



The Y-scale is power level (dB) relative to beam center; the X -scale is angle (degrees, AZ cosine corrected) relative to beam center.

$$\text{Gain by Beamwidth dBi} = 10 \log \left[\left(\frac{3\text{dB factor}}{\text{AZ 3dB BW} * \text{EL 3dB BW}} \right) + \left(\frac{10\text{dB factor}}{\text{AZ 10dB BW} * \text{EL 10dB BW}} \right) \right] / 2 - \text{Feed Loss dB} - 4.923(\text{RMS inches} * \text{Freq GHz})^2$$

SA Freq (Hz)=19891914540, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

AZ Co-pol File % 070522 020800 5349 RC-3-LA-19.892.txt

The calculated gain is greater than the specified gain by 0.31 dB.

EL Co-pol File % 070522 021505 5349 RC-2-LE-19.892.txt

Test Frequency (GHz)	19.891920000
AZ Ref. Level (dBm)	-7.00
Feed Loss (dB)	0.93
RMS (in.)	0.015
Azimuth (deg)	171.150
Elevation (deg)	44.200

AZ 3dB BW (deg)	0.1054
AZ 10dB BW (deg)	0.1771
AZ 15dB BW (deg)	0.2035
EL 3dB BW (deg)	0.1049
EL 10dB BW (deg)	0.1773
EL 15dB BW (deg)	0.2037

Points Displayed **564**

3dB Factor	31000
10dB Factor	91000

Versions
 60719 FAST
 60129 PACK



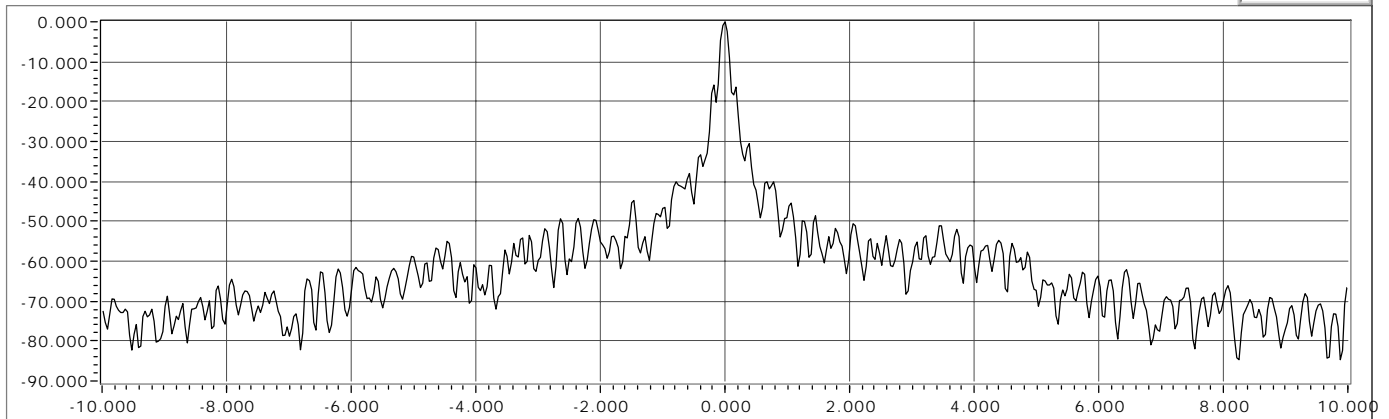
Customer..... Intelsat
 Date/Local Time..... 5-22-2007 at 014214
 Job Number..... 5349

Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, CO
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... Spaceway 2
 Transponder.....

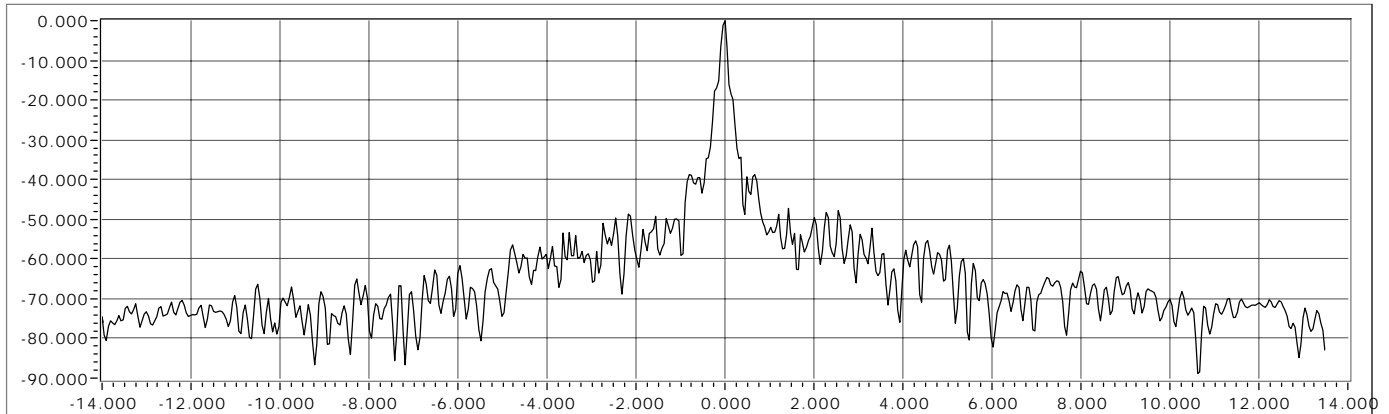
RX...LHCP Polarization...Gain by Integration...19.892 GHz

Spec. Gain (dBi):	62.870
Calculated Gain (dB):	63.85

AZ Pattern



EL Pattern



The Y-scale is power level (dB) relative to beam center; the X -scale is angle (degrees, AZ cosine corrected) relative to beam center.

