

GENERAL DYNAMICS

SATCOM Technologies

1.8m Ka-Band CP Rx/Tx Antenna System

Series 3180

2244 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

1.8M Ka-Band CP Rx/Tx Antenna System

Series 3180

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Gain

Gain Analysis

Frequency (GHz)	Gain (dB) LHCP	Gain (dB) RHCP
29.50	53.1	53.1
29.75	53.3	53.3
30.00	53.6	53.7
19.70	49.7	49.7
19.95	49.7	49.8
20.20	49.8	49.9

LHCP Radiation Patterns
Transmit Frequencies

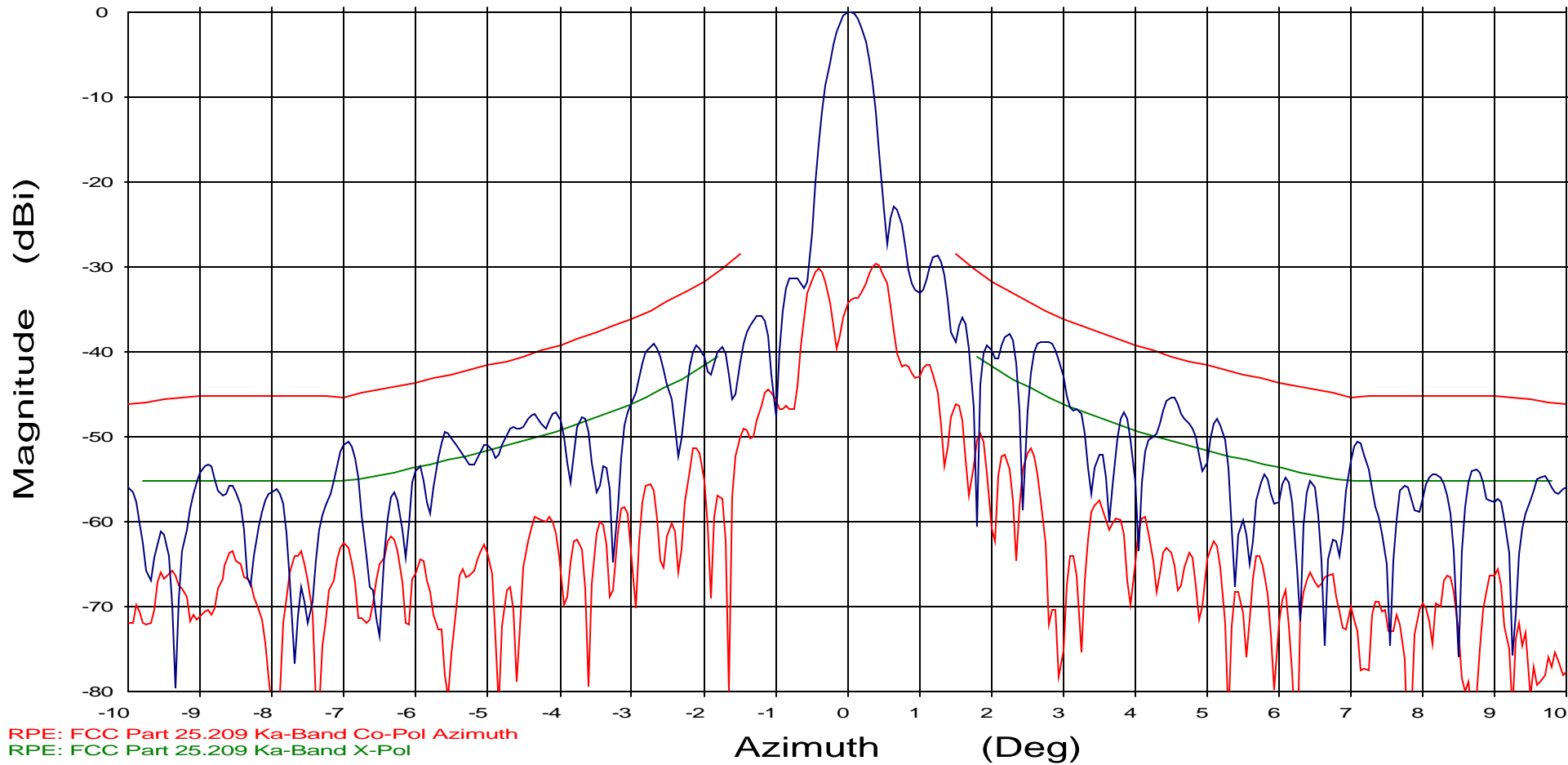
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

2242 22.dat-ant_under_test
2242 26.dat-ant_under_test

Cal. file

2242 22.dat
2242 26.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

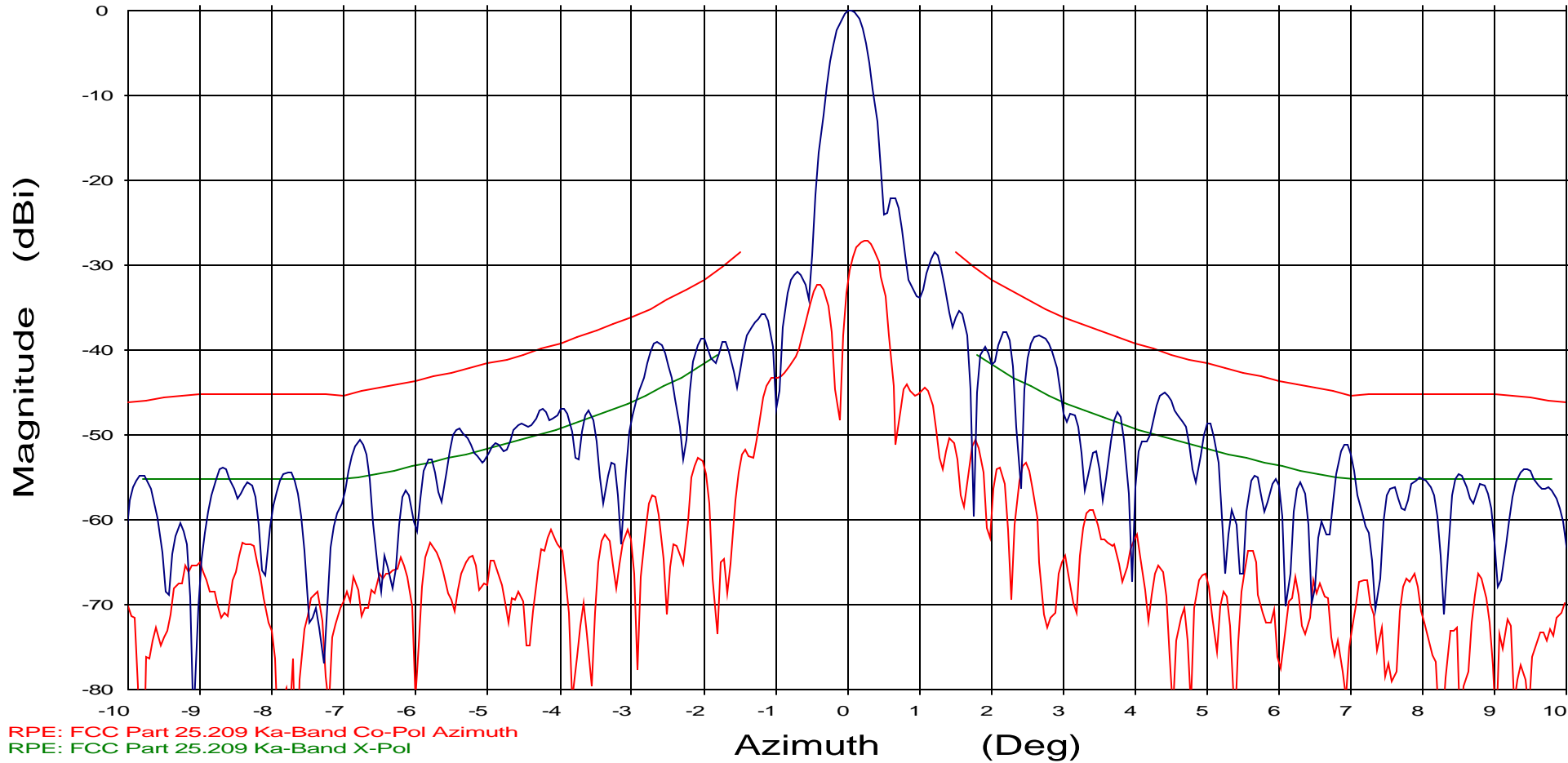
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

2242 22.dat-ant_under_test
2242 26.dat-ant_under_test

Cal. file

2242 22.dat
2242 26.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

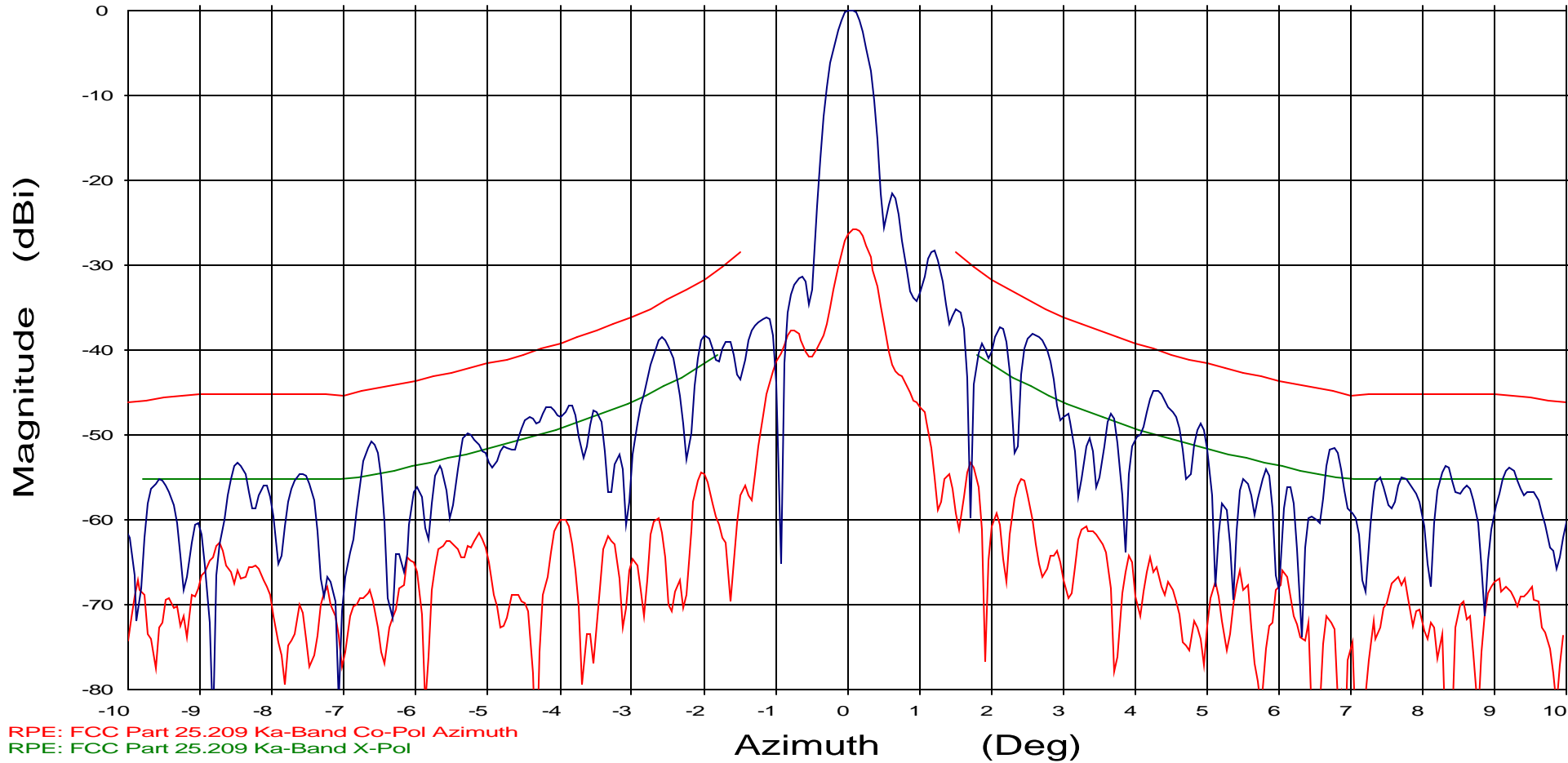
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

