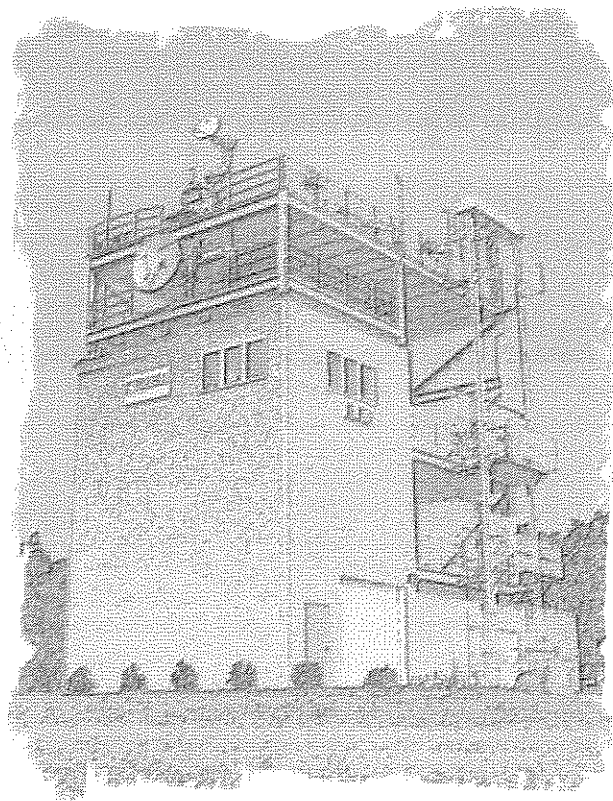


GENERAL DYNAMICS

SATCOM Technologies

2.4M Ka-Band Antenna System
O3b Terminal
2288-B Test Report



East Maiden Antenna Test Facility
4488 Lawing Chapel Church Road
Maiden, North Carolina 28650
828-428-1485 / 828-428-1488 fax

GENERAL DYNAMICS

SATCOM Technologies

General Dynamics SATCOM Technologies is a leading provider of satellite communication solutions for the defense and aerospace industries. Our expertise spans across various satellite systems, including GPS, GPS III, GPS III SVN, GPS III SVN-2, GPS III SVN-3, GPS III SVN-4, GPS III SVN-5, GPS III SVN-6, GPS III SVN-7, GPS III SVN-8, GPS III SVN-9, GPS III SVN-10, GPS III SVN-11, GPS III SVN-12, GPS III SVN-13, GPS III SVN-14, GPS III SVN-15, GPS III SVN-16, GPS III SVN-17, GPS III SVN-18, GPS III SVN-19, GPS III SVN-20, GPS III SVN-21, GPS III SVN-22, GPS III SVN-23, GPS III SVN-24, GPS III SVN-25, GPS III SVN-26, GPS III SVN-27, GPS III SVN-28, GPS III SVN-29, GPS III SVN-30, GPS III SVN-31, GPS III SVN-32, GPS III SVN-33, GPS III SVN-34, GPS III SVN-35, GPS III SVN-36, GPS III SVN-37, GPS III SVN-38, GPS III SVN-39, GPS III SVN-40, GPS III SVN-41, GPS III SVN-42, GPS III SVN-43, GPS III SVN-44, GPS III SVN-45, GPS III SVN-46, GPS III SVN-47, GPS III SVN-48, GPS III SVN-49, GPS III SVN-50, GPS III SVN-51, GPS III SVN-52, GPS III SVN-53, GPS III SVN-54, GPS III SVN-55, GPS III SVN-56, GPS III SVN-57, GPS III SVN-58, GPS III SVN-59, GPS III SVN-60, GPS III SVN-61, GPS III SVN-62, GPS III SVN-63, GPS III SVN-64, GPS III SVN-65, GPS III SVN-66, GPS III SVN-67, GPS III SVN-68, GPS III SVN-69, GPS III SVN-70, GPS III SVN-71, GPS III SVN-72, GPS III SVN-73, GPS III SVN-74, GPS III SVN-75, GPS III SVN-76, GPS III SVN-77, GPS III SVN-78, GPS III SVN-79, GPS III SVN-80, GPS III SVN-81, GPS III SVN-82, GPS III SVN-83, GPS III SVN-84, GPS III SVN-85, GPS III SVN-86, GPS III SVN-87, GPS III SVN-88, GPS III SVN-89, GPS III SVN-90, GPS III SVN-91, GPS III SVN-92, GPS III SVN-93, GPS III SVN-94, GPS III SVN-95, GPS III SVN-96, GPS III SVN-97, GPS III SVN-98, GPS III SVN-99, GPS III SVN-100.

General Dynamics SATCOM Technologies is a leading provider of satellite communication solutions for the defense and aerospace industries.

2.4M Ka-Band Antenna System

O3b Terminal

Contents

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LHCP Radiation Patterns.....	Section 2
Transmit Frequencies	
RHCP Radiation Patterns.....	Section 3
Transmit Frequencies	



Gain

1. The gain of a system is the ratio of the output to the input. It is a measure of the system's ability to amplify a signal. The gain of a system can be determined by measuring the output and input signals and calculating their ratio. The gain of a system can also be determined by measuring the system's response to a known input signal. The gain of a system is a function of the system's parameters and the input signal. The gain of a system can be used to determine the system's stability and to design control systems. The gain of a system is a key parameter in the analysis and design of control systems.

Gain Analysis

Frequency (GHz)	Gain (dB) LHCP	Gain (dB) RHCP
27.60	55.4	55.6
28.35	55.6	55.7
29.10	55.8	55.7

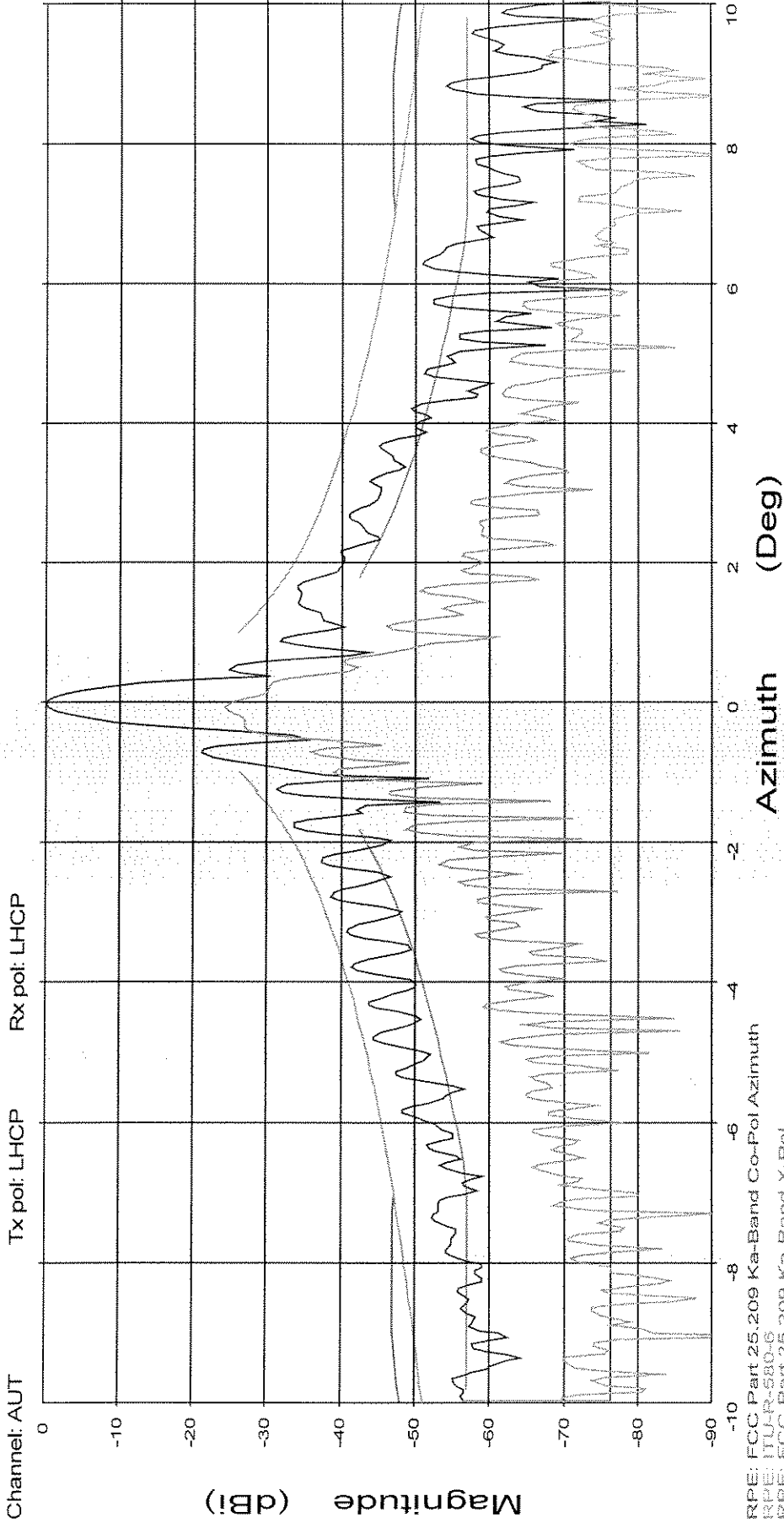
LHCP Transmit Radiation Patterns

Figure 2.1 shows the radiation patterns for LHCP transmit radiation patterns. The radiation patterns are shown in the x-z plane for $\theta = 0^\circ$ and $\theta = 90^\circ$. The radiation patterns are shown in the x-z plane for $\theta = 0^\circ$ and $\theta = 90^\circ$. The radiation patterns are shown in the x-z plane for $\theta = 0^\circ$ and $\theta = 90^\circ$.

2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 27.600 GHz

Operator: J Hartness



2.4M Ka-Band Antenna System
O3b Terminal

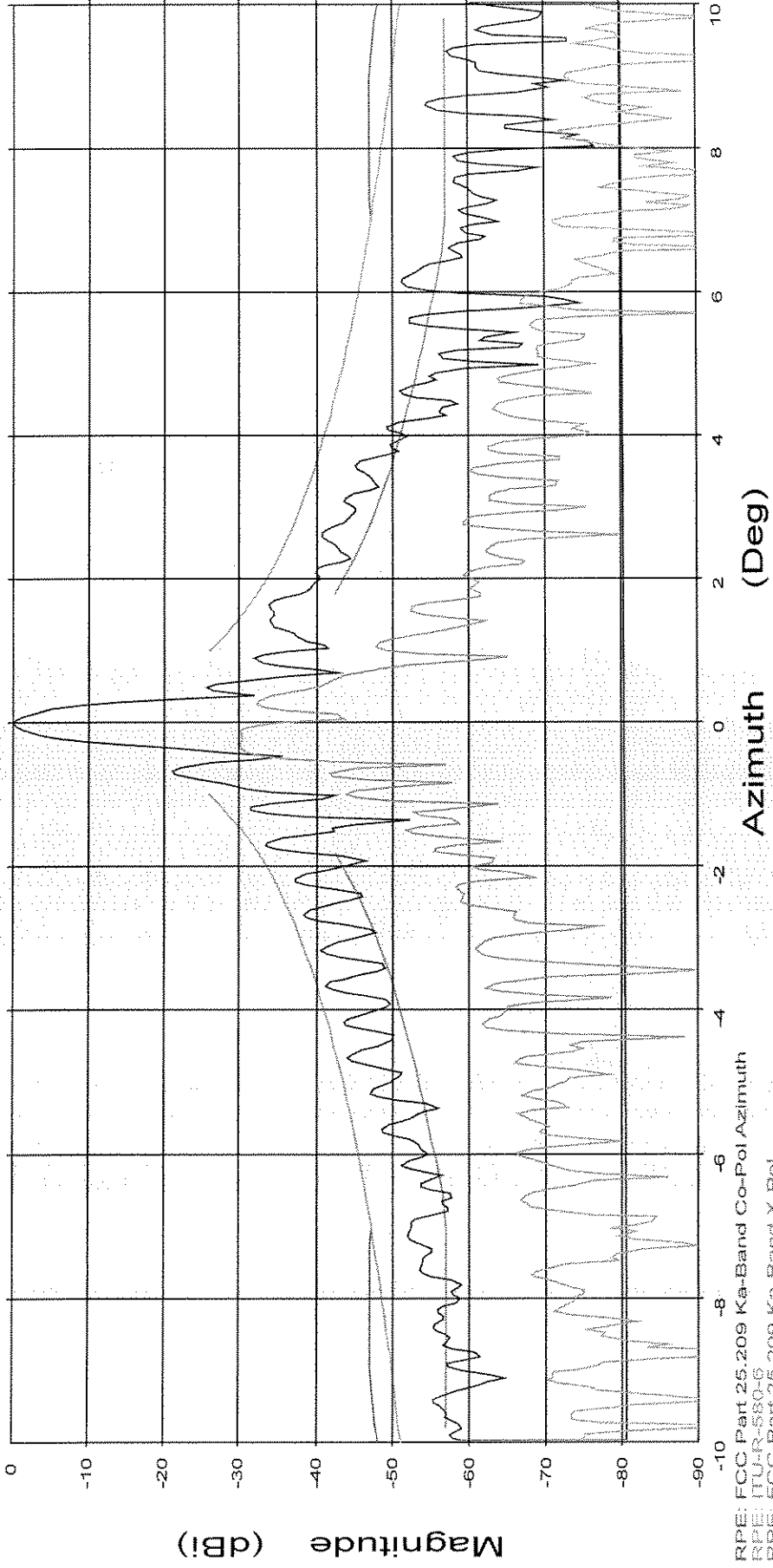
Frequency : 28.350 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: ITU-R-S80-6
RPE: FCC Part 25.209 Ka-Band X-Pol

