

# **GENERAL DYNAMICS**

## SATCOM Technologies

120cm Ka-Band Rx/Tx Antenna System

Series 3122

2334 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

# Series 3122

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## Ka-Band Circular Polarity Rx/Tx

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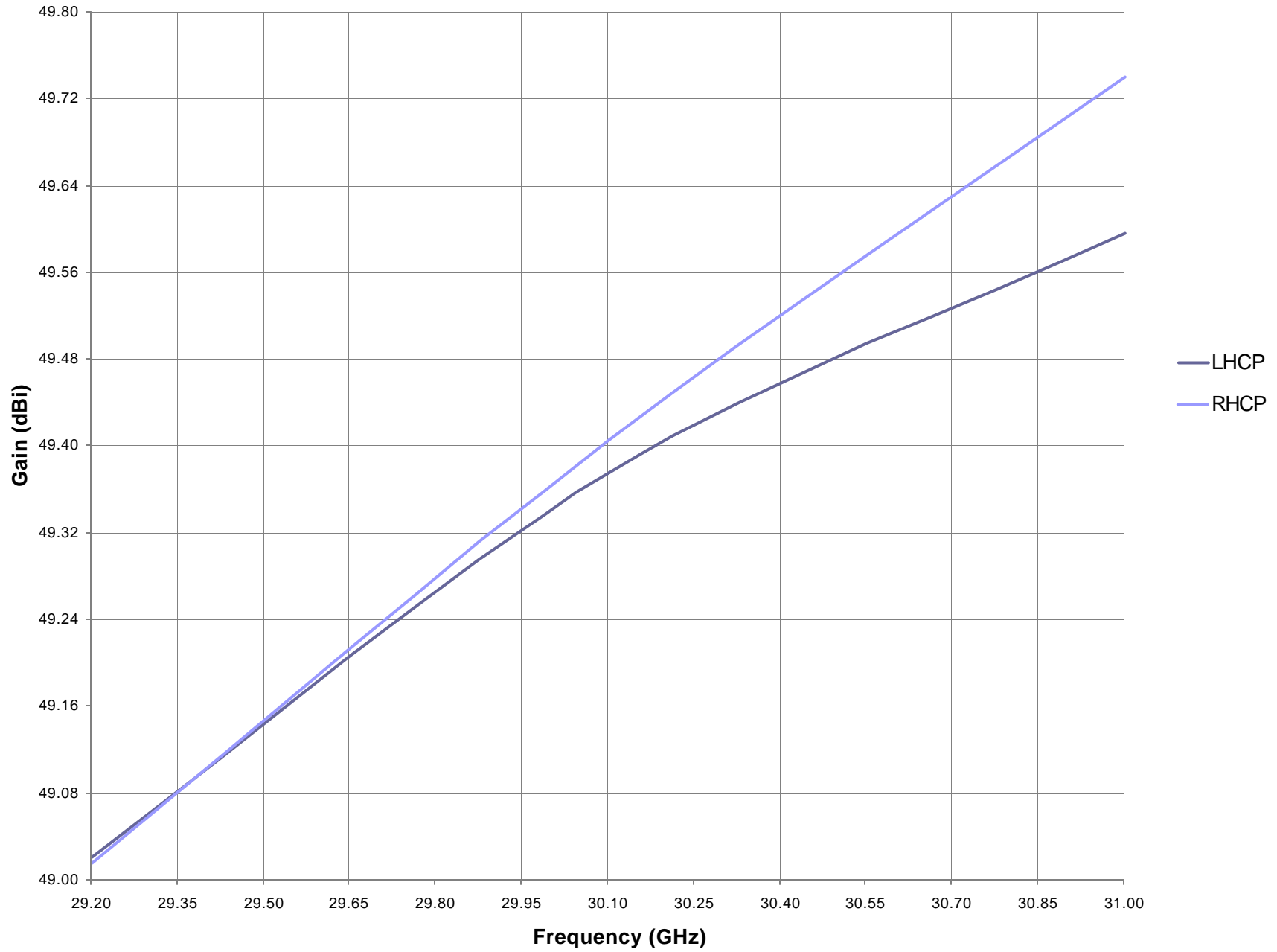
**RHCP Polarization Radiation Patterns .....Section 4**  
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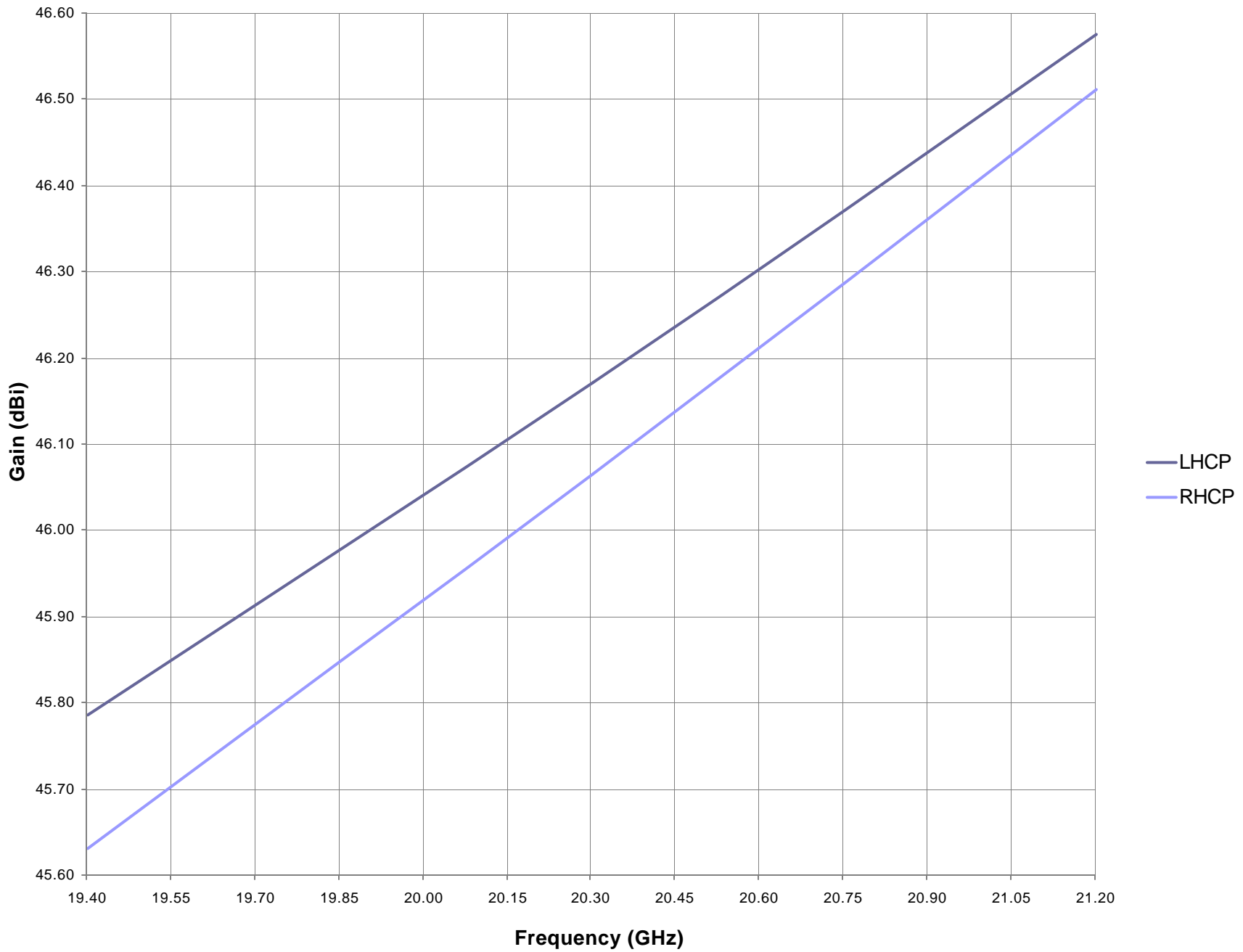


Measured Gain  
**Transmit and Receive**

# Measured Gain \_ Transmit Frequencies



# Measured Gain \_ Receive Frequencies



RHCP Radiation Patterns  
**Transmit Frequencies**

1.2M Ka-Band Antenna  
Series 3122

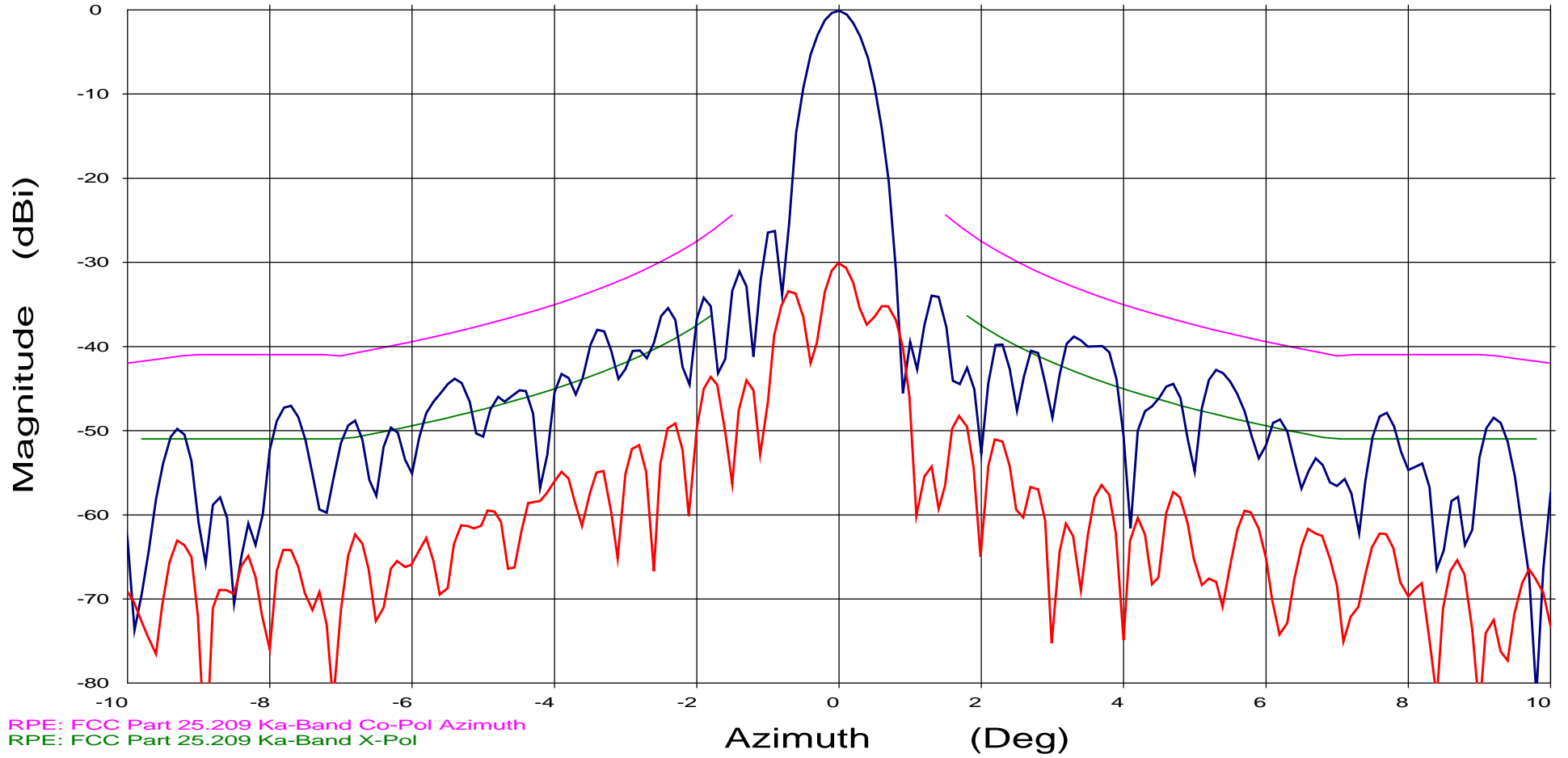
Frequency : 29.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2334 47.dat-ant\_under\_test ———  
2334 51.dat-ant\_under\_test ———

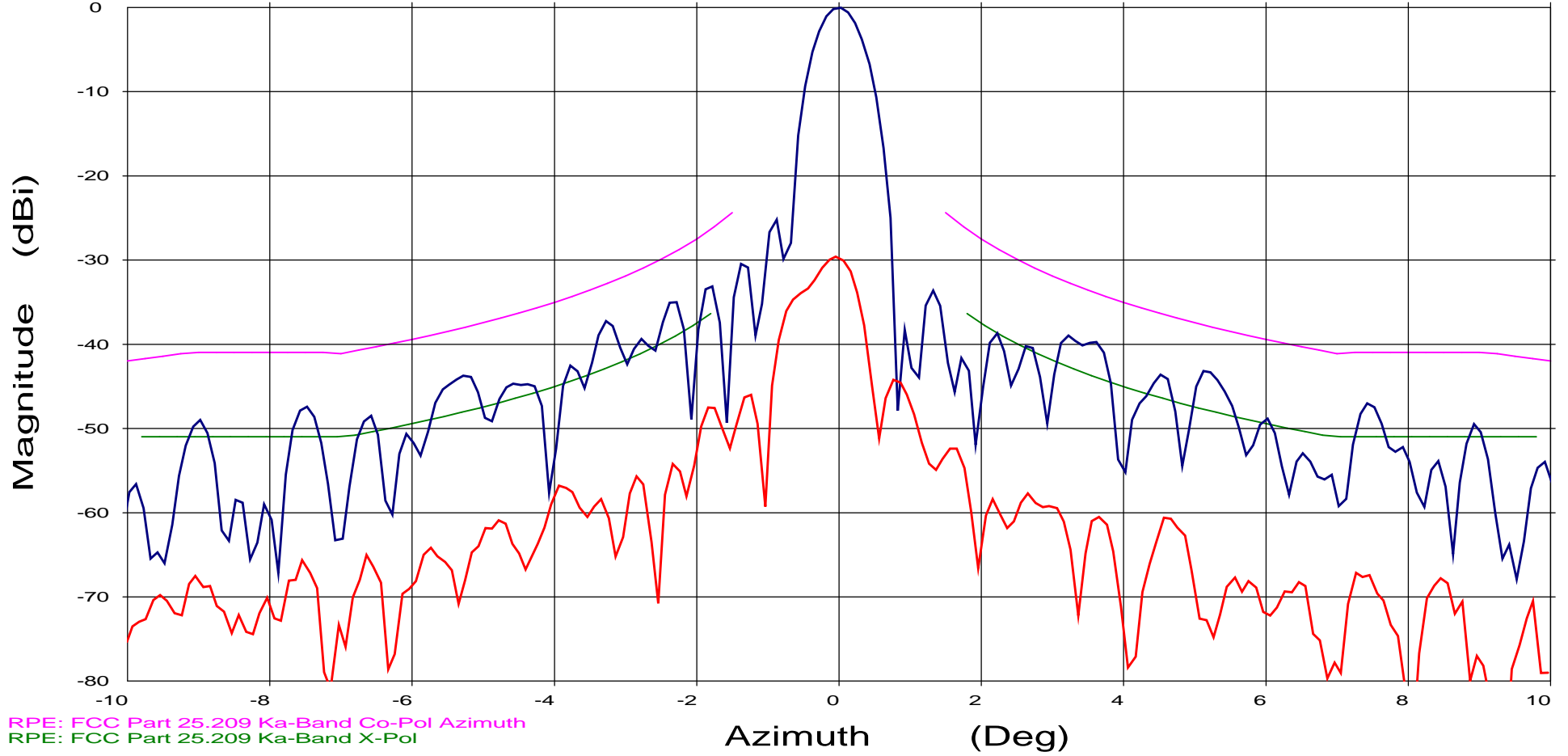


Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

- 2334 47.dat-ant\_under\_test
- 2334 51.dat-ant\_under\_test

1.2M Ka-Band Antenna  
Series 3122

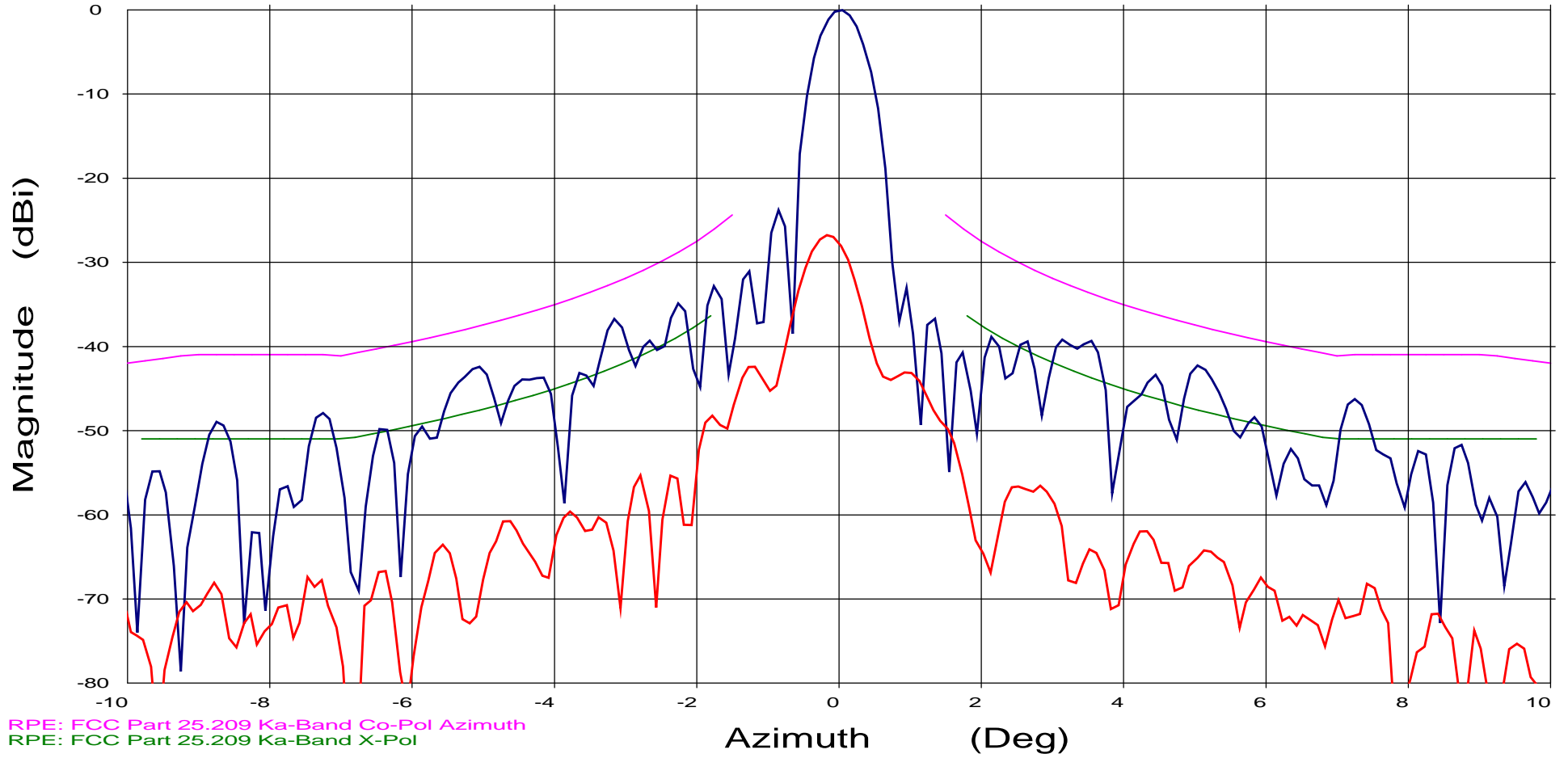
Frequency : 31.000 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

- 2334 47.dat-ant\_under\_test — blue line
- 2334 51.dat-ant\_under\_test — red line

1.2M Ka-Band Antenna  
Series 3122

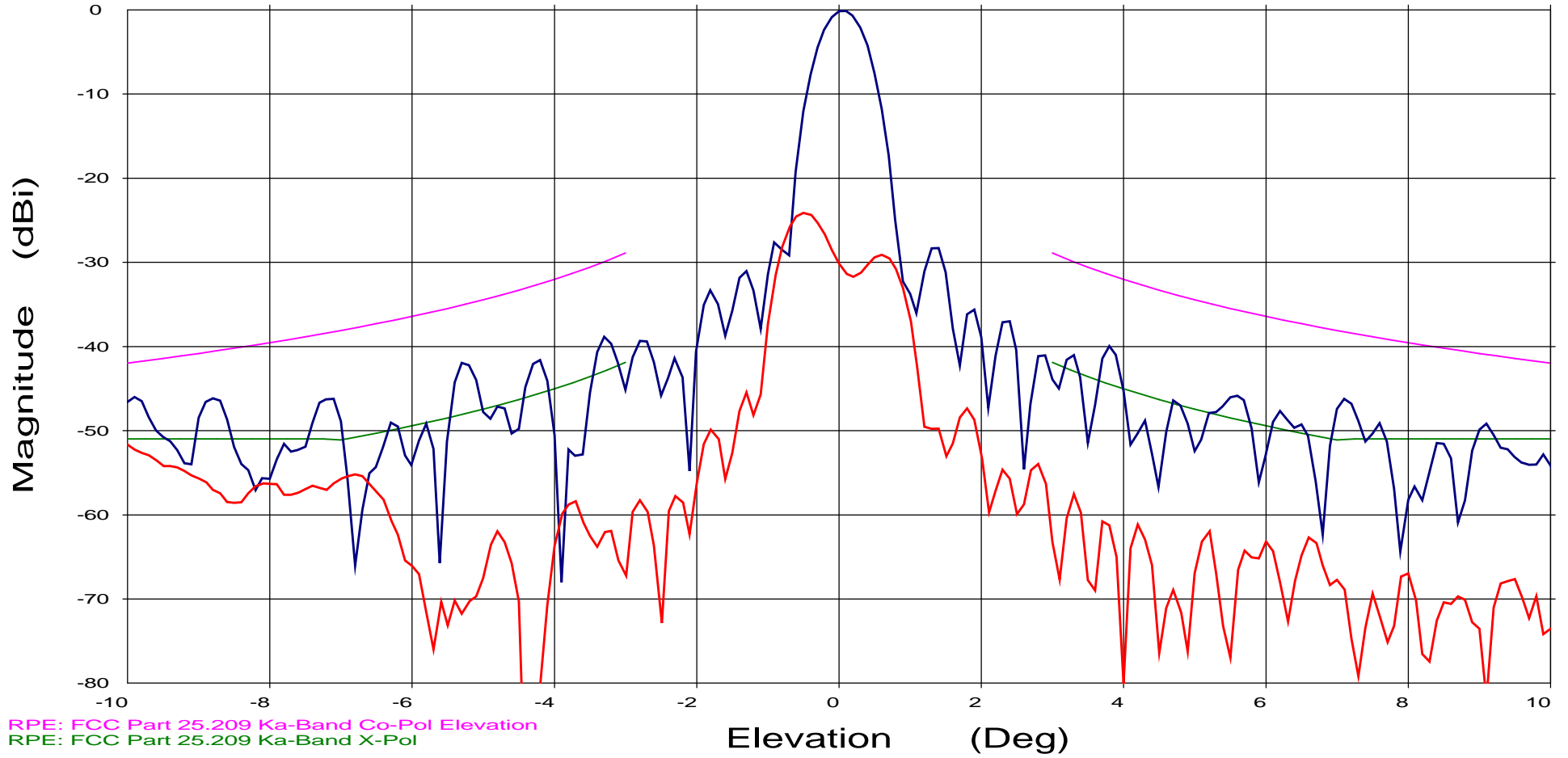
Frequency : 29.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