2242 22.dat-ant_under_test
2242 26.dat-ant_under_test

Cal. file

2242 22.dat
2242 26.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

1.8M Ka-Band CP Rx/Tx Antenna System
Series 3180

Frequency : 29.500 GHz

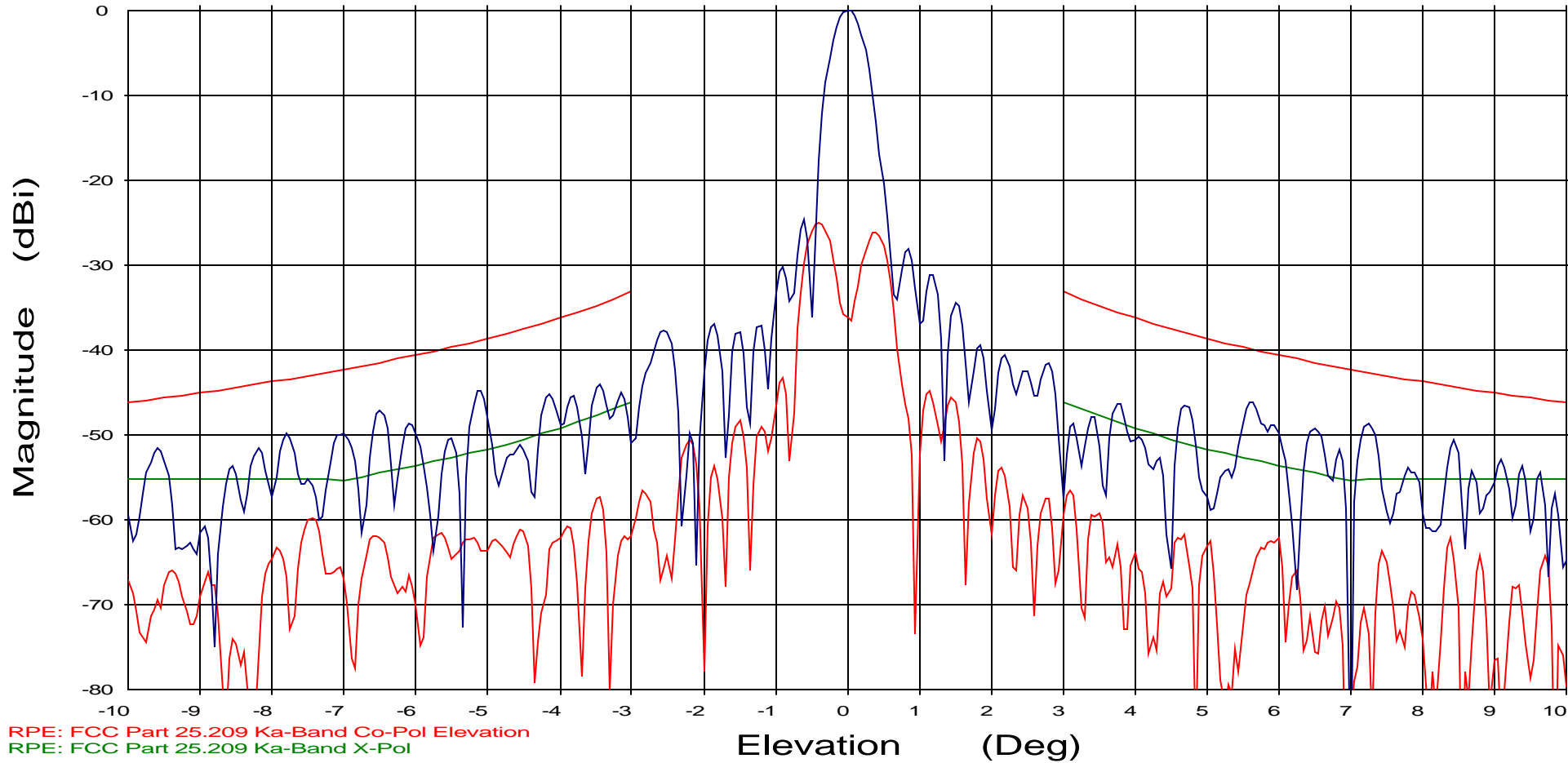
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

2242 25.dat-ant_under_test
2242 27.dat-ant_under_test

Cal. file

2242 25.dat
2242 27.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

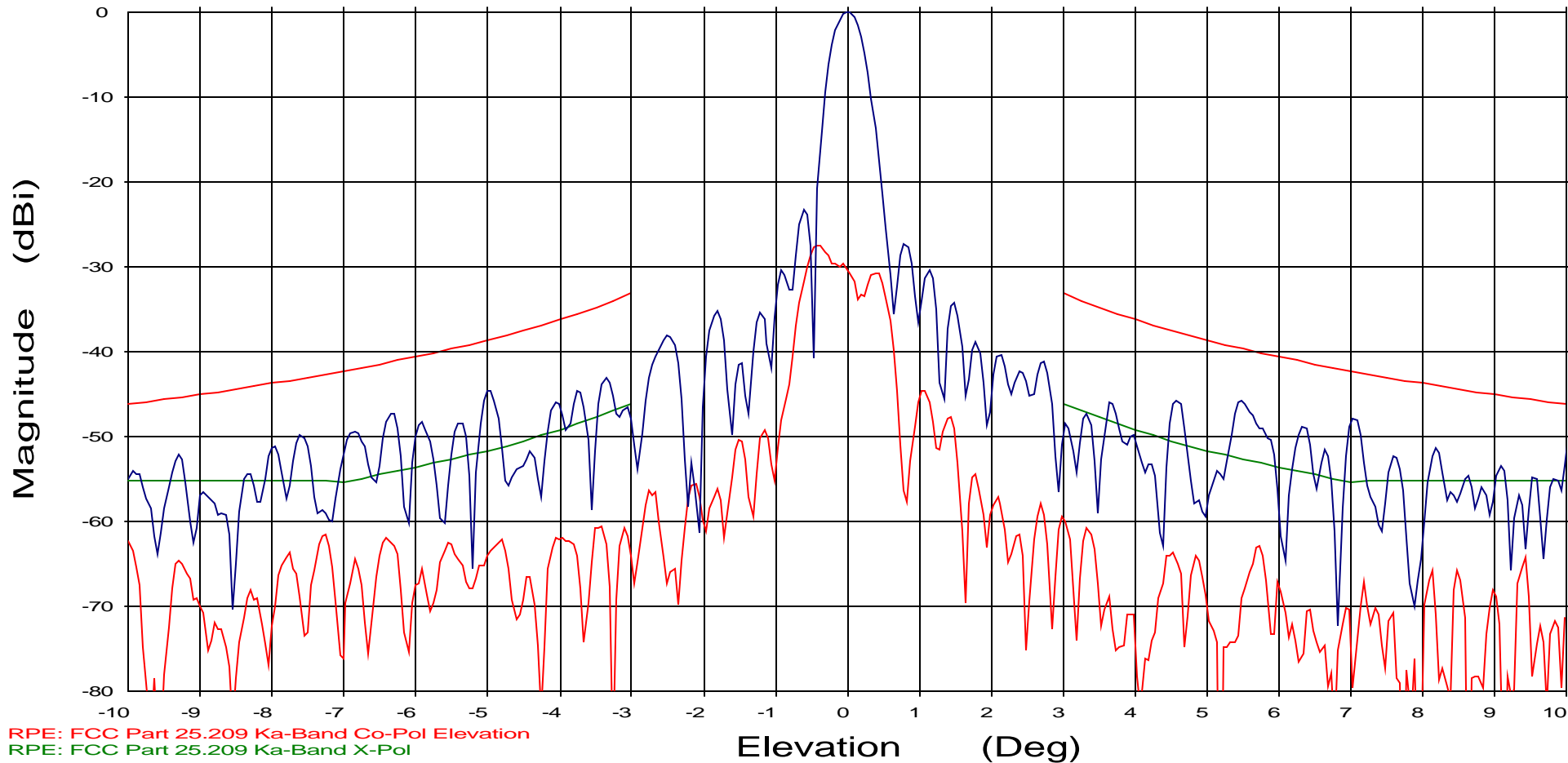
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

2242 25.dat-ant_under_test
2242 27.dat-ant_under_test

Cal. file

2242 25.dat
2242 27.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

1.8M Ka-Band CP Rx/Tx Antenna System
Series 3180

Frequency : 30.000 GHz

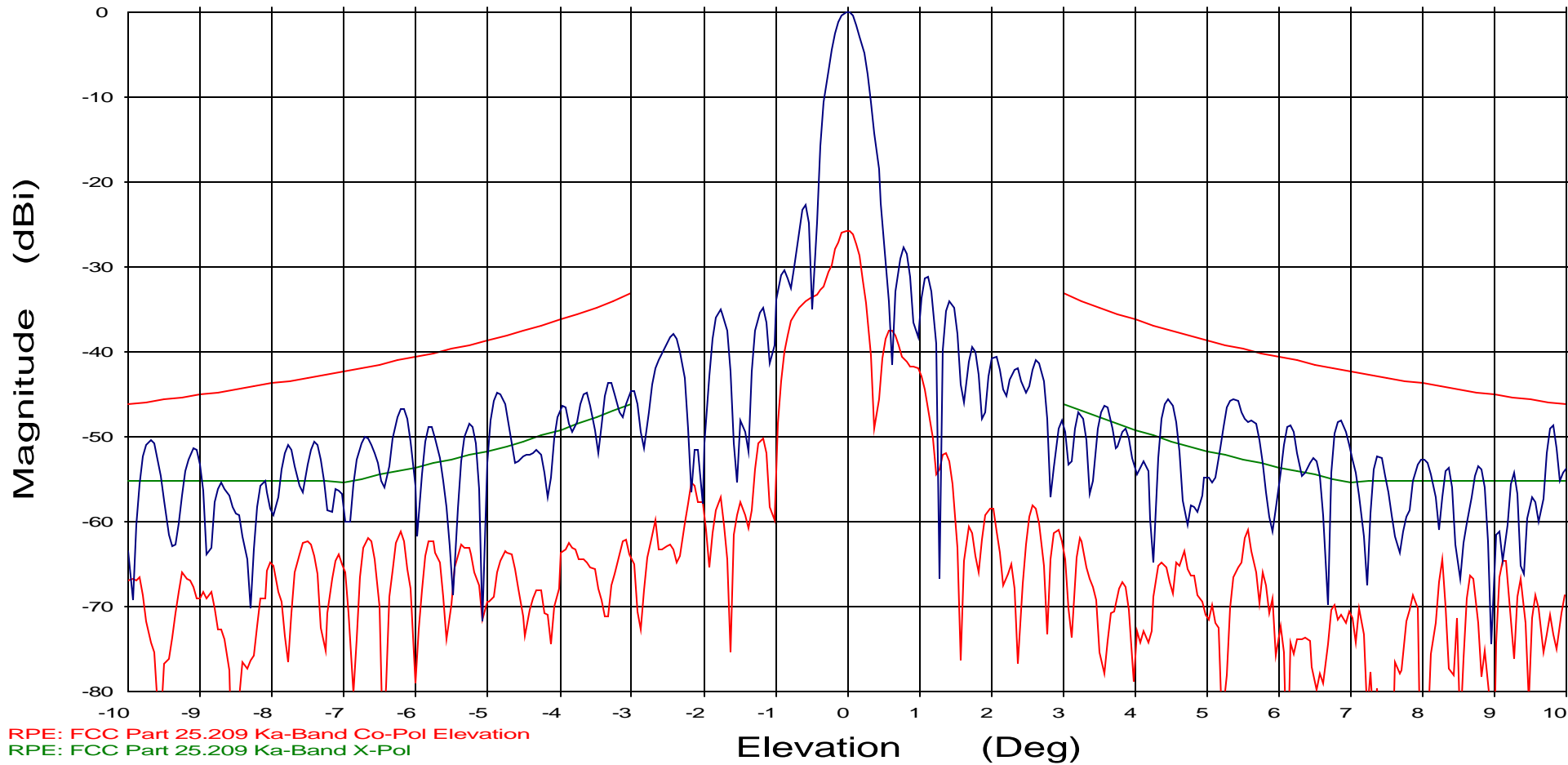
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

2242 25.dat-ant_under_test
2242 27.dat-ant_under_test

Cal. file

2242 25.dat
2242 27.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

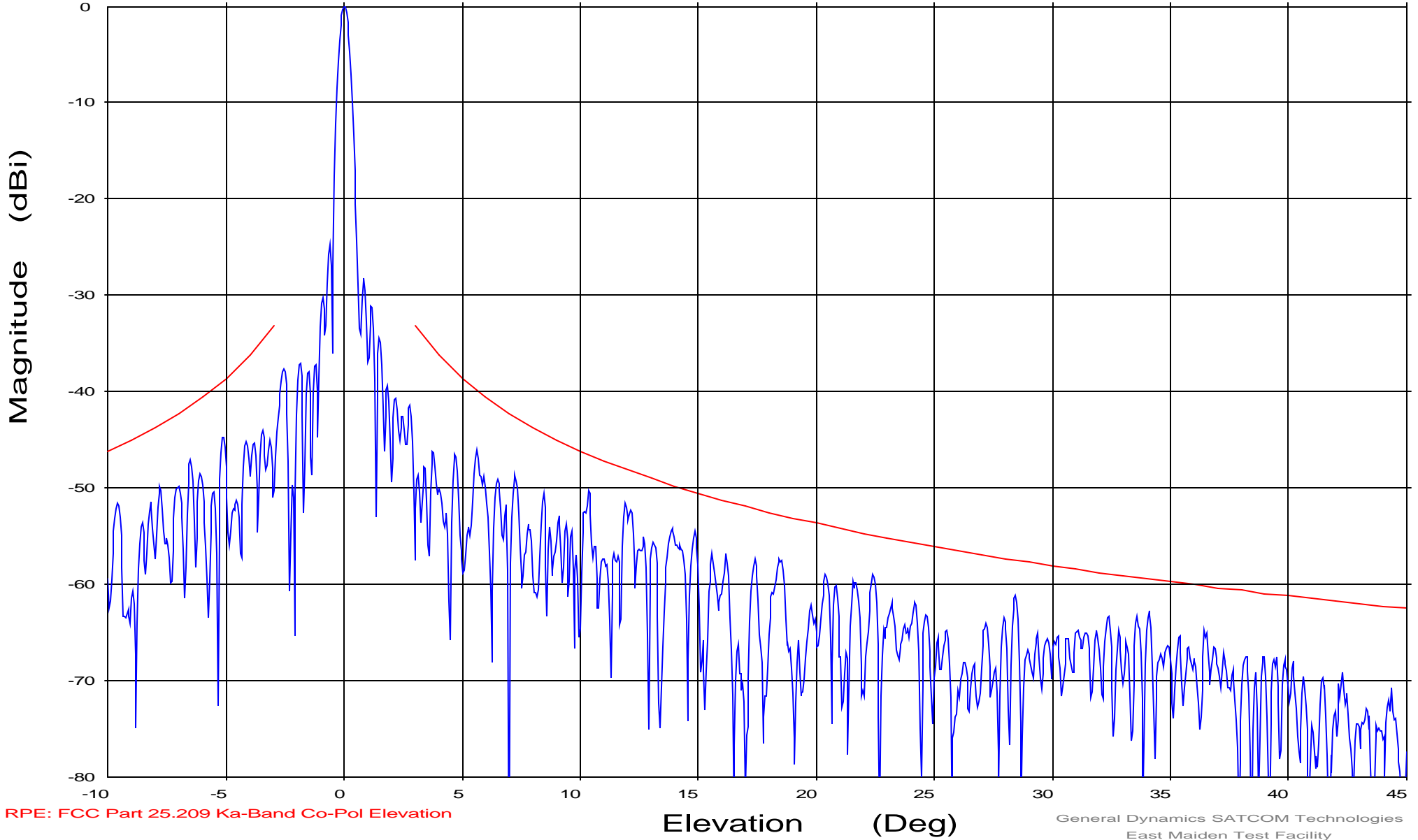
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