Overlays
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2288 47.dat-ant_under_test

Cal. file
2288 45.dat
2288 47.dat

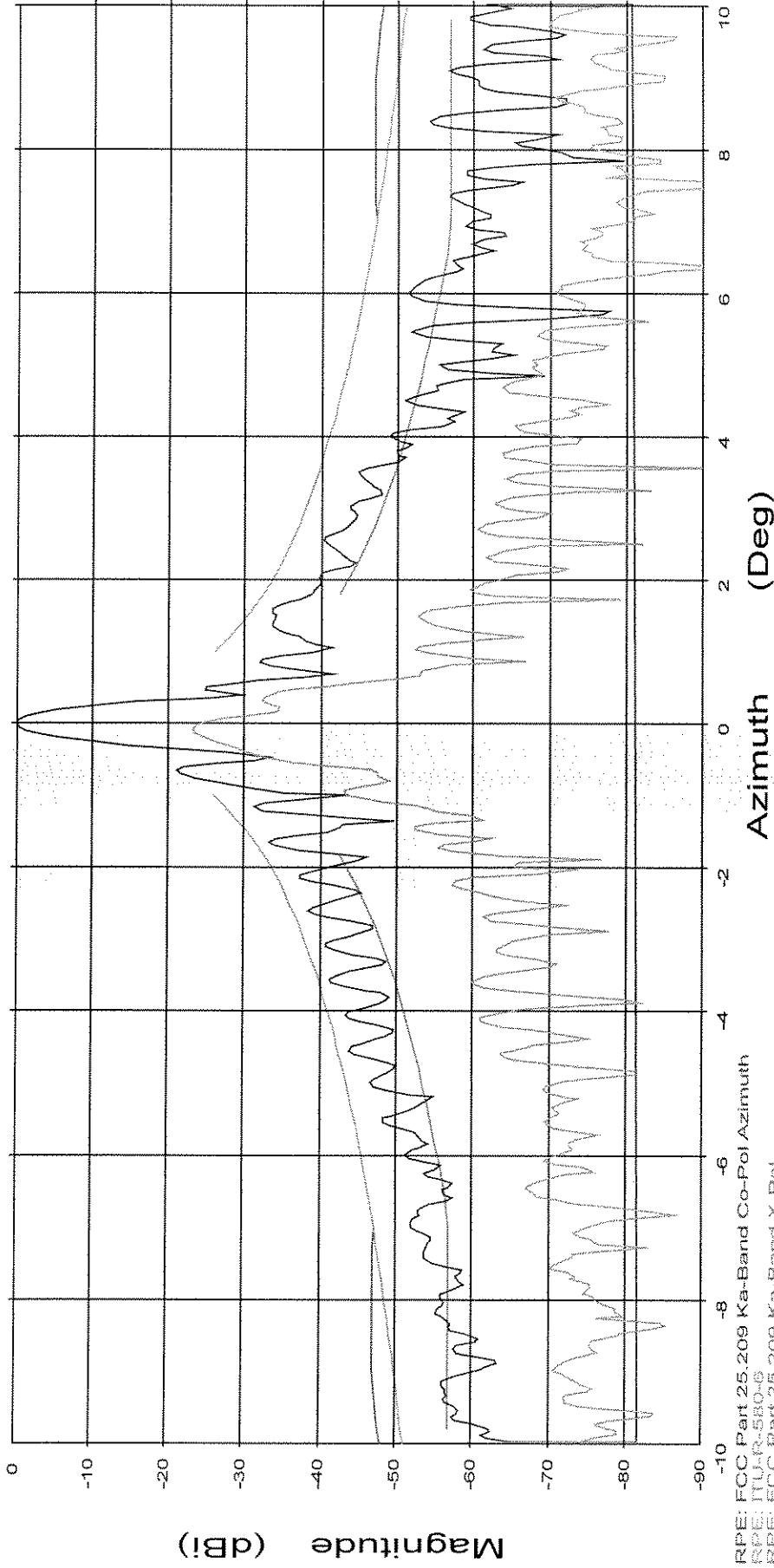
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 29.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: ITU-R-580-6
RPE: FCC Part 25.209 Ka-Band X-Pol

Overlays
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Cal. file
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2288 47.dat

Frequency : 27.600 GHz

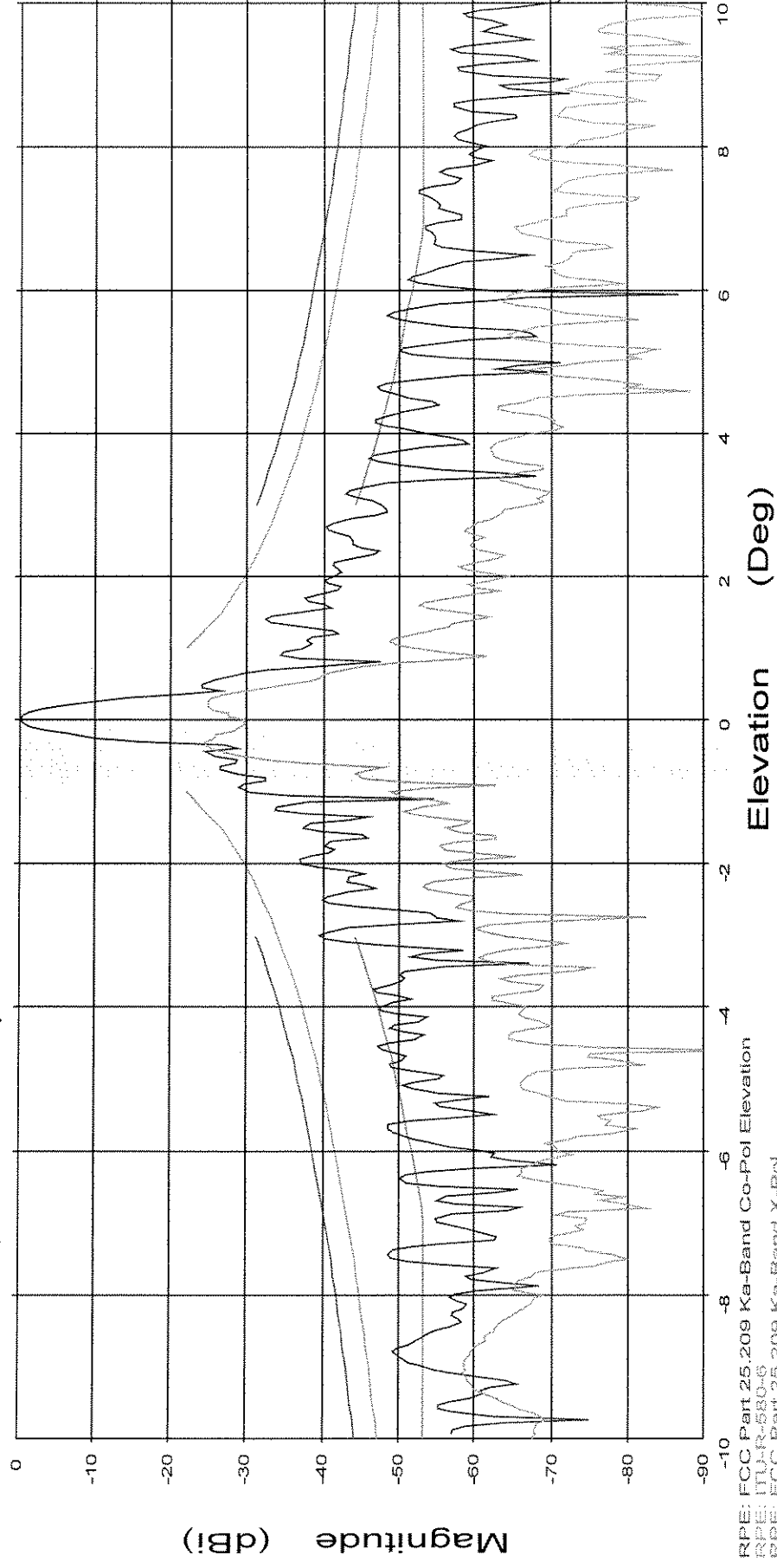
2.4M Ka-Band Antenna System
O3b Terminal

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITU-R-580-6
RPE: FCC Part 25.209 Ka-Band X-Pol

Overlays
2288 46.dat-ant_under_test——
2288 51.dat-ant_under_test-----
Cal. file
2288 46.dat
2288 51.dat

General Dynamics SATCOM Test Facilities
East Malabar Test Facility
4480 Loring Chapel Church Road
Malabar, North Carolina 28550

2.4M Ka-Band Antenna System
O3b Terminal

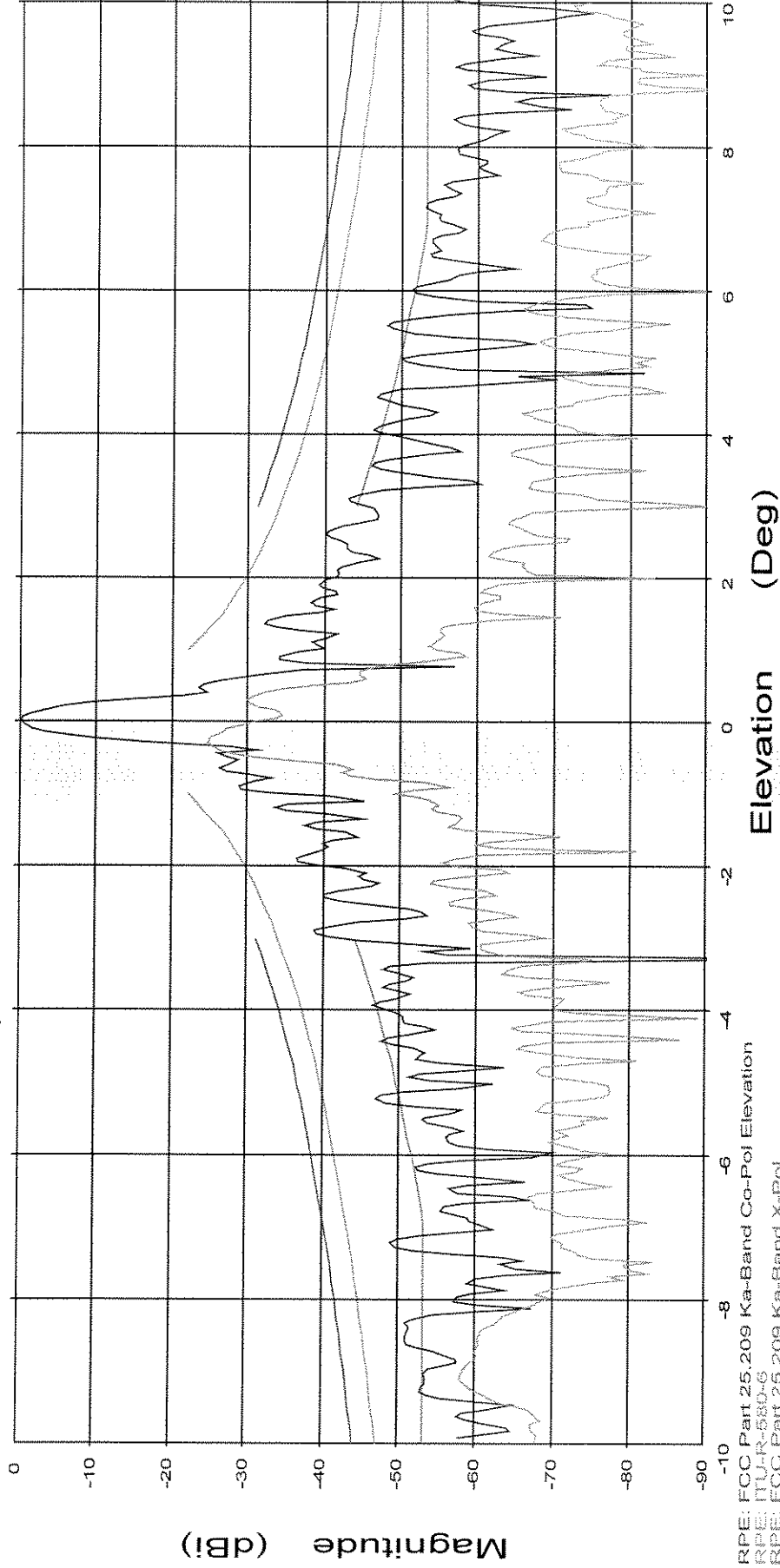
Frequency : 28.350 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITU-R-580-6
RPE: FCC Part 25.209 Ka-Band X-Pol