Antenna Gain by Integration = $2 / (\text{Sum} [P_{\text{subTheta}} * \sin(\text{Theta}) * \text{deltaTheta}] - \text{FeedLoss} - \text{AngularExtentLoss} - \text{SparBlockageLoss} - \text{CrossPolLoss})$
 where the summation is performed for look angles (Theta) offset from beam center from 0 to 180 degrees (in practice the summation occurs on both sides of beam center and the average is taken) and where PsubTheta is the power relative to beam center power and measured at look angles offset from beam center.

SA Freq (Hz)=19891914540, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

AZ Co-pol File	% 070522 014214 5349 RC-15-LA-19.892.txt
EL Co-pol File	% 070522 020224 5349 RC-14-LE-19.892.txt
Test Frequency (GHz)	19.891920000
AZ Ref. Level (dBm)	-7.66
Azimuth (deg)	171.140
Elevation (deg)	44.200

Versions
 60719 FAST
 60129 PACK

The calculated gain is greater than the specified gain by 0.98 dB.

# Points Displayed	563
Feed Loss (dB)	0.93
Angular Extent Loss(dB)	0.05
Spar Blockage Loss (dB)	0.05
Cross-pol Loss (dB)	0.05



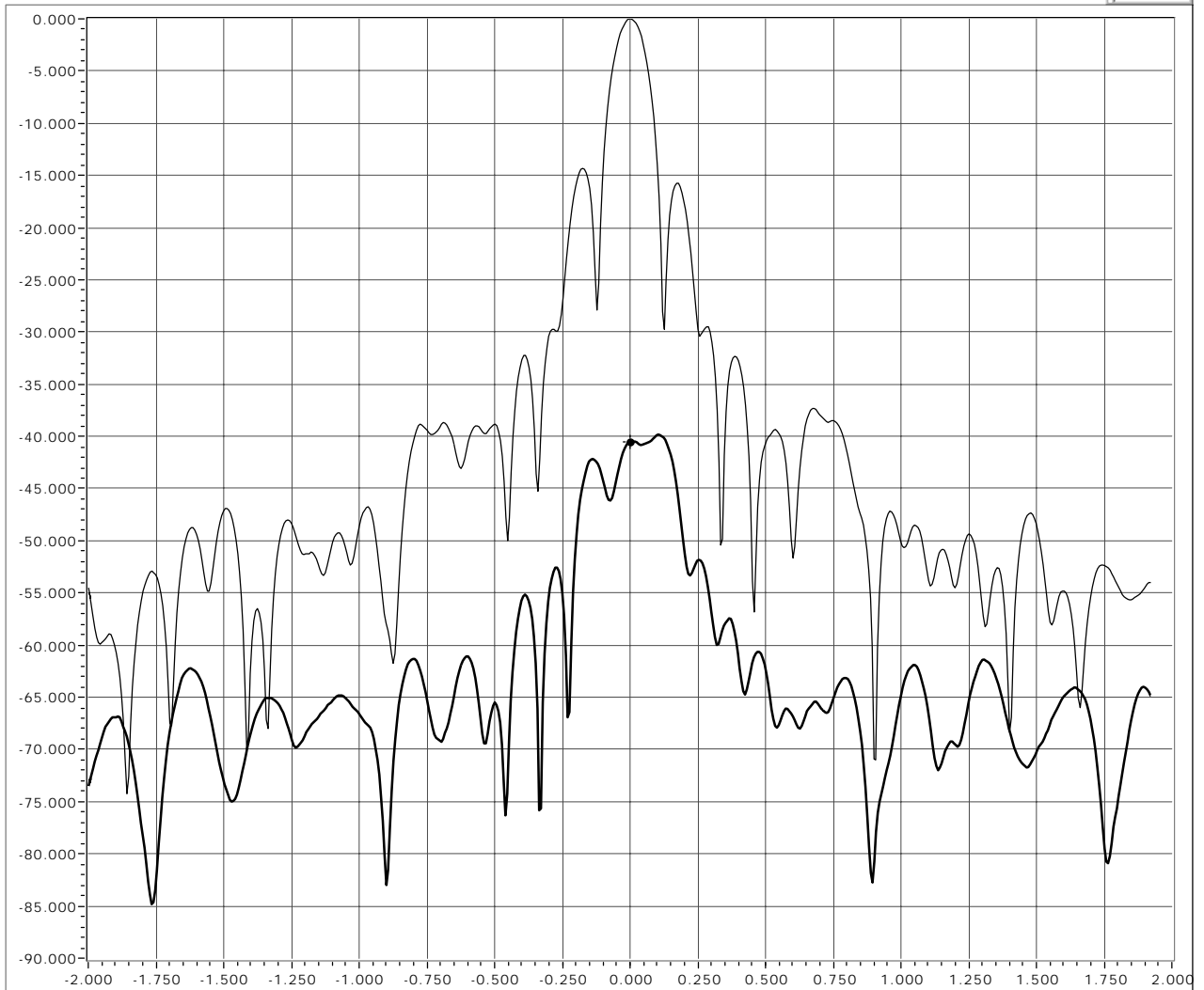
Customer..... Intelsat
 Date/Local Time..... 5-22-2007 at 021505
 Job Number..... 5349

Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, CO
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... SW2
 Transponder.....