- 2334 49.dat-ant\_under\_test
- 2334 52.dat-ant\_under\_test

1.2M Ka-Band Antenna  
Series 3122

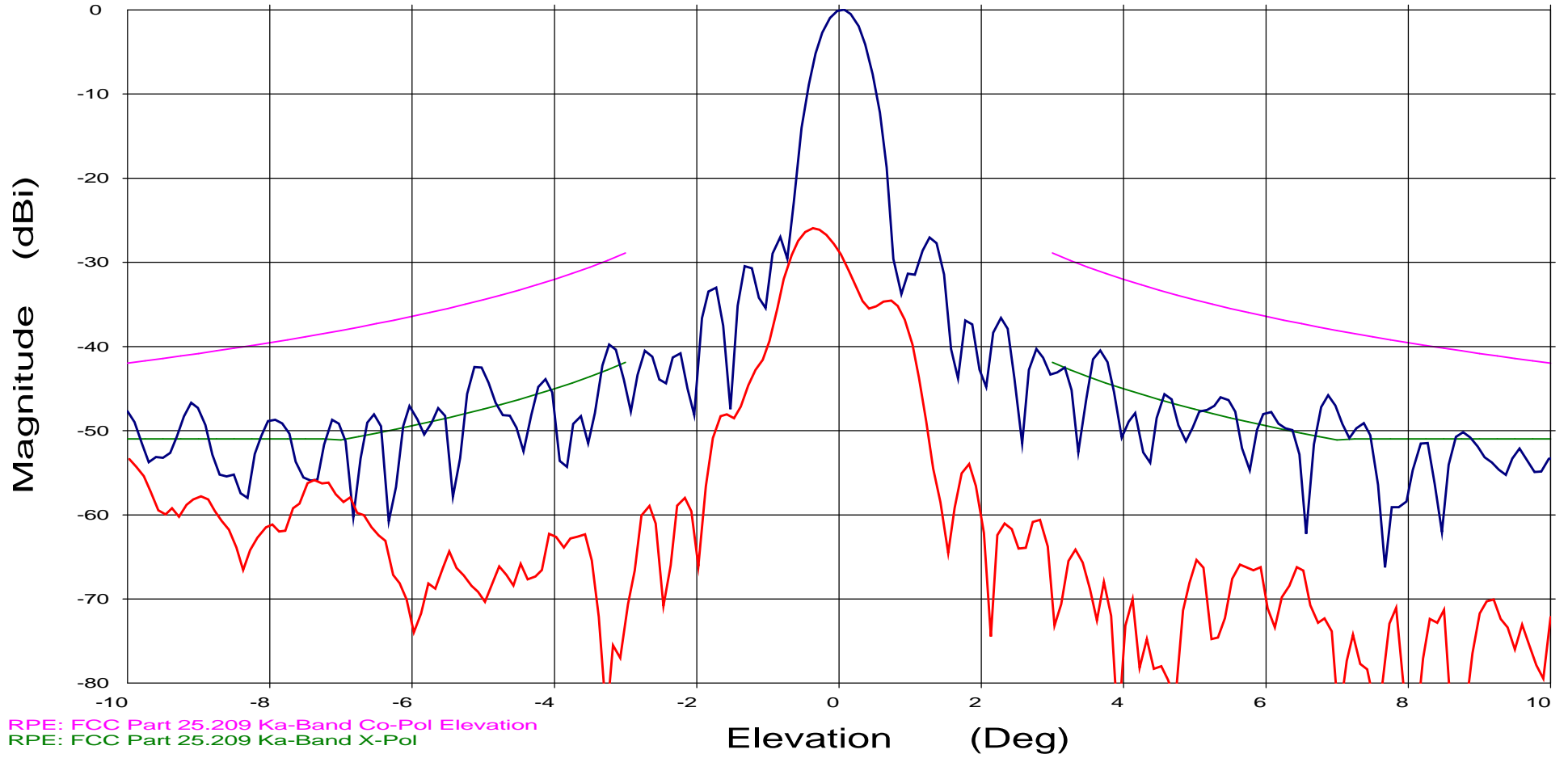
Frequency : 30.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

Overlays  
2334 49.dat-ant\_under\_test ———  
2334 52.dat-ant\_under\_test ———

1.2M Ka-Band Antenna  
Series 3122

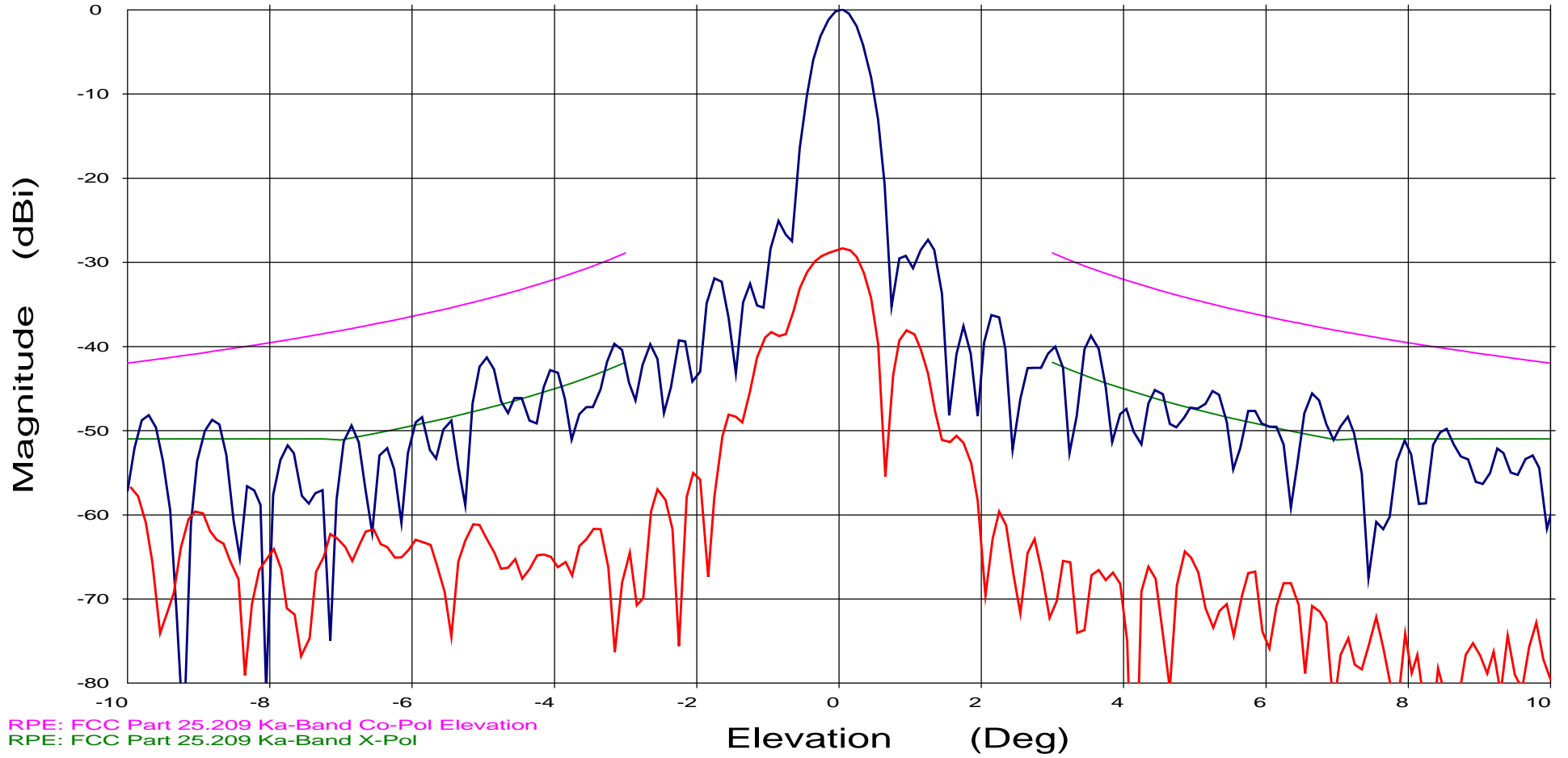
Frequency : 31.000 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2334 49.dat-ant\_under\_test ———  
2334 52.dat-ant\_under\_test ———

File: 2334 49.dat

1.2M Ka-Band Antenna  
Series 3122

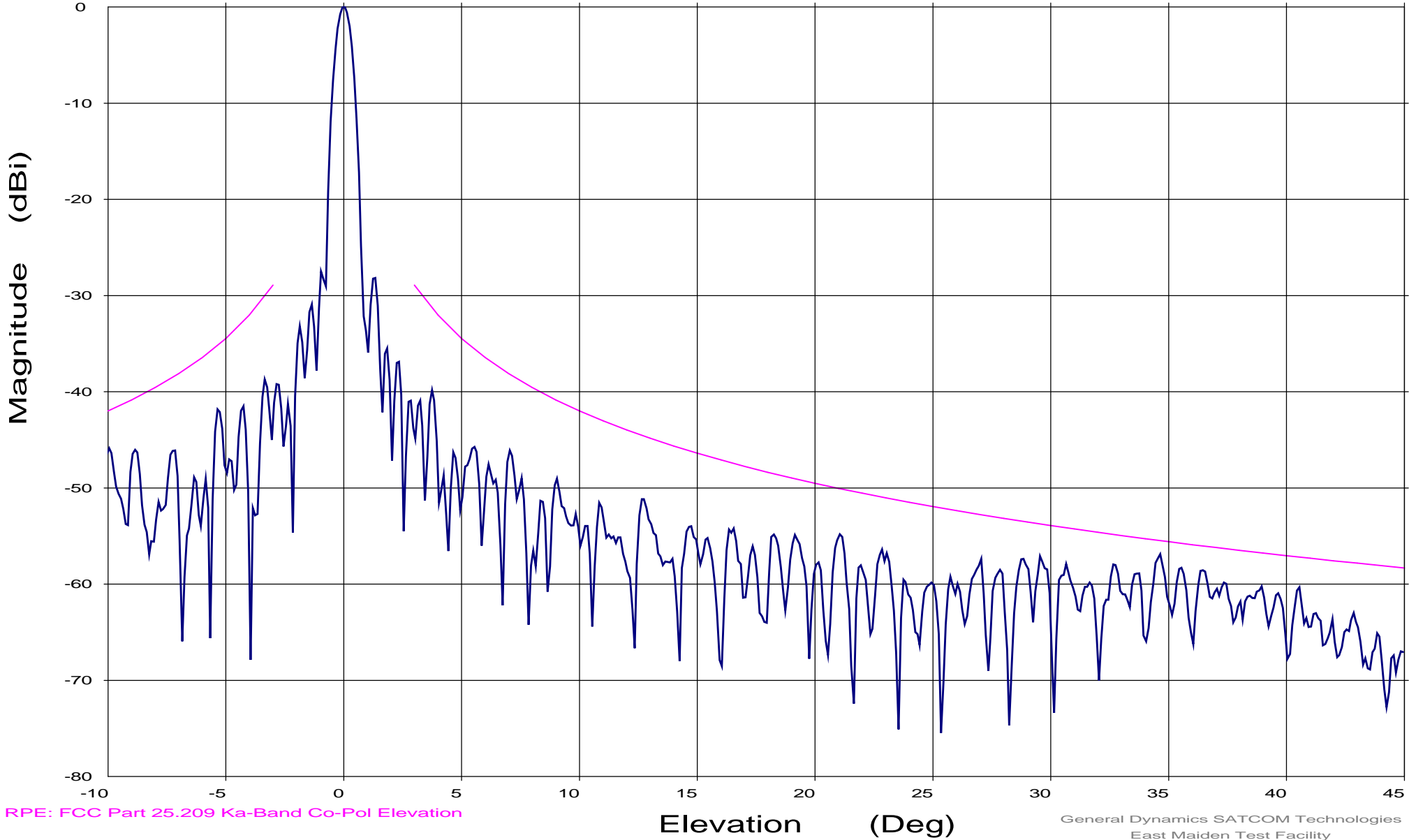
Frequency : 29.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

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

File: 2334 49.dat

1.2M Ka-Band Antenna  
Series 3122

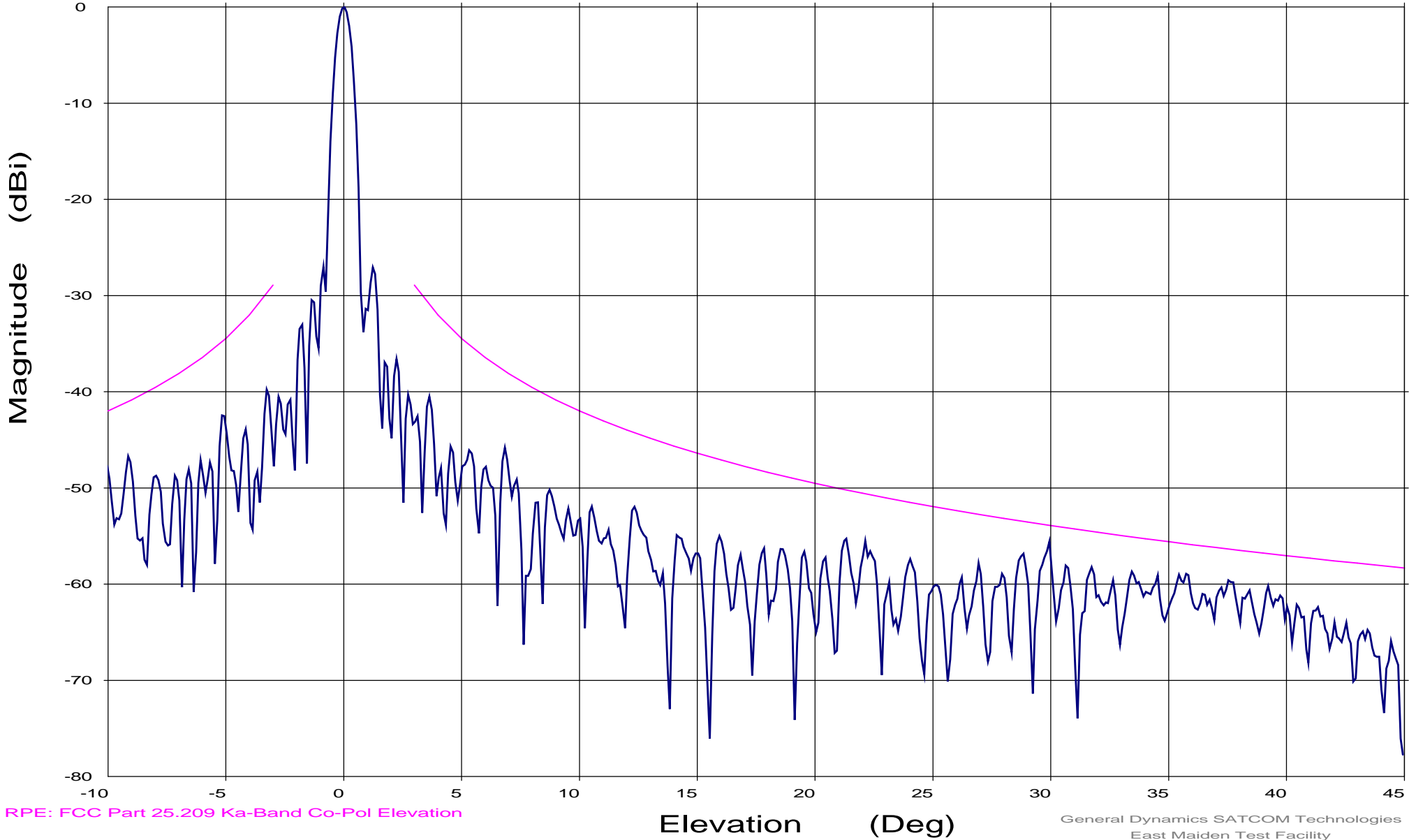
Frequency : 30.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

General Dynamics SATCOM Technologies  
East Maiden Test Facility  
4488 Lawing Chapel Church Road  
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File: 2334 49.dat

1.2M Ka-Band Antenna  
Series 3122

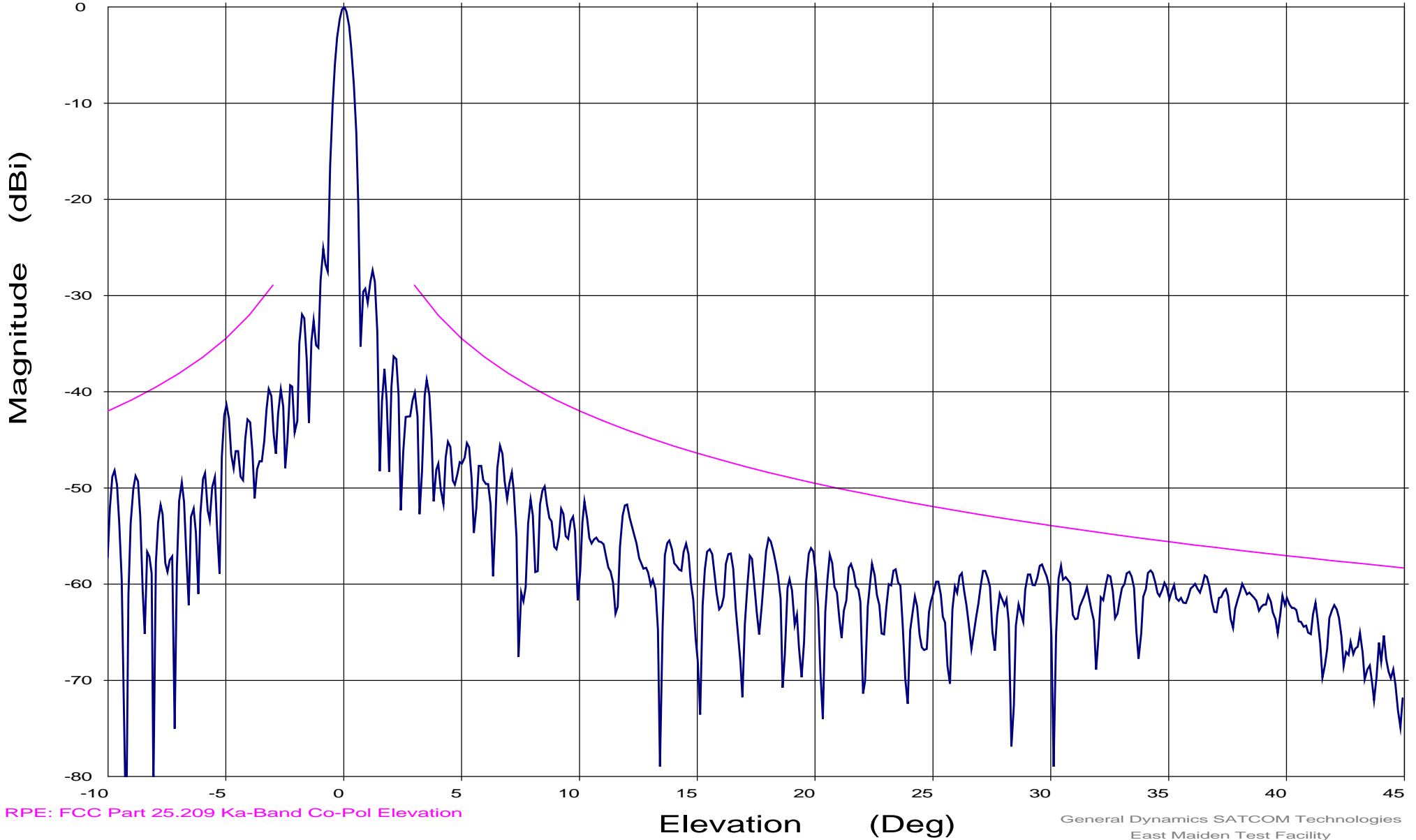
Frequency : 31.000 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

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East Maiden Test Facility  
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File: 2334 47.dat

1.2M Ka-Band Antenna  
Series 3122

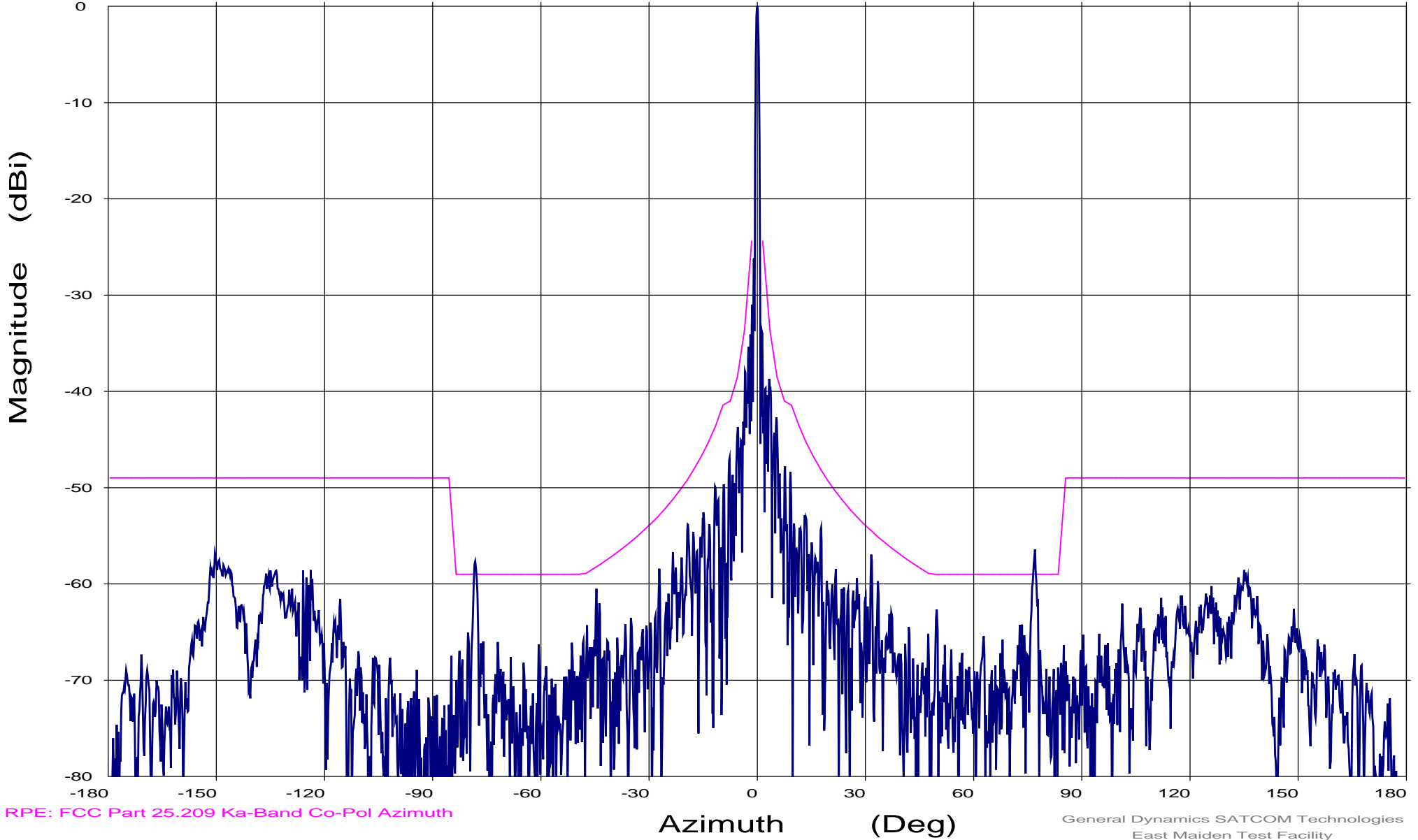
Frequency : 29.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

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4488 Lawing Chapel Church Road  
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File: 2334 47.dat