Overlays
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2288 51.dat-ant_under_test

Cal. file
2288 46.dat
2288 51.dat

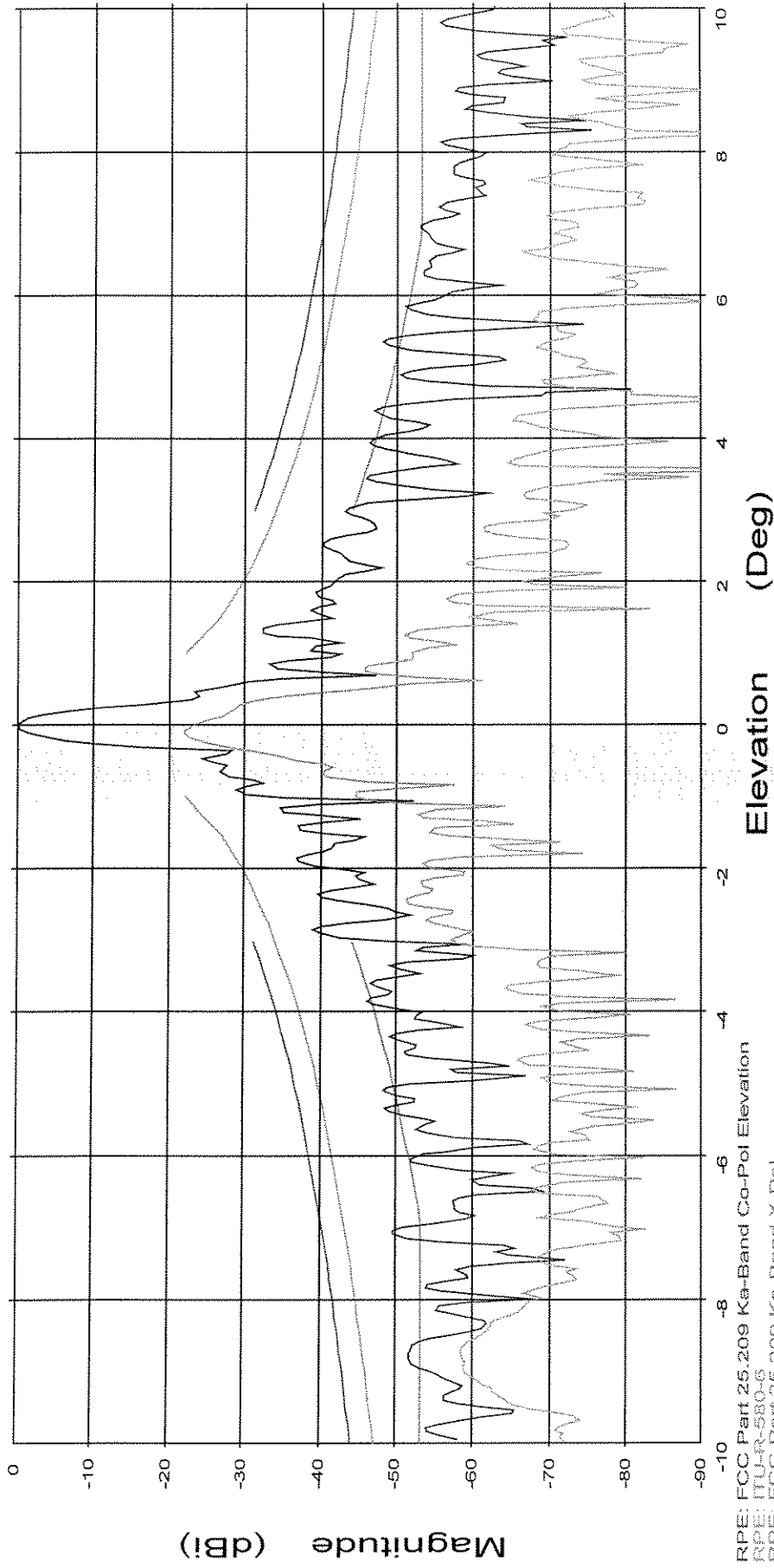
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 29.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITU-R-SB0-6
RPE: FCC Part 25.209 Ka-Band X-Pol

Overlays
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2288 51.dat

File: 2288 46.dat

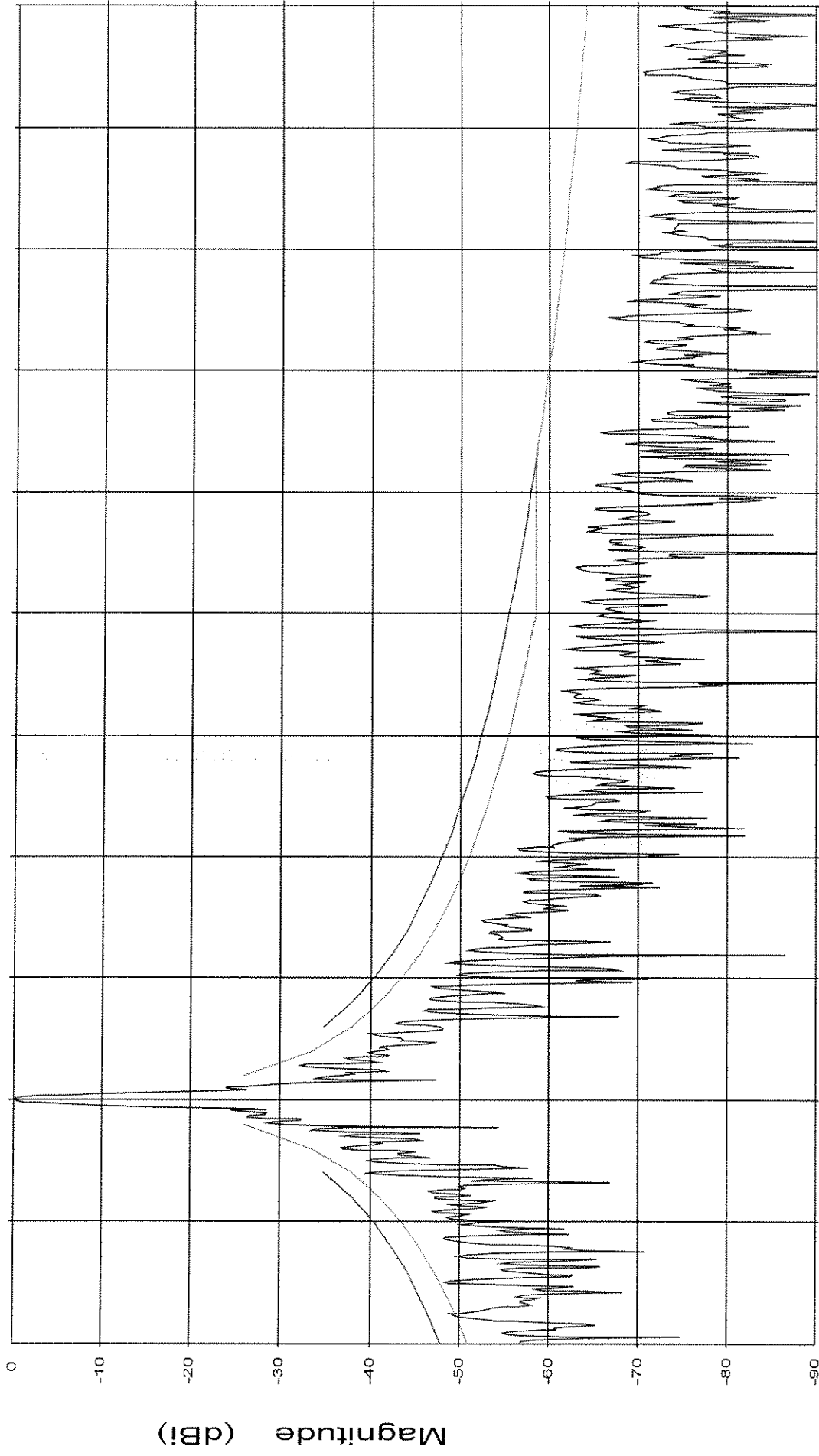
2.4M Ka-Band Antenna System
O3b Terminal

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITU-R-560-6

Elevation (Deg)

General Dynamics SA (COM) Technologies
East Malabar Test Facility
4480 Lanning Chapel Church Road
Mandeville, North Carolina 28658

File: 2288 46.dat

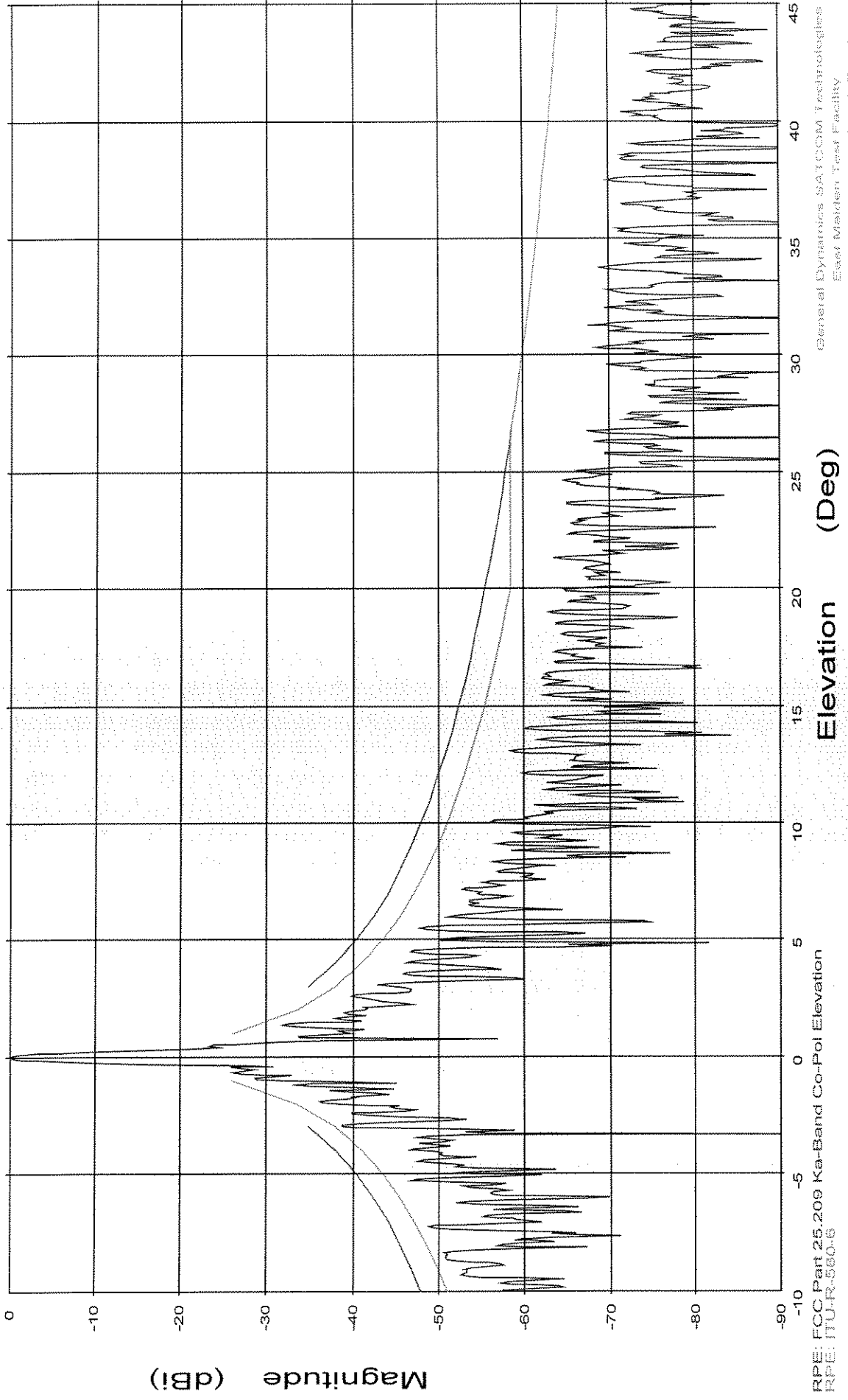
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 28.350 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITR-560-6

Elevation (Deg)

General Dynamics SATCOM Technologies
East Maiden Test Facility
4488 Lawson Chapel Church Road
Maiden, North Carolina 28650