RX...Cross-pol under Co-pol...LHCP polarization...19.892 GHz

Elevation

On Axis Isolation (dB): 40.50



The Y-scale is power level (dB) relative to beam center; the X-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=19891914540, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3			
Co-pol File:	% 070522 021505 5349 RC-2-LE-19.892.txt	Azimuth Beam Center (deg):	171.150
Cross-pol File:	% 070522 022631 5349 RC-2-LE-19.892.txt	Elevation Beam Center (deg):	44.200
Test Frequency (GHz):	19.891920000	On-axis Spec. Isolation (dB):	30.800
Ref. Level (dBm):	-7.00	Off-axis Spec. Isolation (dB):	30.80
# Points Displayed:	601	Versions 60719 FAST 60129 PACK	



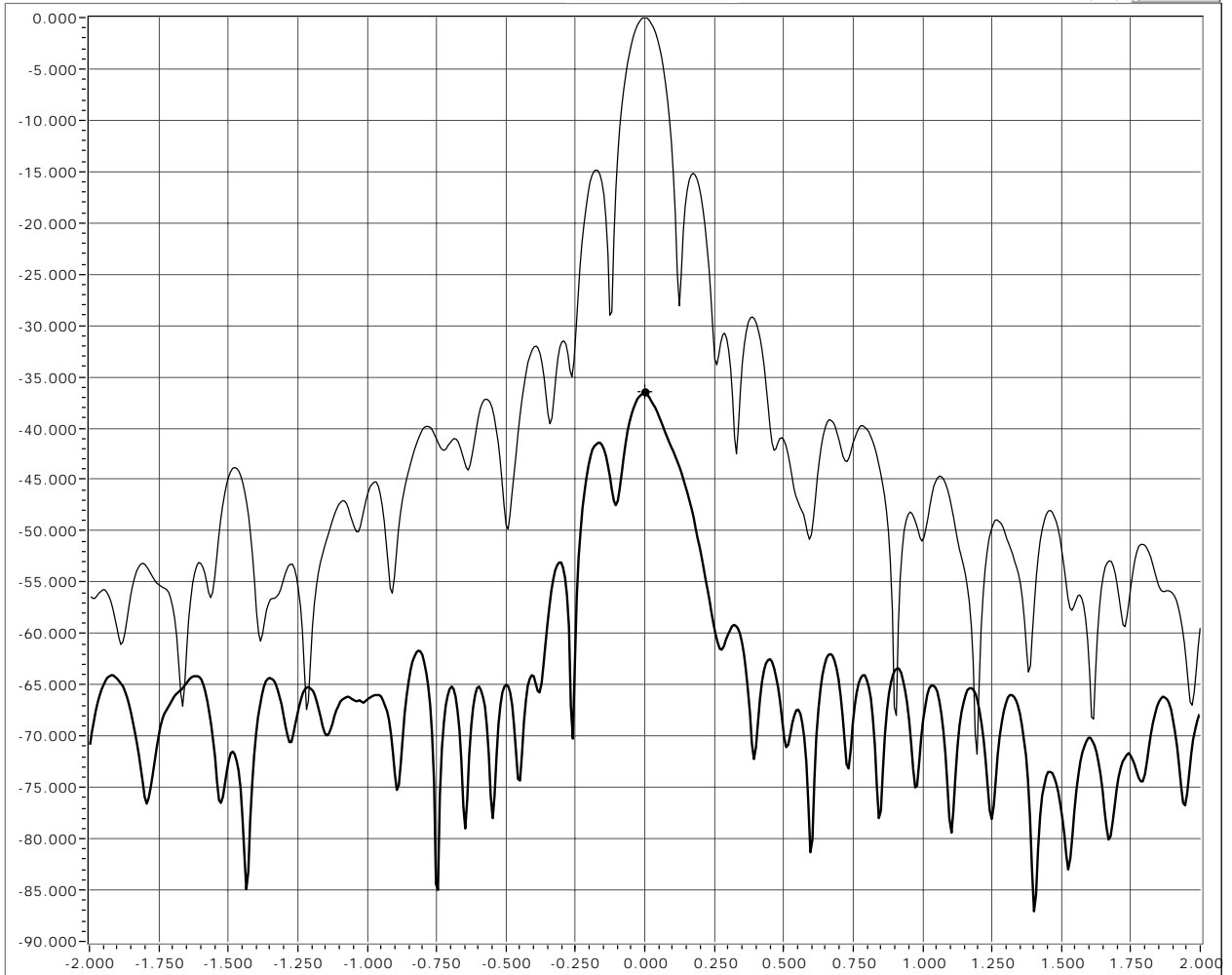
Customer..... Intelsat
 Date/Local Time.... 5-22-2007 at 022109
 Job Number..... 5349

Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, Co
 Weather..... Clear
 Test Engineer..... T. Murray/T. West
 Spacecraft..... SW2
 Transponder.....

RX...Cross-pol under Co-pol...LHCP polarization...19.892 GHz

Azimuth

On-axis Isolation (dB): 36.50



The Y-scale is power level (dB) relative to beam center; the X-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=19891914540, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=31

Co-pol File:	% 070522 020800 5349 RC-3-LA-19.892.txt	Azimuth Beam Center (deg):	171.150
Cross-pol File:	% 070522 022109 5349 RC-3-LA-19.892.txt	Elevation Beam Center (deg):	44.200
Test Frequency (GHz):	19.891920000	On-axis Spec. Isolation (dB):	30.800
Ref. Level (dBm):	-7.00	Off-axis Spec. Isolation (dB):	30.80
# Points Displayed:	560		