1.2M Ka-Band Antenna  
Series 3122

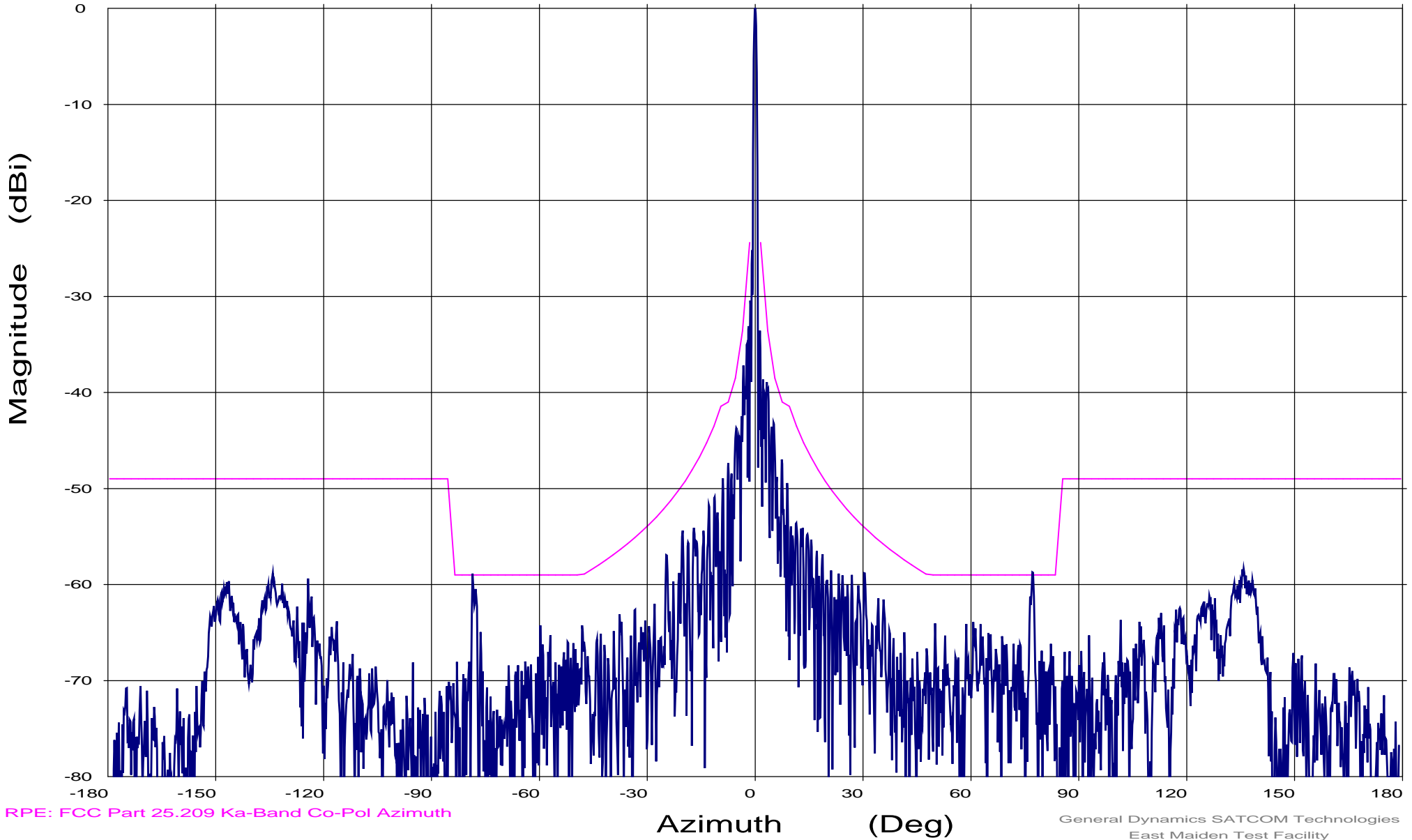
Frequency : 30.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

Azimuth (Deg)

General Dynamics SATCOM Technologies  
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File: 2334 47.dat

1.2M Ka-Band Antenna  
Series 3122

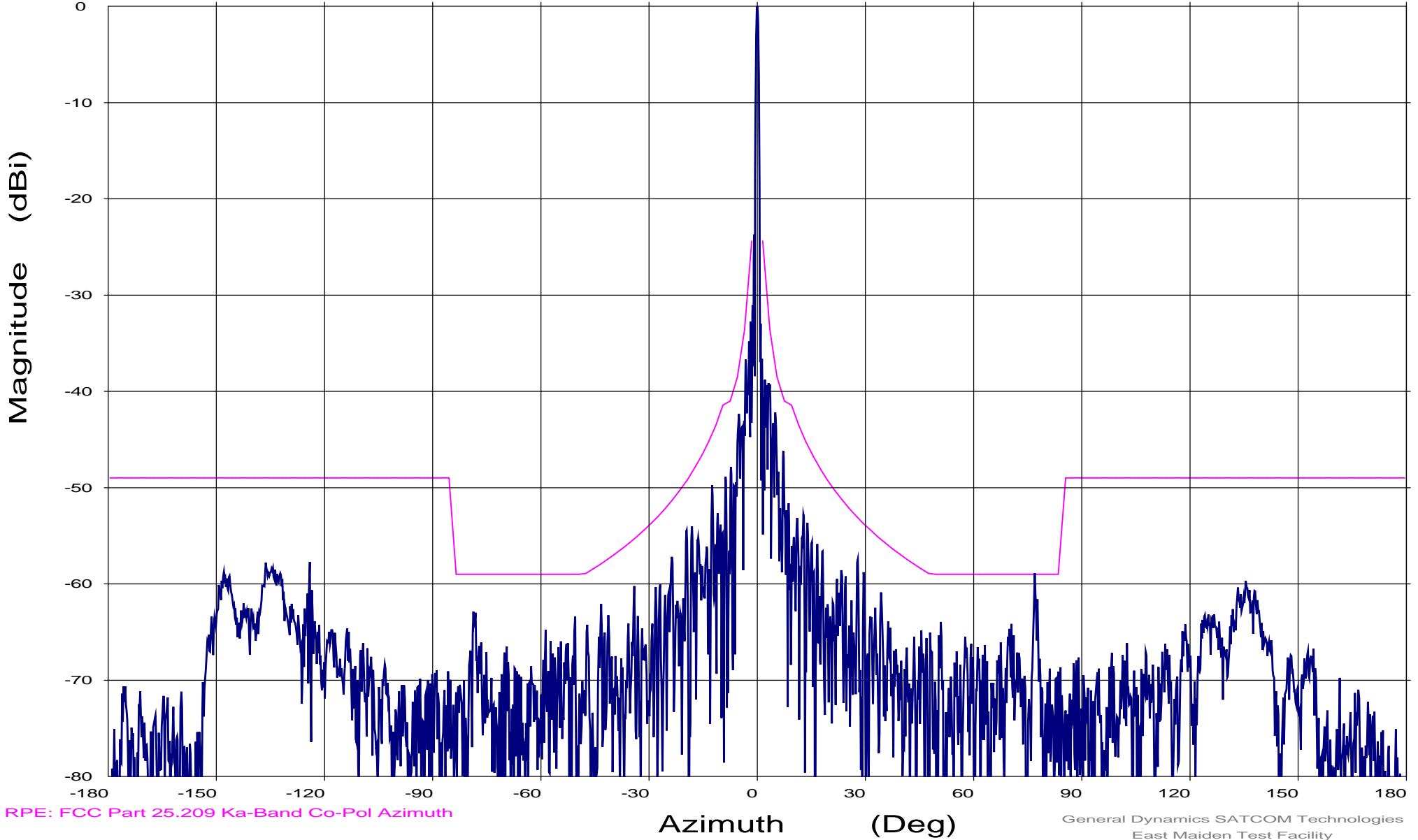
Frequency : 31.000 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

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

LHCP Radiation Patterns  
**Transmit Frequencies**

1.2M Ka-Band Antenna  
Series 3122

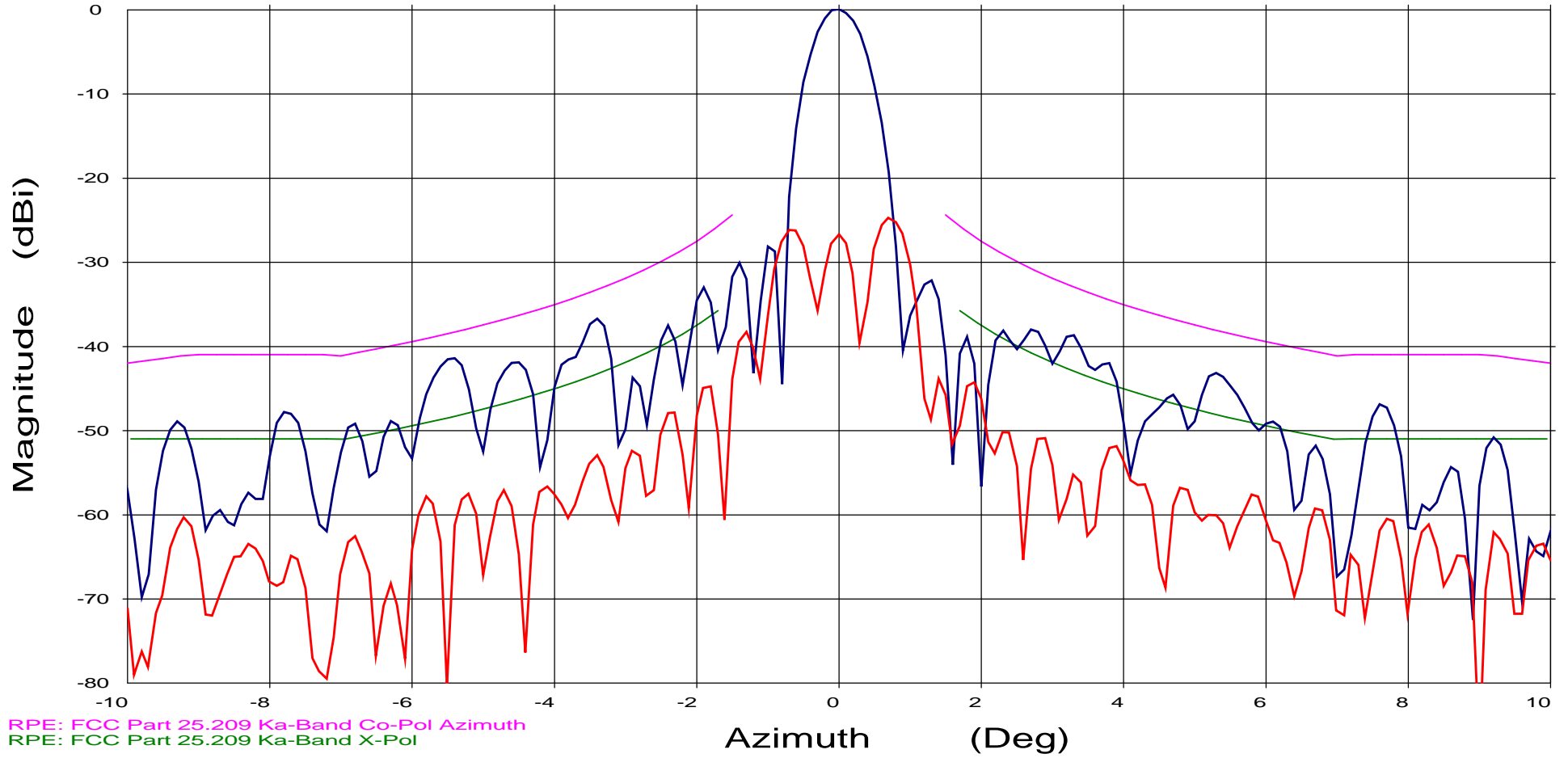
Frequency : 29.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

- 2334 26.dat-ant\_under\_test — (Blue line)
- 2334 56.dat-ant\_under\_test — (Red line)

1.2M Ka-Band Antenna  
Series 3122

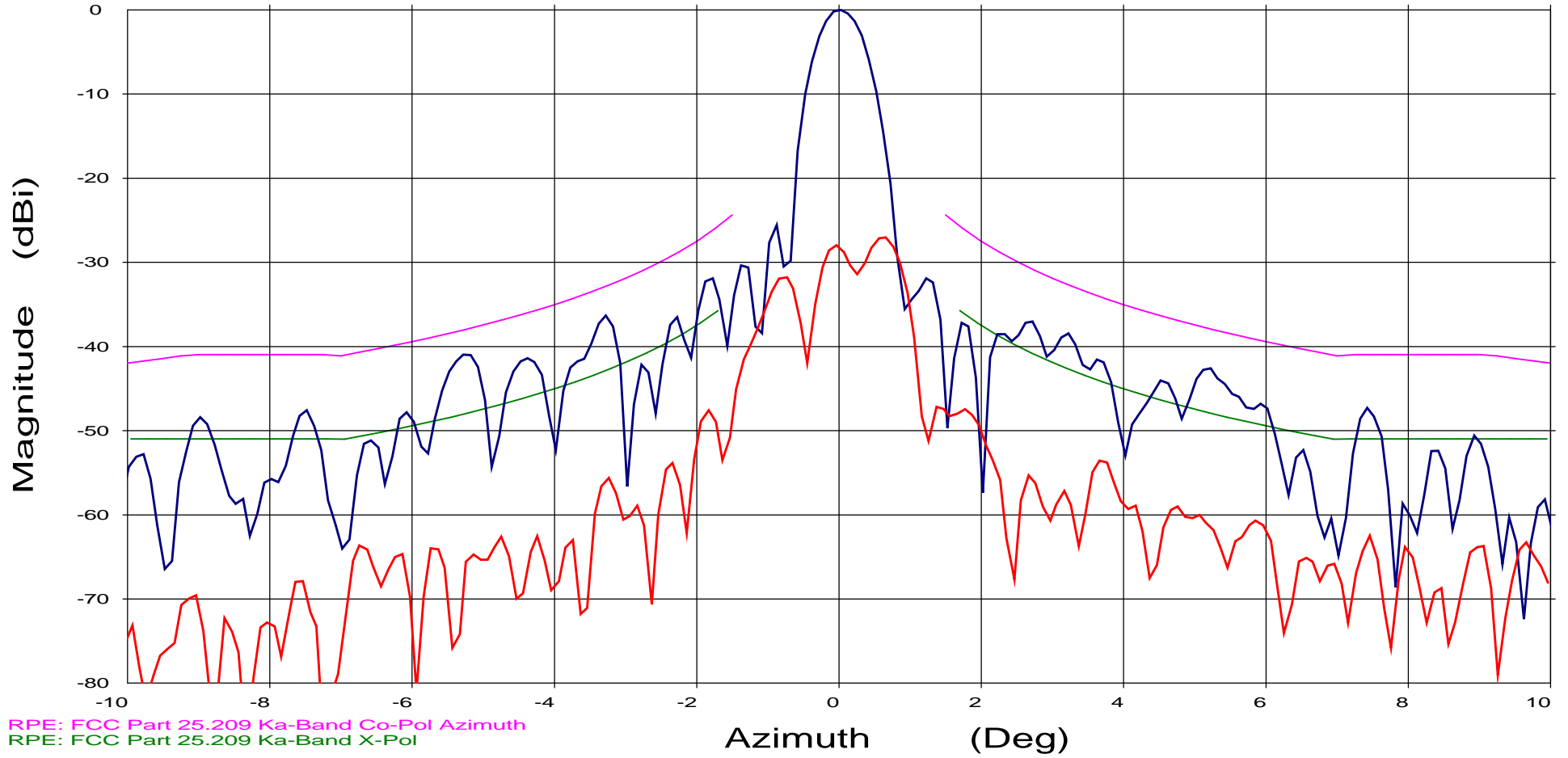
Frequency : 30.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays  
2334 26.dat-ant\_under\_test ———  
2334 56.dat-ant\_under\_test ———

1.2M Ka-Band Antenna  
Series 3122

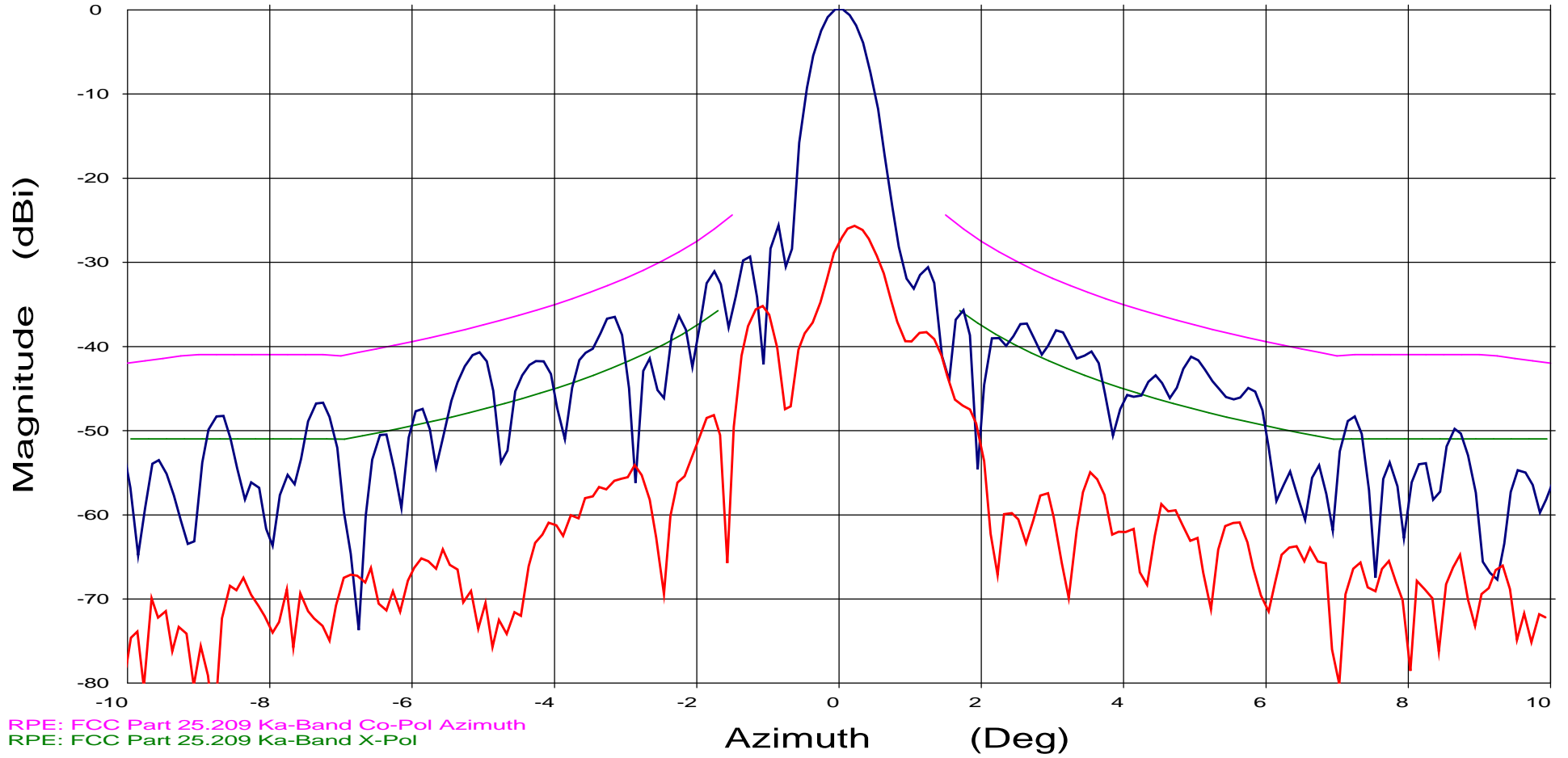
Frequency : 31.000 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth (Magenta)  
RPE: FCC Part 25.209 Ka-Band X-Pol (Green)

Overlays  
2334 26.dat-ant\_under\_test (Blue)  
2334 56.dat-ant\_under\_test (Red)

1.2M Ka-Band Antenna  
Series 3122

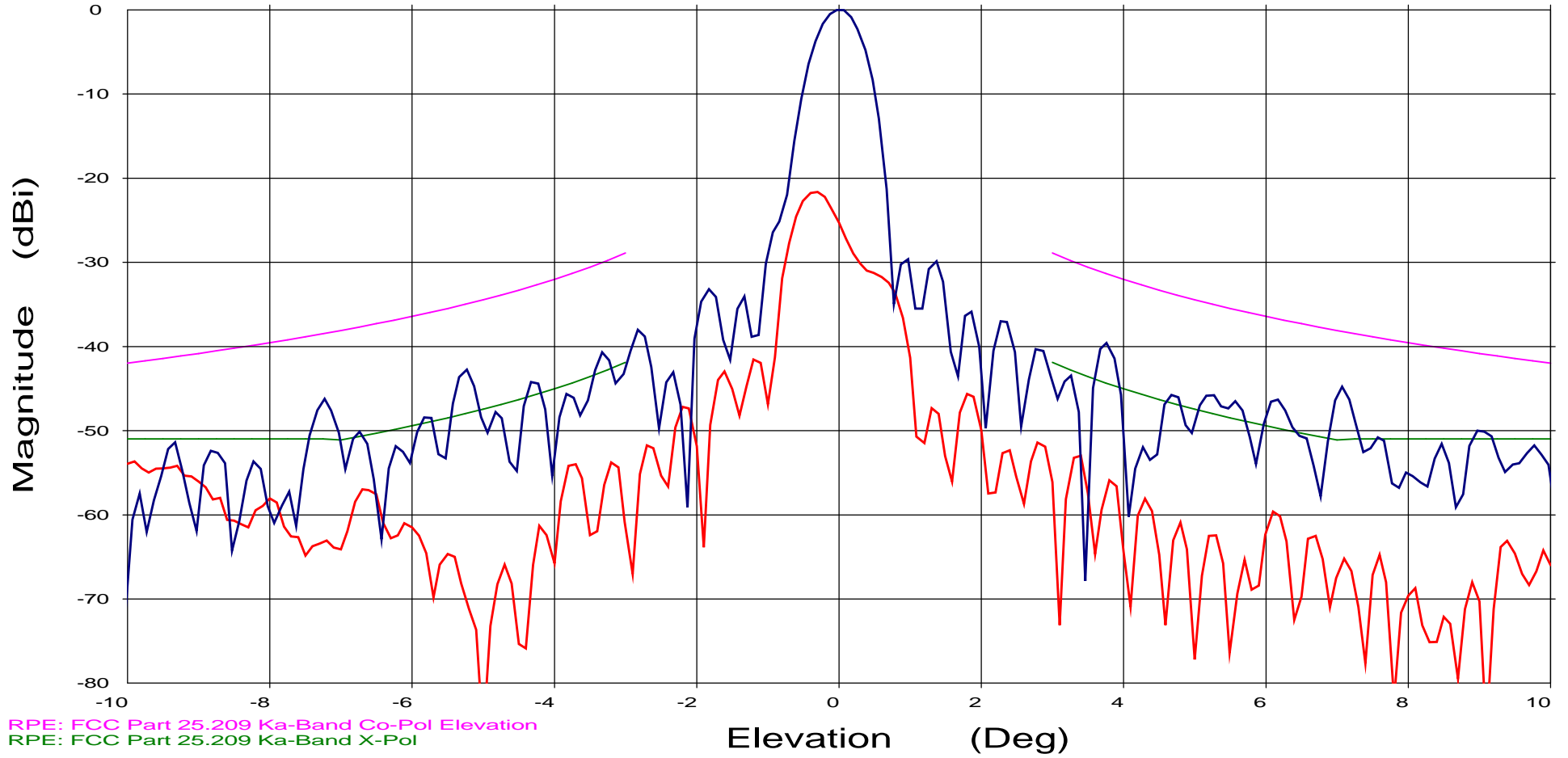
Frequency : 29.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

- 2334 28.dat-ant\_under\_test — blue line
- 2334 58.dat-ant\_under\_test — red line



1.2M Ka-Band Antenna  
Series 3122

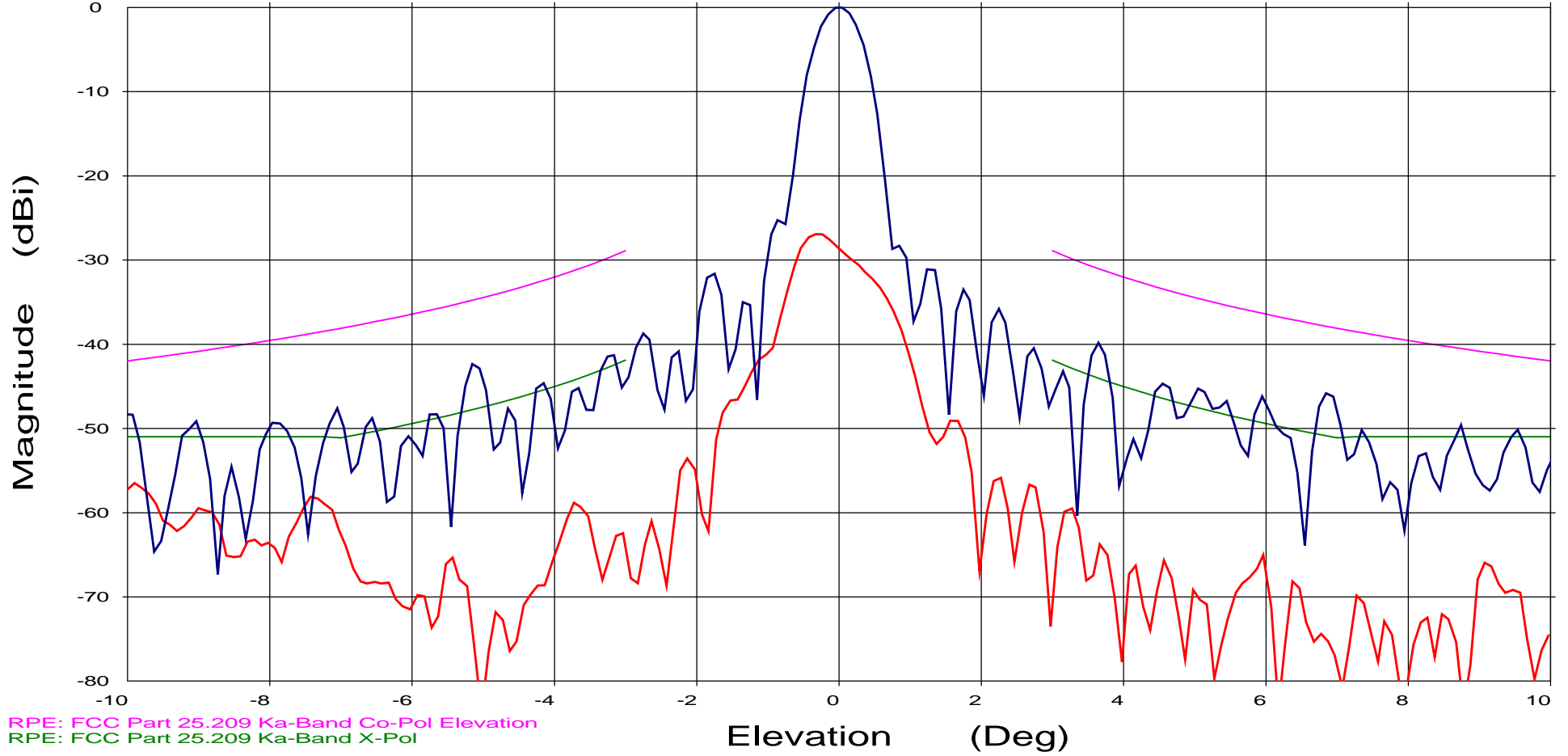
Frequency : 30.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