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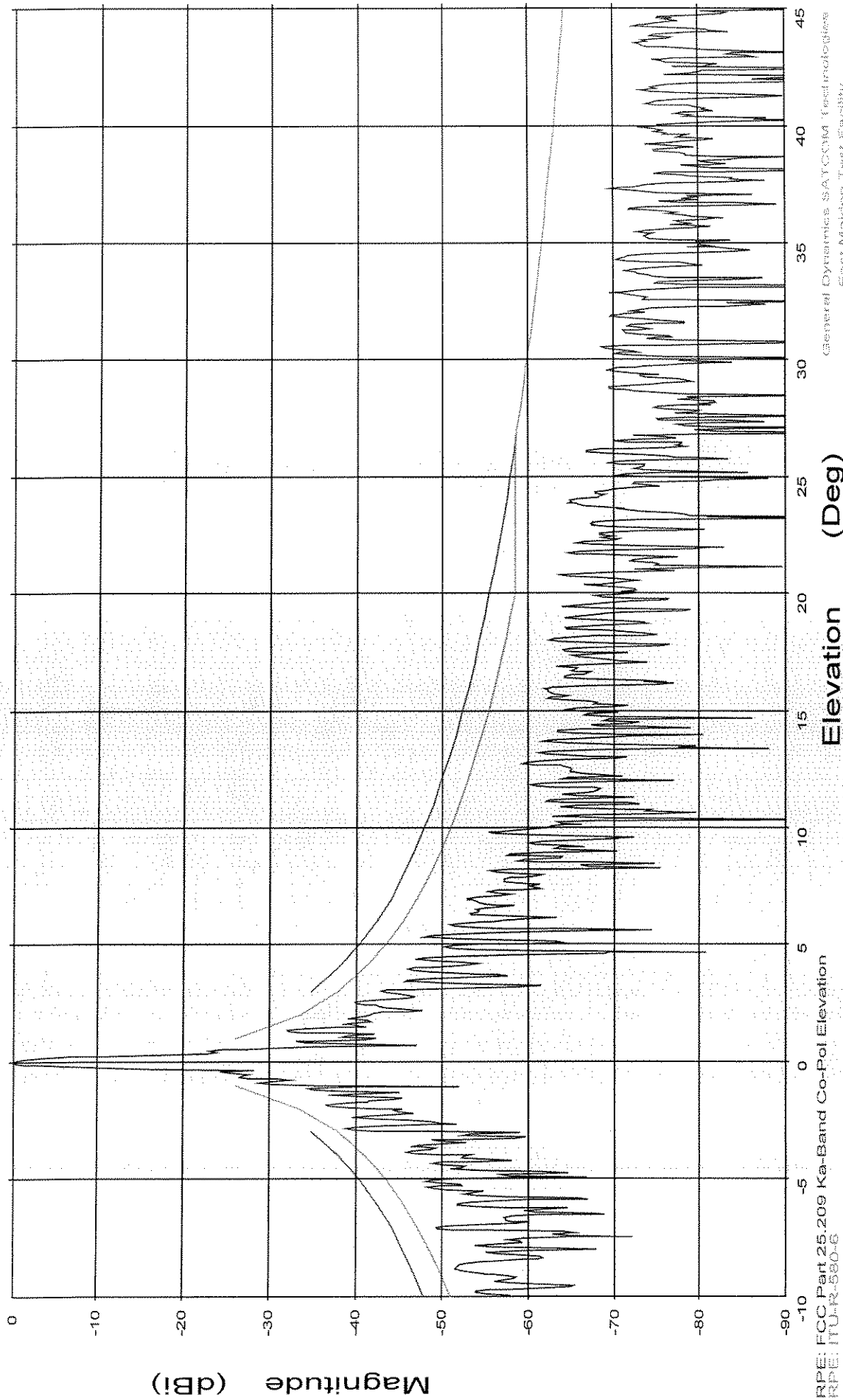
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 29.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITU-R-580-6

General Dynamics SATCOM Technologies
East Maiden Test Facility
4488 Loring Chapel Church Road
Maiden, North Carolina 28650

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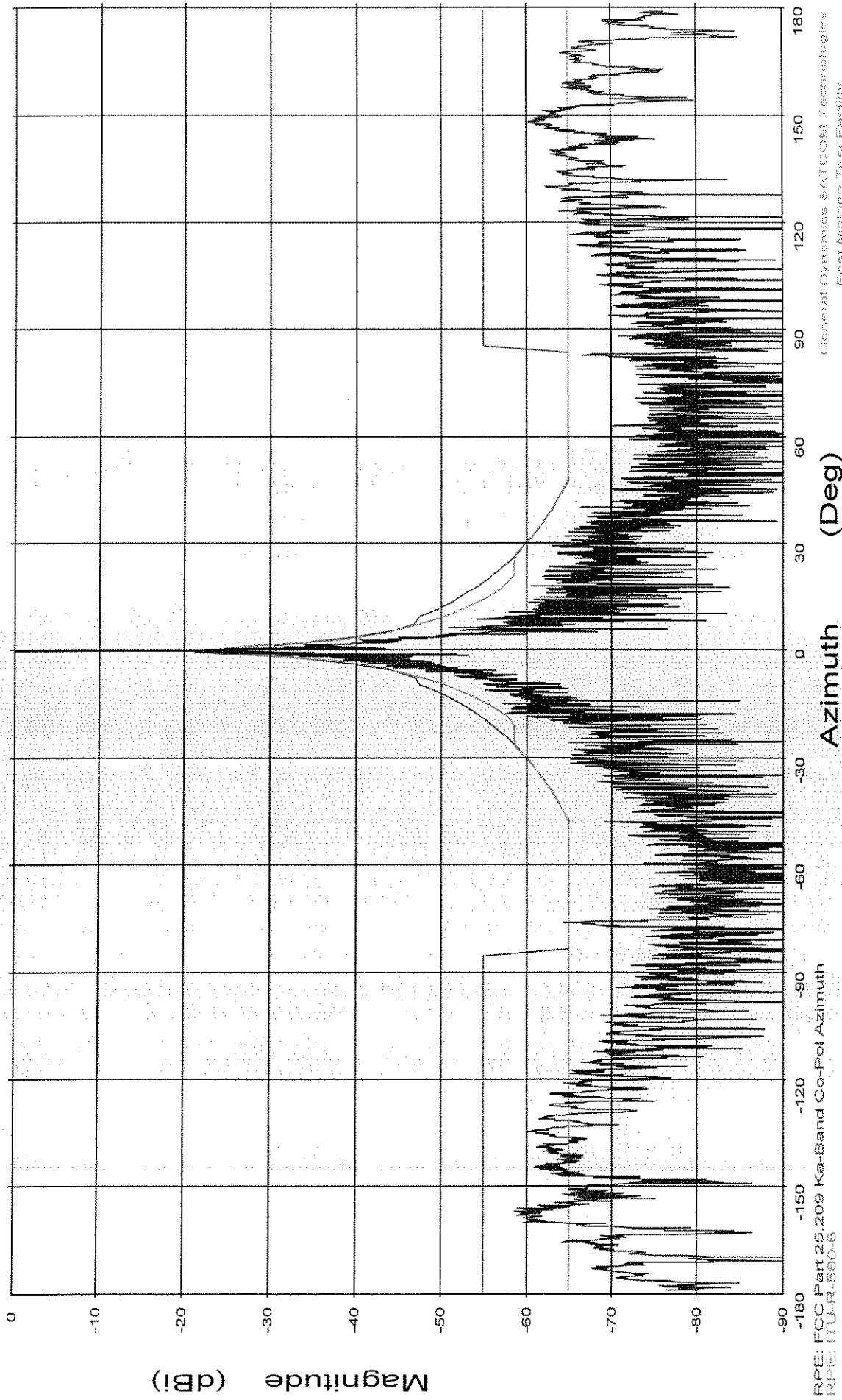
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 27.600 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: ITU-R.560-6

General Dynamics SATCOM Technologies
East Maiden Test Facility
4488 Lawson Chapel Church Road
Maiden, North Carolina 27659

Frequency : 28.350 GHz

2.4M Ka-Band Antenna System
O3b Terminal

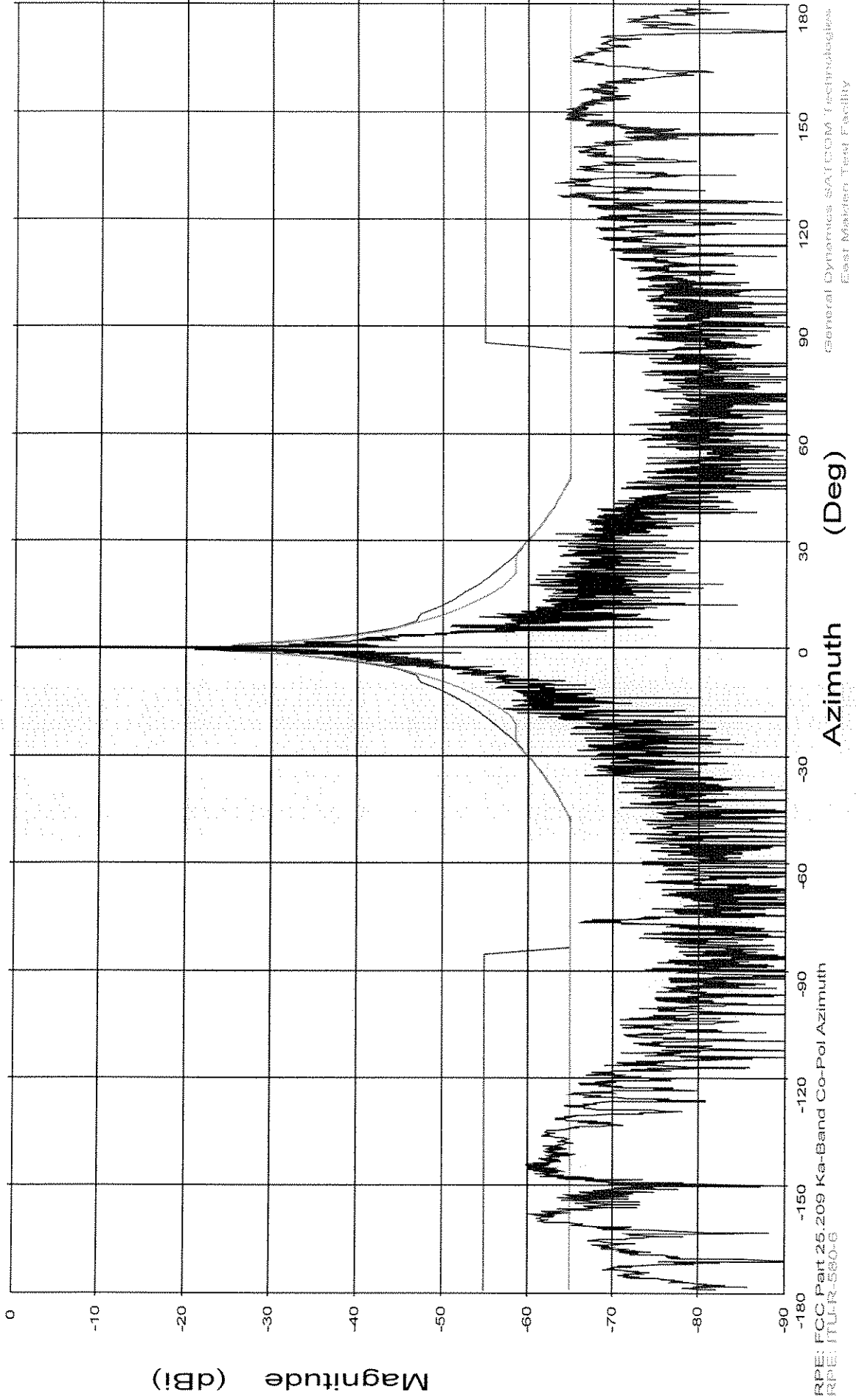
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Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: ITLR-580-6

General Dynamics SATCOM Technologies
East Market Test Facility
4488 Loring Chapel Church Road
Mallory, North Carolina 28650

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2.4M Ka-Band Antenna System
O3b Terminal