Versions
 60719 FAST
 60129 PACK

Section 6
RX Patterns @ 20.074



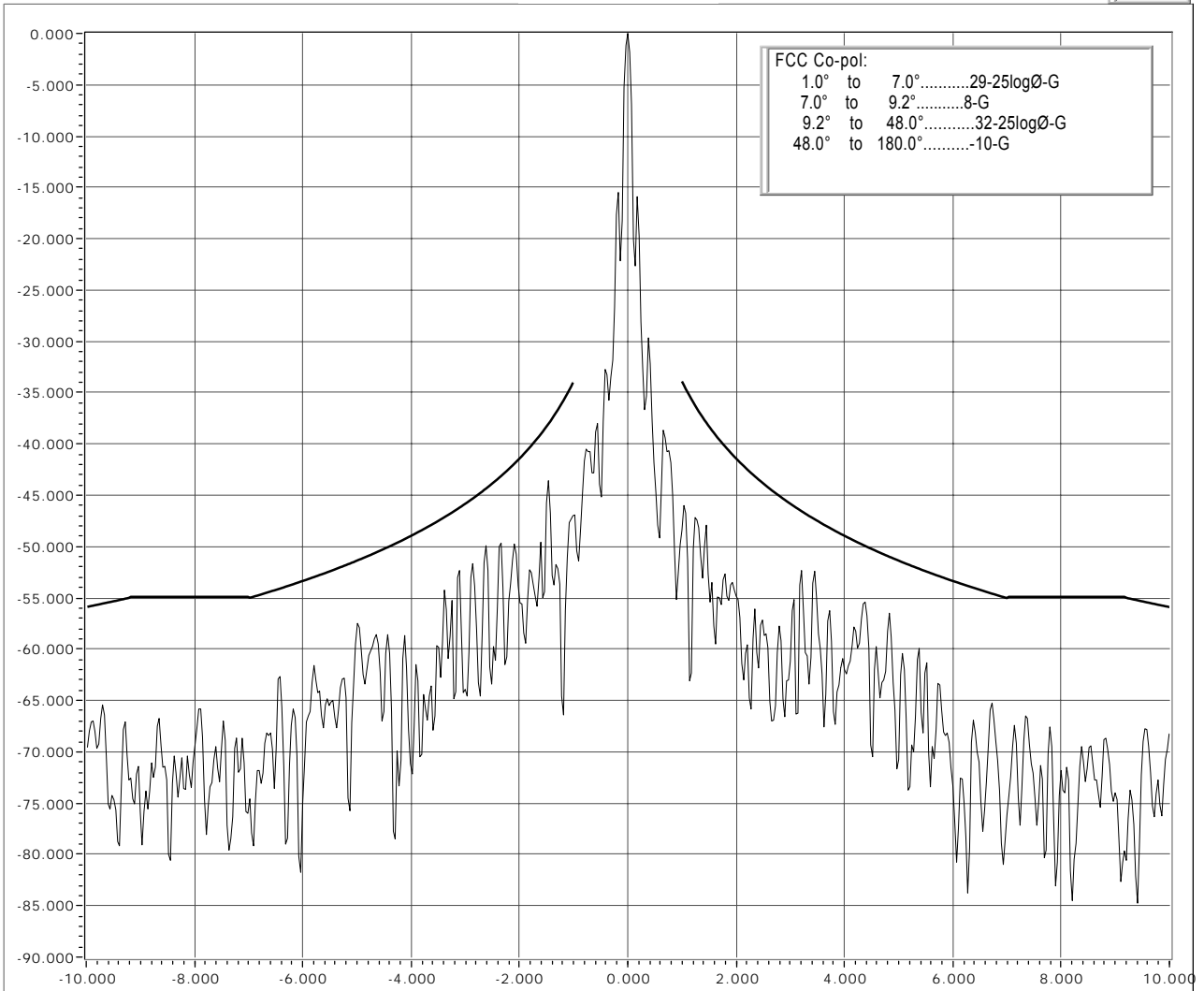
Customer..... Intelsat
 Date/Local Time..... 5-20-2007 at 175529
 Job Number..... 5349

Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, CO
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... Galaxy 28
 Transponder.....

RX...Co-pol...RHCP polarization...20.074 GHz

Azimuth

% Over Curve (not including main lobe)



Y-scale is power level (dB) relative to beam center; x-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=20073998729, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

File:

Test Frequency (GHz):

Ref. Level (dBm):

Points Displayed:

Versions
60719 FAST
60129 PACK

Specified Gain (dB):

Azimuth Beam Center (deg):

Elevation Beam Center (deg):

Margin Under Curved (dB):



Customer..... Intelsat
 Date/Local Time..... 5-20-2007 at 182527
 Job Number..... 5349