Overlays  
2334 28.dat-ant\_under\_test ———  
2334 58.dat-ant\_under\_test ———

1.2M Ka-Band Antenna  
Series 3122

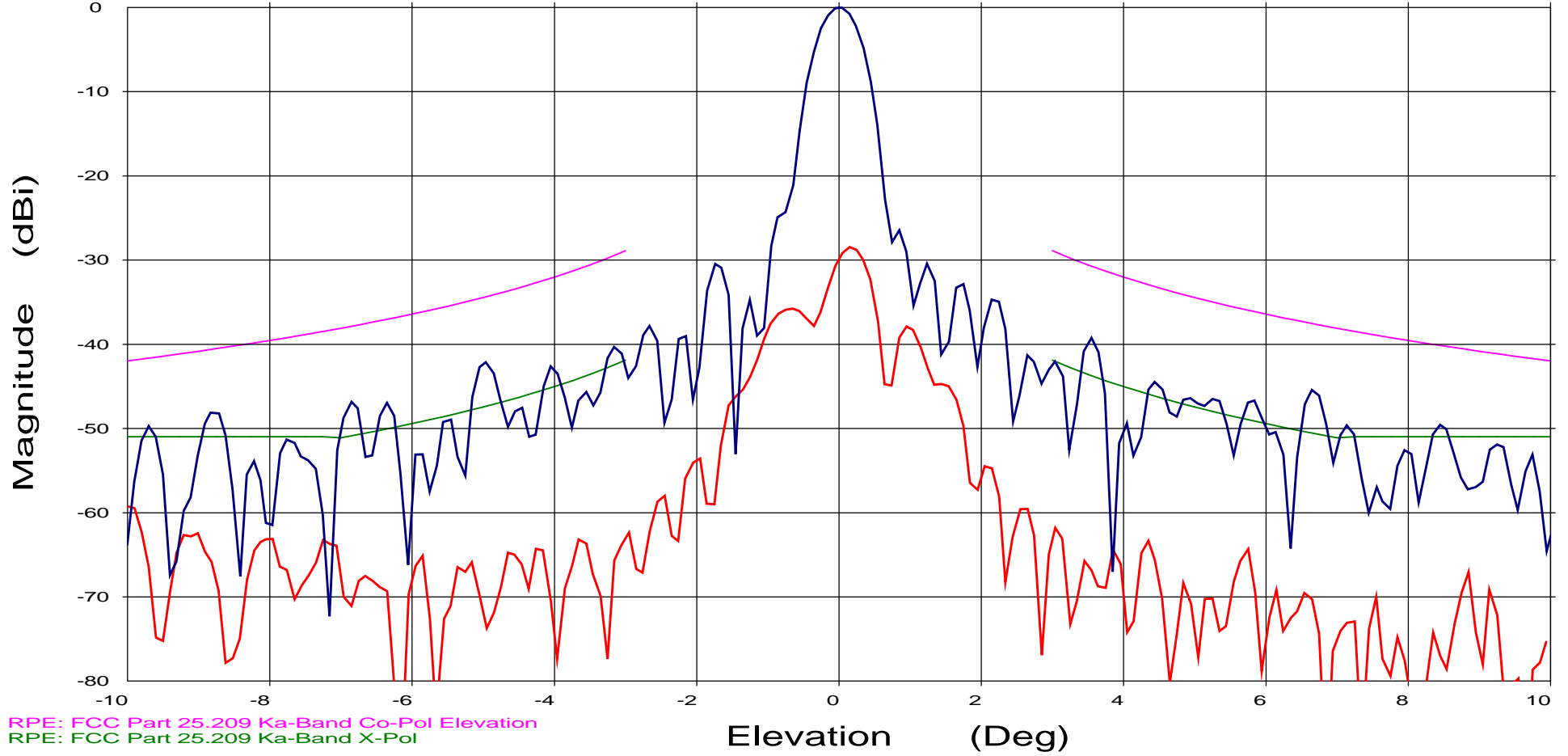
Frequency : 31.000 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

- 2334 28.dat-ant\_under\_test (Blue line)
- 2334 58.dat-ant\_under\_test (Red line)

File: 2334 28.dat

1.2M Ka-Band Antenna  
Series 3122

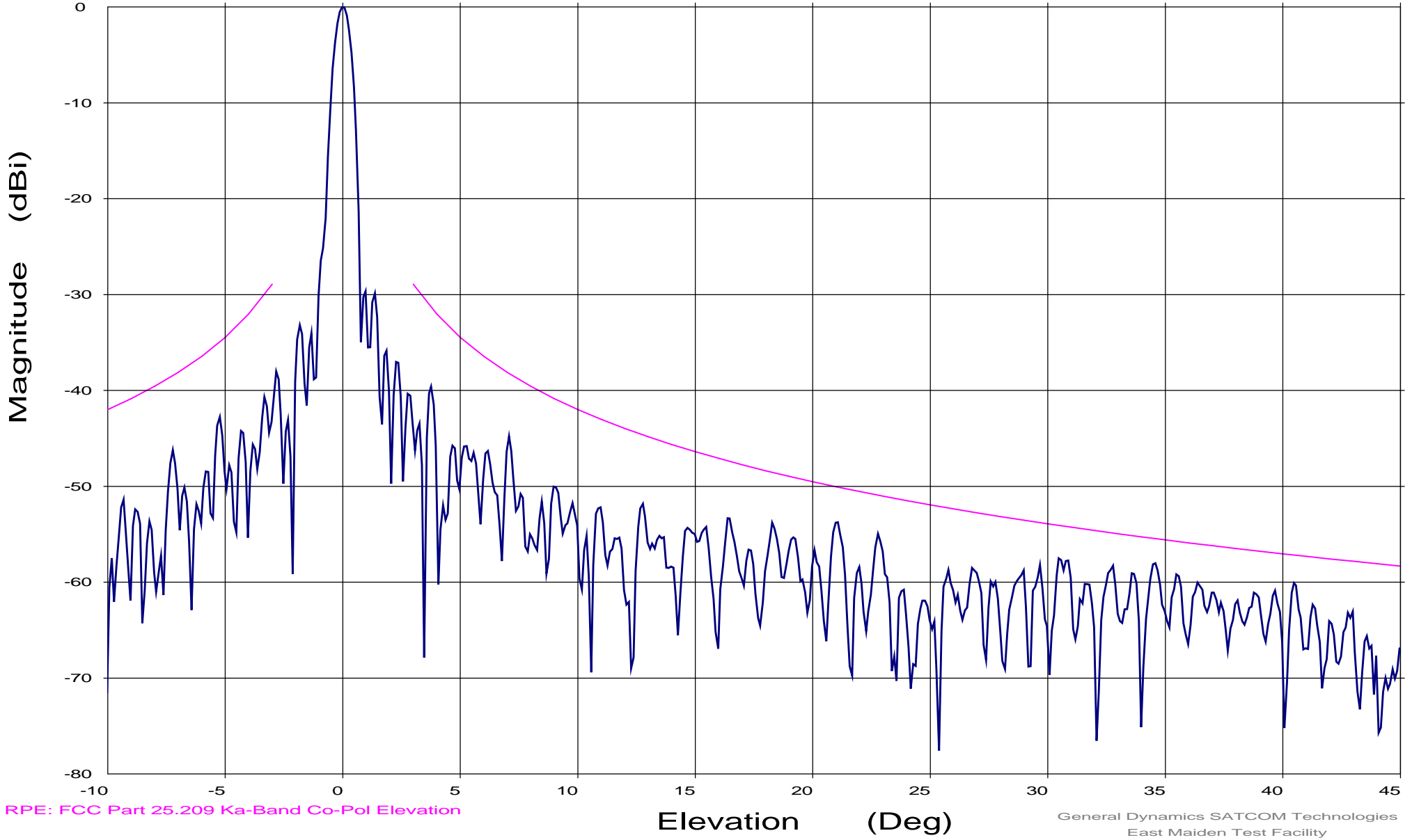
Frequency : 29.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

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

File: 2334 28.dat

1.2M Ka-Band Antenna  
Series 3122

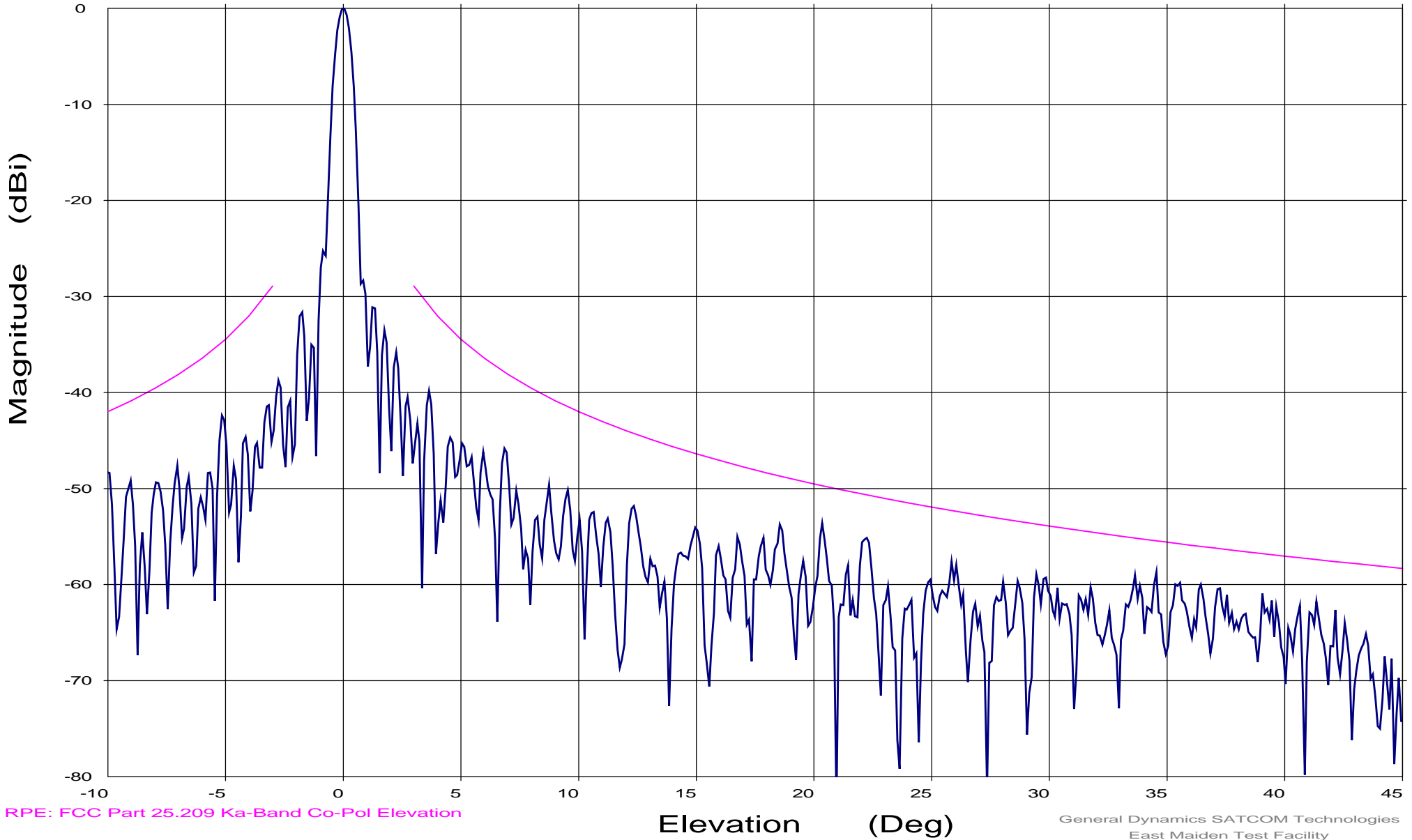
Frequency : 30.100 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

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

File: 2334 28.dat

1.2M Ka-Band Antenna  
Series 3122

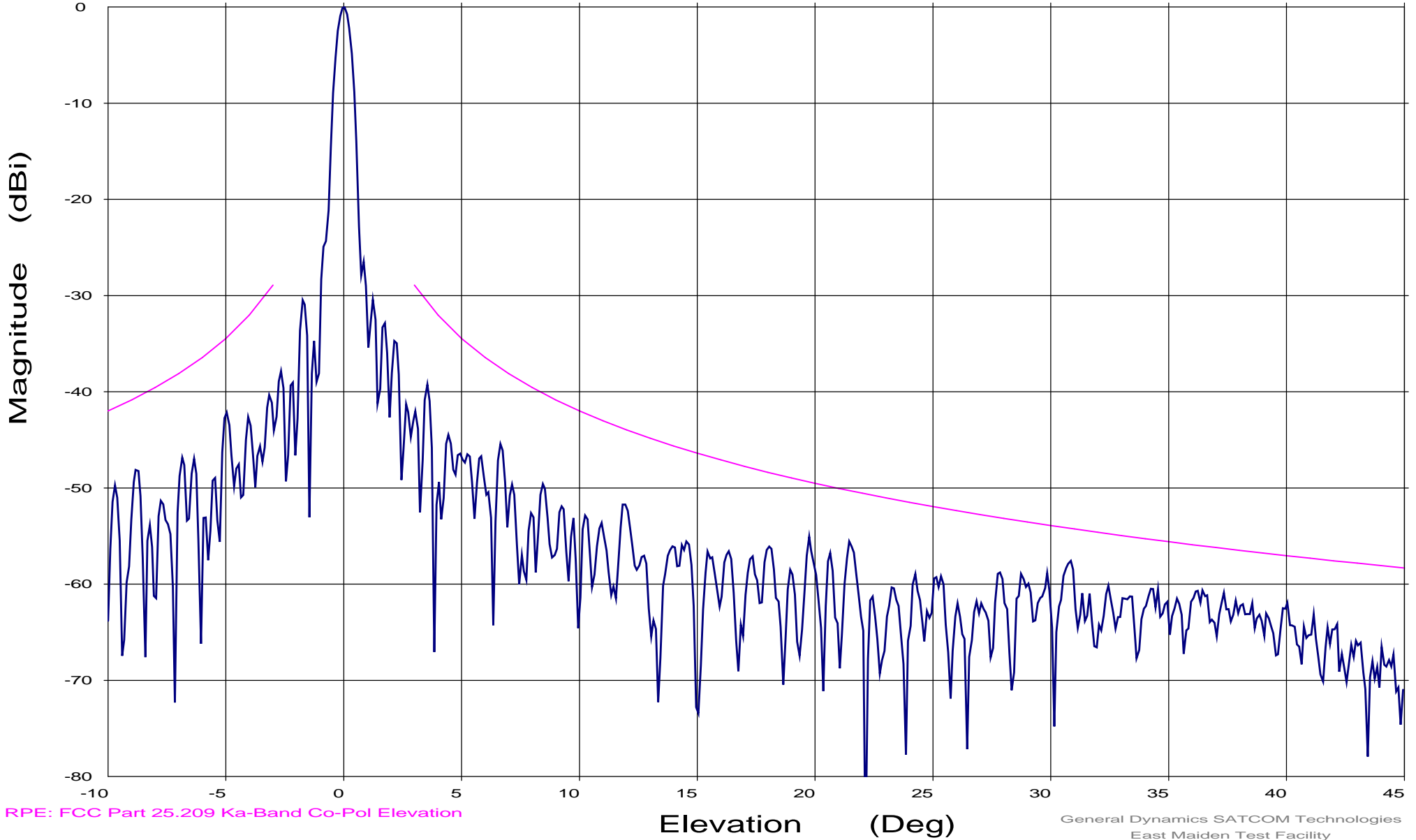
Frequency : 31.000 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

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

File: 2334 26.dat

1.2M Ka-Band Antenna  
Series 3122

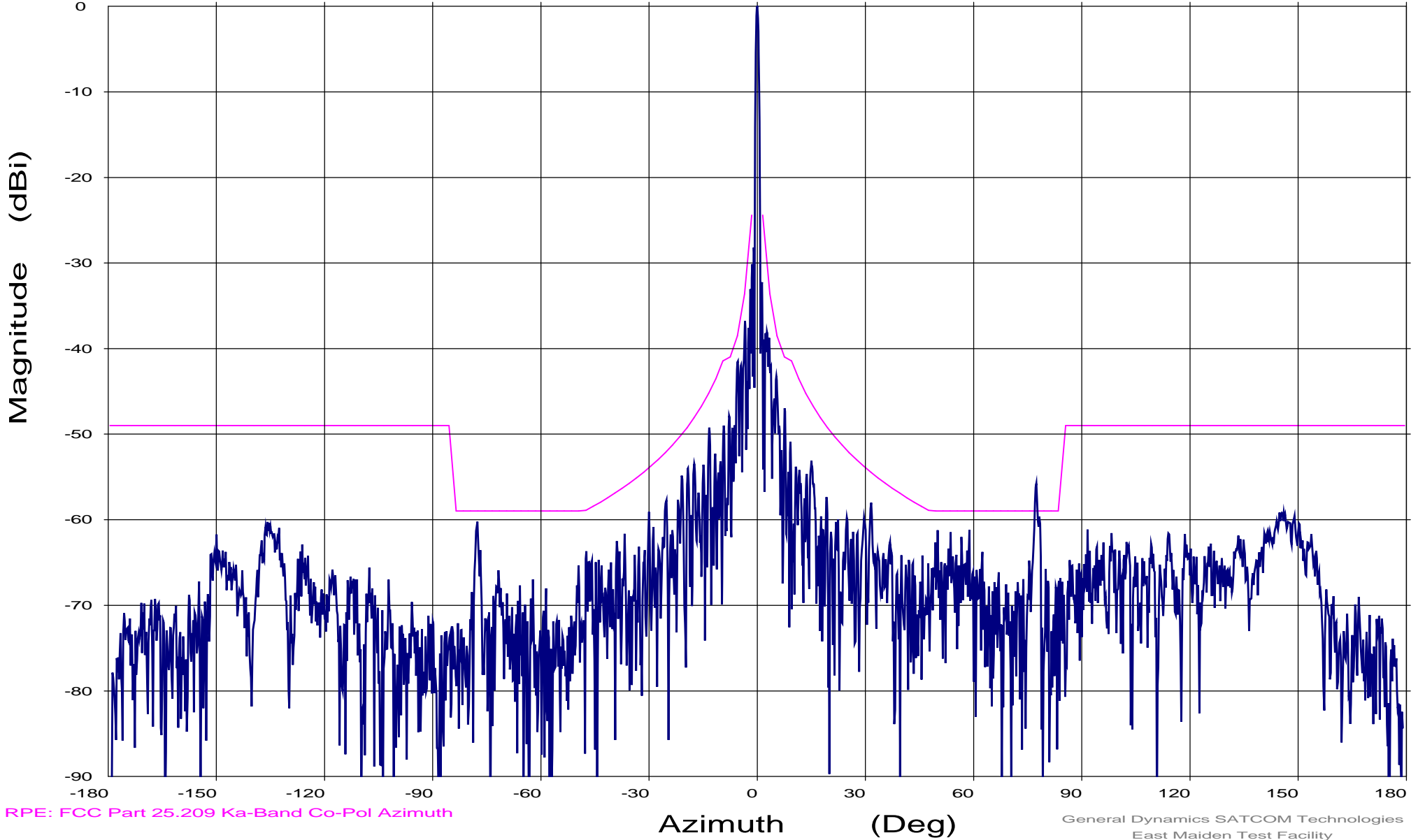
Frequency : 29.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP