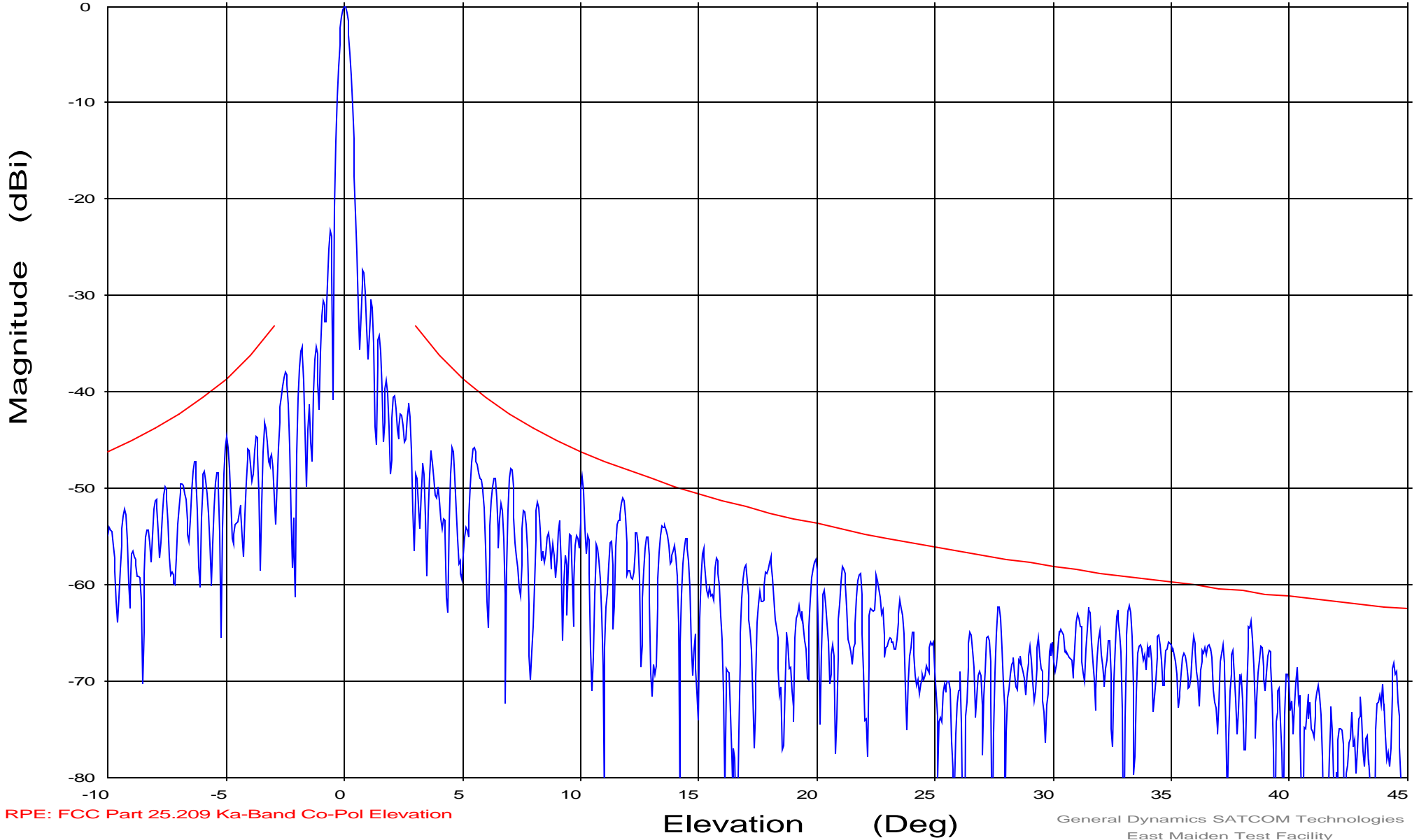
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

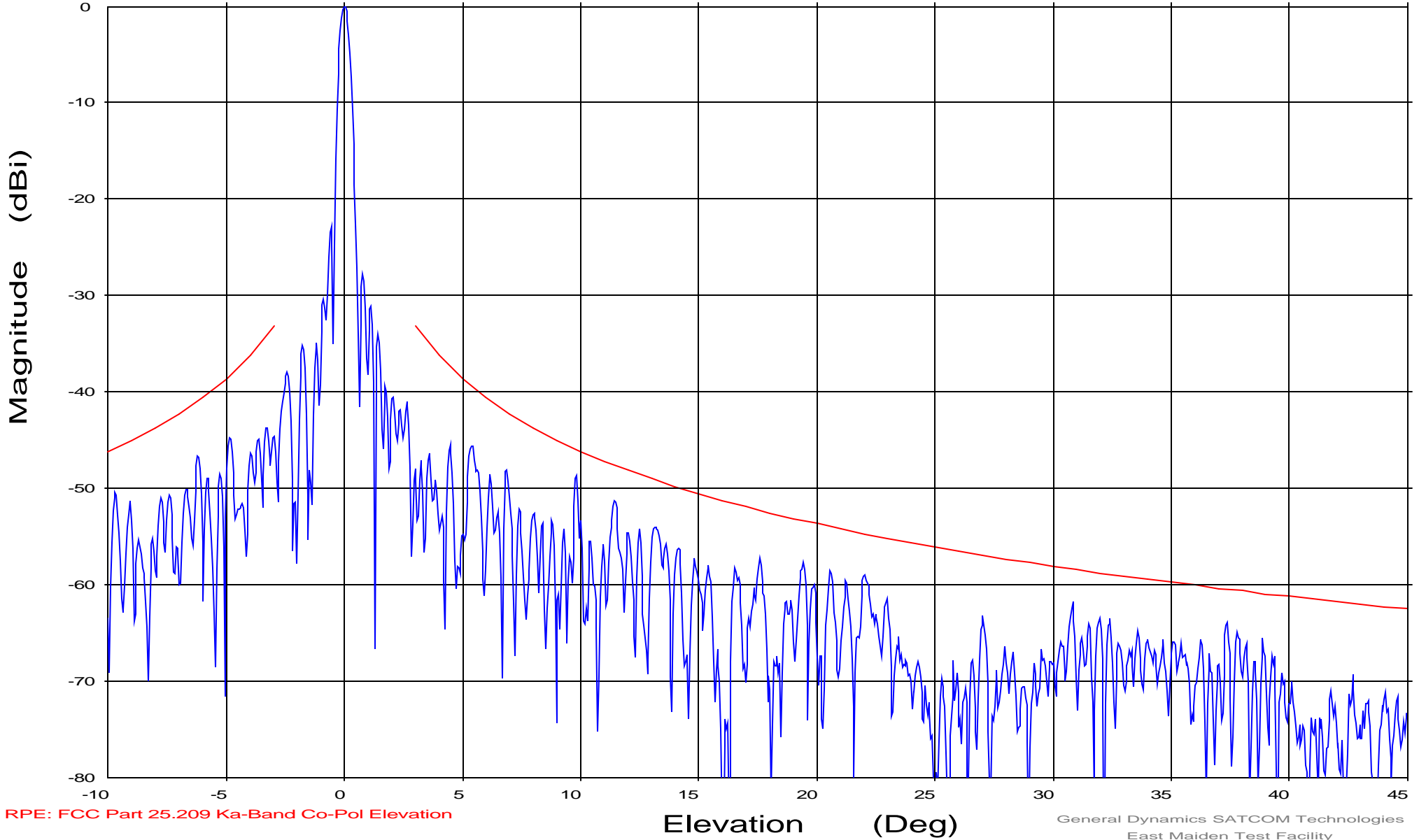
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

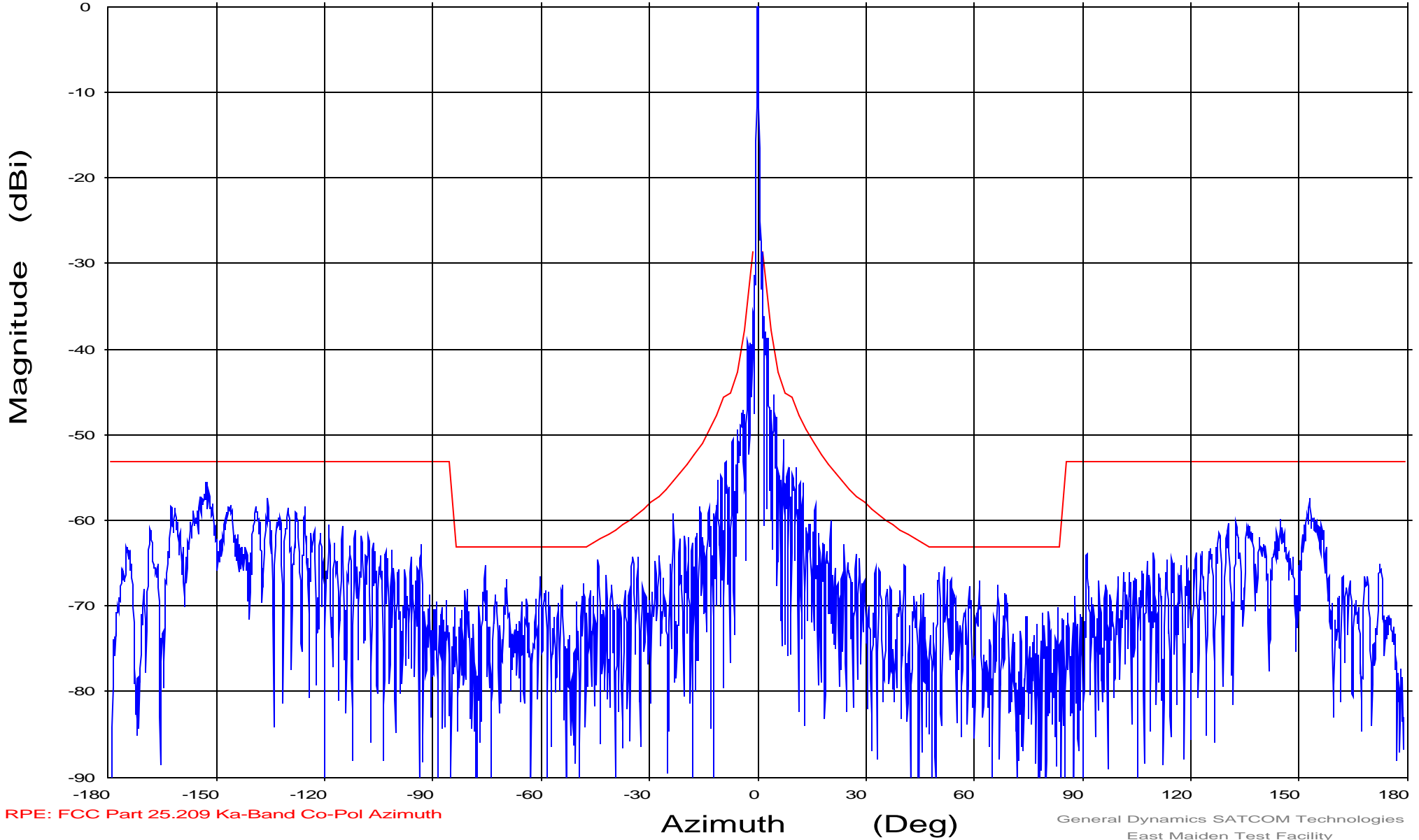
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

Azimuth (Deg)

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

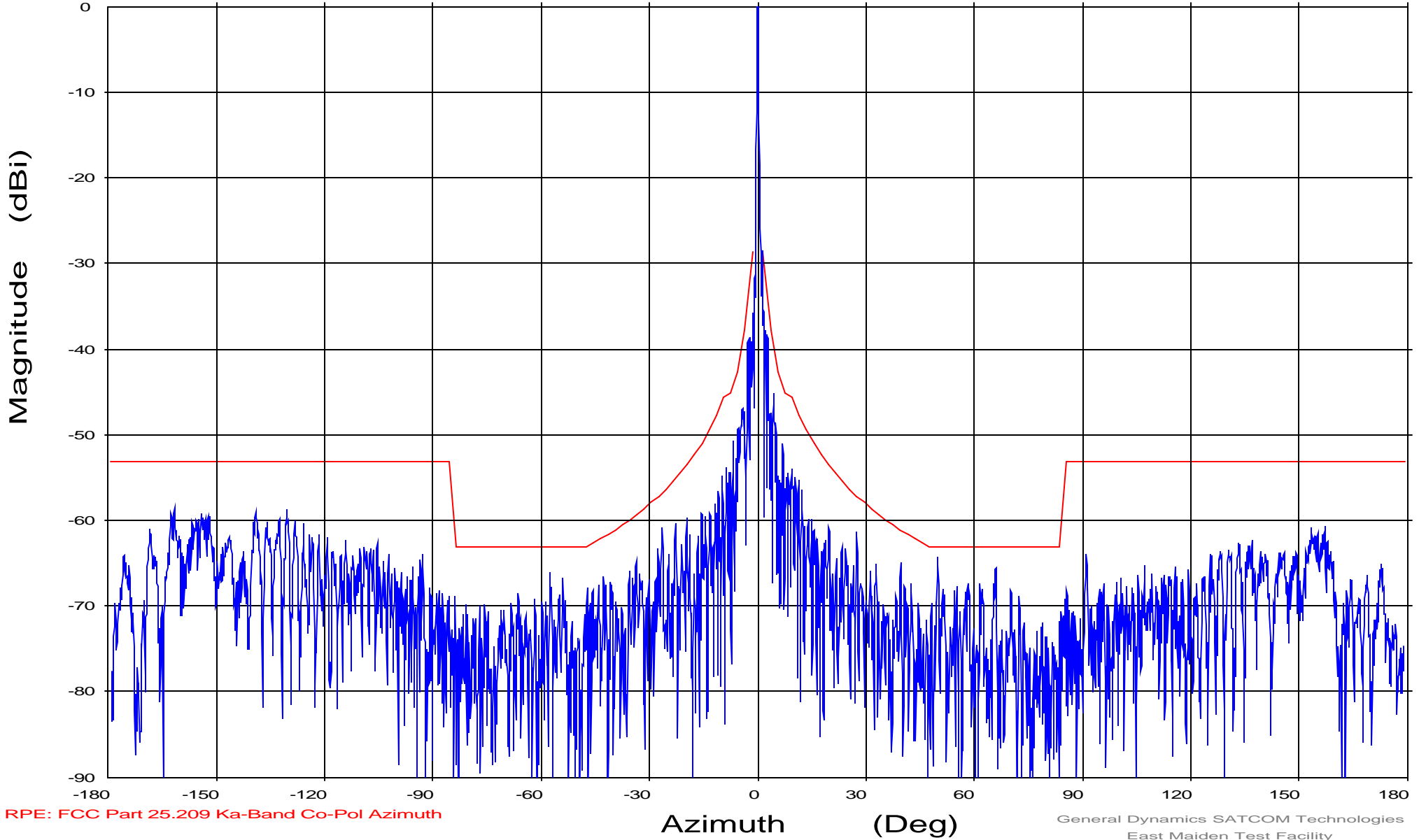
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