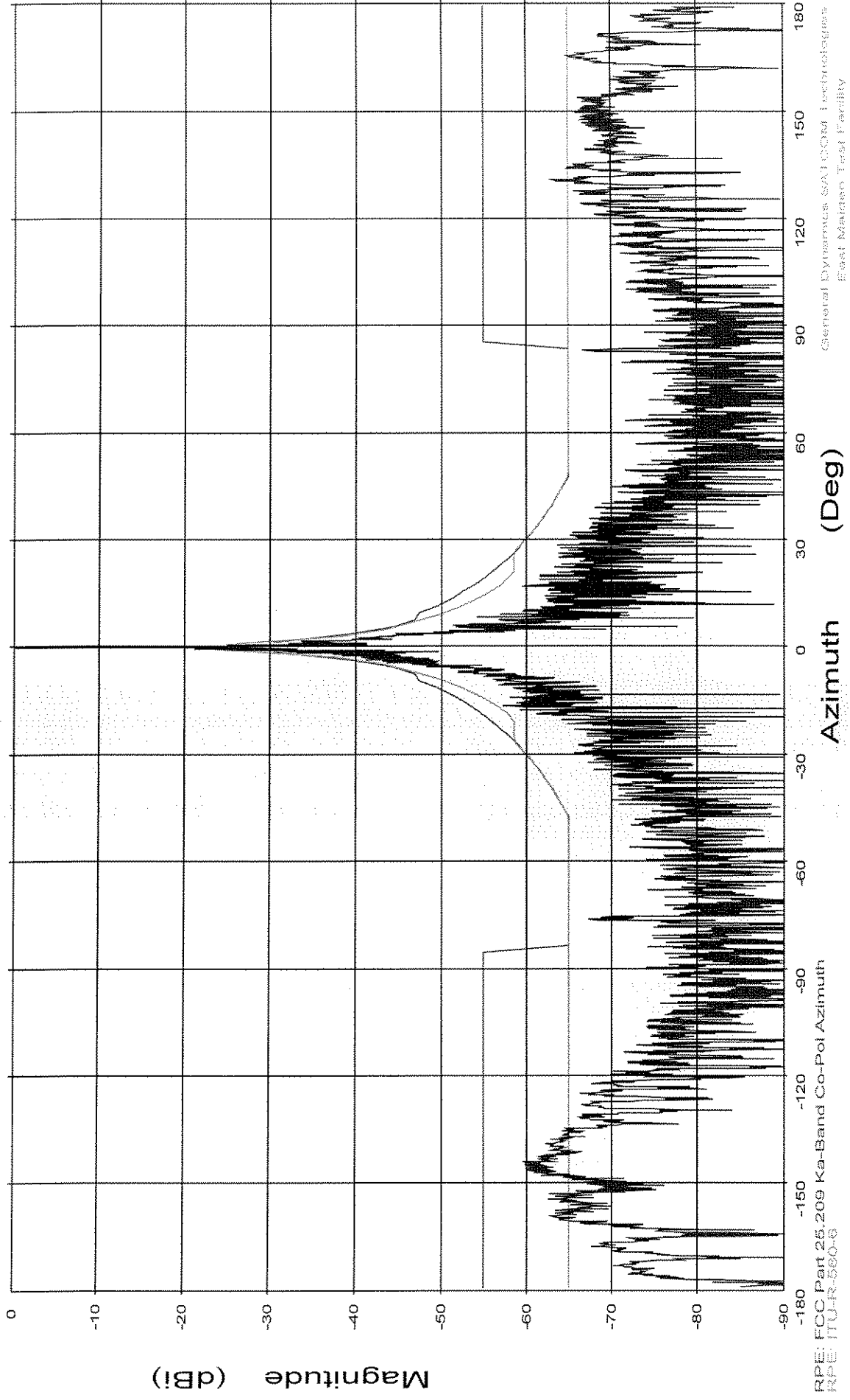
Frequency : 29.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP

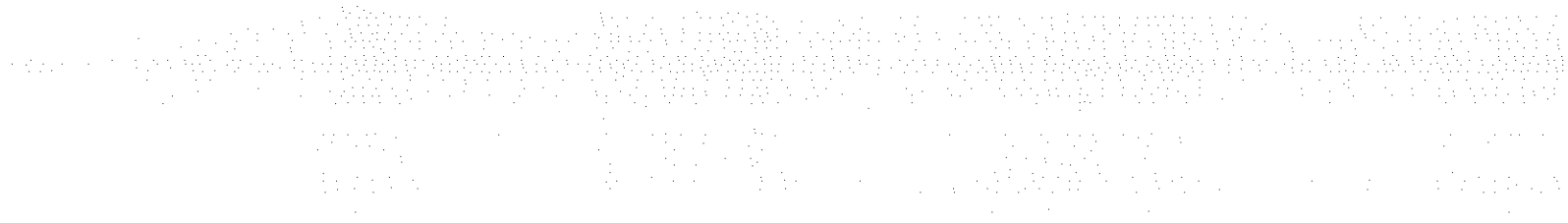


RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: ITU-R-SG-6

Azimuth (Deg)

General Dynamics SATCOM Technologies
East Mountain Test Facility
4486B Lenoir Chapel Church Road
Maulden, North Carolina 28640

RHCP Transmit Radiation Patterns



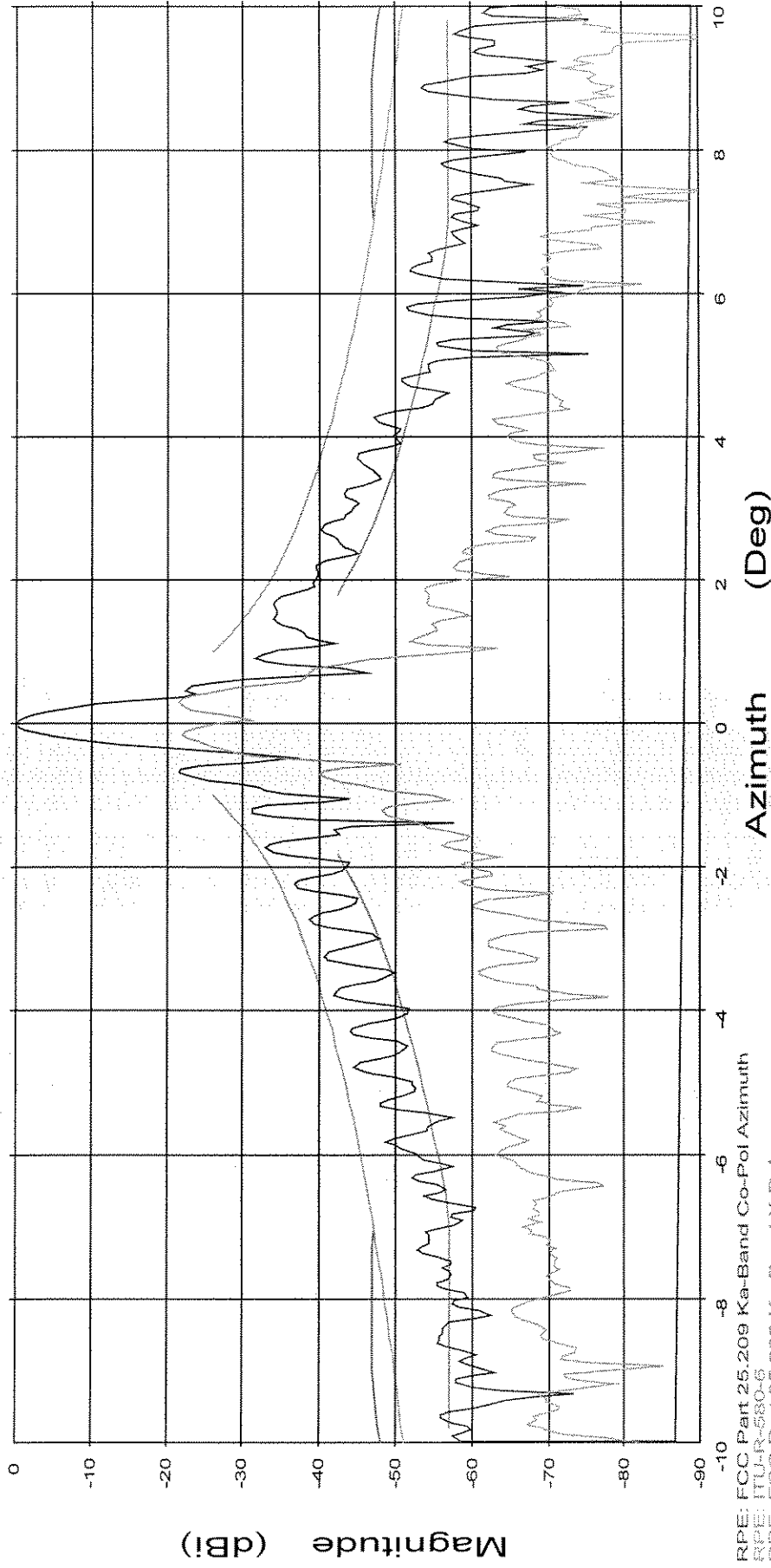
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 27.600 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: ITU-R-580-6
RPE: FCC Part 25.209 Ka-Band X-Pol

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2288 56.dat-ant_under_test
Cal. file
2288 54.dat
2288 56.dat

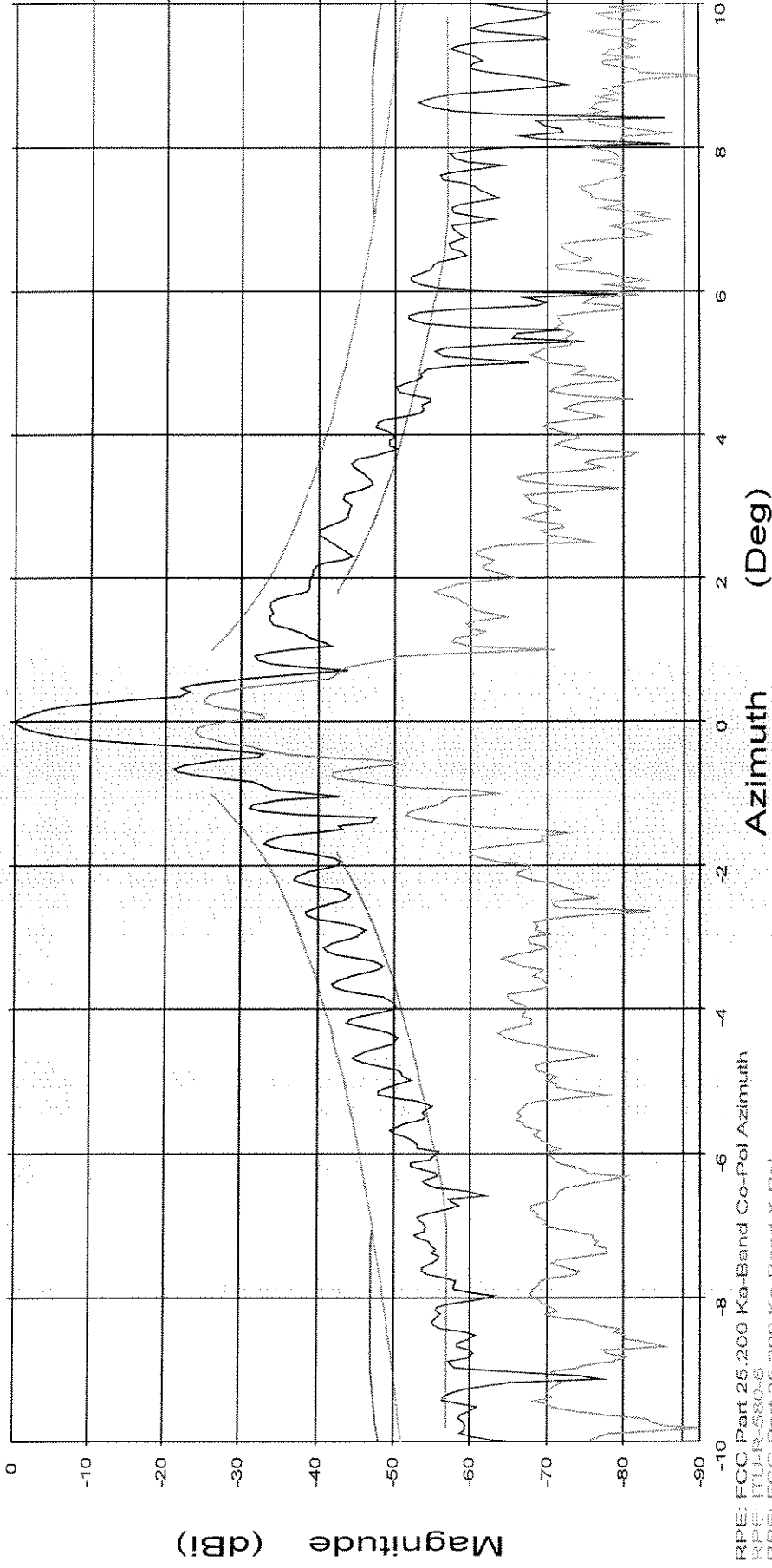
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 28.350 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: ILLR-580-6
RPE: FCC Part 25.209 Ka-Band X-Pol