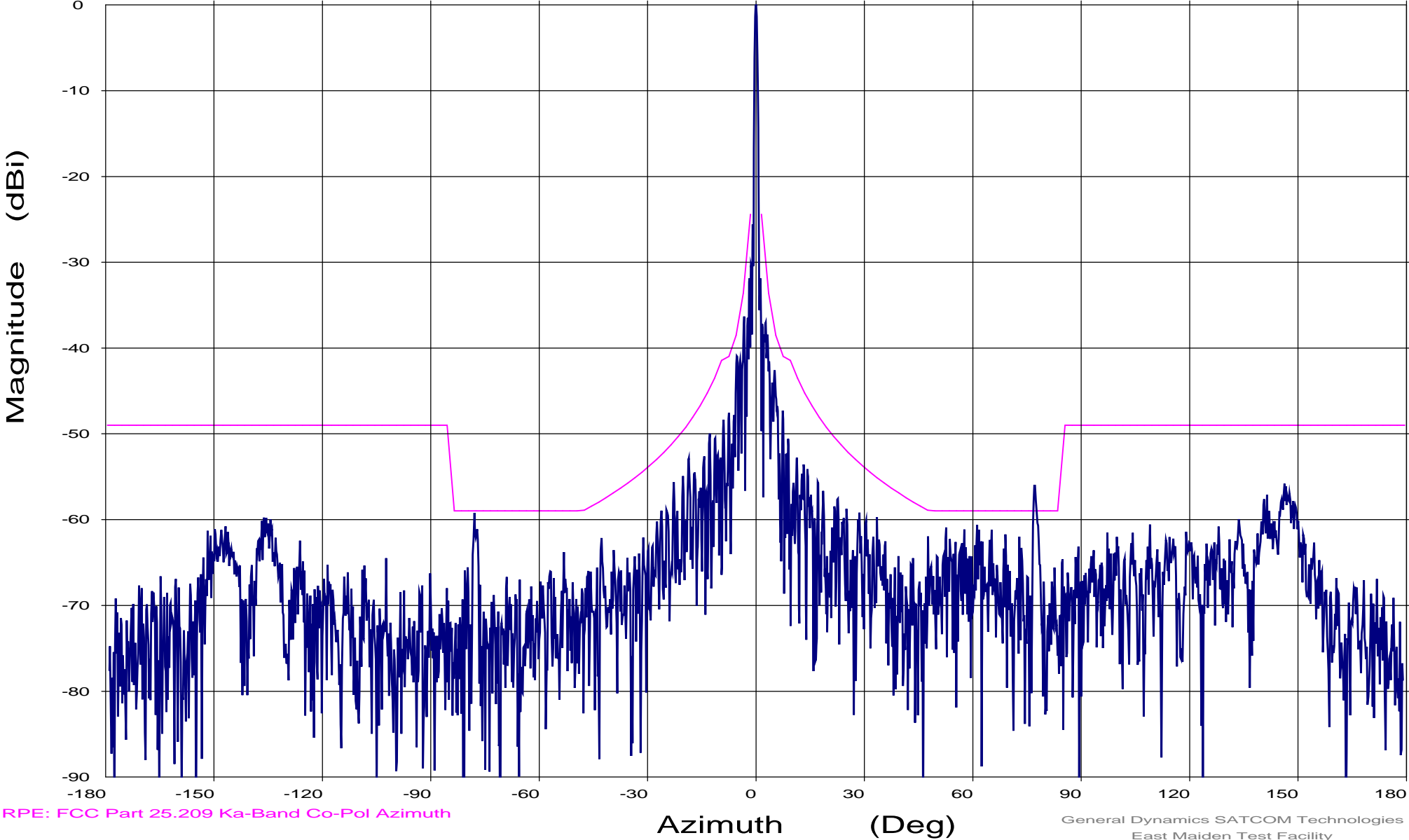


RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

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

Operator: J Hartness

Channel: AUT Tx pol: LHCP Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

File: 2334 26.dat

1.2M Ka-Band Antenna  
Series 3122

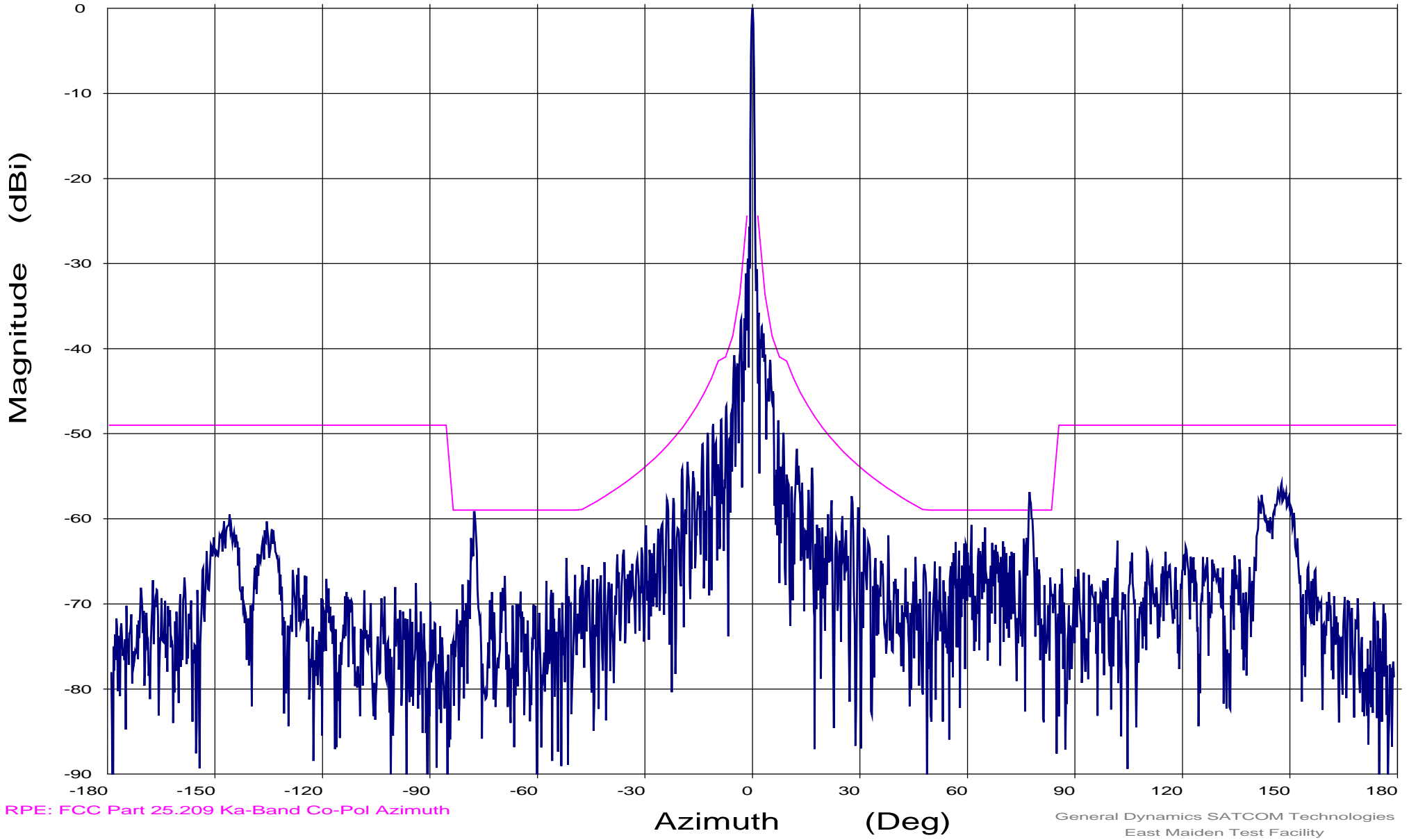
Frequency : 31.000 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

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



RHCP Radiation Patterns  
**Receive Frequencies**

1.2M Ka-Band Antenna  
Series 3122

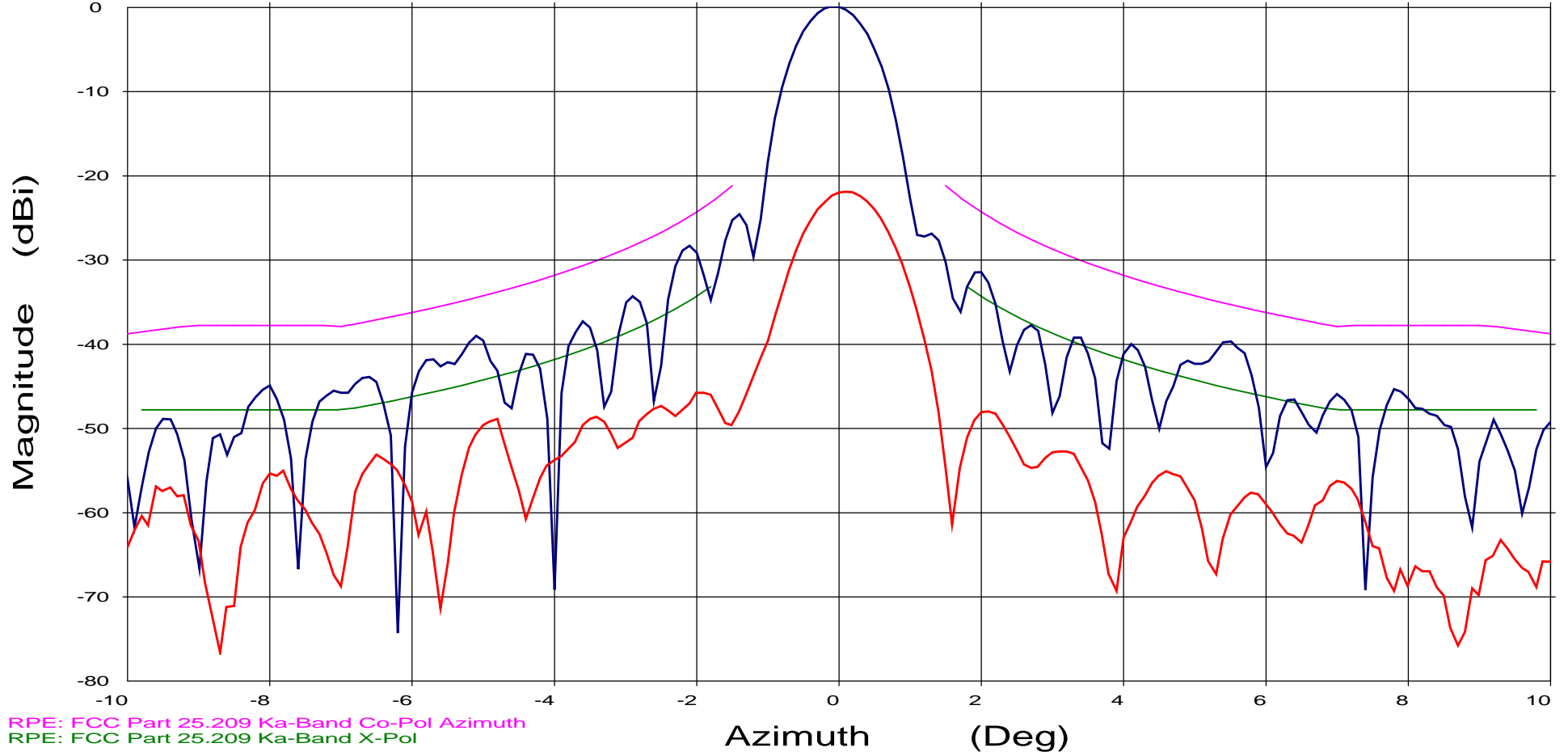
Frequency : 19.400 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2334 61.dat-ant\_under\_test — blue line  
2334 64.dat-ant\_under\_test — red line

1.2M Ka-Band Antenna  
Series 3122

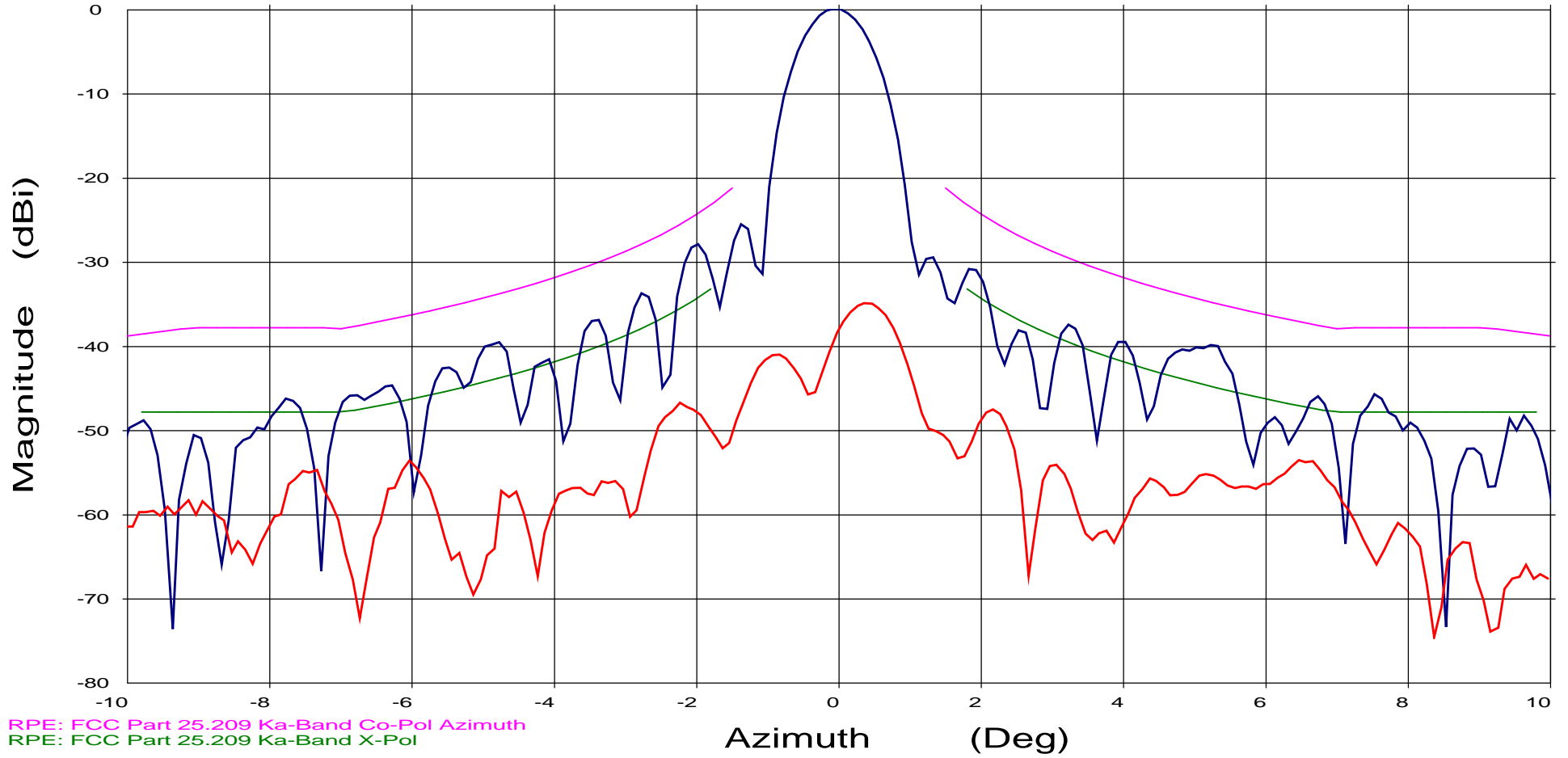
Frequency : 20.300 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

Overlays  
2334 61.dat-ant\_under\_test — blue line  
2334 64.dat-ant\_under\_test — red line

1.2M Ka-Band Antenna  
Series 3122

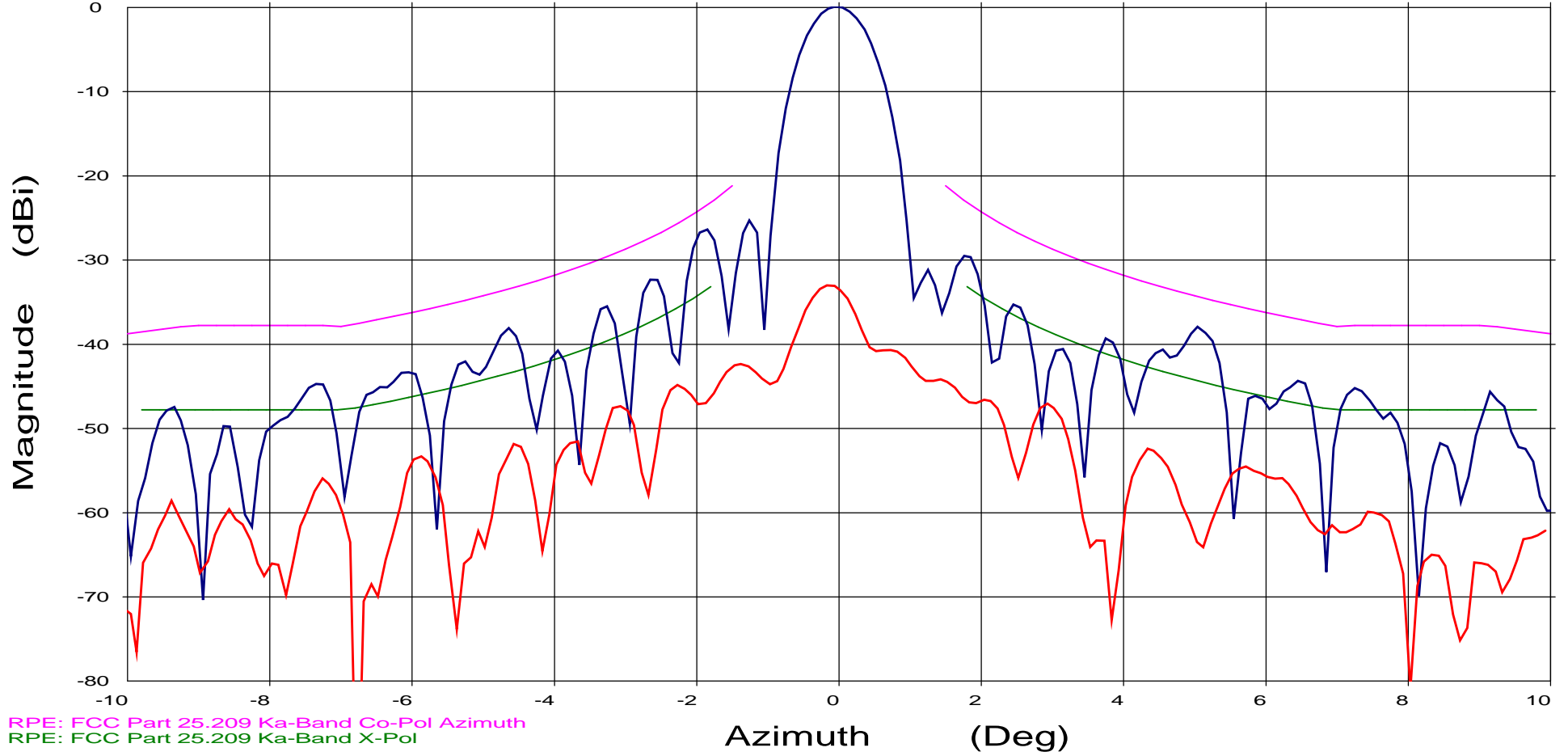
Frequency : 21.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

- 2334 61.dat-ant\_under\_test ———
- 2334 64.dat-ant\_under\_test ———

1.2M Ka-Band Antenna  
Series 3122

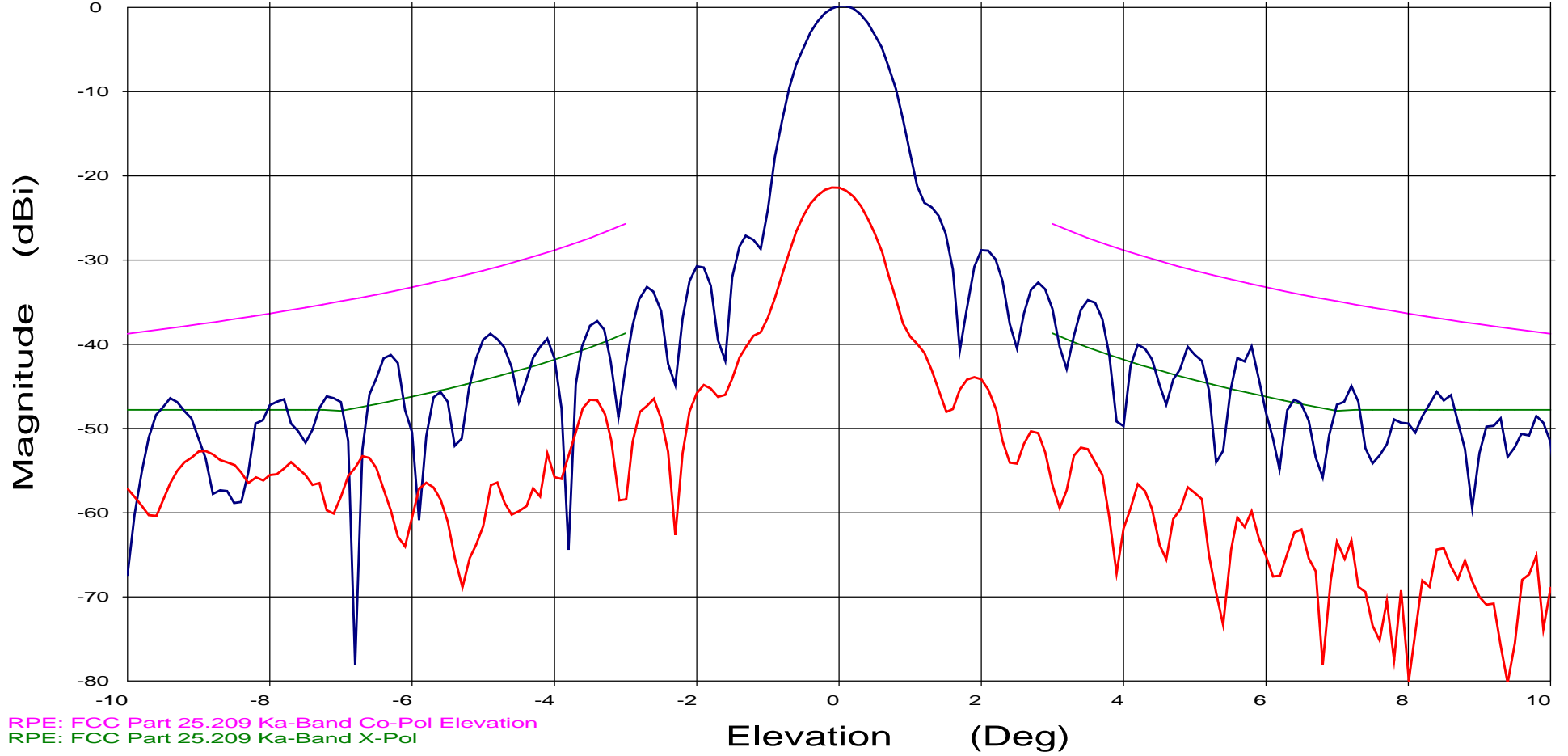
Frequency : 19.400 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

Overlays  
2334 63.dat-ant\_under\_test ———  
2334 66.dat-ant\_under\_test ———

1.2M Ka-Band Antenna  
Series 3122

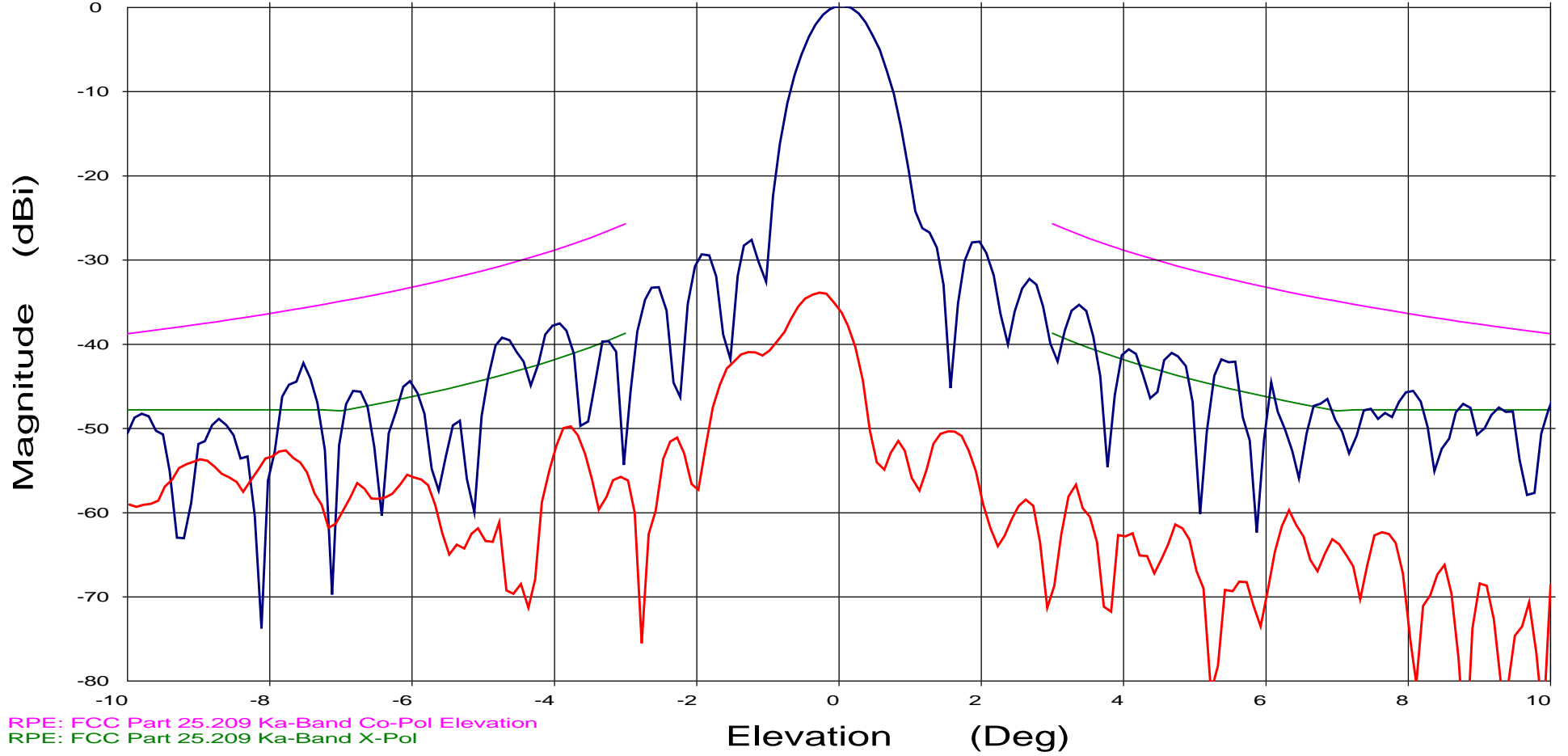
Frequency : 20.300 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

Overlays  
2334 63.dat-ant\_under\_test — blue line  
2334 66.dat-ant\_under\_test — red line