Azimuth (Deg)

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

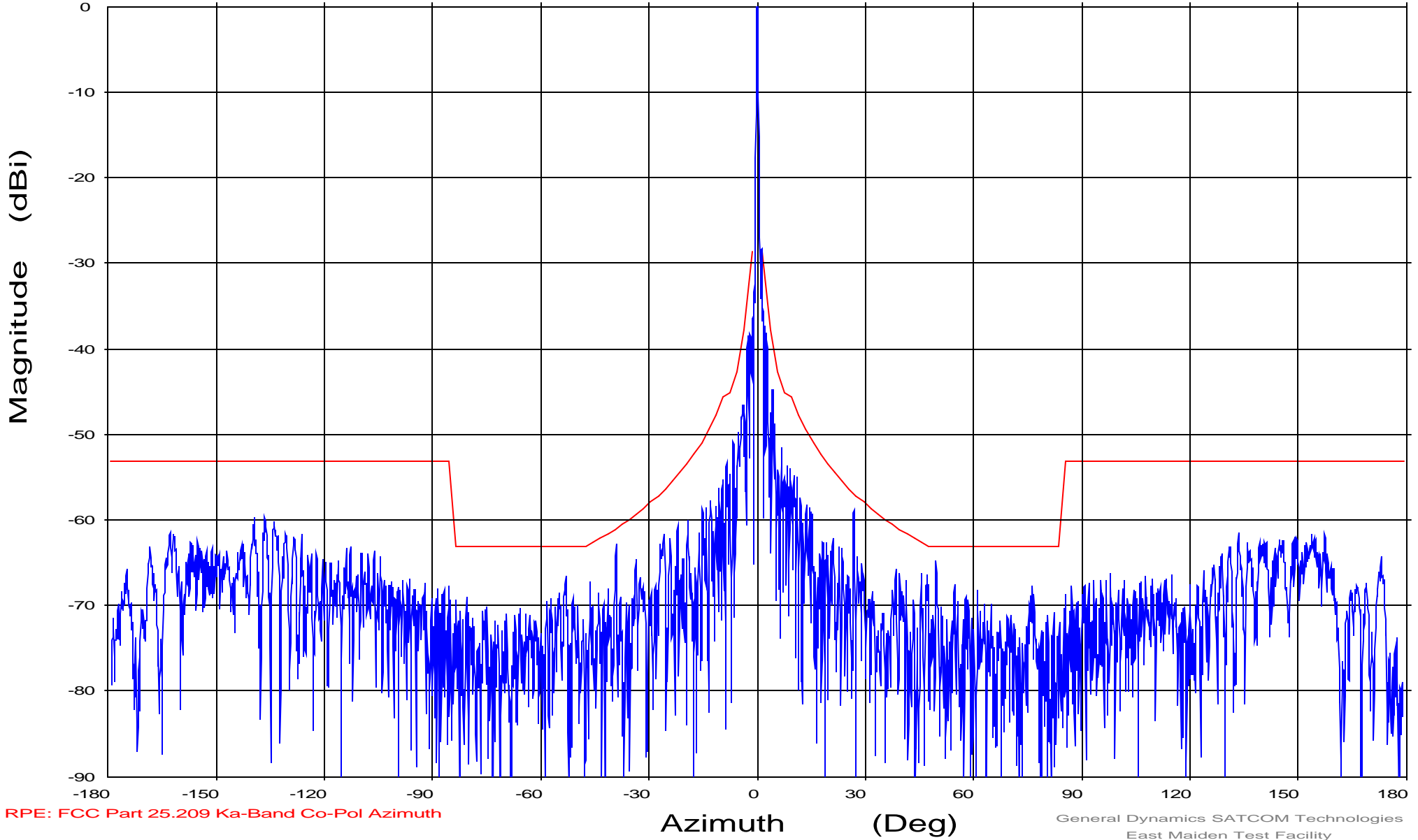
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

RHCP Radiation Patterns
Transmit Frequencies

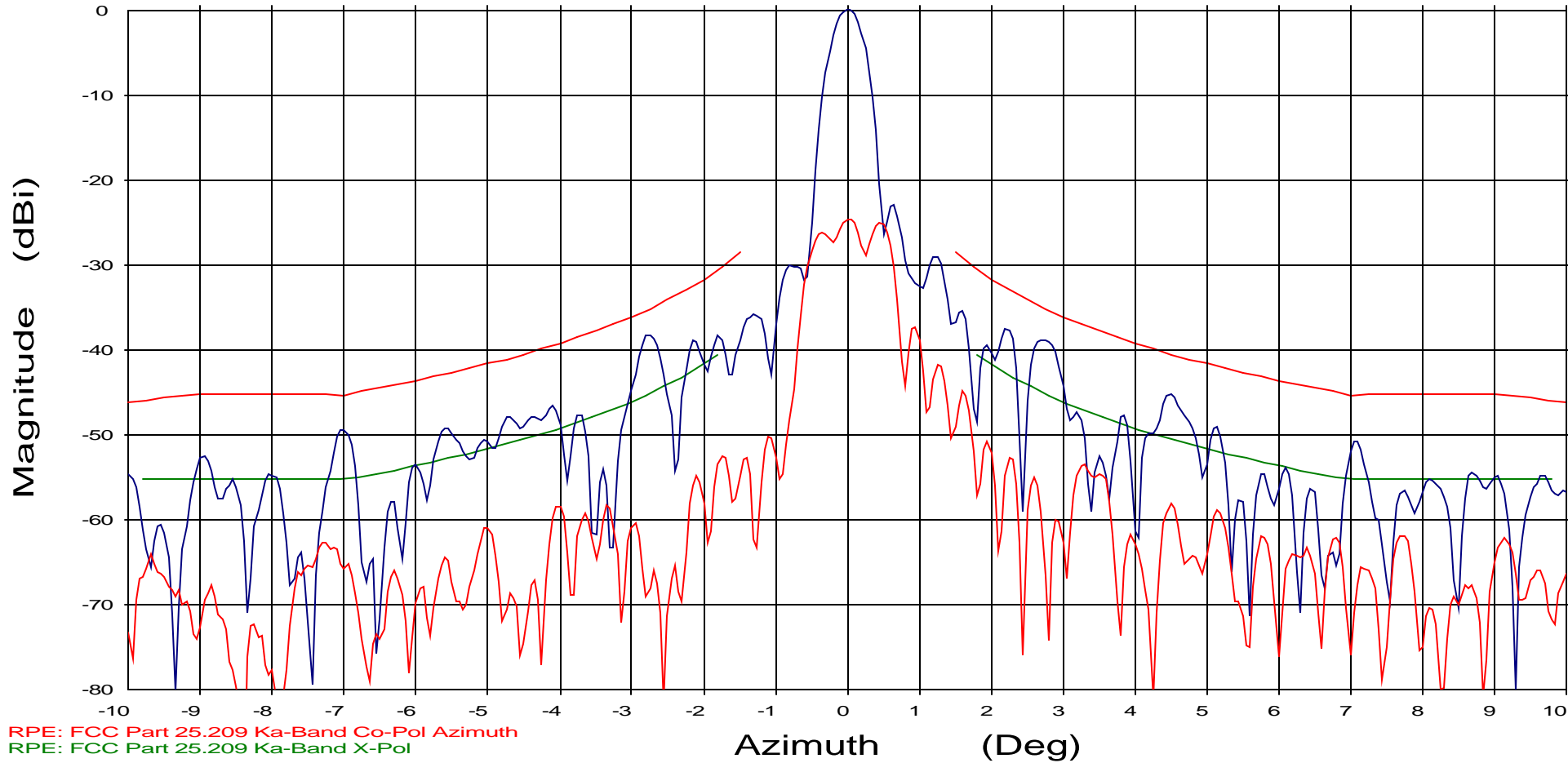
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 14.dat-ant_under_test
2242 16.dat-ant_under_test

Cal. file

2242 14.dat
2242 16.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

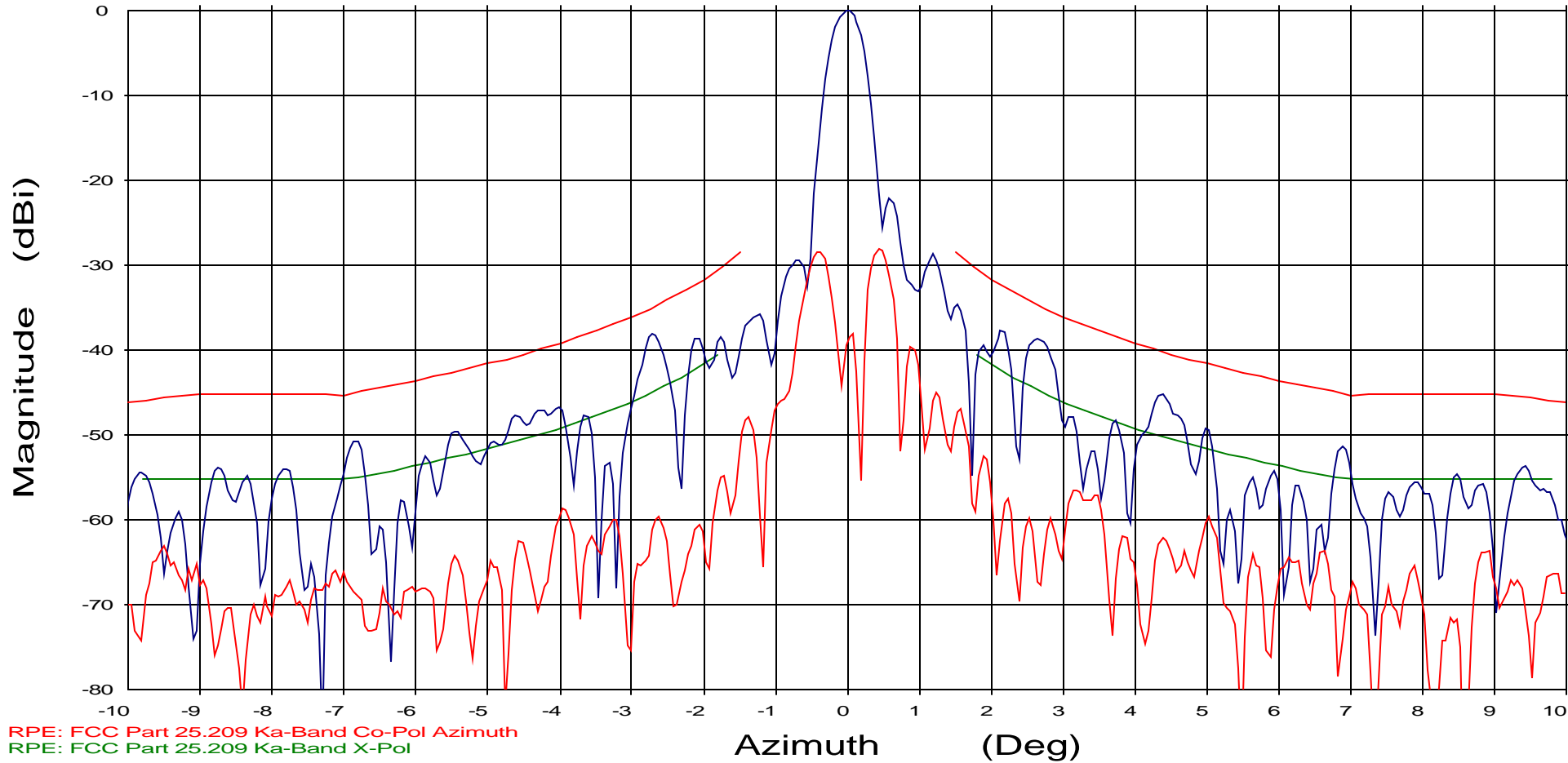
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 14.dat-ant_under_test
2242 16.dat-ant_under_test