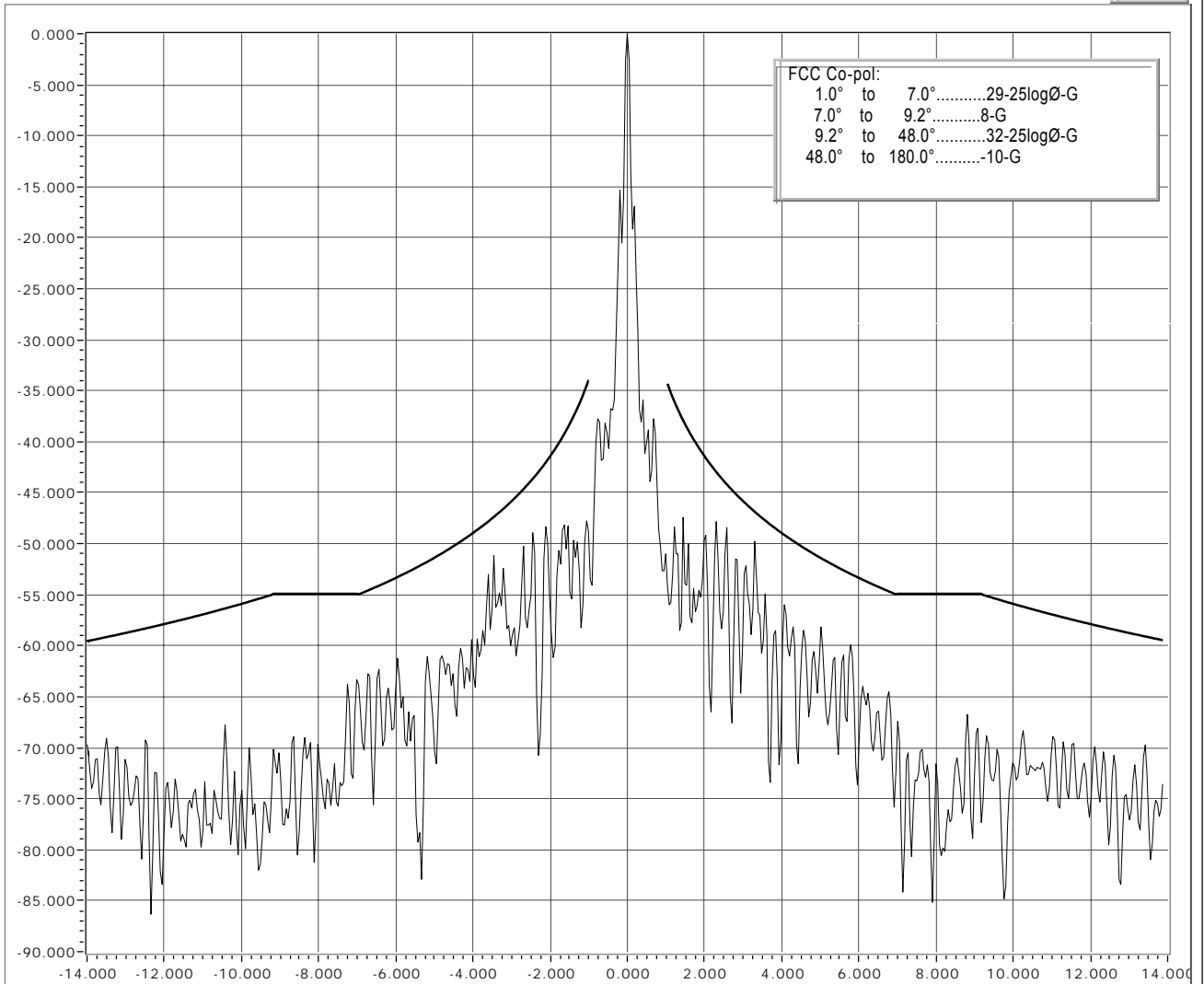
Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, Co
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... Galaxy 28
 Transponder.....

RX...Co-pol...RHCP polarization...20.074 GHz

Elevation

% Over Curve (not including main lobe)

0.0



Y-scale is power level (dB) relative to beam center; x-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=20073998729, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

File: % 070520 182527 5349 RC-14-RE-20.074.txt

Specified Gain: 62.900

Test Frequency (GHz): 20.073998729

Azimuth Beam Center (deg): 155.810

Ref. Level (dBm): -12.50

Elevation Beam Center (deg): 41.700

Points Displayed: 601

Versions
 60719 FAST
 60129 PACK

Margin Under Curve (dB): 2.88



Customer..... Intelsat
 Date/Local Time..... 5-20-2007 at 173913
 Job Number..... 5349

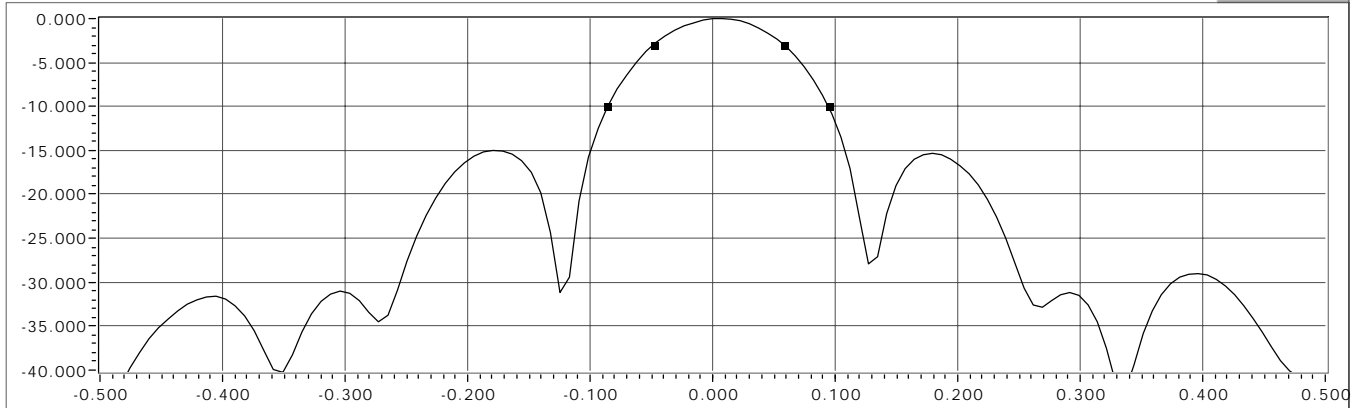
Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, CO
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... Galaxy 28
 Transponder.....