1.2M Ka-Band Antenna  
Series 3122

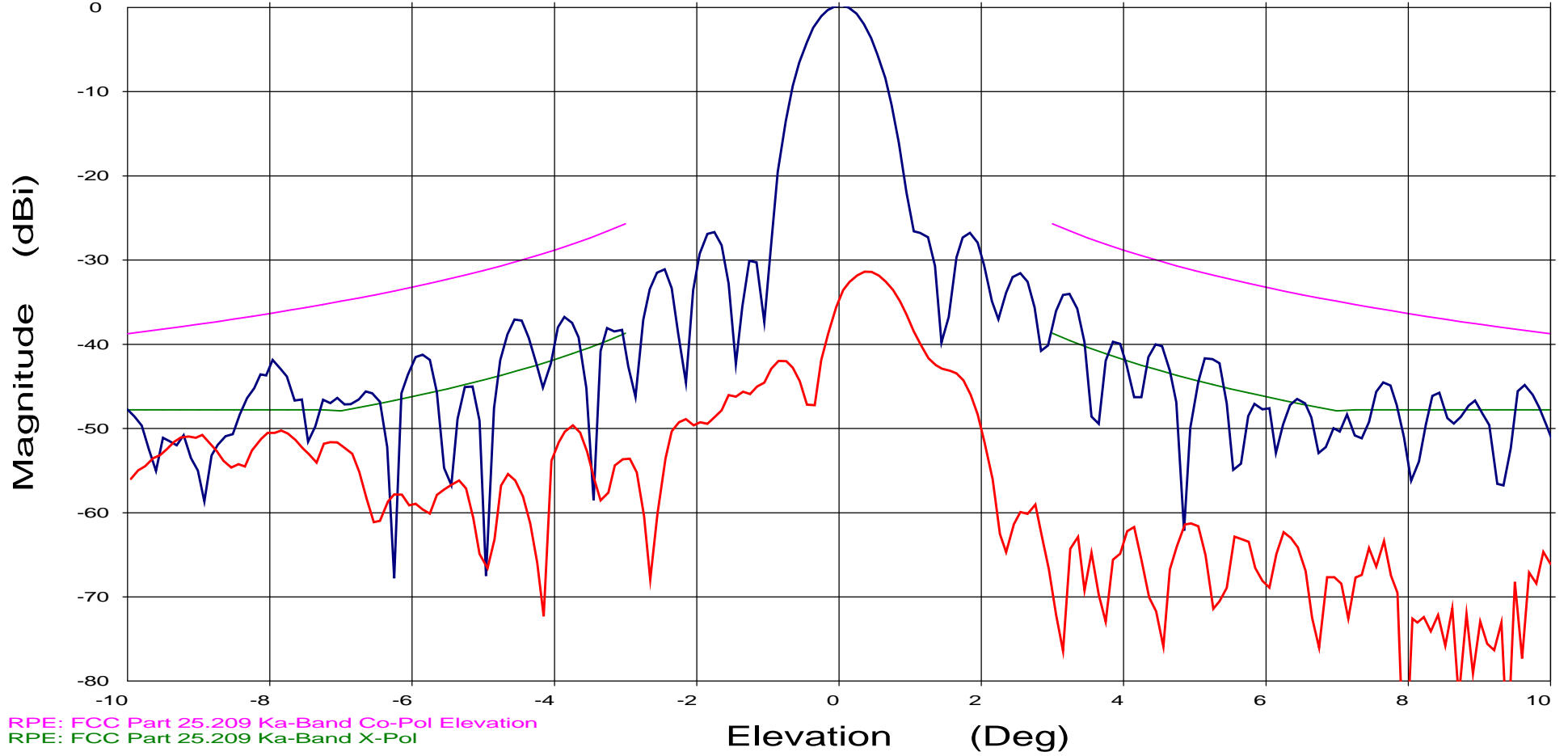
Frequency : 21.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

Overlays  
2334 63.dat-ant\_under\_test ———  
2334 66.dat-ant\_under\_test ———

File: 2334 63.dat

1.2M Ka-Band Antenna  
Series 3122

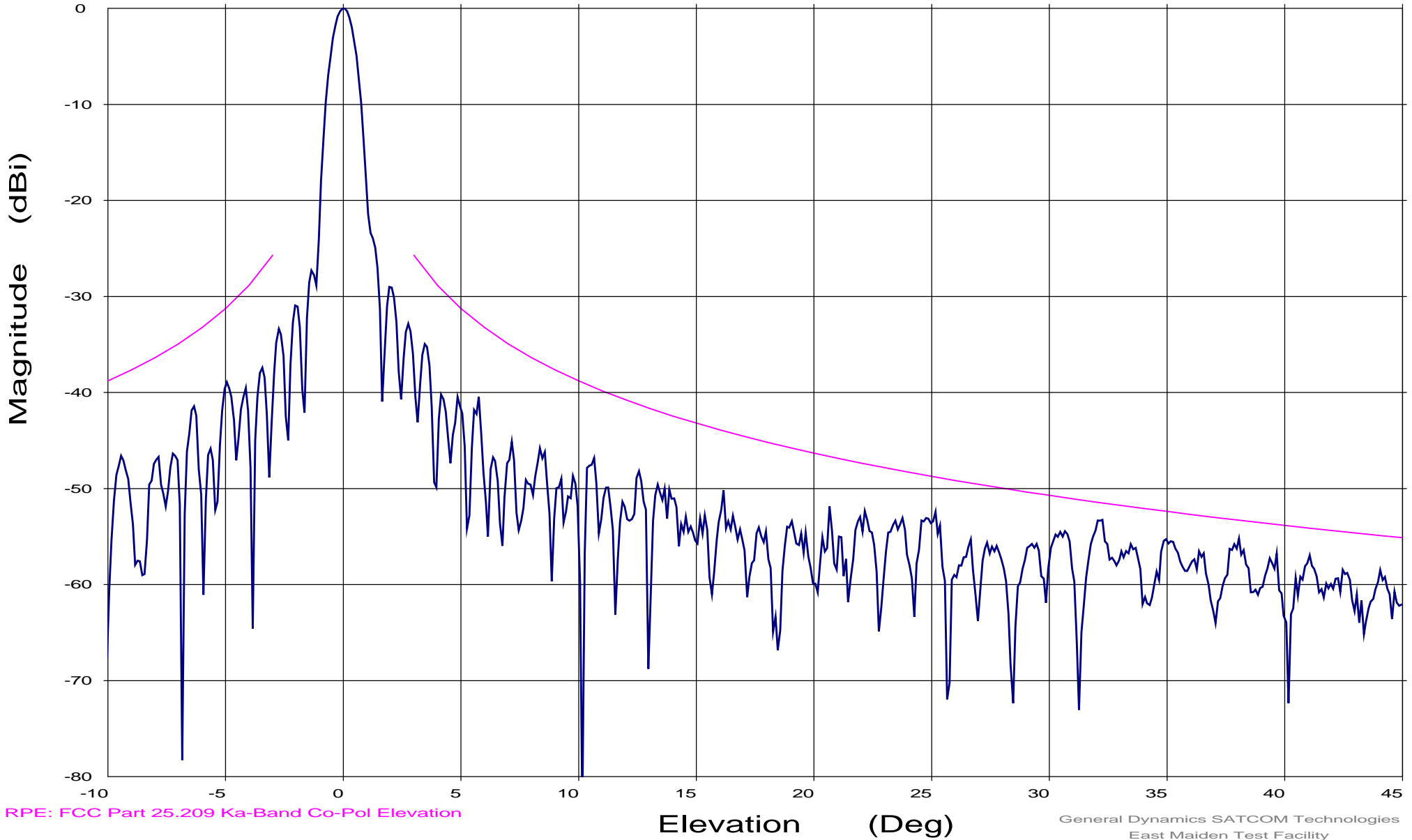
Frequency : 19.400 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

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



File: 2334 63.dat

1.2M Ka-Band Antenna  
Series 3122

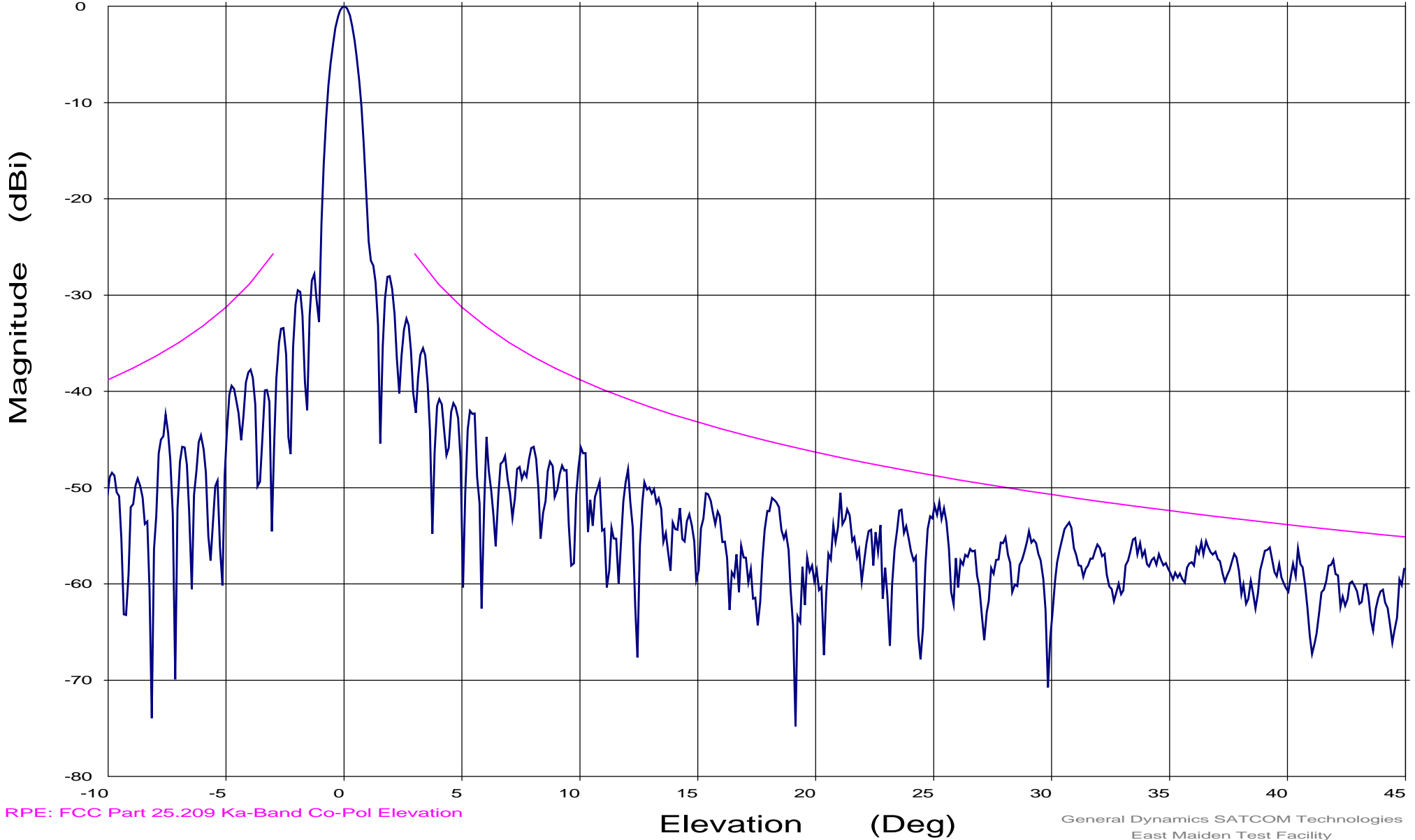
Frequency : 20.300 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

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

File: 2334 63.dat

1.2M Ka-Band Antenna  
Series 3122

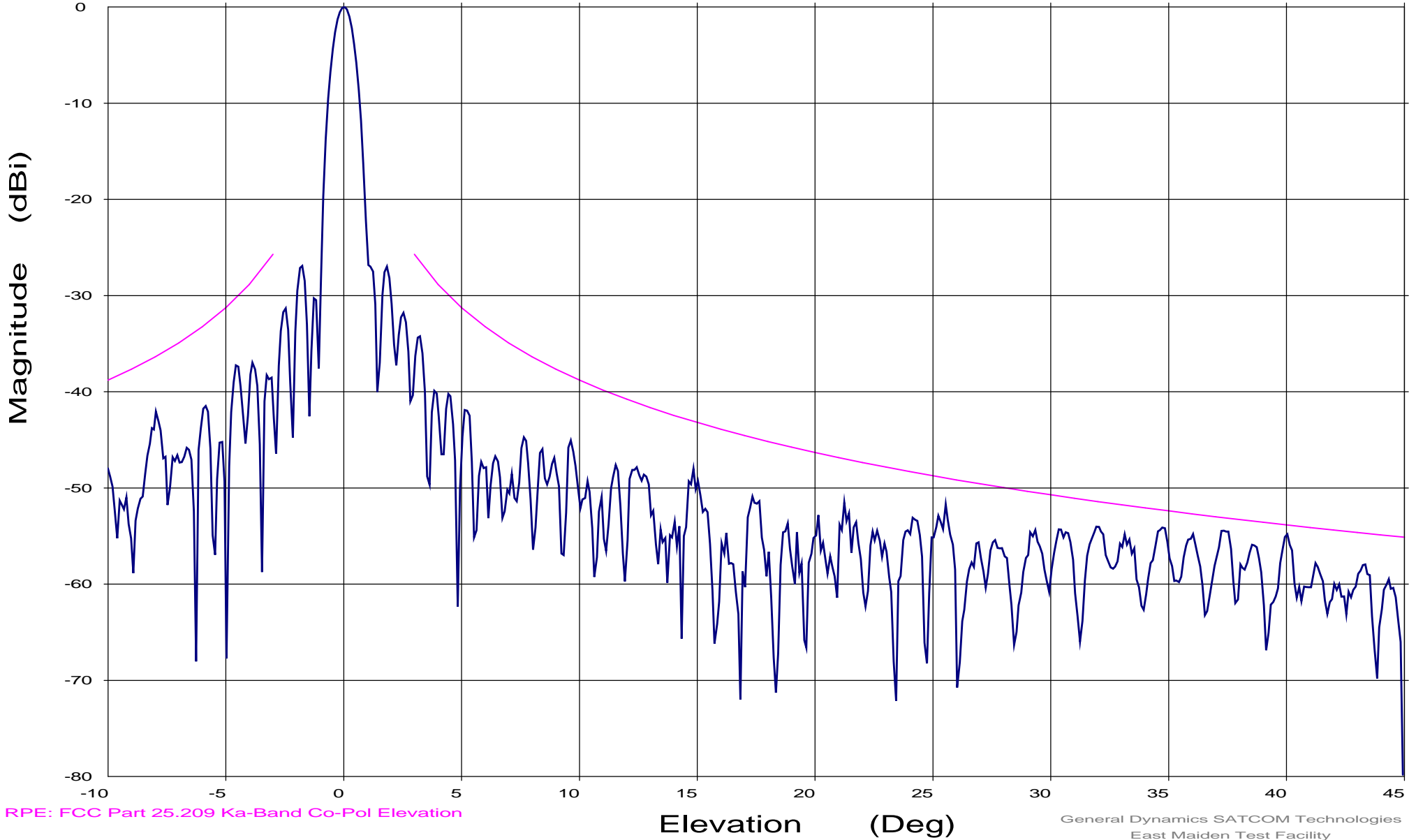
Frequency : 21.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

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East Maiden Test Facility  
4488 Lawing Chapel Church Road  
Maiden, North Carolina 28650

File: 2334 61.dat

1.2M Ka-Band Antenna  
Series 3122

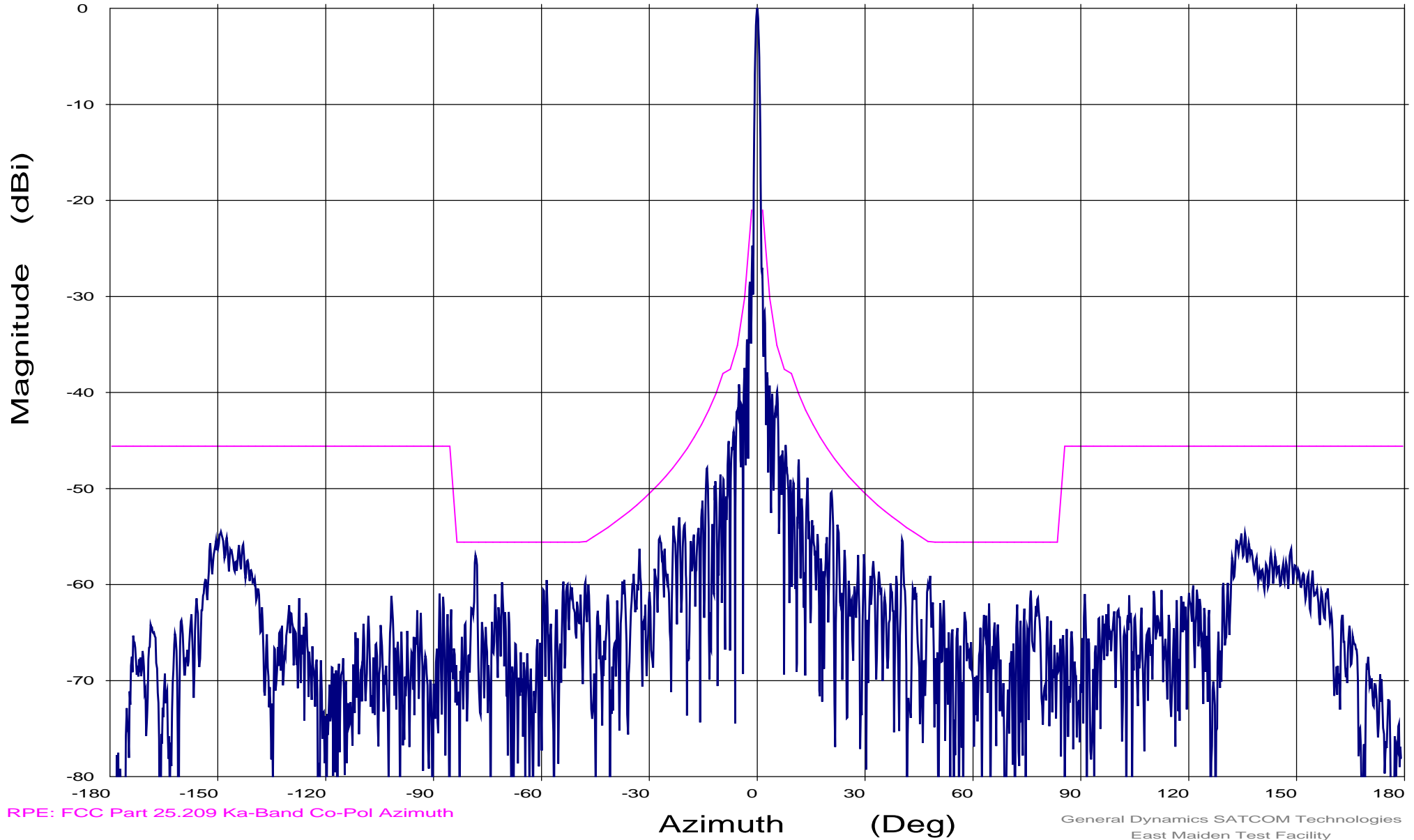
Frequency : 19.400 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

General Dynamics SATCOM Technologies  
East Maiden Test Facility  
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Maiden, North Carolina 28650

File: 2334 61.dat

1.2M Ka-Band Antenna  
Series 3122

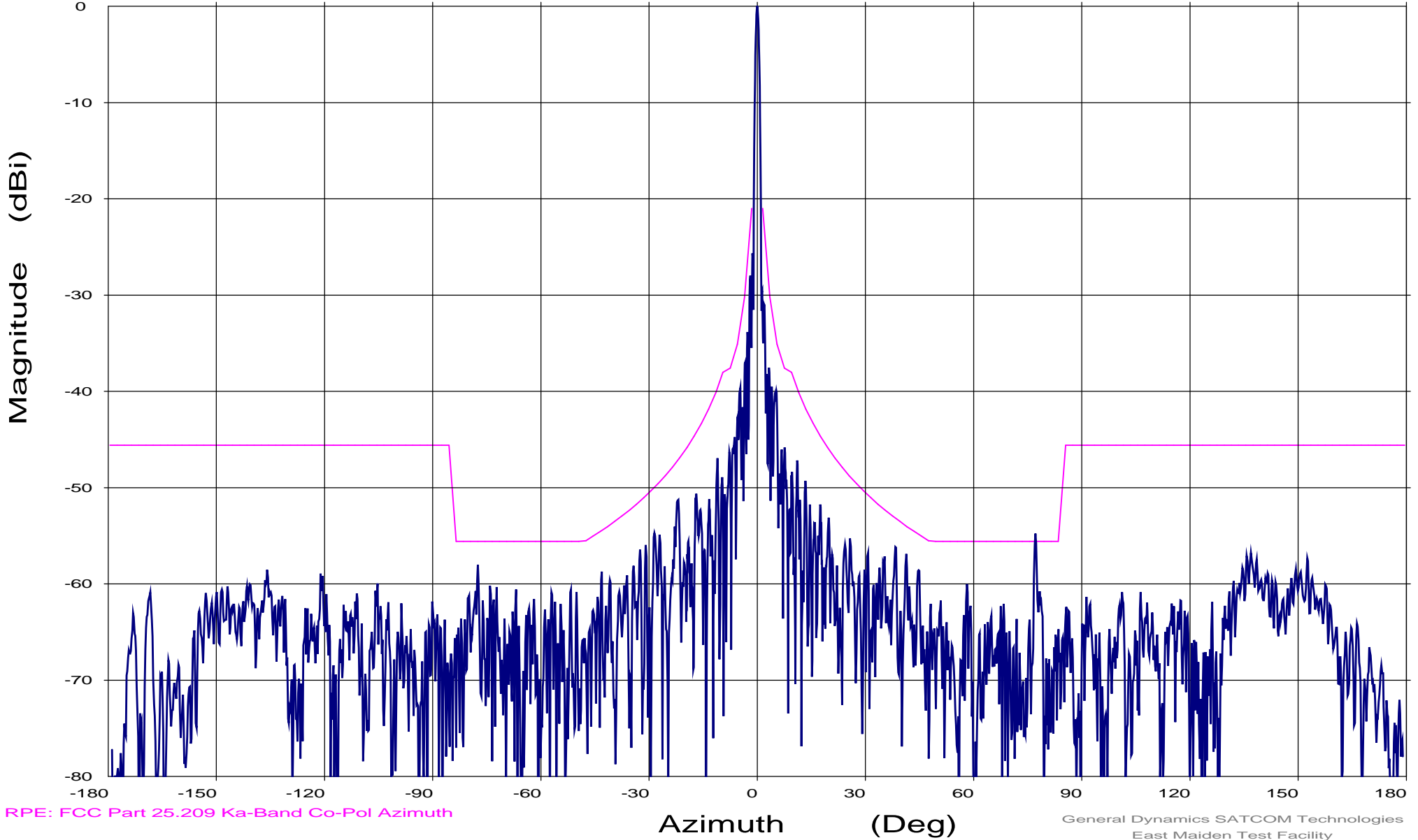
Frequency : 20.300 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

General Dynamics SATCOM Technologies  
East Maiden Test Facility  
4488 Lawing Chapel Church Road  
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File: 2334 61.dat

1.2M Ka-Band Antenna  
Series 3122

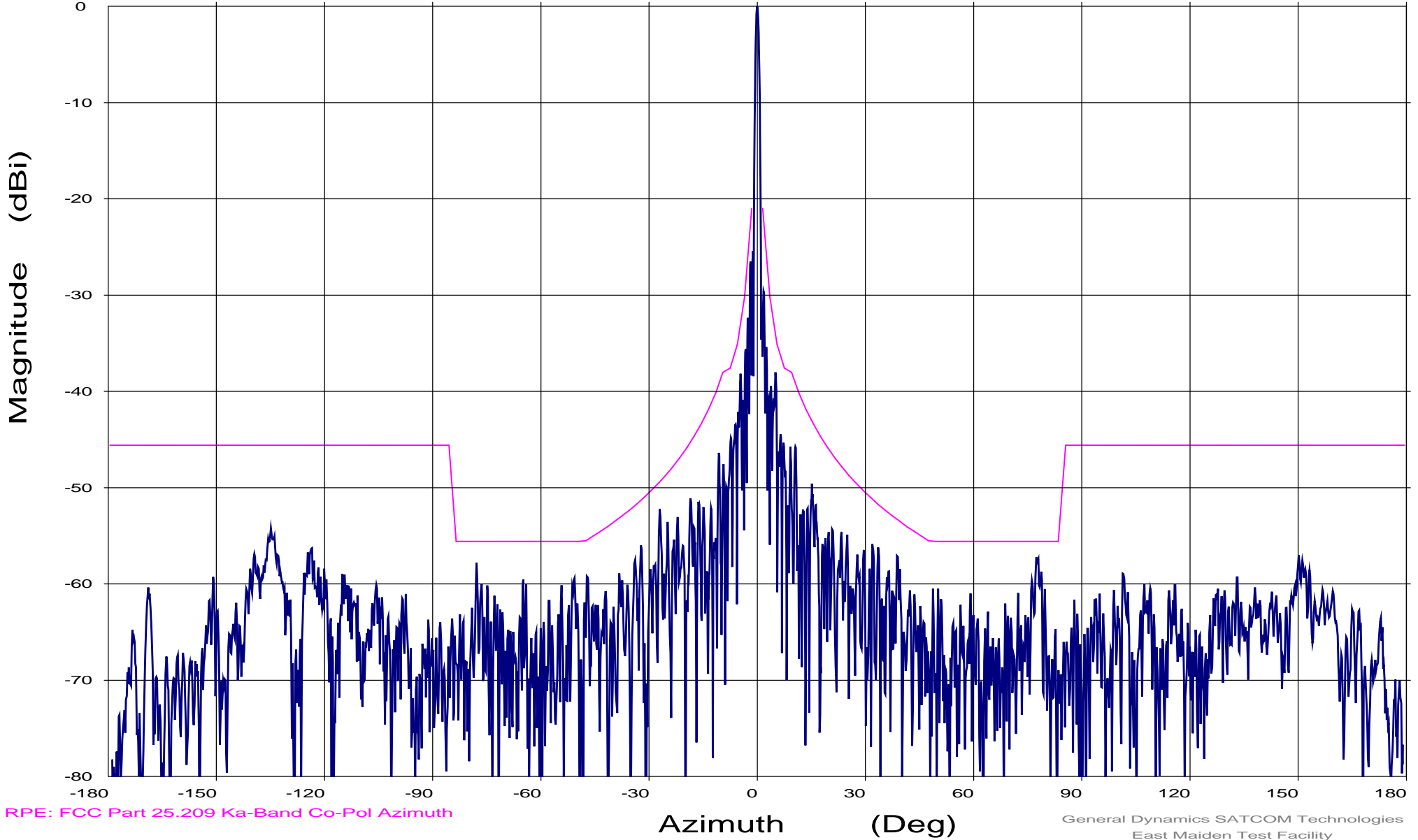
Frequency : 21.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