Cal. file

2242 14.dat
2242 16.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

1.8M Ka-Band CP Rx/Tx Antenna System
Series 3180

Frequency : 30.000 GHz

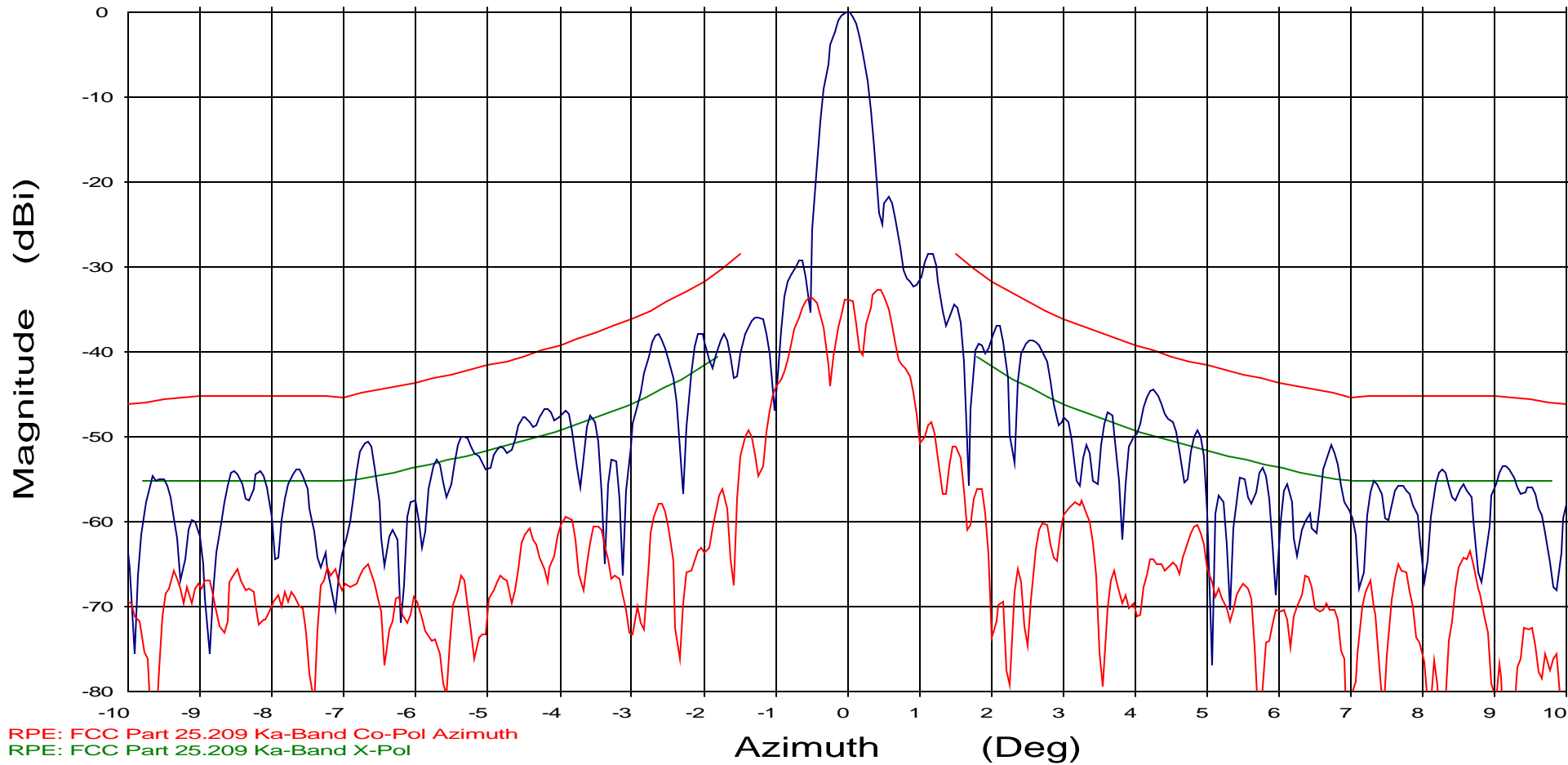
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 14.dat-ant_under_test
2242 16.dat-ant_under_test

Cal. file

2242 14.dat
2242 16.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

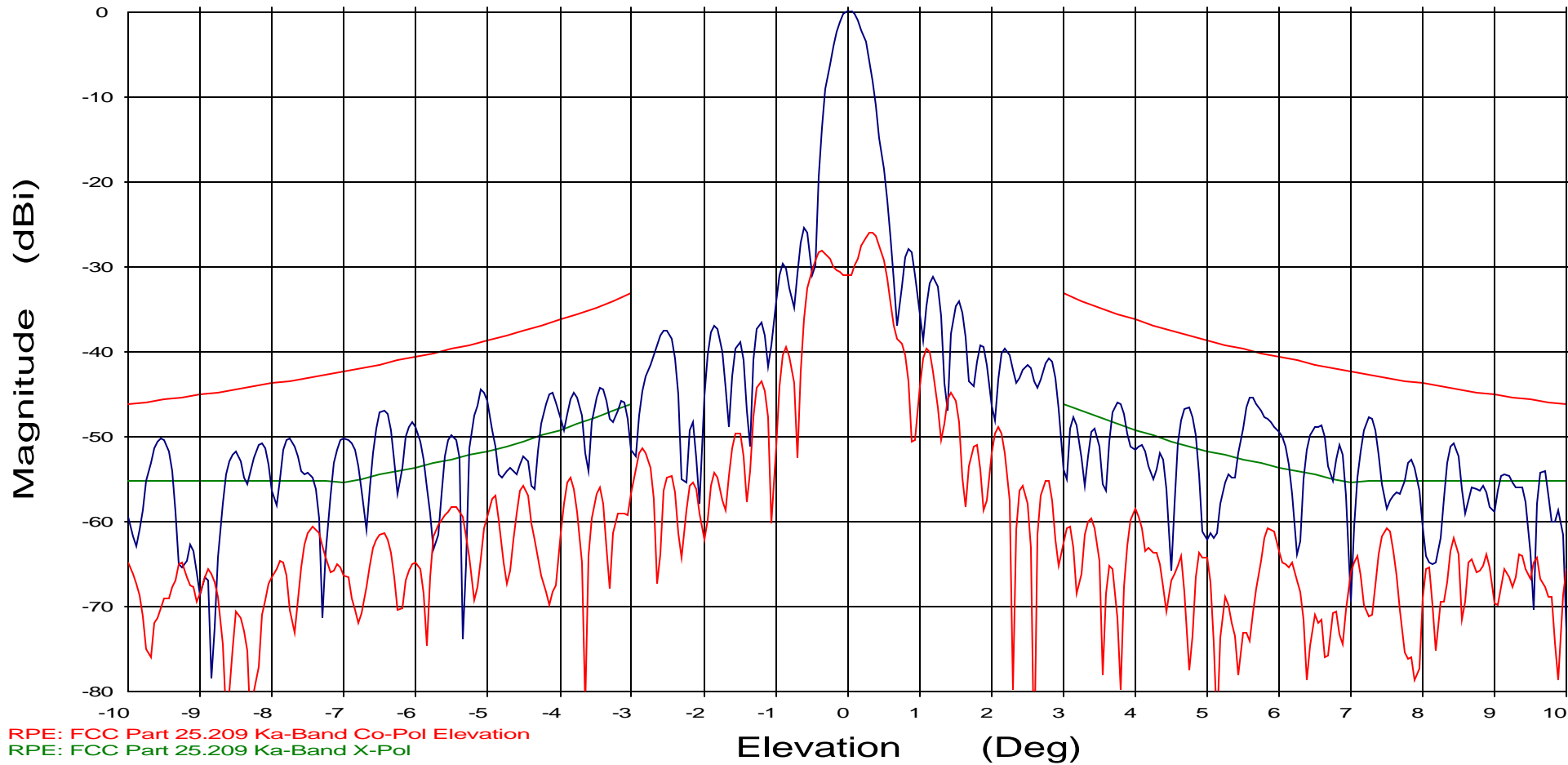
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 15.dat-ant_under_test — blue line
2242 19.dat-ant_under_test — red line

Cal. file

2242 15.dat
2242 19.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

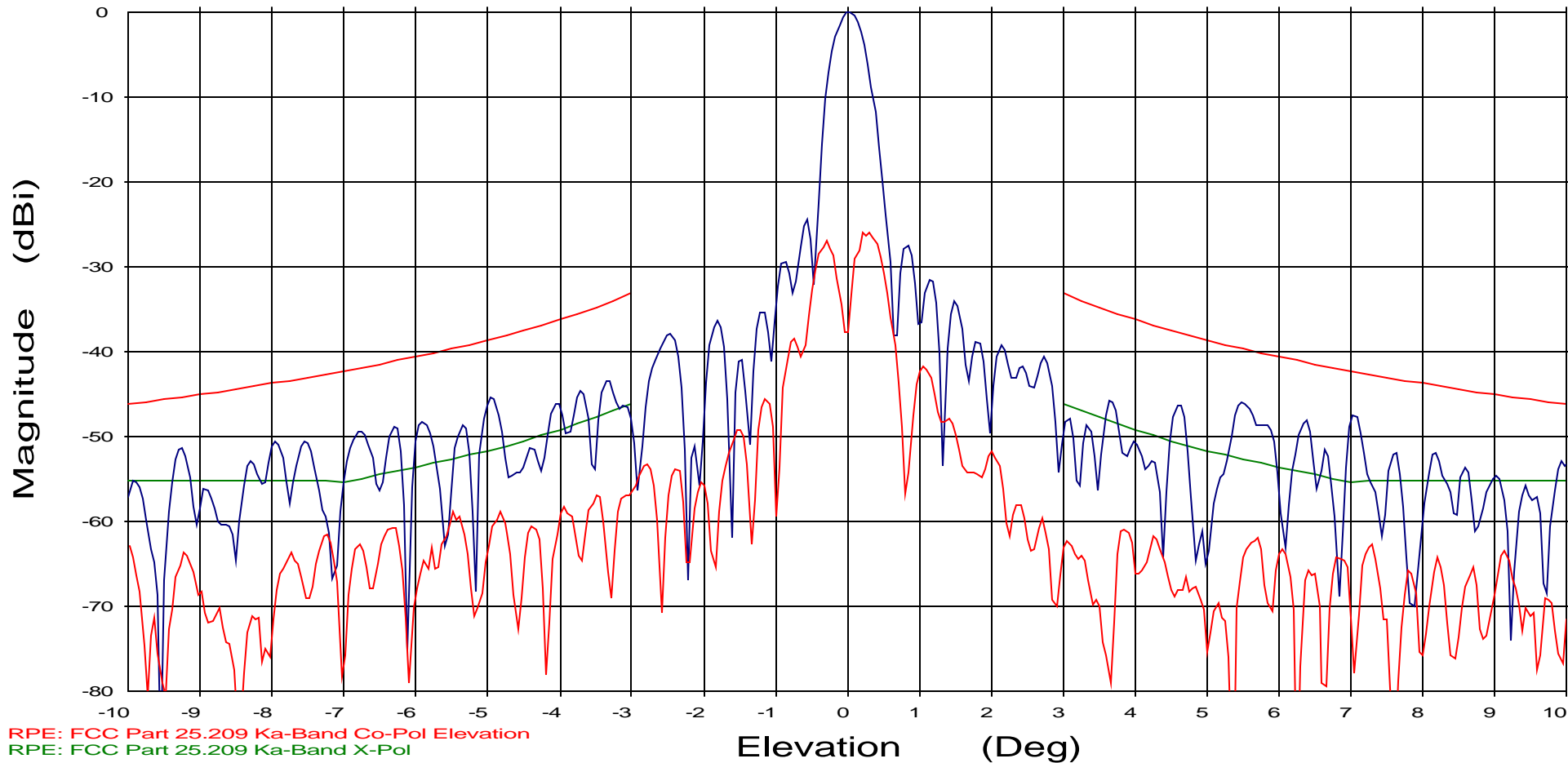
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 15.dat-ant_under_test — blue line
2242 19.dat-ant_under_test — red line

Cal. file

2242 15.dat
2242 19.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

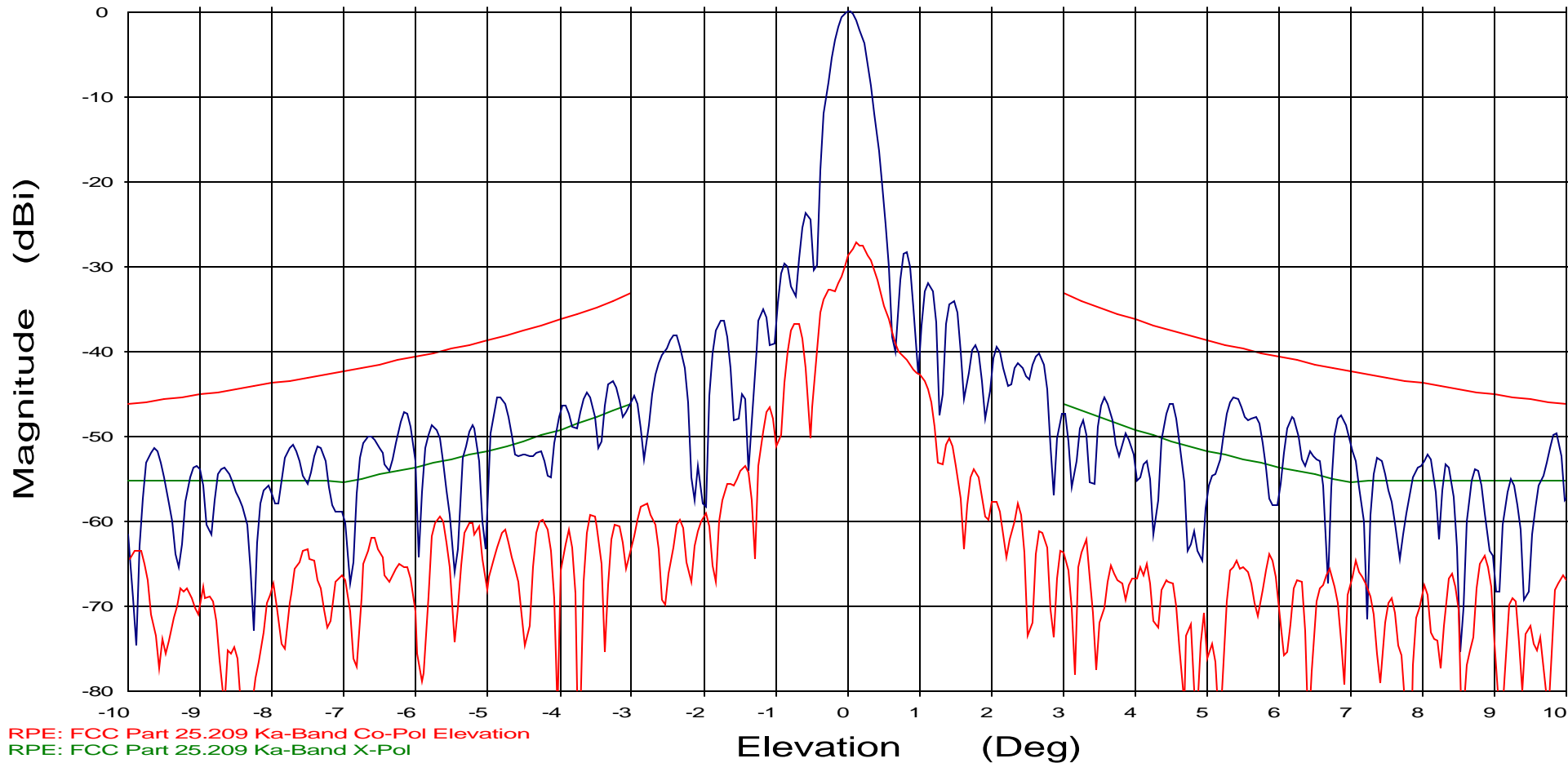
Operator: Dwight B. Lutz

Ser. no.:

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

2242 15.dat-ant_under_test

2242 19.dat-ant_under_test

Cal. file

2242 15.dat

2242 19.dat

table

Reference

Reference

channel

AUT

AUT

units

dBi

dBi

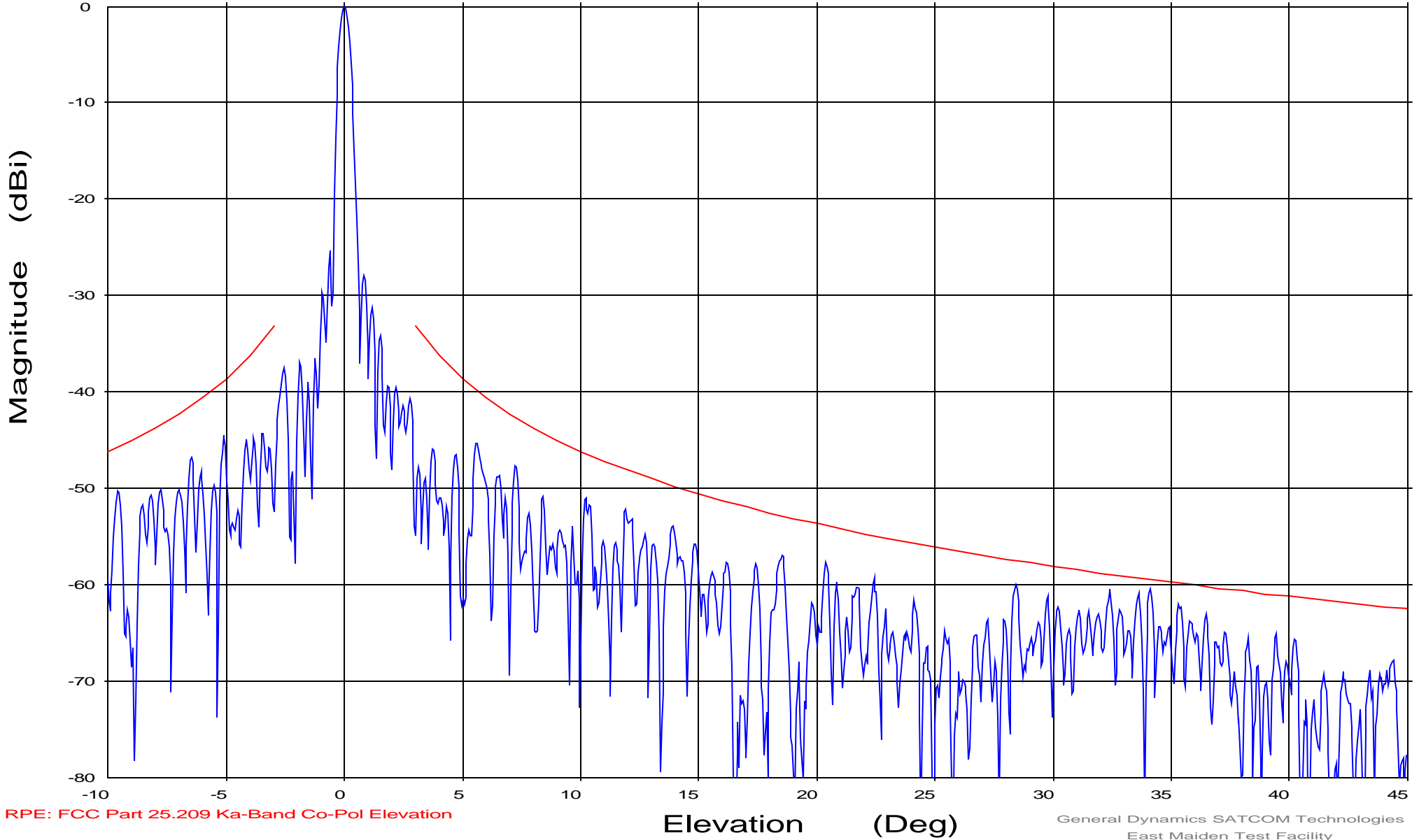
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

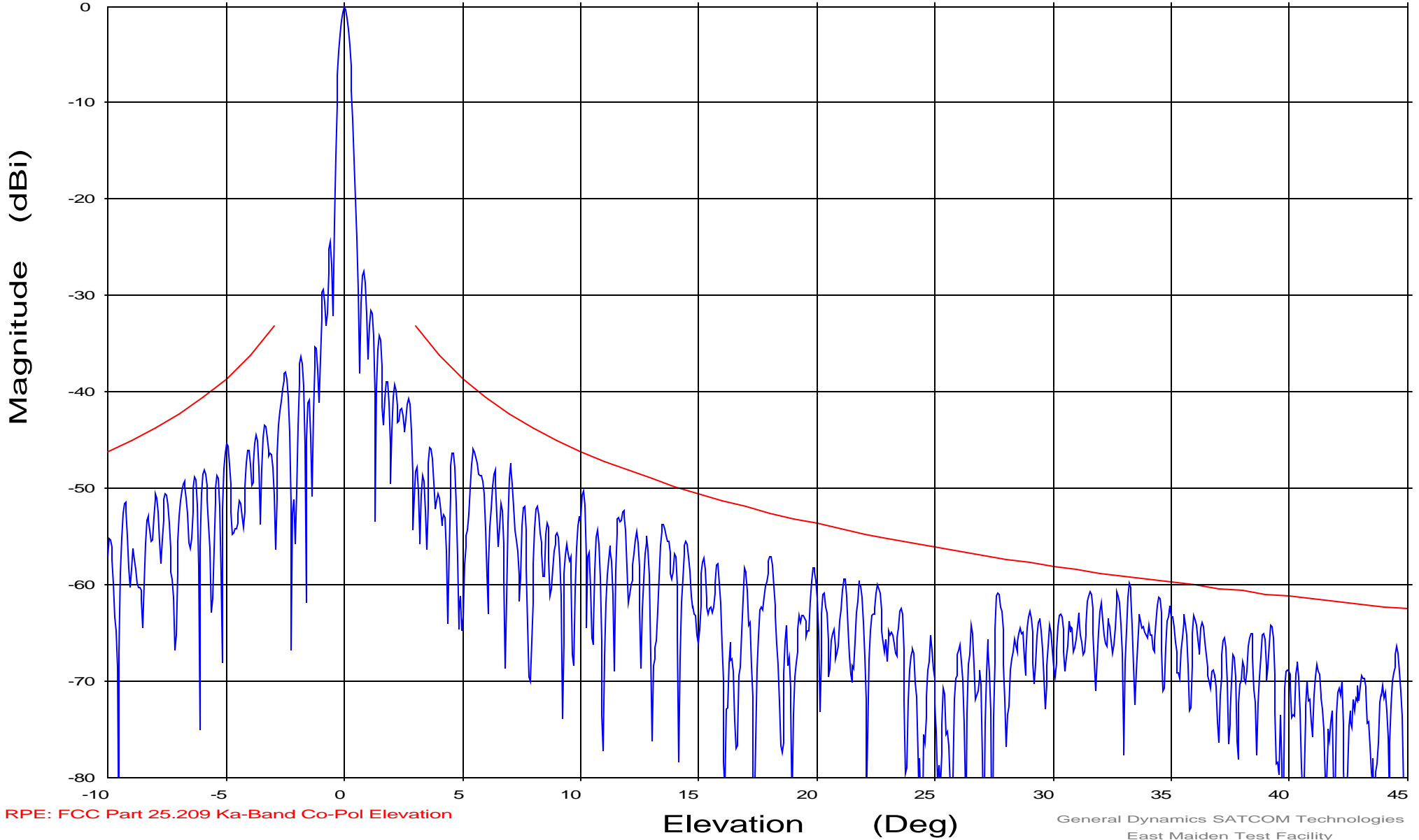
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

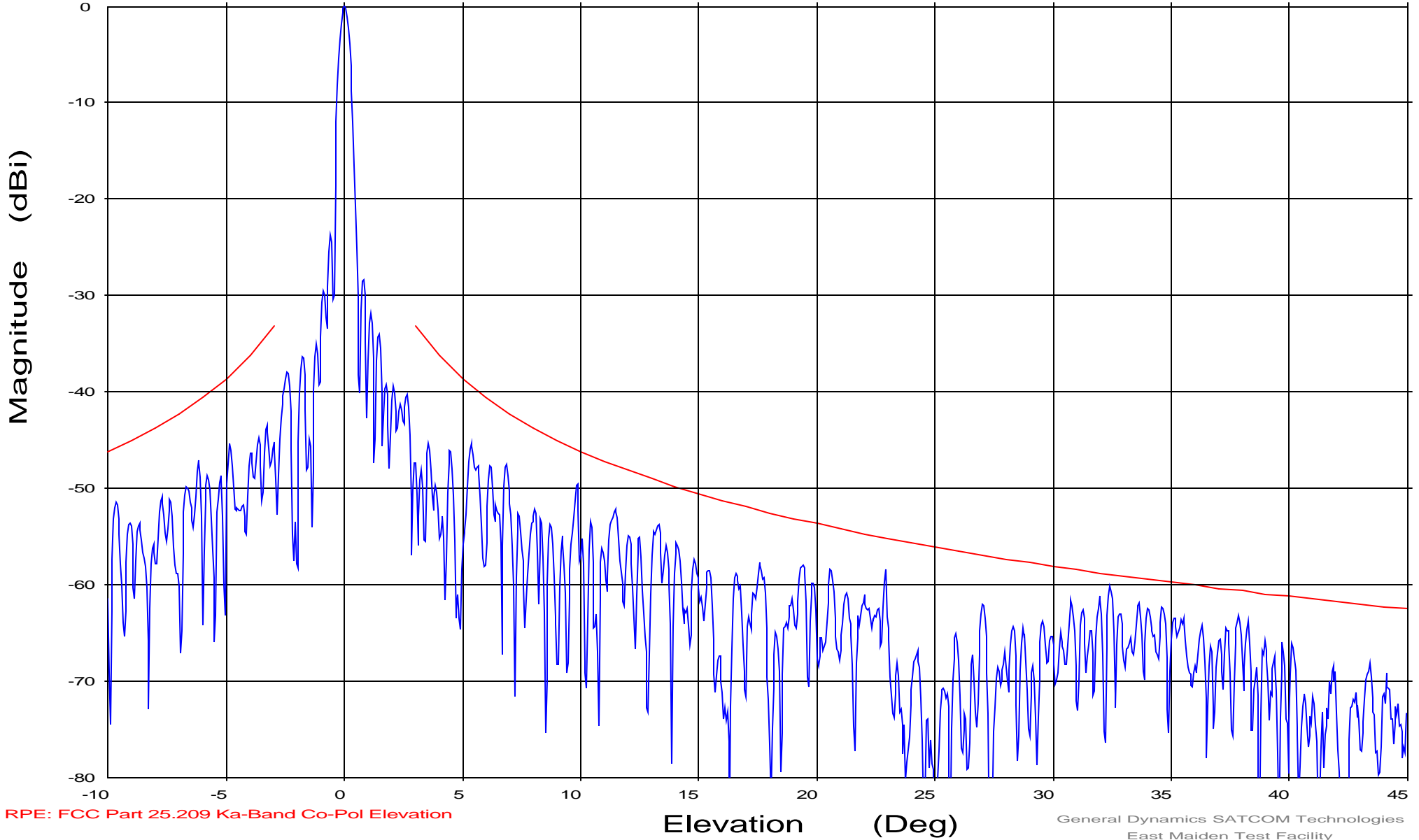
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

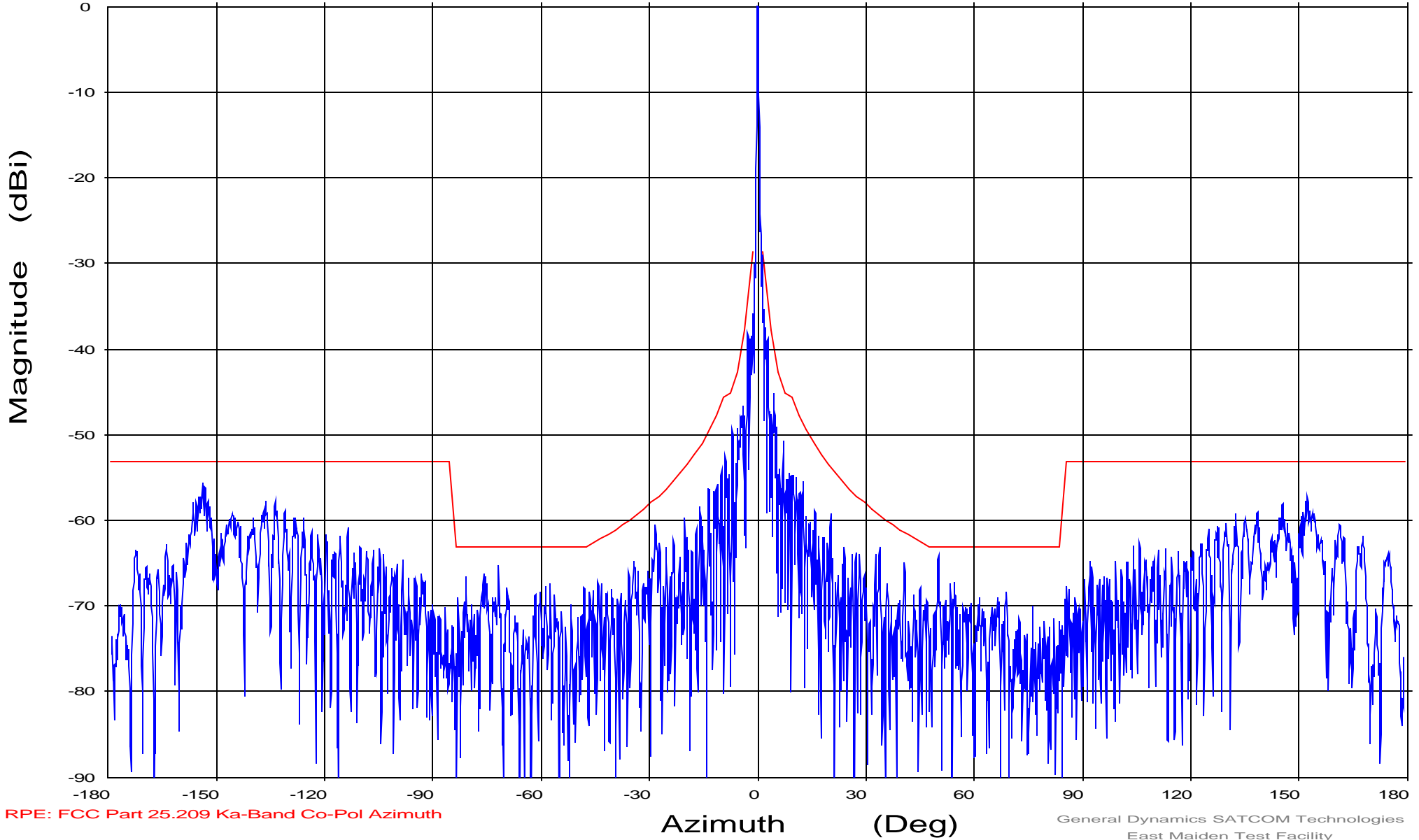
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