RX...RHCP Polarization...Gain by Beamwidth...20.074 GHz

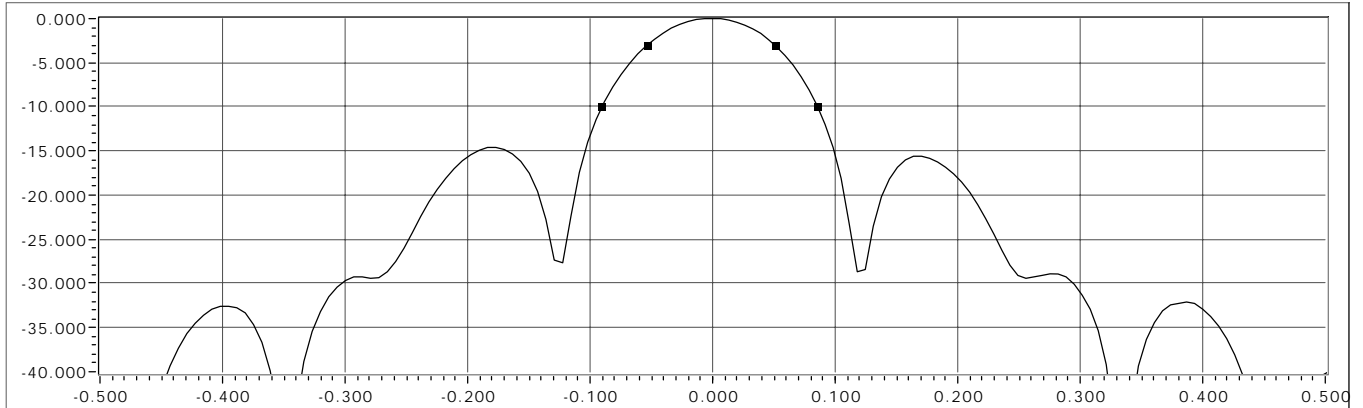
Spec. Gain (dBi): **62.900**

Calculated Gain (dB): **63.16**

AZ Pattern



EL Pattern



The Y-scale is power level (dB) relative to beam center; the X -scale is angle (degrees, AZ cosine corrected) relative to beam center.

$$\text{Gain by Beamwidth dBi} = 10 \log [((3\text{dB factor} / (\text{AZ } 3\text{dB BW} * \text{EL } 3\text{dB BW})) + (10\text{dB factor} / (\text{AZ } 10\text{dB BW} * \text{EL } 10\text{dB BW}))) / 2] - \text{Feed Loss dB} - 4.923(\text{RMS inches} * \text{Freq GHz})^2$$

SA Freq (Hz)=20073998729, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

AZ Co-pol File

The calculated gain is greater than the specified gain by 0.26 dB.

EL Co-pol File

Test Frequency (GHz)	20.073998729
AZ Ref. Level (dBm)	-11.50
Feed Loss (dB)	0.90
RMS (in.)	0.015
Azimuth (deg)	155.810
Elevation (deg)	41.700

AZ 3dB BW (deg)	0.1072
AZ 10dB BW (deg)	0.1801
AZ 15dB BW (deg)	0.2075
EL 3dB BW (deg)	0.1041
EL 10dB BW (deg)	0.1762
EL 15dB BW (deg)	0.2032

Points Displayed

3dB Factor	31000
10dB Factor	91000

Versions
 60719 FAST
 60129 PACK



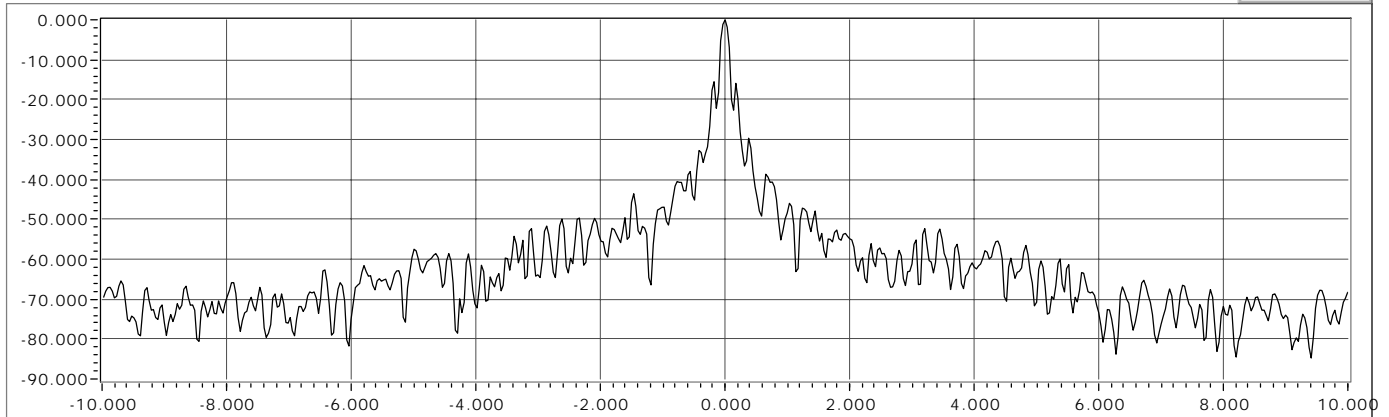
Customer..... Intelsat
 Date/Local Time..... 5-20-2007 at 175529
 Job Number..... 5349

Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, CO
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... Galaxy 28
 Transponder.....

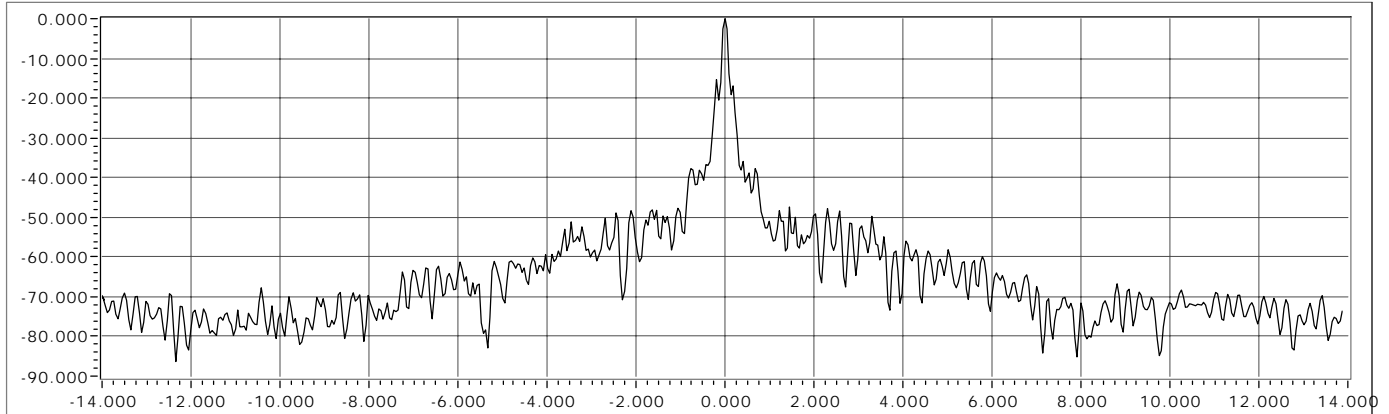
RX...RHCP Polarization...Gain by Integration...20.074 GHz

Spec. Gain (dBi): **62.900**
 Calculated Gain (dB): **64.54**

AZ Pattern



EL Pattern



The Y-scale is power level (dB) relative to beam center; the X -scale is angle (degrees, AZ cosine corrected) relative to beam center.