Overlays
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2288 56.dat

2.4M Ka-Band Antenna System
O3b Terminal

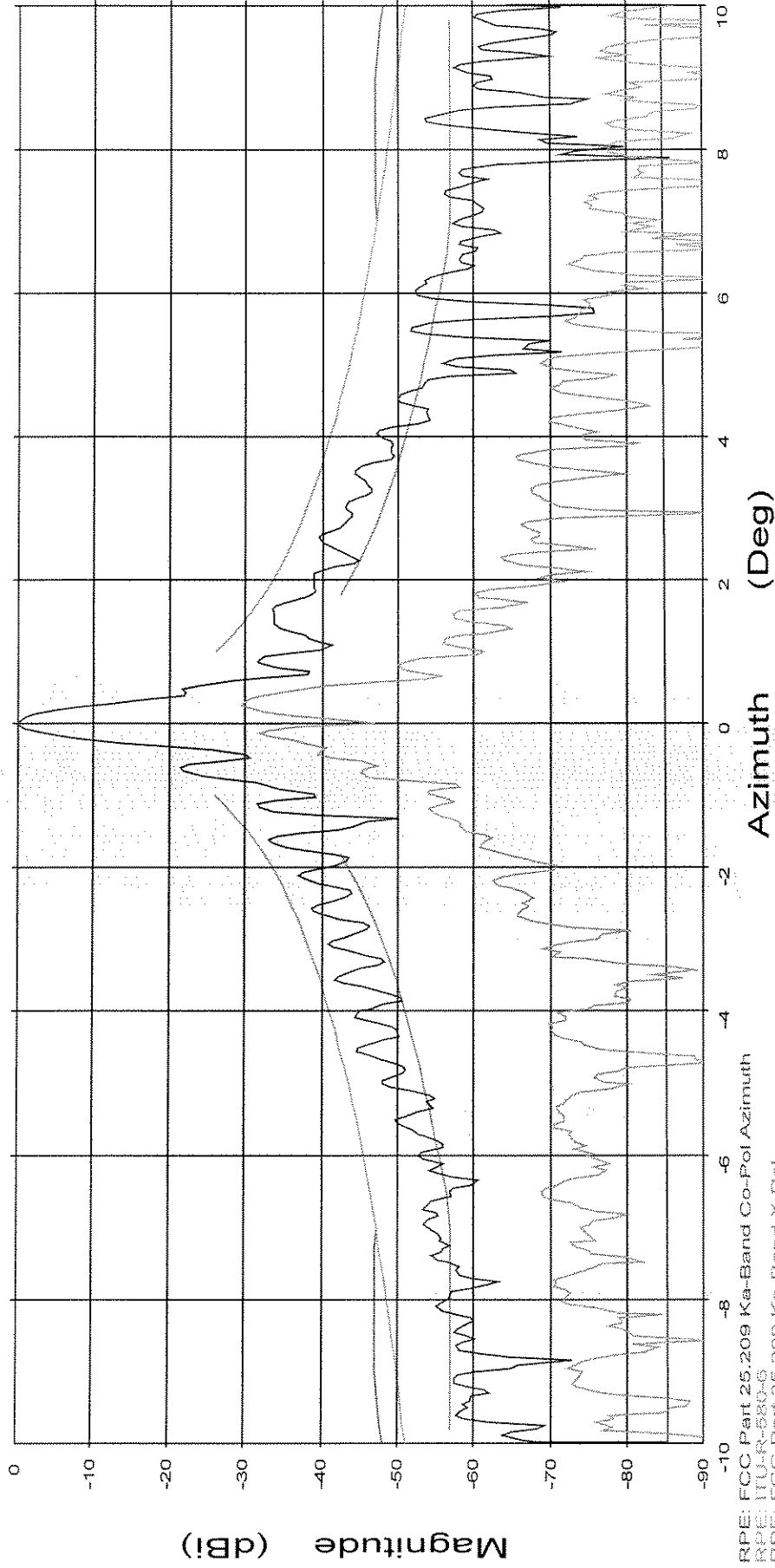
Frequency : 29.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: ITU-R-SM-C
RPE: FCC Part 25.209 Ka-Band X-Pol

Overlays
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2288 56.dat

2.4M Ka-Band Antenna System
O3b Terminal

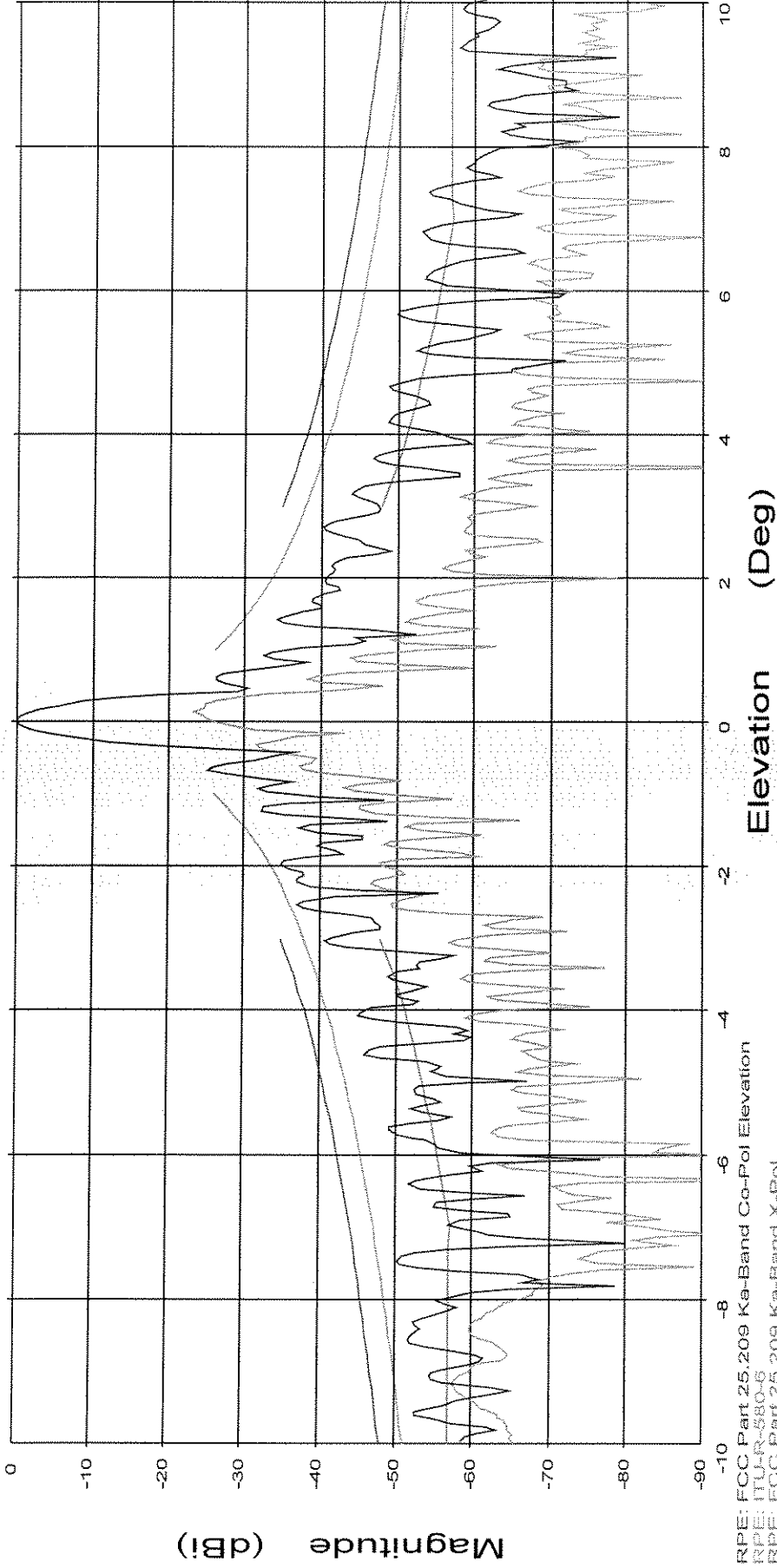
Frequency : 27.600 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITU-R S-580-6
RPE: FCC Part 25.209 Ka-Band X-Pol

Overlays

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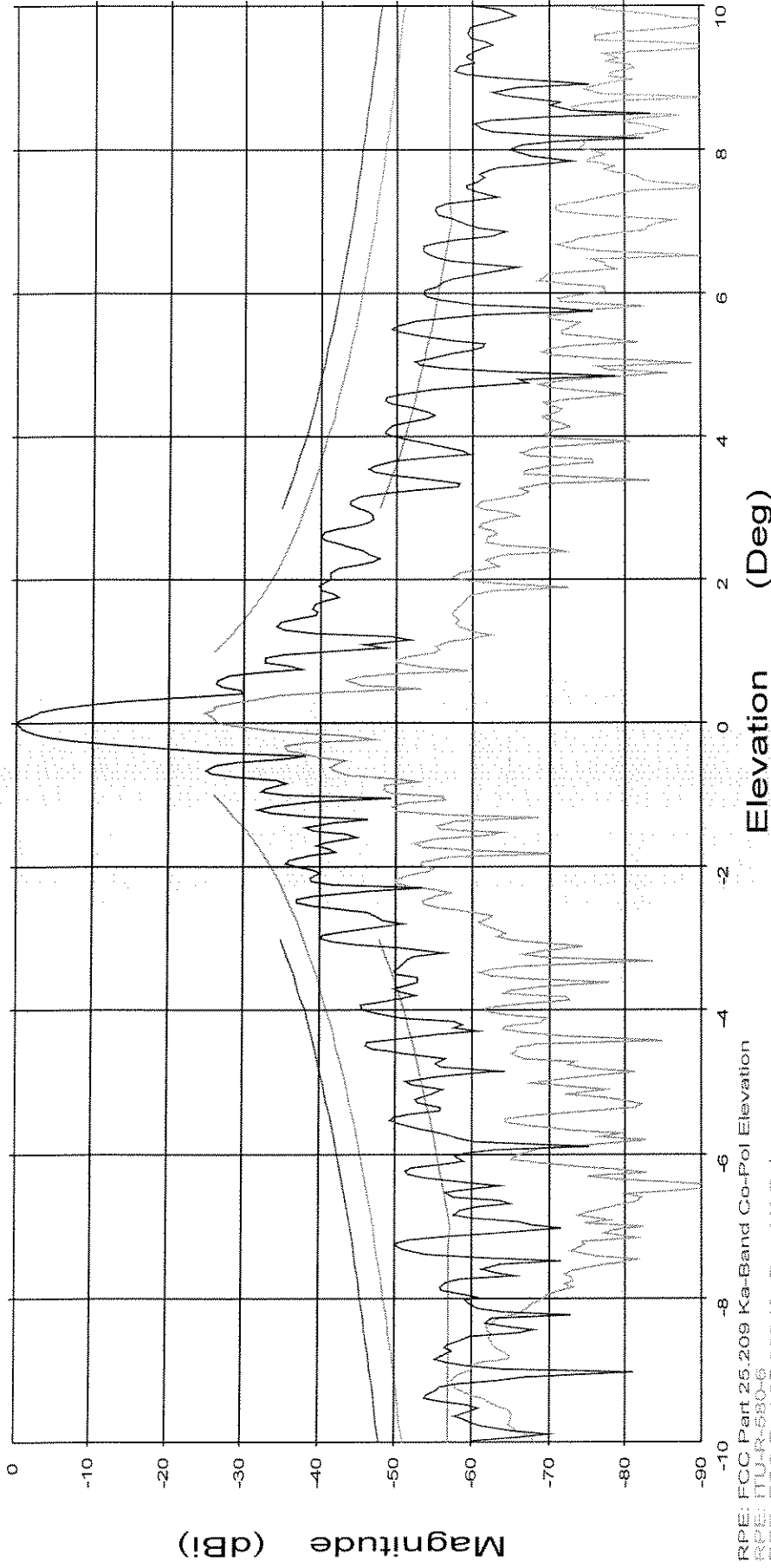
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 28.350 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITU-R-SB0-6
RPE: FCC Part 25.209 Ka-Band X-Pol

Overlays
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2288 59.dat-ant_under_test

Cal. file
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2288 59.dat

2.4M Ka-Band Antenna System
O3b Terminal

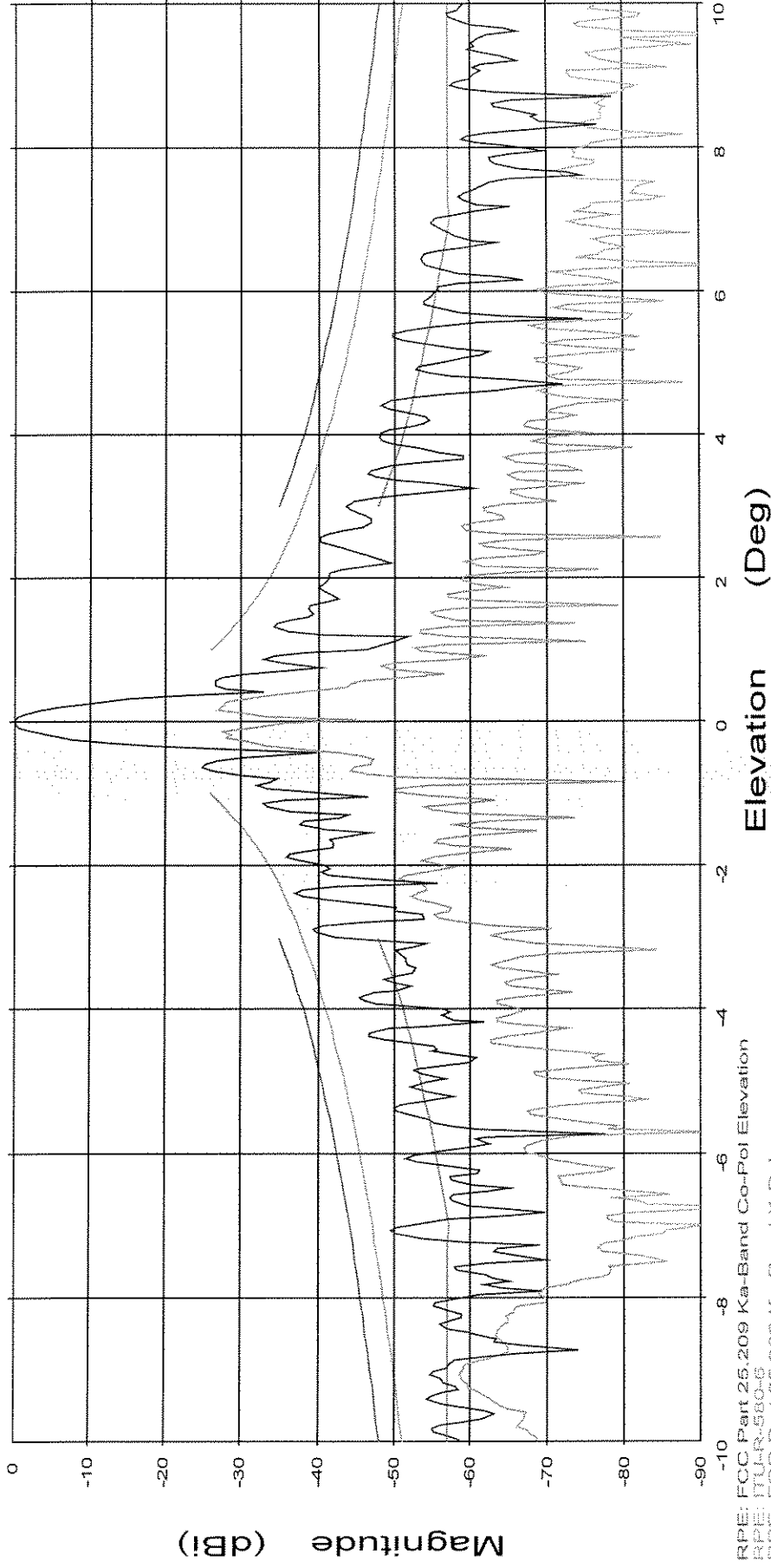
Frequency : 29.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITUR-580-G
RPE: FCC Part 25.209 Ka-Band X-Pol