LHCP Radiation Patterns  
**Receive Frequencies**

1.2M Ka-Band Antenna  
Series 3122

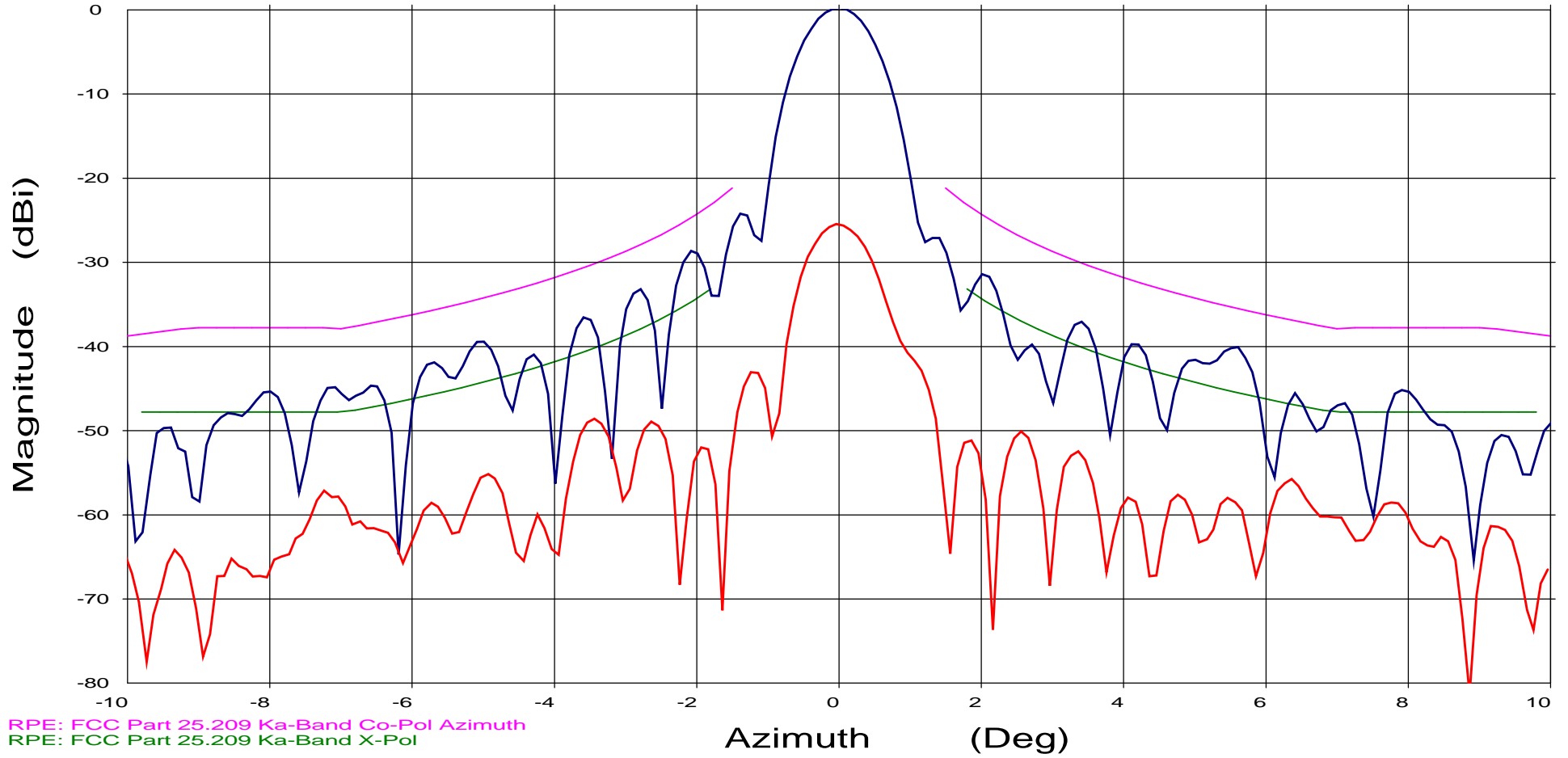
Frequency : 19.400 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

Overlays  
2334 69.dat-ant\_under\_test ———  
2334 72.dat-ant\_under\_test ———

1.2M Ka-Band Antenna  
Series 3122

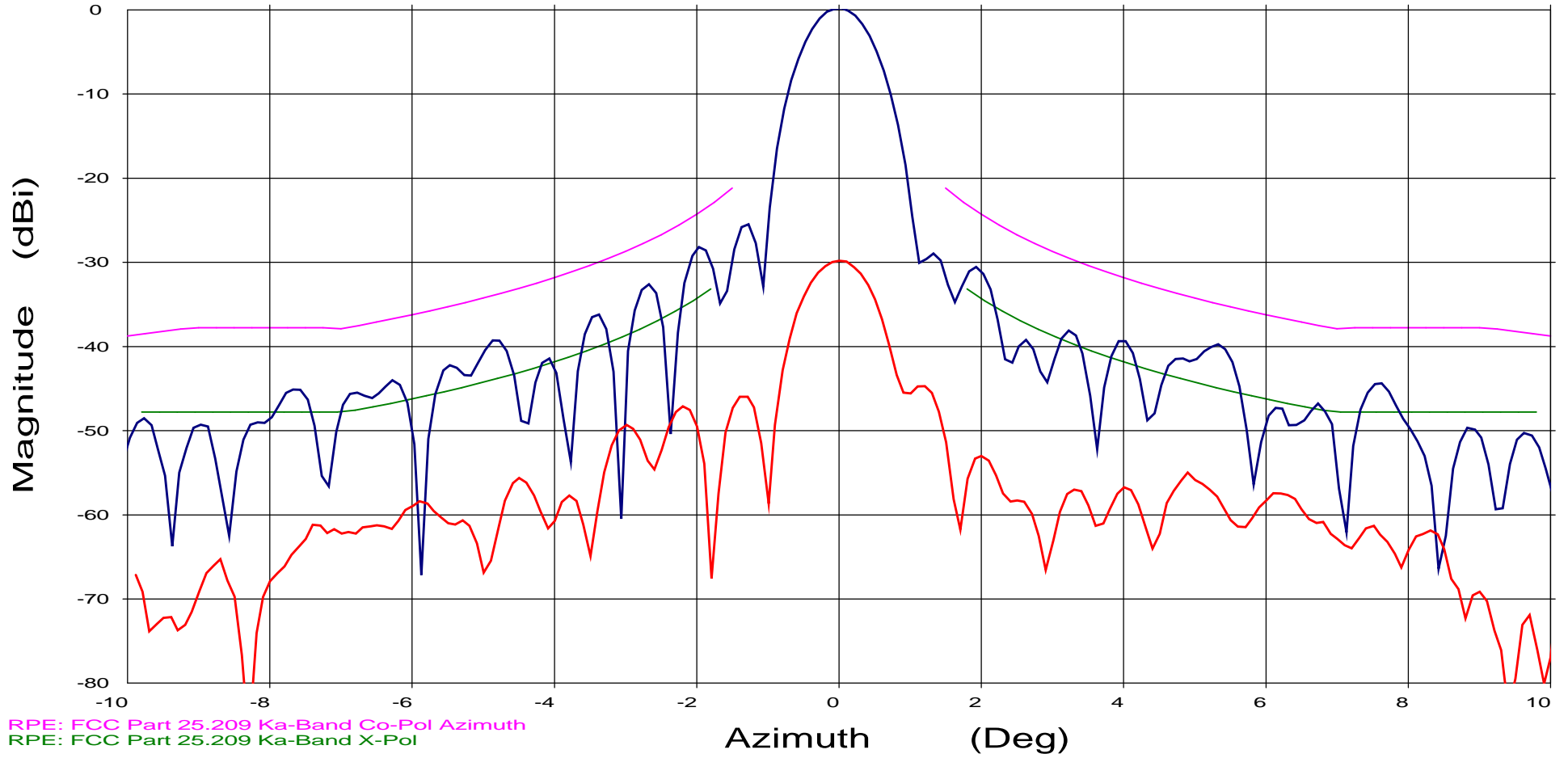
Frequency : 20.300 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

Overlays  
2334 69.dat-ant\_under\_test ———  
2334 72.dat-ant\_under\_test ———



1.2M Ka-Band Antenna  
Series 3122

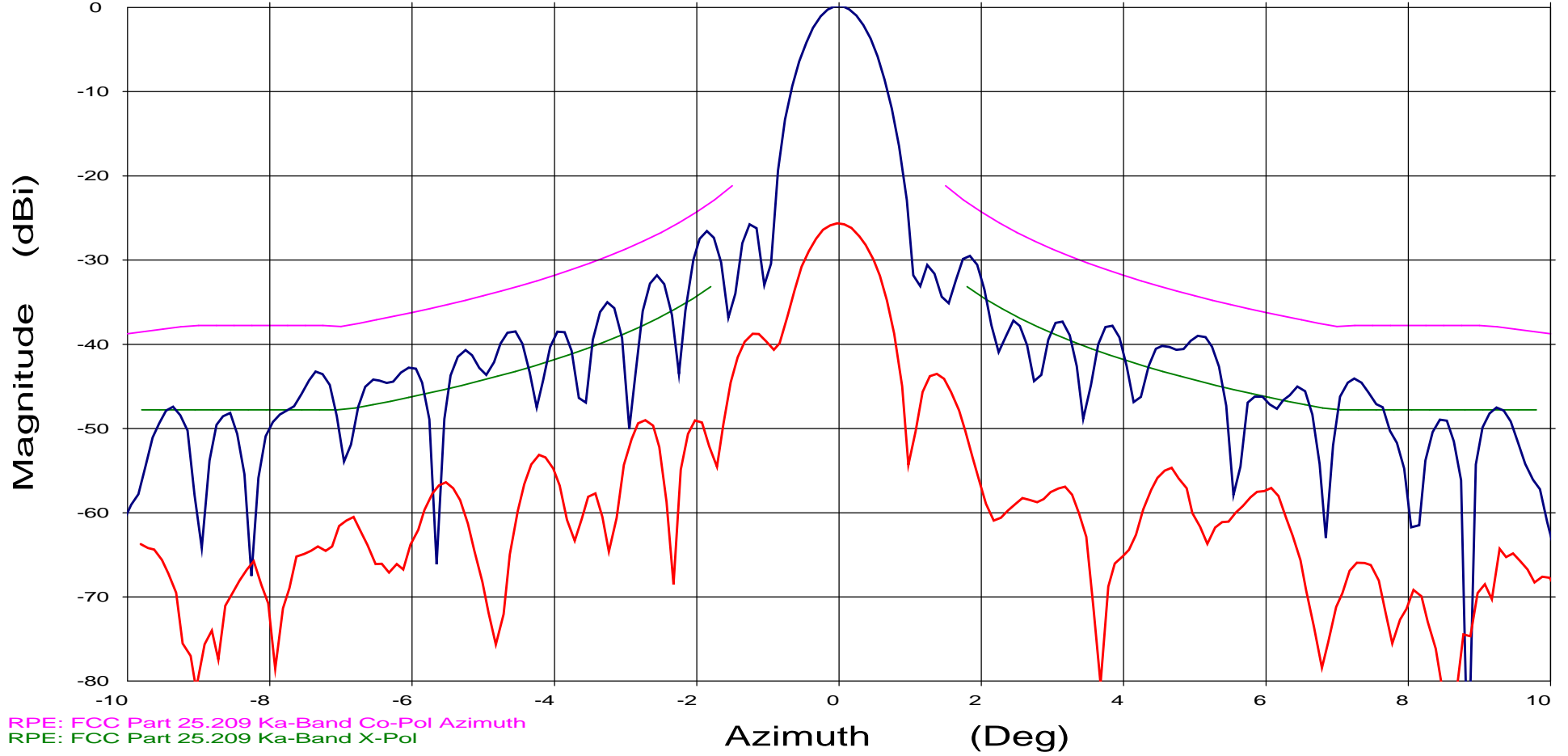
Frequency : 21.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays  
2334 69.dat-ant\_under\_test ———  
2334 72.dat-ant\_under\_test ———

1.2M Ka-Band Antenna  
Series 3122

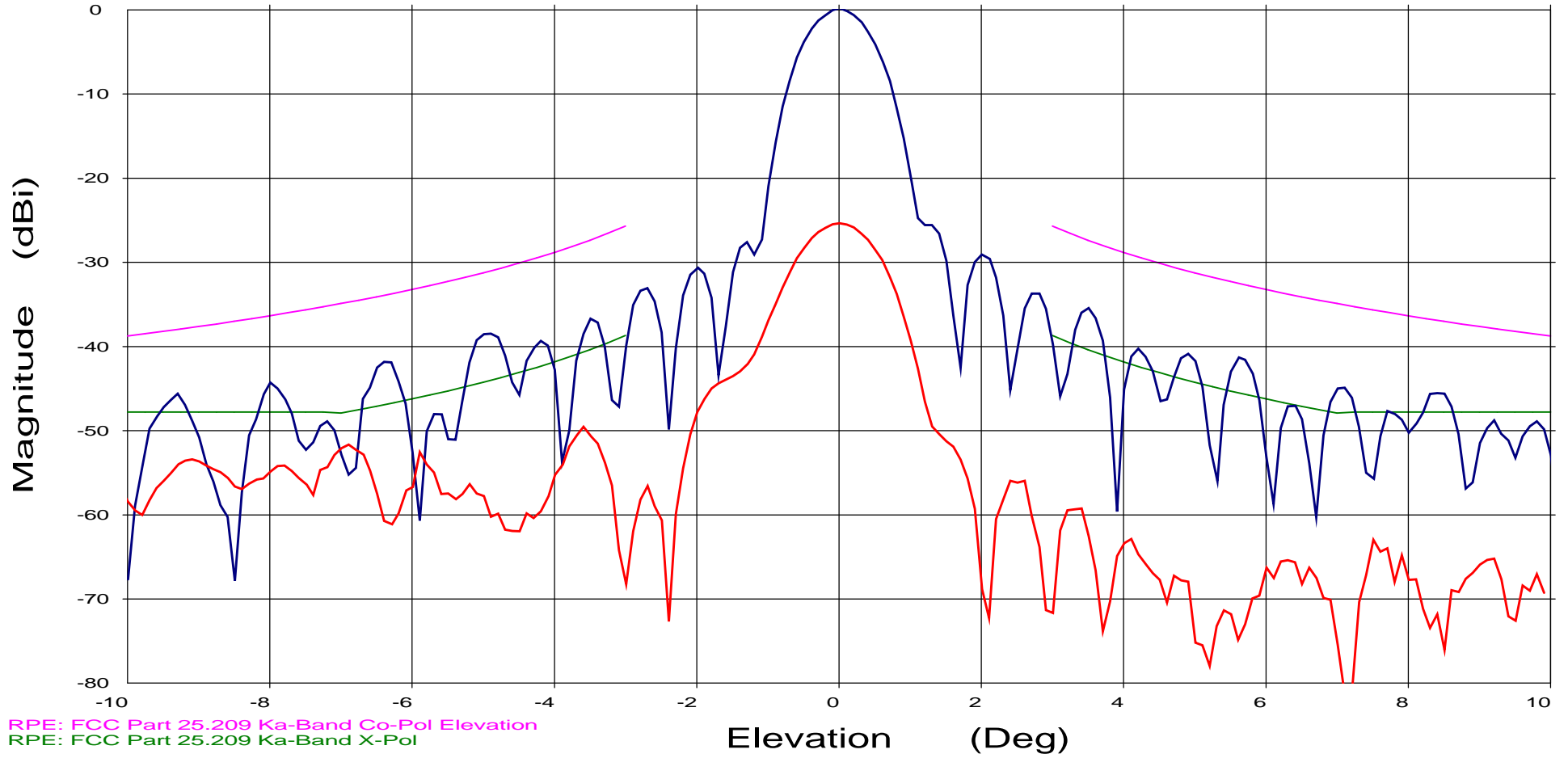
Frequency : 19.400 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

Overlays  
2334 70.dat-ant\_under\_test — blue line  
2334 73.dat-ant\_under\_test — red line

1.2M Ka-Band Antenna  
Series 3122

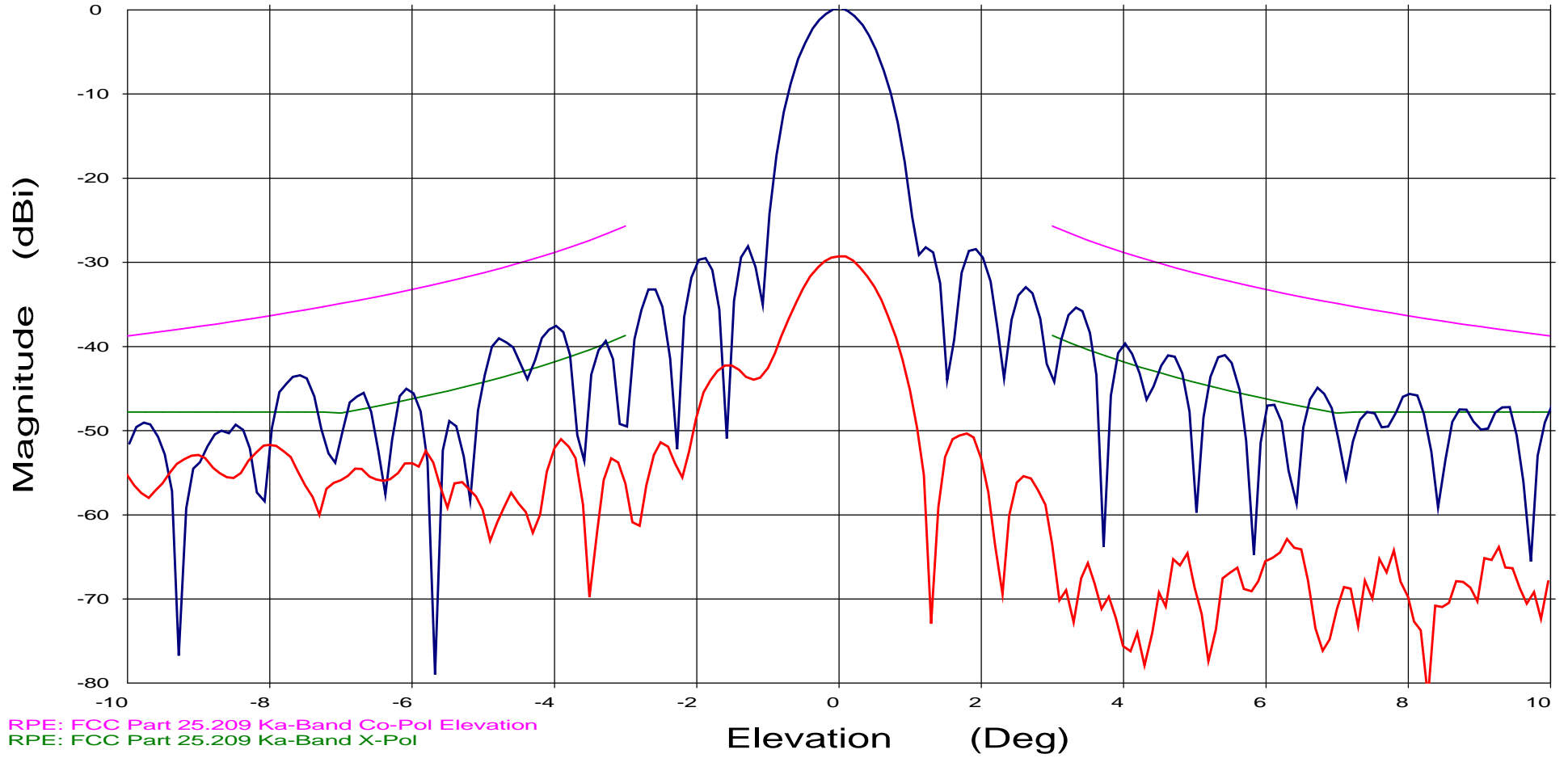
Frequency : 20.300 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

Overlays  
2334 70.dat-ant\_under\_test — blue line  
2334 73.dat-ant\_under\_test — red line

1.2M Ka-Band Antenna  
Series 3122

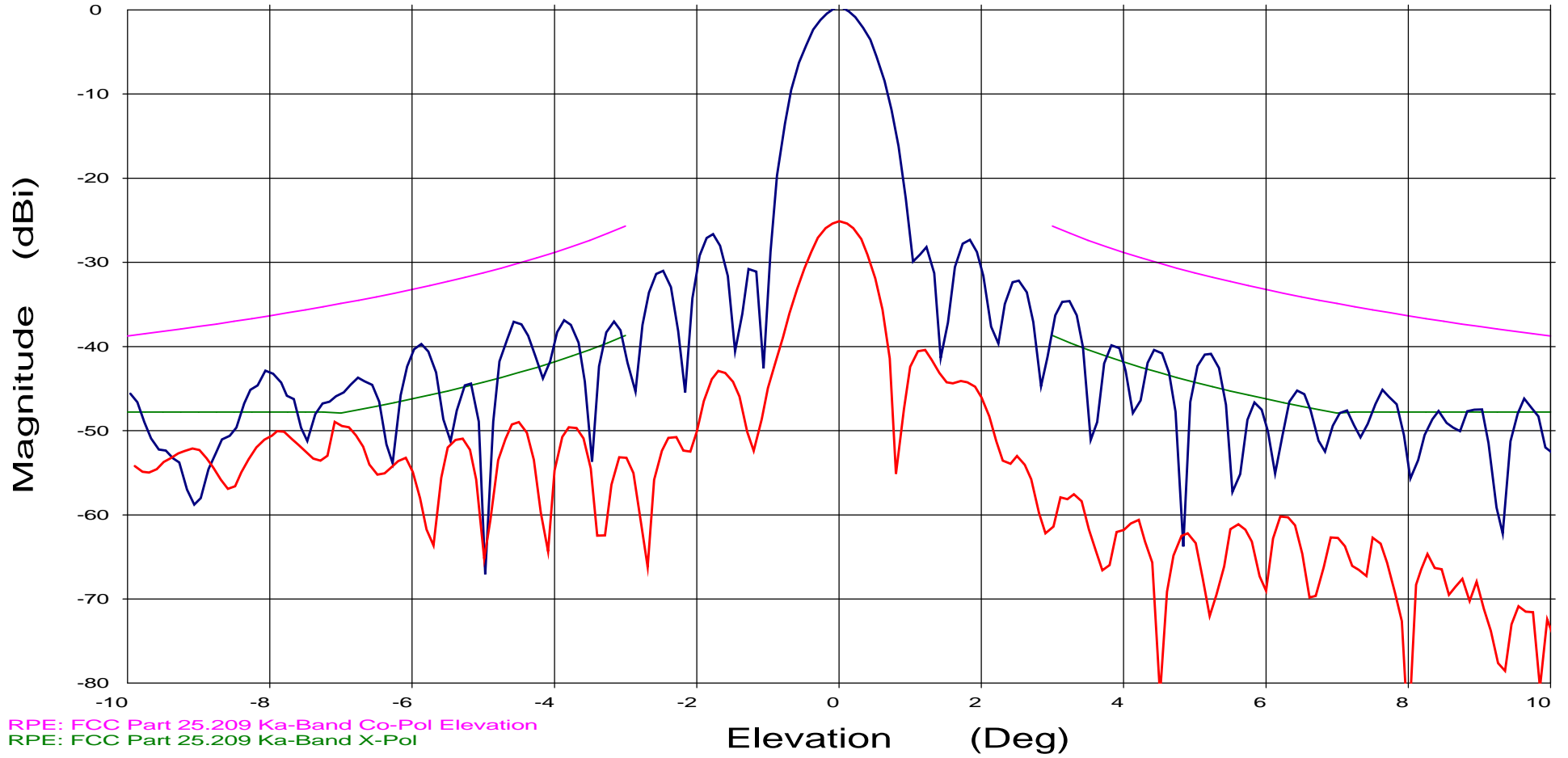
Frequency : 21.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