Antenna Gain by Integration = $2 / (\text{Sum} [P_{\text{subTheta}} * \sin(\text{Theta}) * \text{deltaTheta}] - \text{FeedLoss} - \text{AngularExtentLoss} - \text{SparBlockageLoss} - \text{CrossPolLoss})$
 where the summation is performed for look angles (Theta) offset from beam center from 0 to 180 degrees (in practice the summation occurs on both sides of beam center and the average is taken) and where PsubTheta is the power relative to beam center power and measured at look angles offset from beam center.

SA Freq (Hz)=20073998729, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

AZ Co-pol File
 EL Co-pol File
 Test Frequency (GHz)
 AZ Ref. Level (dBm)
 Azimuth (deg)
 Elevation (deg)

Versions
 60719 FAST
 60129 PACK

The calculated gain is greater than the specified gain by 1.64 dB.

# Points Displayed	577
Feed Loss (dB)	0.90
Angular Extent Loss(dB)	0.05
Spar Blockage Loss (dB)	0.05
Cross-pol Loss (dB)	0.05



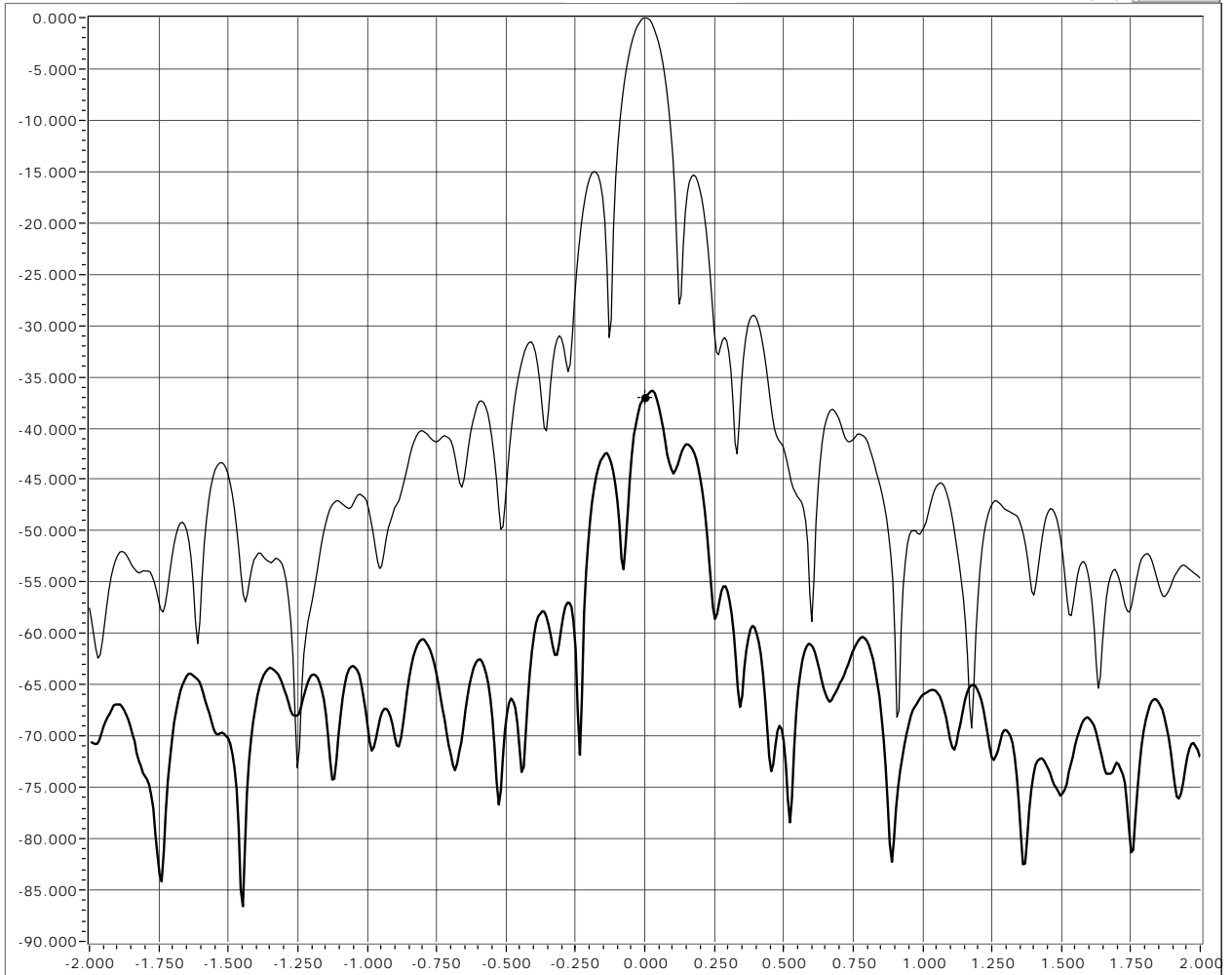
Customer..... Intelsat
 Date/Local Time.... 5-20-2007 at 183318
 Job Number..... 5349

Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, Co
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... Galaxy 28
 Transponder.....