Overlays

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2288 59.dat-ant_under_test

Cal. file
2288 58.dat
2288 59.dat

File: 2288 59.dat

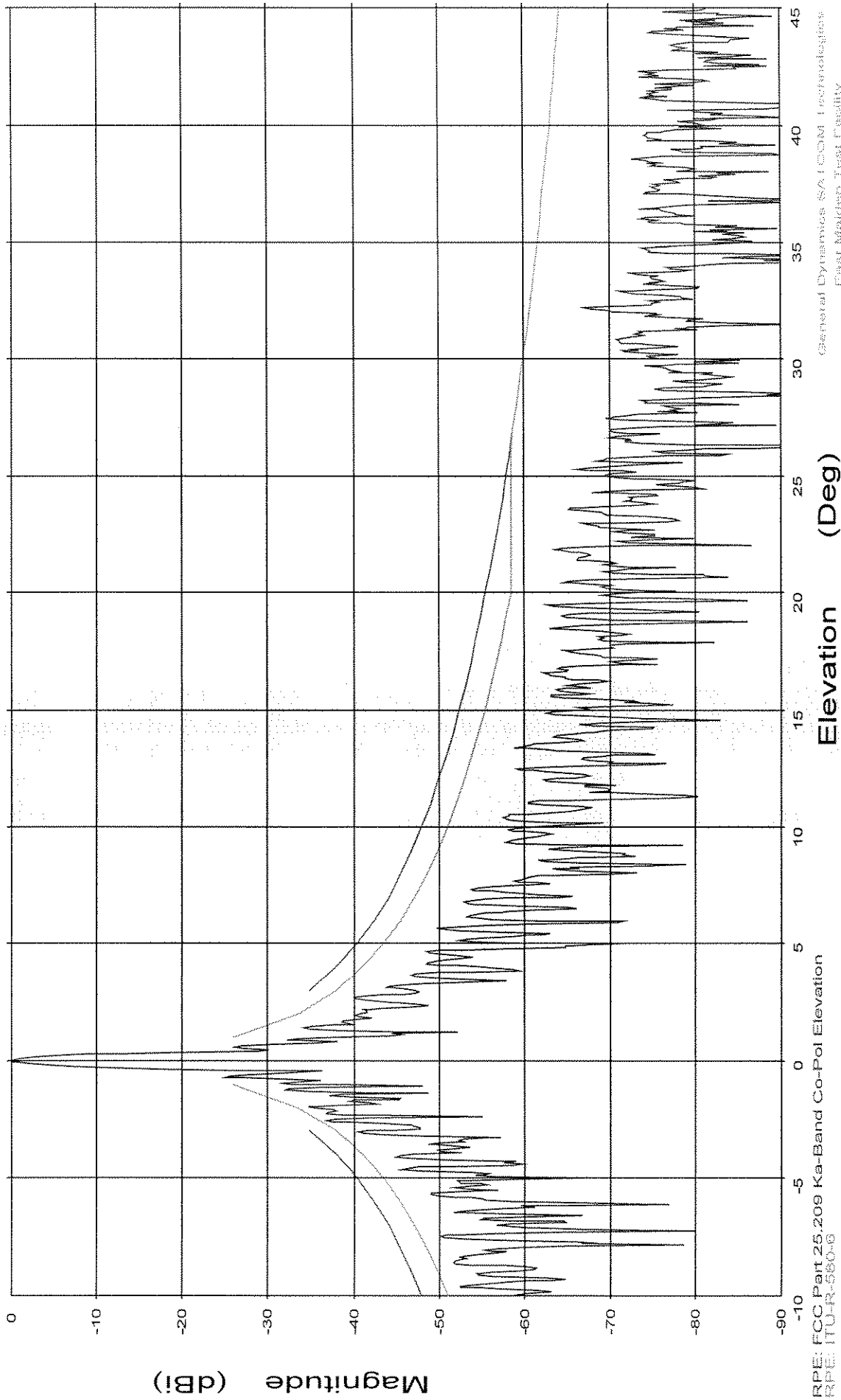
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 27.600 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITR-580-G

Elevation (Deg)

General Dynamics SAICOM Technologies
East Maiden Test Facility
4488 Lavers Chapel Church Road
Maiden, North Carolina 28650

File: 2288 59.dat

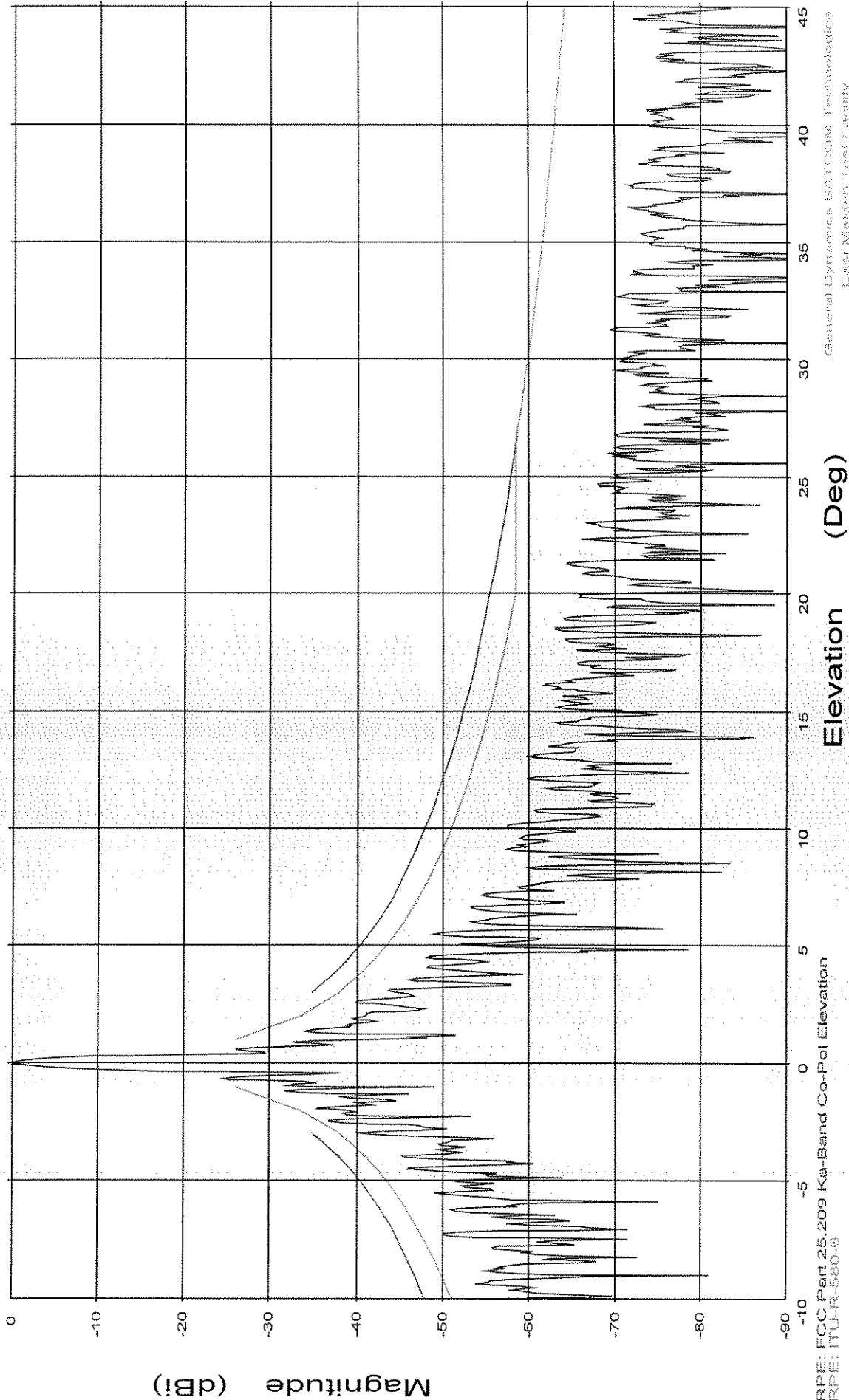
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 28.350 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: ITUR-580-6

General Dynamics SATCOM Technologies
East Maiden Test Facility
4488 Lawing Chapel Church Road
Maiden, North Carolina 28650

File: 2288 59.dat

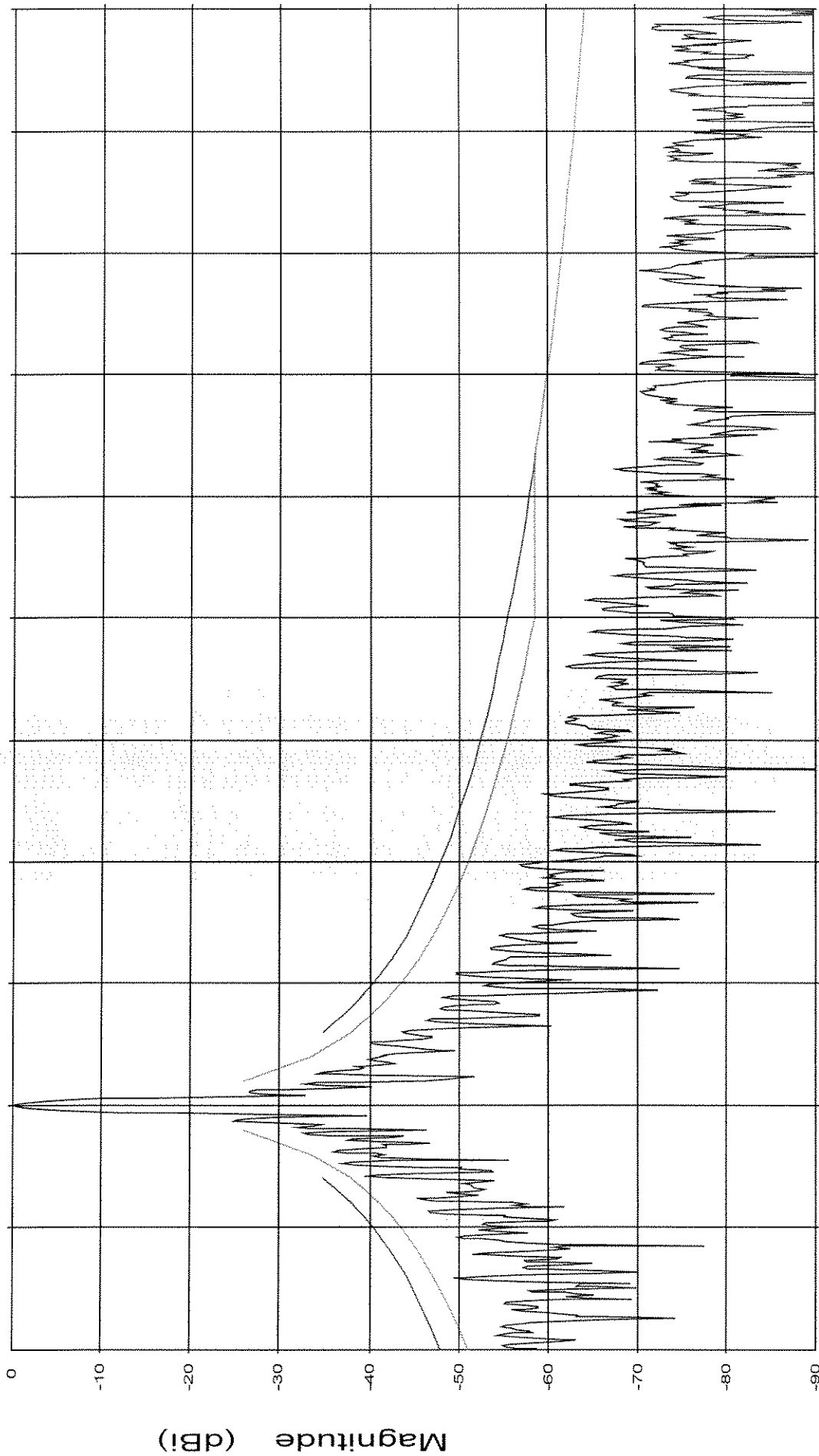
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 29.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Elevation
RPE: IUR-5806