Overlays  
2334 70.dat-ant\_under\_test ———  
2334 73.dat-ant\_under\_test ———

File: 2334 70.dat

1.2M Ka-Band Antenna  
Series 3122

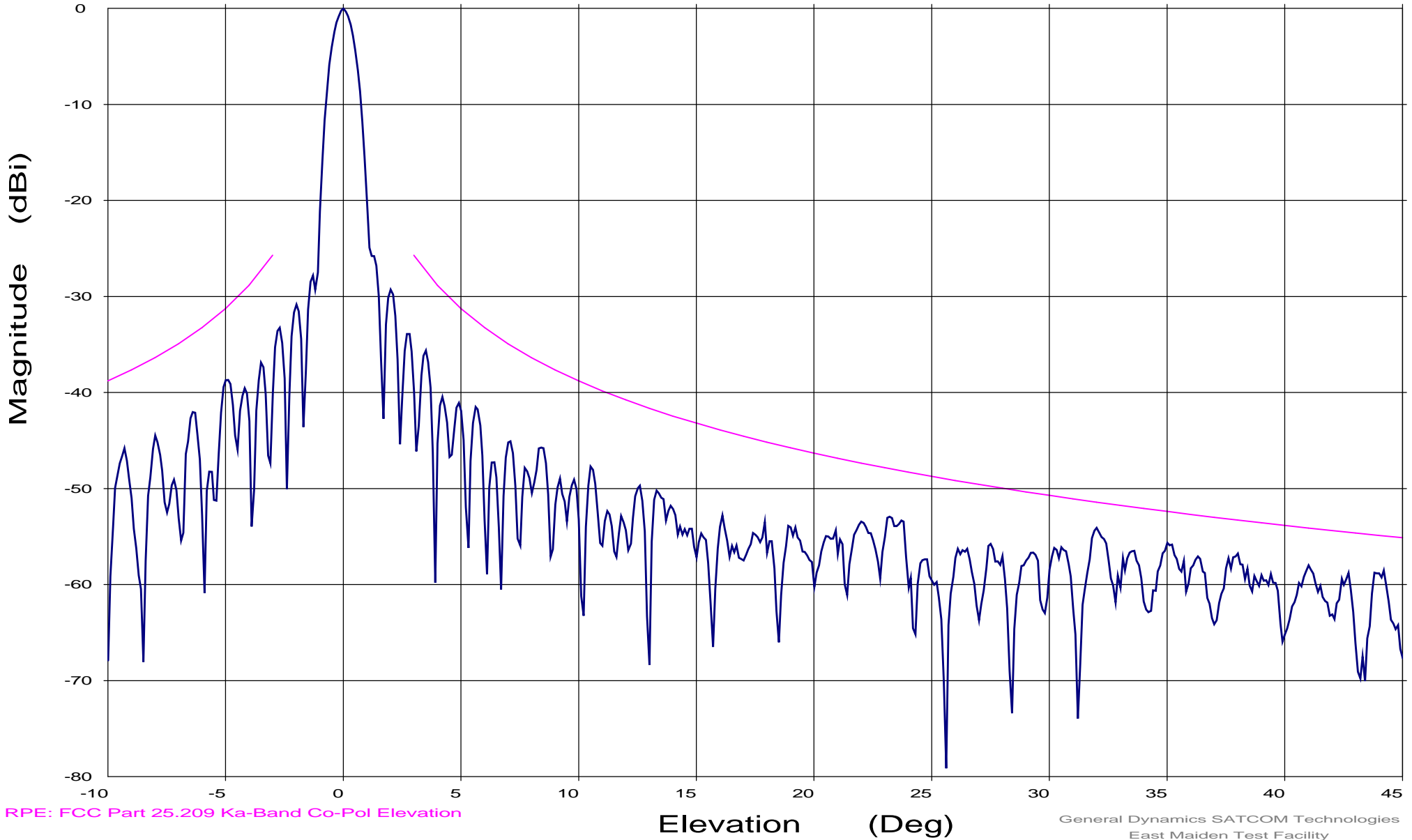
Frequency : 19.400 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

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

File: 2334 70.dat

1.2M Ka-Band Antenna  
Series 3122

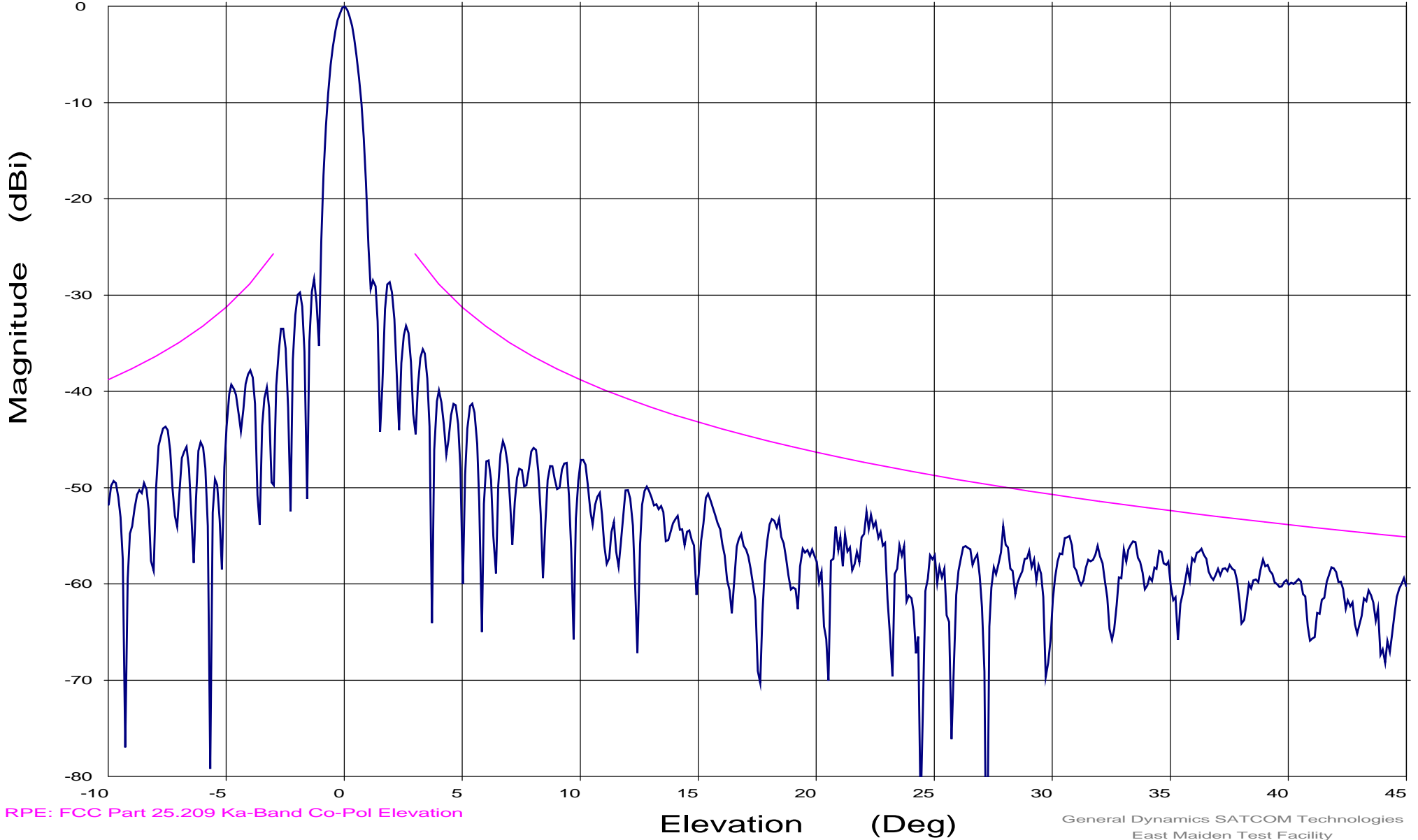
Frequency : 20.300 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

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File: 2334 70.dat

1.2M Ka-Band Antenna  
Series 3122

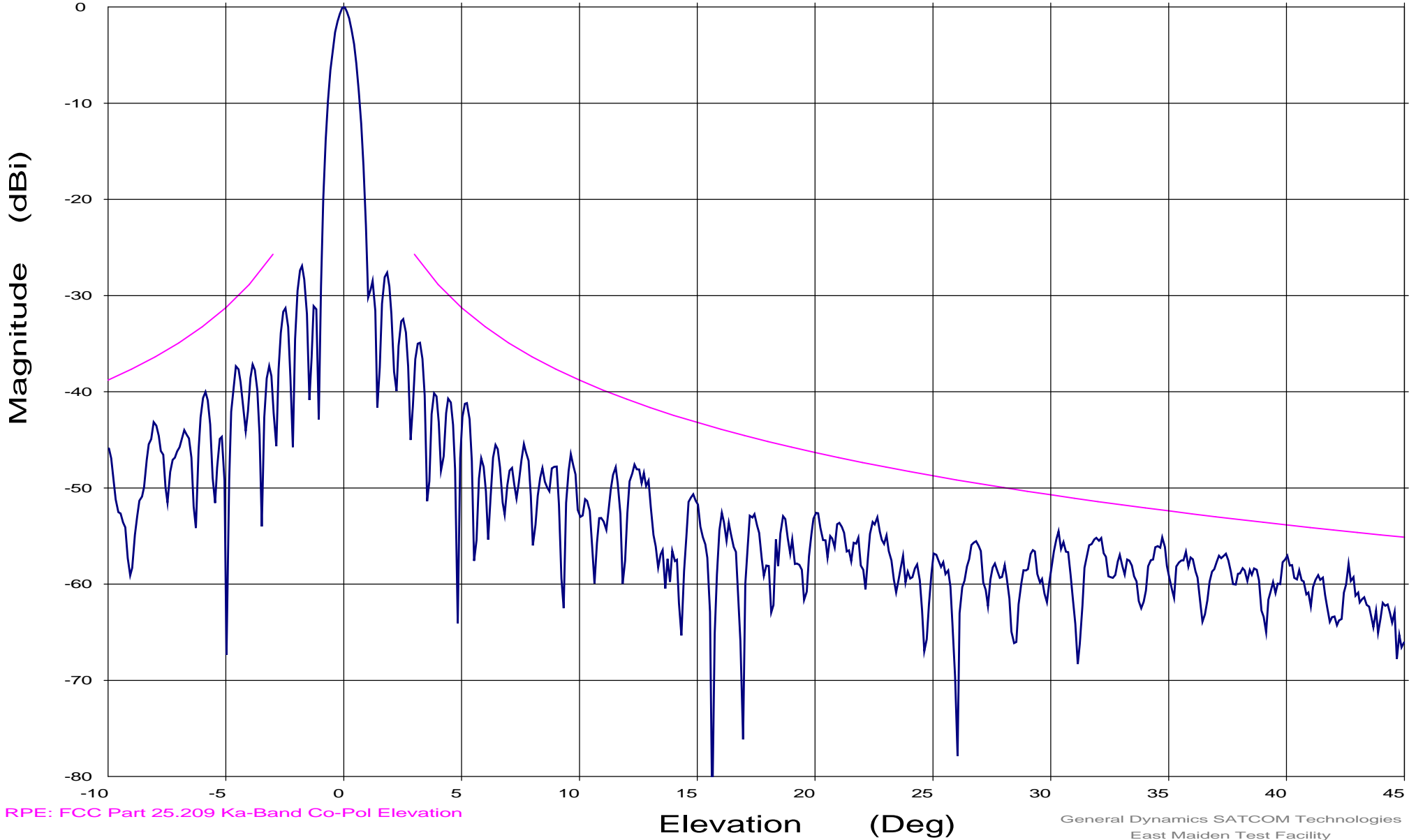
Frequency : 21.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

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4488 Lawing Chapel Church Road  
Maiden, North Carolina 28650

File: 2334 69.dat

1.2M Ka-Band Antenna  
Series 3122

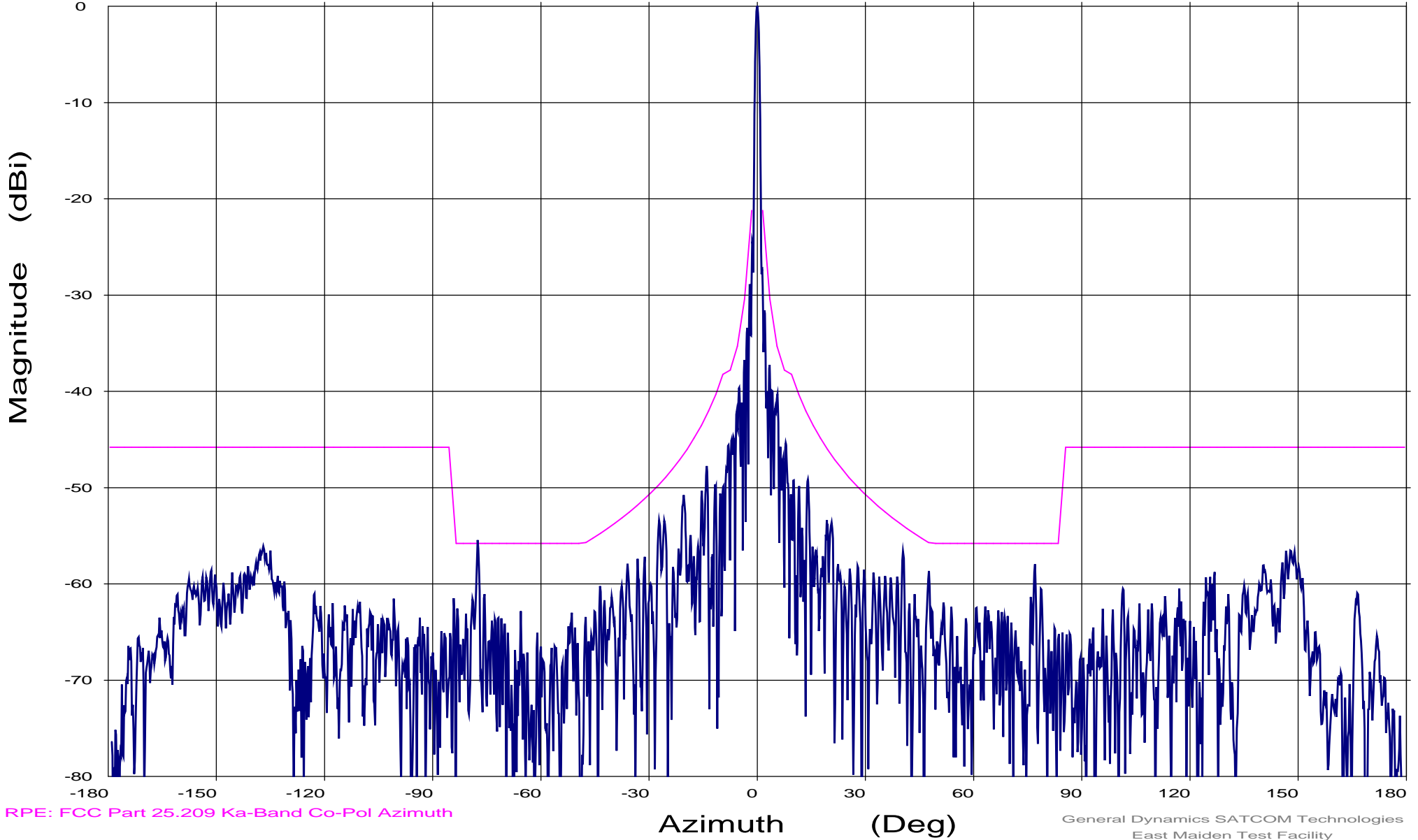
Frequency : 19.400 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

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4488 Lawing Chapel Church Road  
Maiden, North Carolina 28650



File: 2334 69.dat

1.2M Ka-Band Antenna  
Series 3122

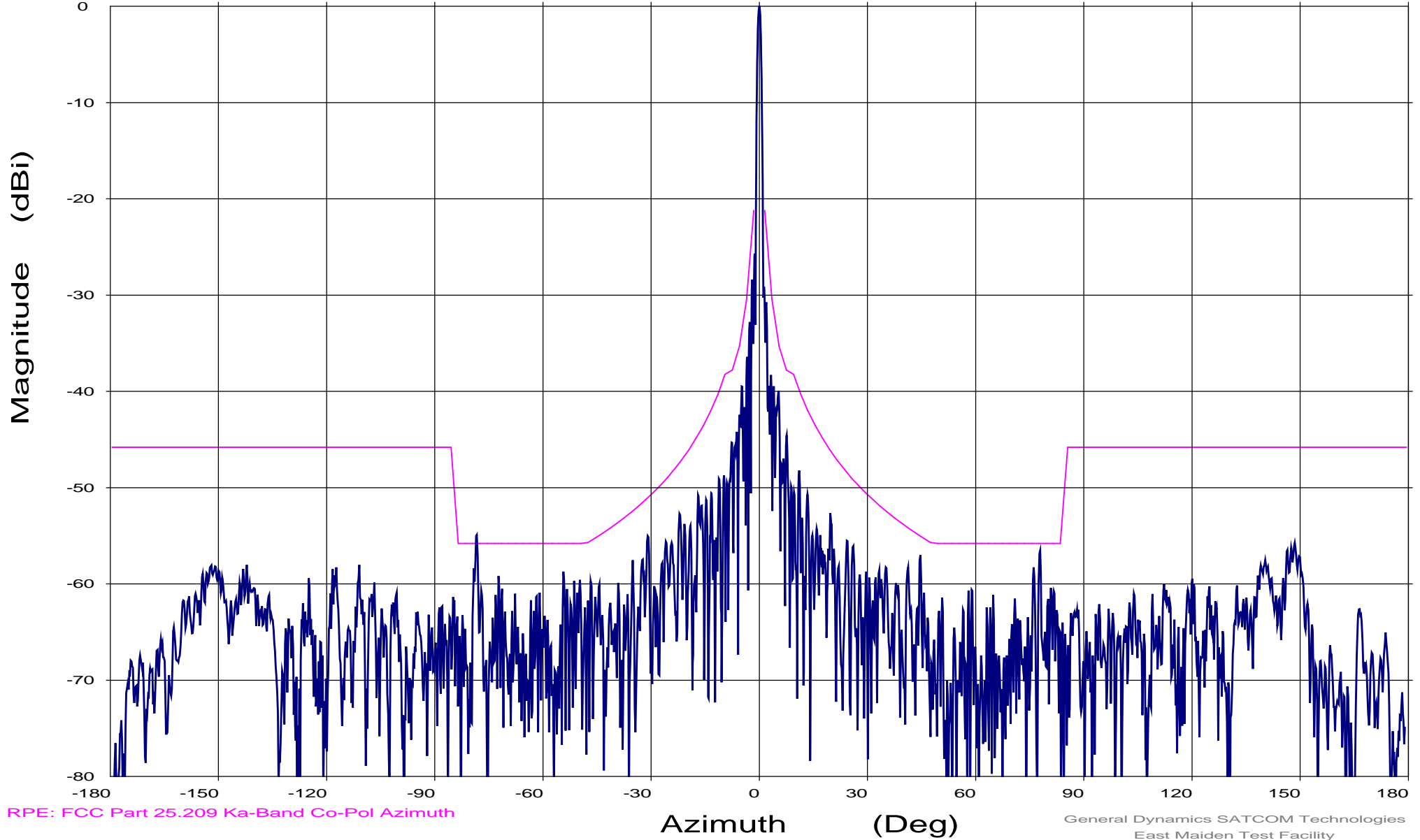
Frequency : 20.300 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

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File: 2334 69.dat

1.2M Ka-Band Antenna  
Series 3122

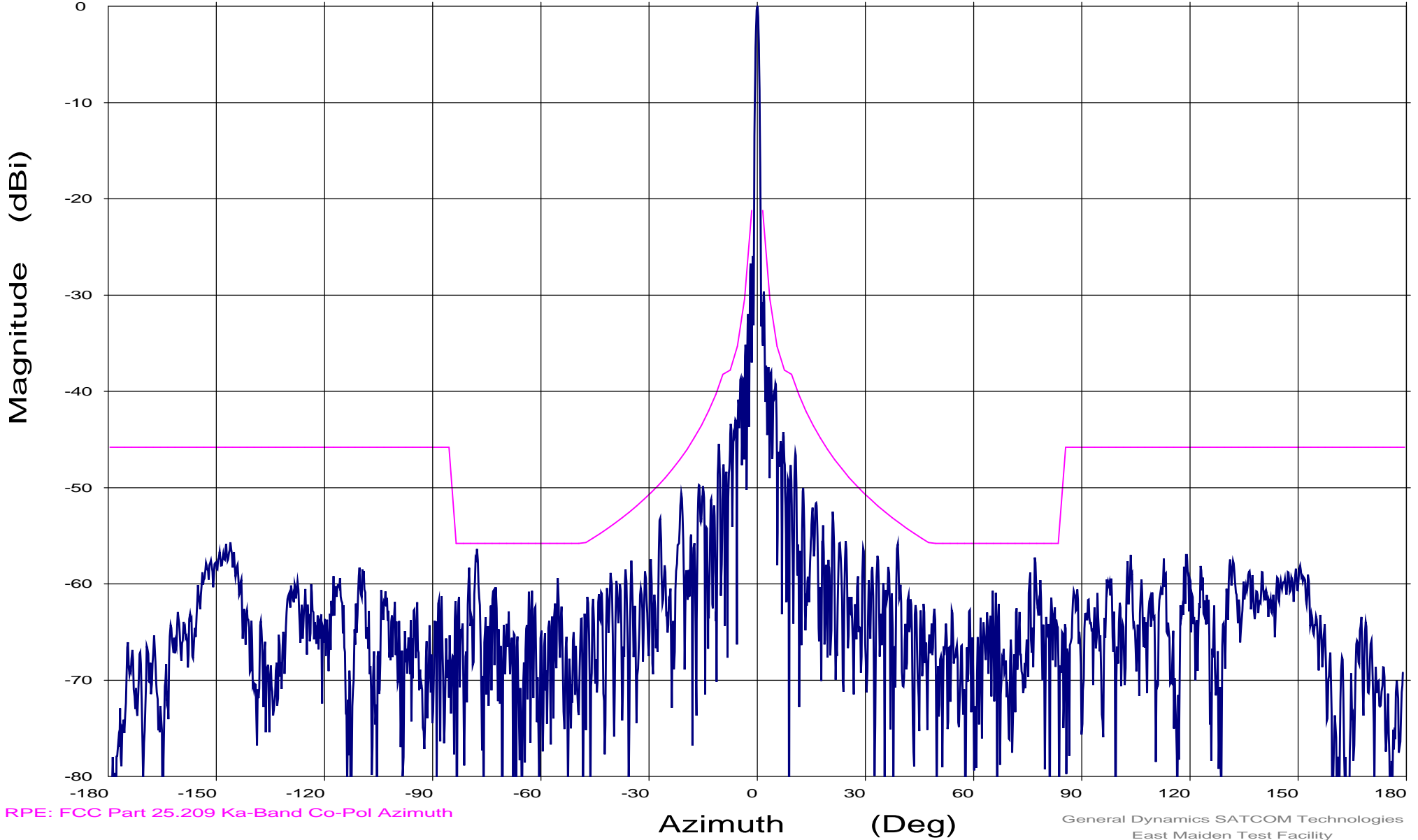
Frequency : 21.200 GHz

Operator: J Hartness

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



RPE: FCC Part 25.209 Ka-Band Co-Pol Azimuth

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End of Report

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