RX...Cross-pol under Co-pol...RHCP polarization...20.074 GHz

Azimuth

On-axis Isolation (dB): 37.06



The Y-scale is power level (dB) relative to beam center; the X-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=20073998729, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3

Co-pol File:	% 070520 173913 5349 RC-3-RA-20.074.txt	Azimuth Beam Center (deg):	155.810
Cross-pol File:	% 070520 183318 5349 RX-3-RA-20.074.txt	Elevation Beam Center (deg):	41.700
Test Frequency (GHz):	20.073998729	On-axis Spec. Isolation (dB):	30.800
Ref. Level (dBm):	-11.50	Off-axis Spec. Isolation (dB):	30.80
# Points Displayed:	534		

Versions
 60719 FAST
 60129 PACK



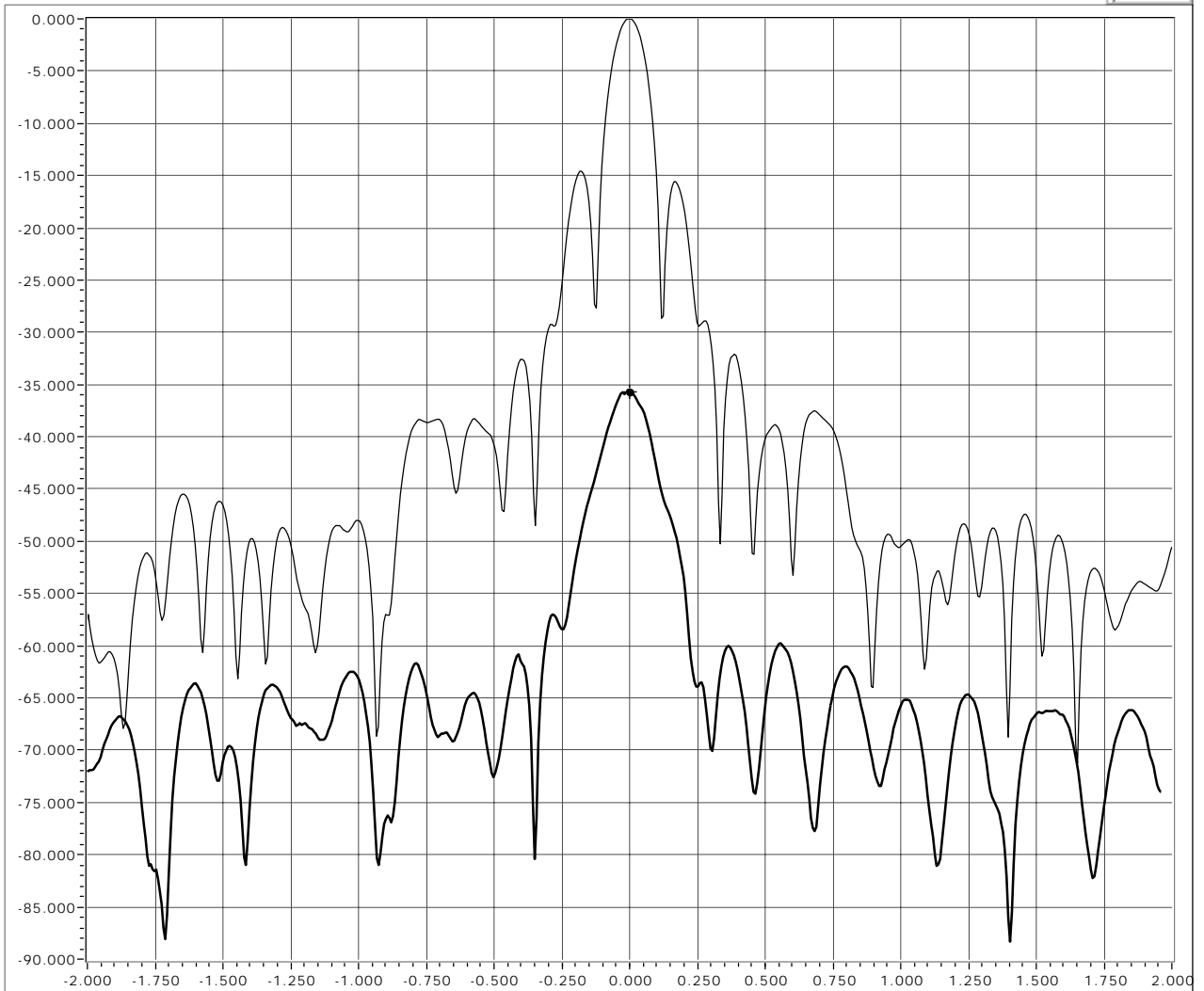
Customer..... Intelsat
 Date/Local Time..... 5-20-2007 at 174328
 Job Number..... 5349

Model..... 9.0m THKa CRK-A61
 Location..... Castle Rock, Co
 Weather..... Clear
 Test Engineer..... T. West
 Spacecraft..... Galaxy 28
 Transponder.....

RX...Cross-pol under Co-pol...RHCP polarization...20.074 GHz

Elevation

On Axis Isolation (dB): 35.69



The Y-scale is power level (dB) relative to beam center; the X-scale is angle (degrees, cosine corrected) relative to beam center.

SA Freq (Hz)=20073998729, AZ rate (deg/s)=0.125, EL rate (deg/s)=0.100, RBW (Hz)=300, VBW (Hz)=3			
Co-pol File:	% 070520 174328 5349 RC-2-RE-20.074.txt	Azimuth Beam Center (deg):	155.810
Cross-pol File:	% 070520 183826 5349 RX-2-RE-20.074.txt	Elevation Beam Center (deg):	41.700
Test Frequency (GHz):	20.073998729	On-axis Spec. Isolation (dB):	30.800
Ref. Level (dBm):	-11.50	Off-axis Spec. Isolation (dB):	30.80
# Points Displayed:	600	Versions	
		60719 FAST	
		60129 PACK	