Elevation (Deg)

General Dynamics SATCOM Technologies
East Maiden Test Facility
4488 Leaning Chapel Church Road
Maiden, North Carolina 28650

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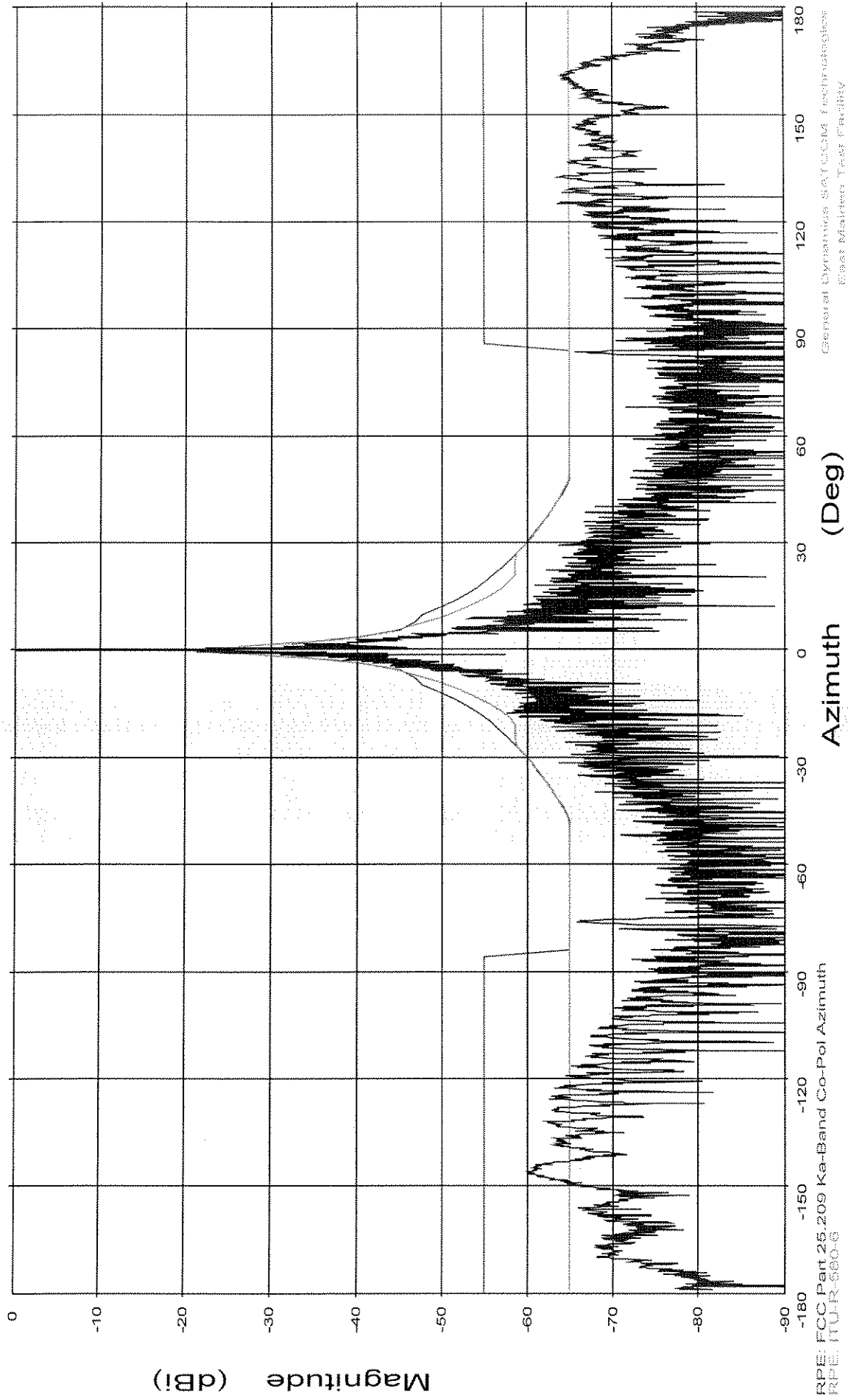
2.4M Ka-Band Antenna System
O3b Terminal

Frequency : 27.600 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: ITU-R 580-6

Azimuth (Deg)

General Dynamics SATCOM Technologies
Eagle Mountain Test Facility
4486 Loring Chapel Church Road
Milledgeville, North Carolina 29650

File: 2288 54.dat

2.4M Ka-Band Antenna System
O3b Terminal

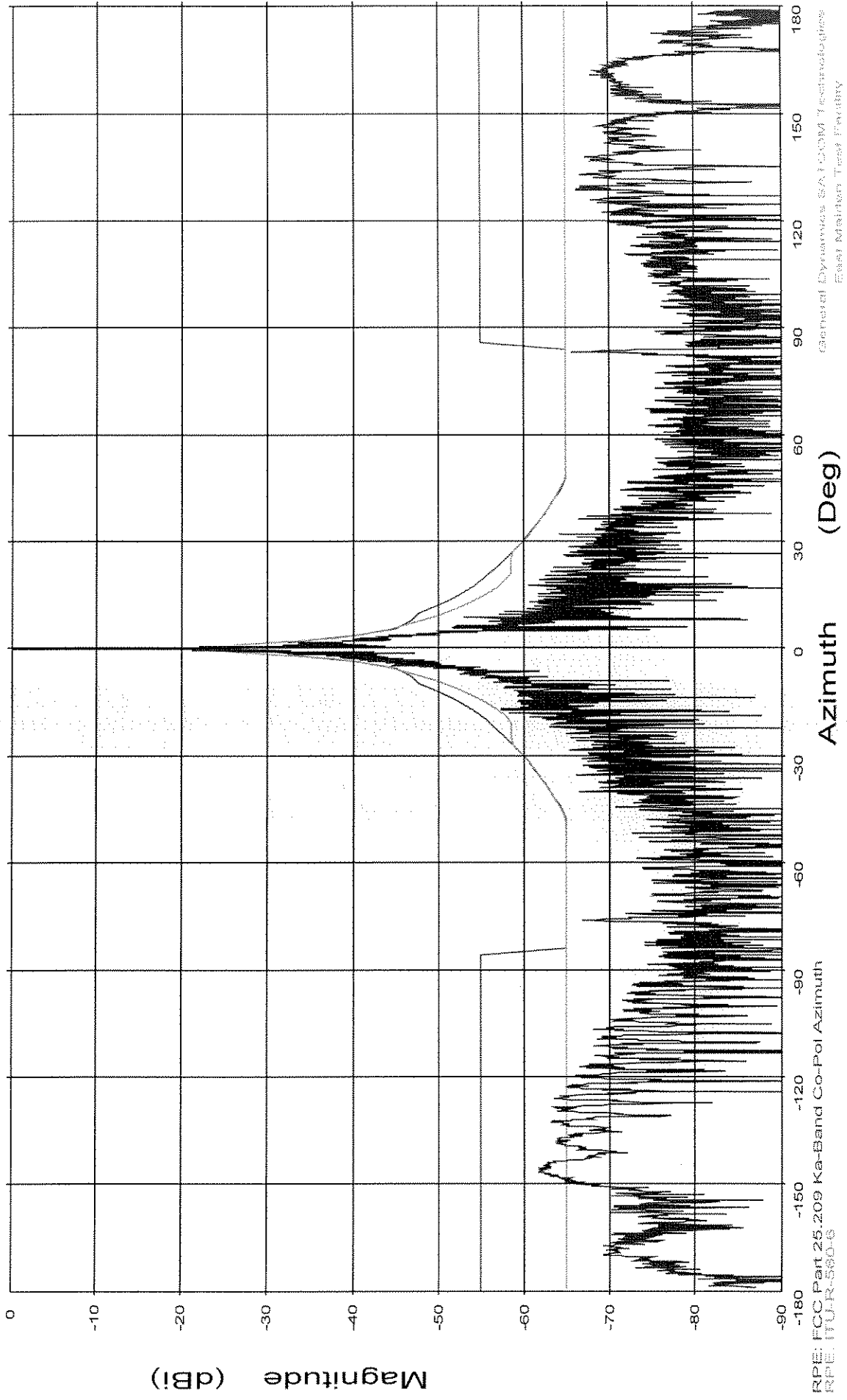
Frequency : 28.350 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: FUR-580-6

Azimuth (Deg)

General Dynamics SAFCOM Technologies
East Mountain Test Facility
4426 Lenoir Chapel Church Road
Millsboro, North Carolina 28350

File: 2288 54.dat

2.4M Ka-Band Antenna System
O3b Terminal

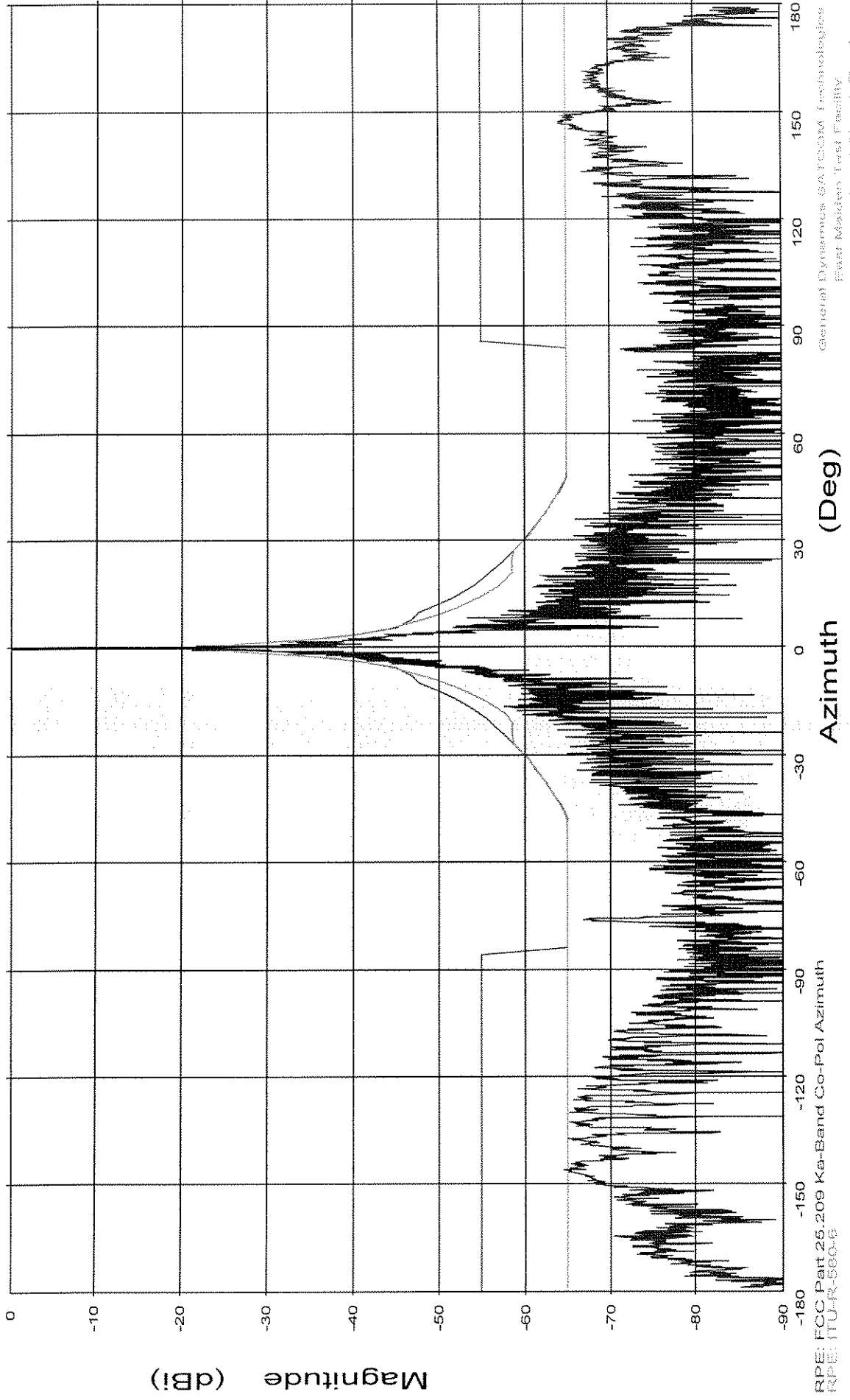
Frequency : 29.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth
RPE: ITU-R-S60-6

Azimuth (Deg)

General Dynamics SATCOM Technologies
Flight Analysis Test Facility
4488 Leesford Chapel Church Road
Manassas, North Carolina 28650

End of Report

General Dynamics SATCOM Technologies
East Maiden Test Facility
4488 Lawing Chapel Church Road
Maiden, North Carolina 28550