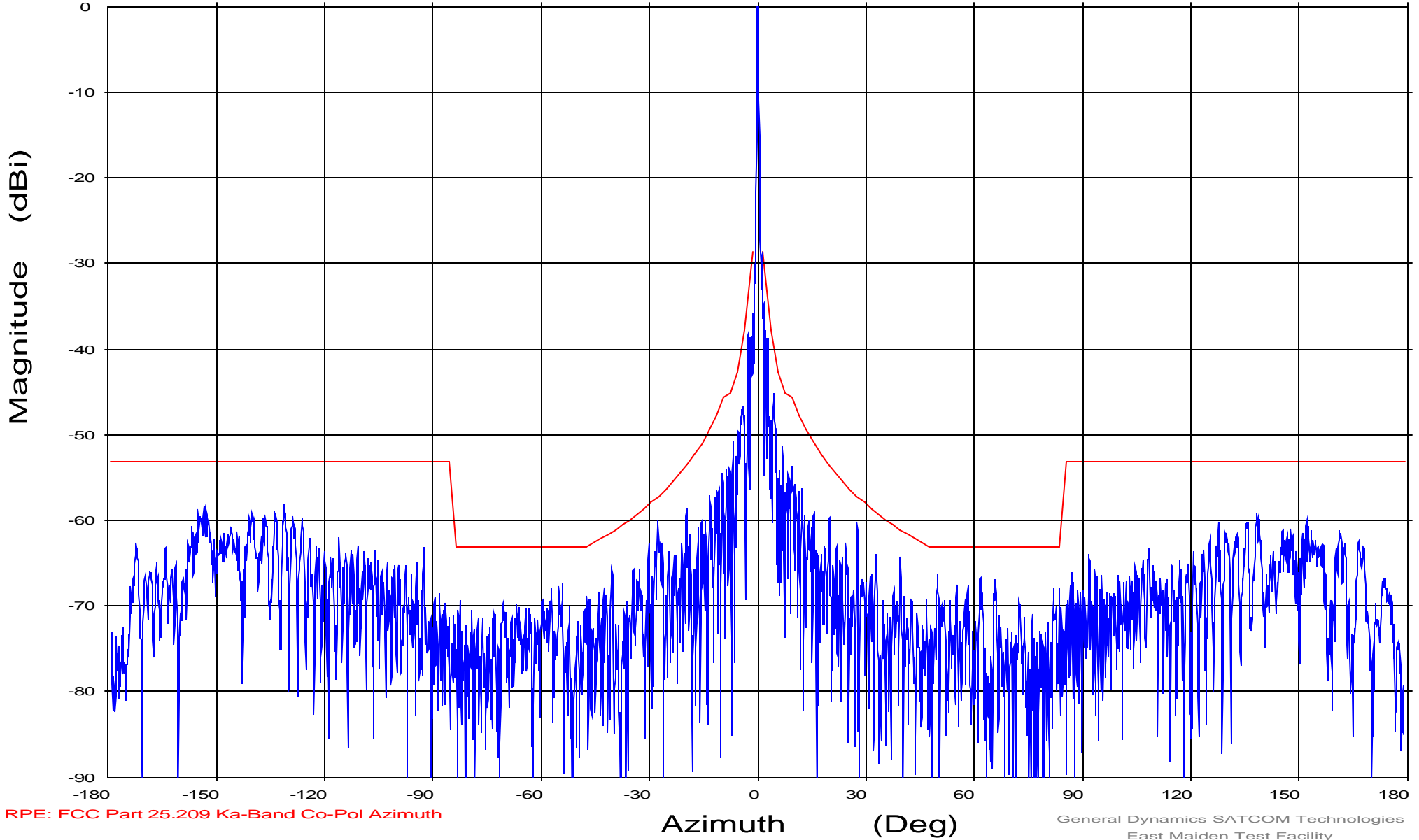
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

Azimuth (Deg)

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

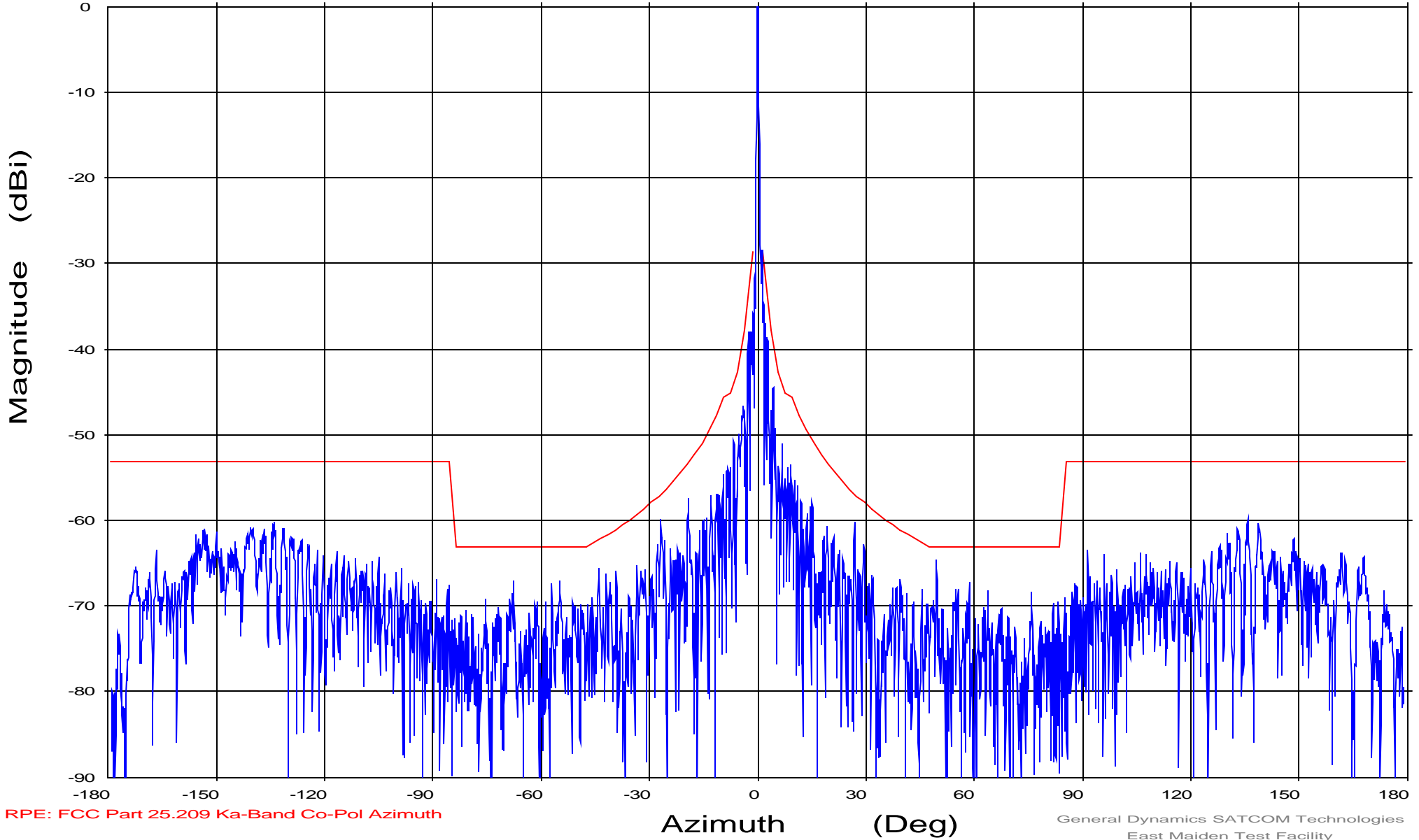
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

LHCP Radiation Patterns
Receive Frequencies

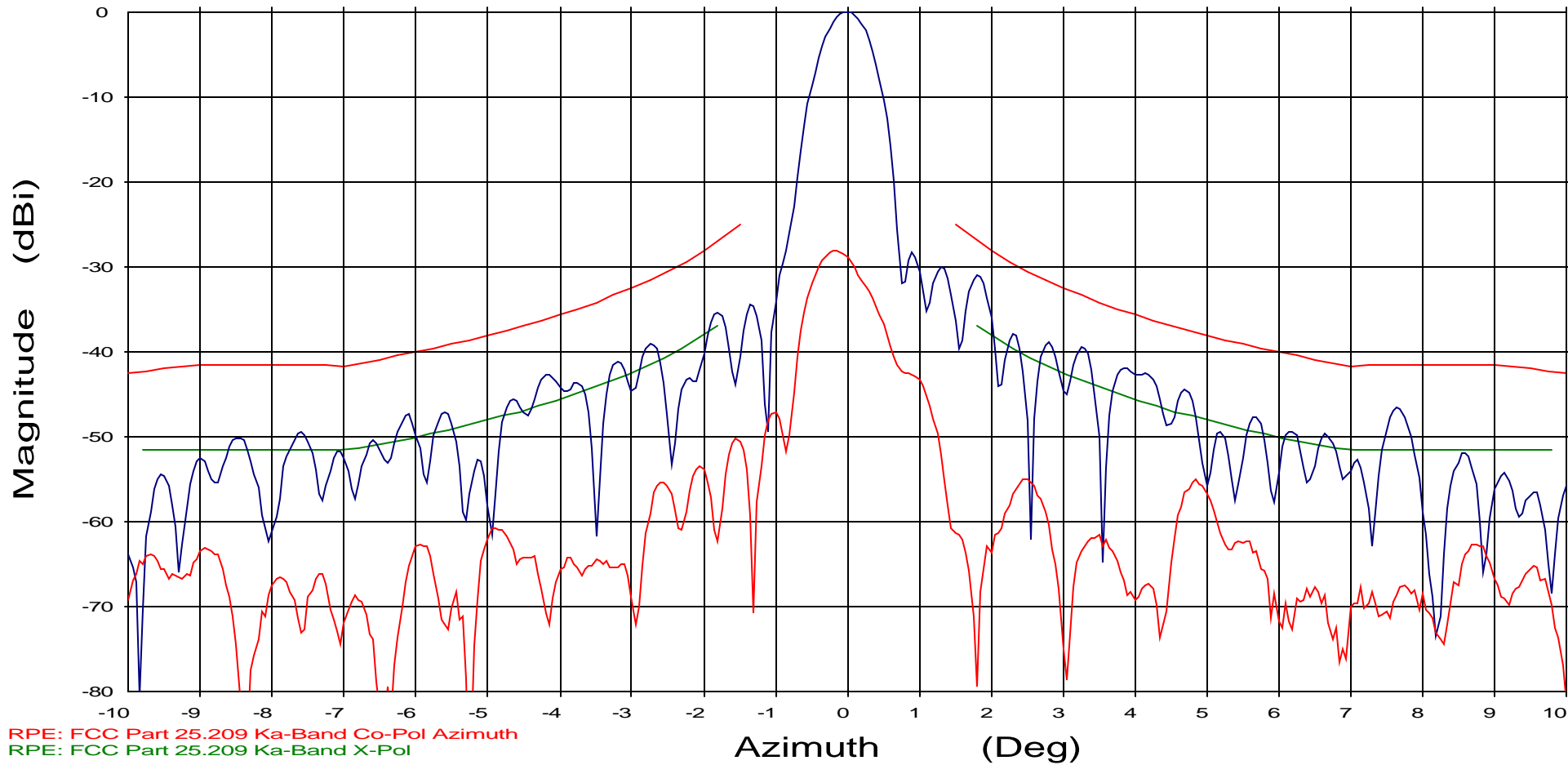
Operator: Dwight B. Lutz

Ser. no.:

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

2242 08.dat-ant_under_test
2242 10.dat-ant_under_test

Cal. file

2242 08.dat
2242 10.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

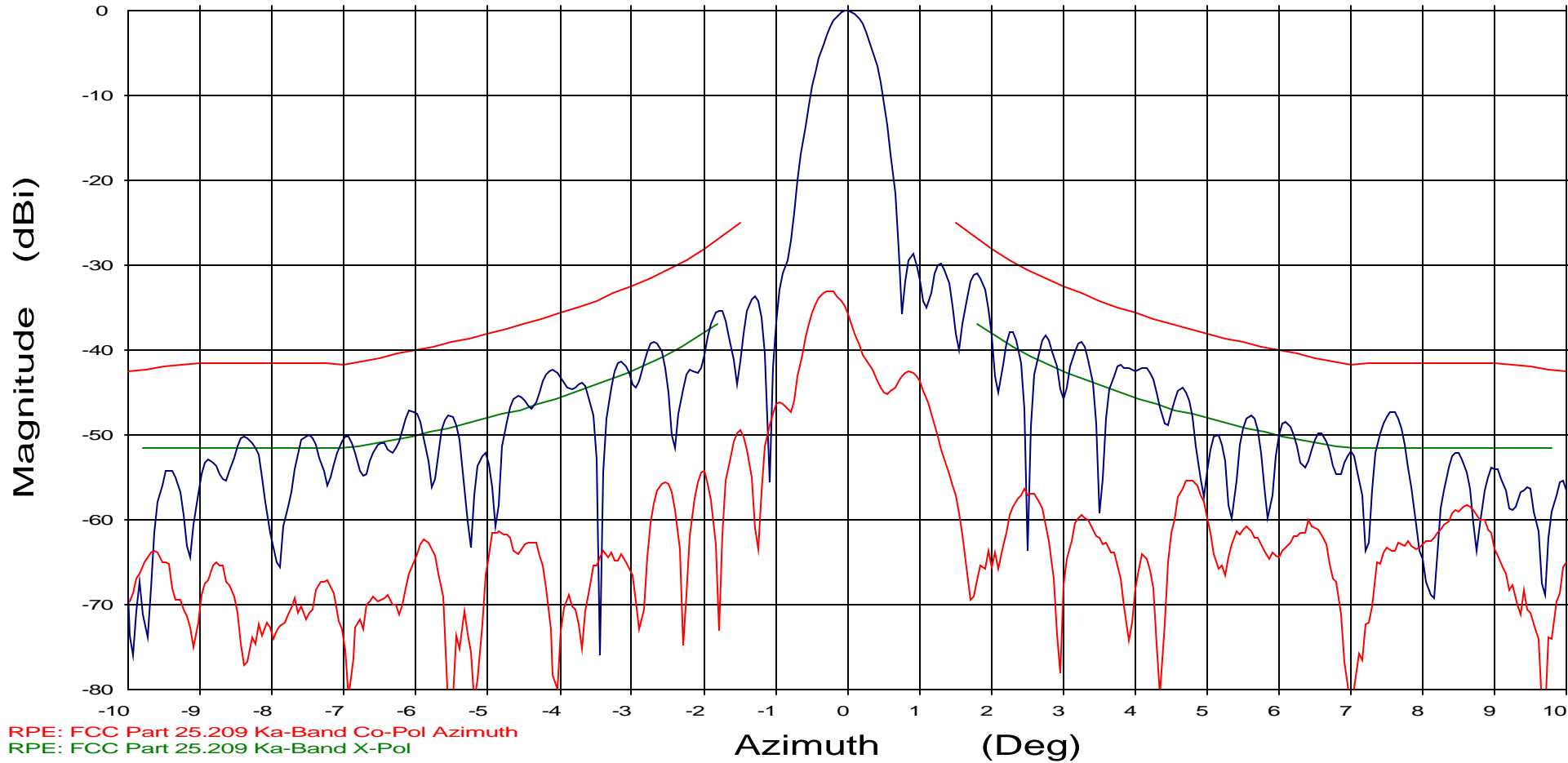
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

2242 08.dat-ant_under_test
2242 10.dat-ant_under_test

Cal. file

2242 08.dat
2242 10.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

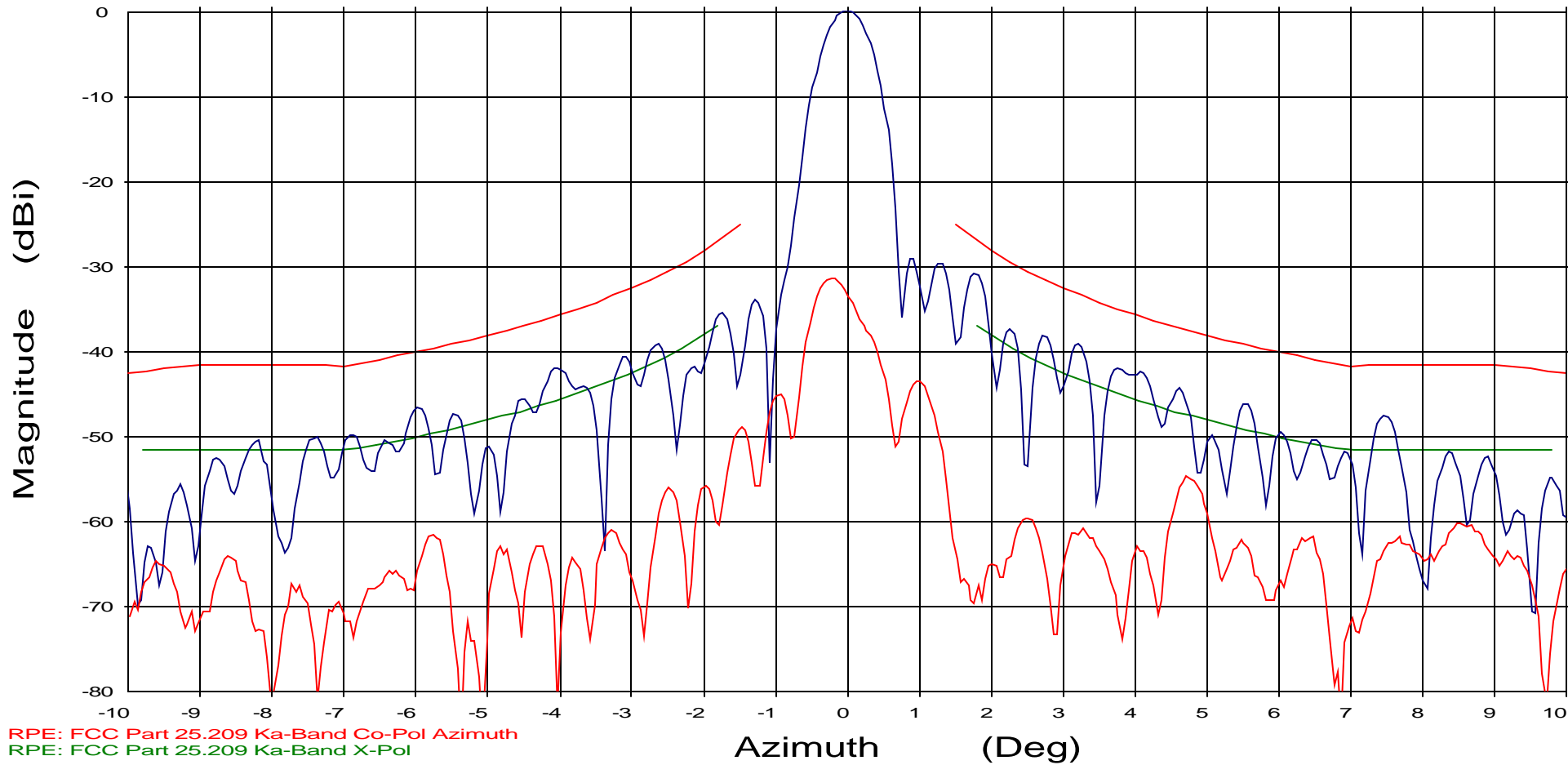
Operator: Dwight B. Lutz

Ser. no.:

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

2242 08.dat-ant_under_test — blue line
2242 10.dat-ant_under_test — red line

Cal. file

2242 08.dat
2242 10.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

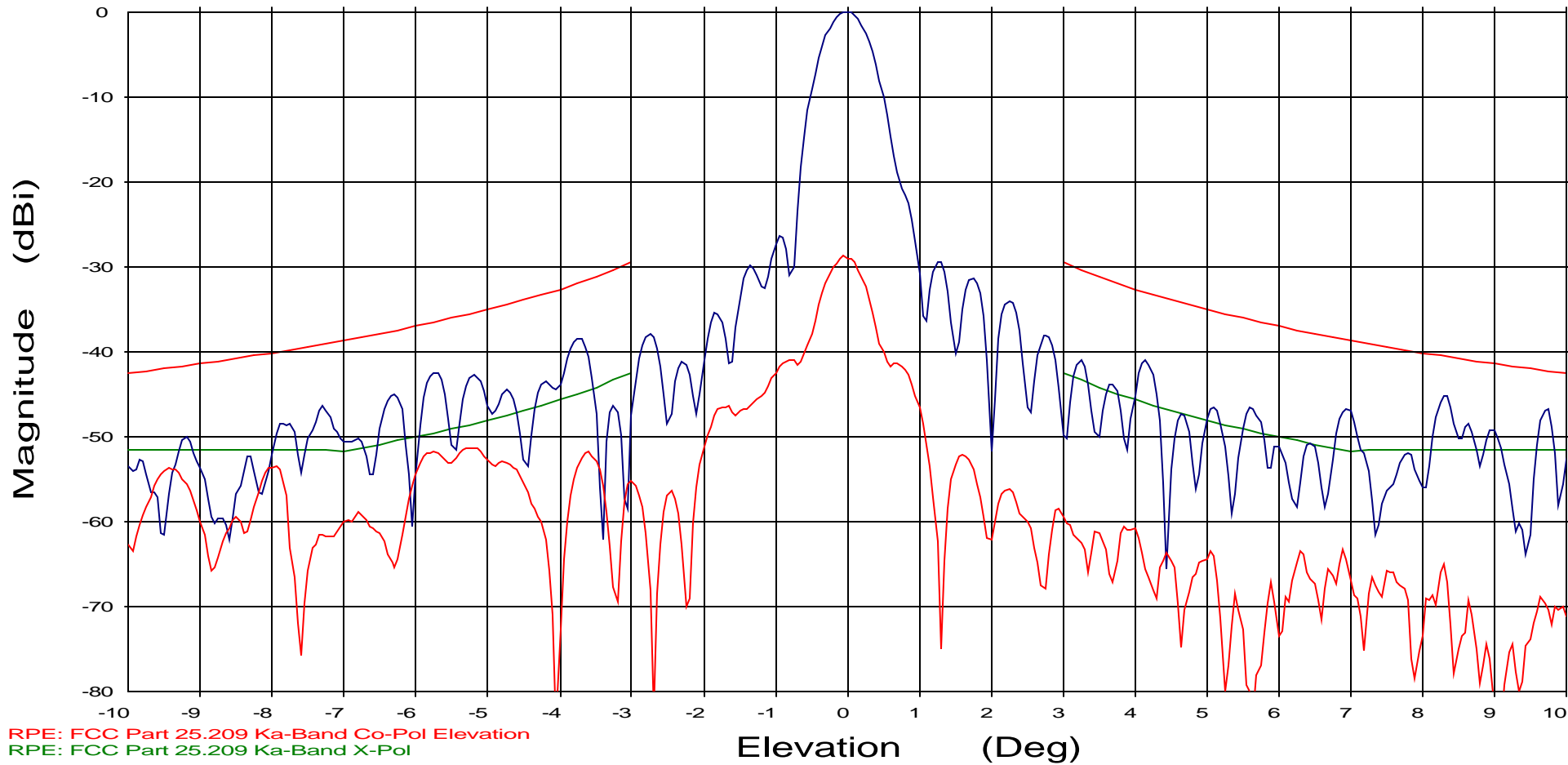
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



Overlays

2242 09.dat-ant_under_test
2242 11.dat-ant_under_test

Cal. file

2242 09.dat
2242 11.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

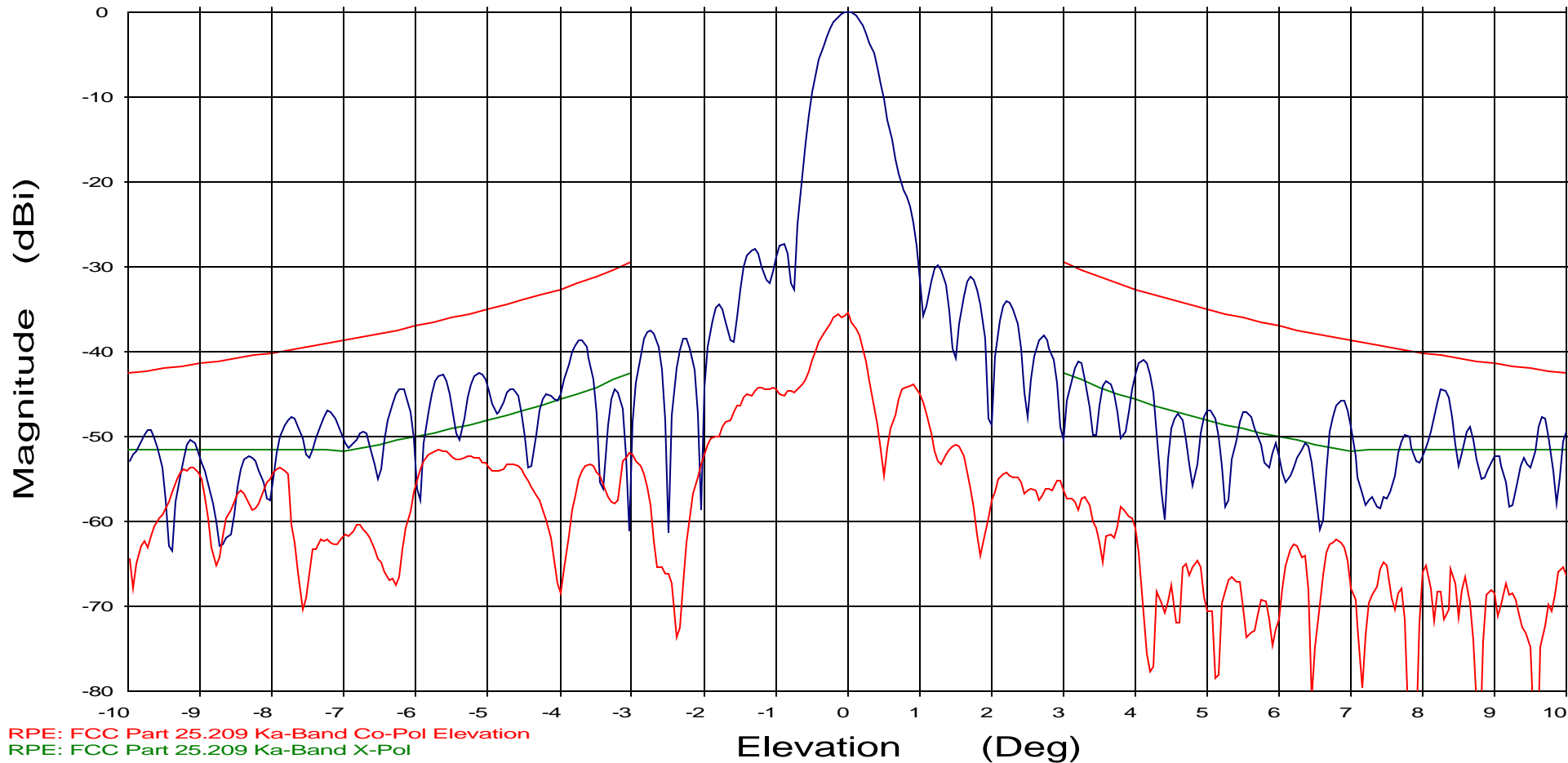
Operator: Dwight B. Lutz

Ser. no.:

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

2242 09.dat-ant_under_test
2242 11.dat-ant_under_test

Cal. file

2242 09.dat
2242 11.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

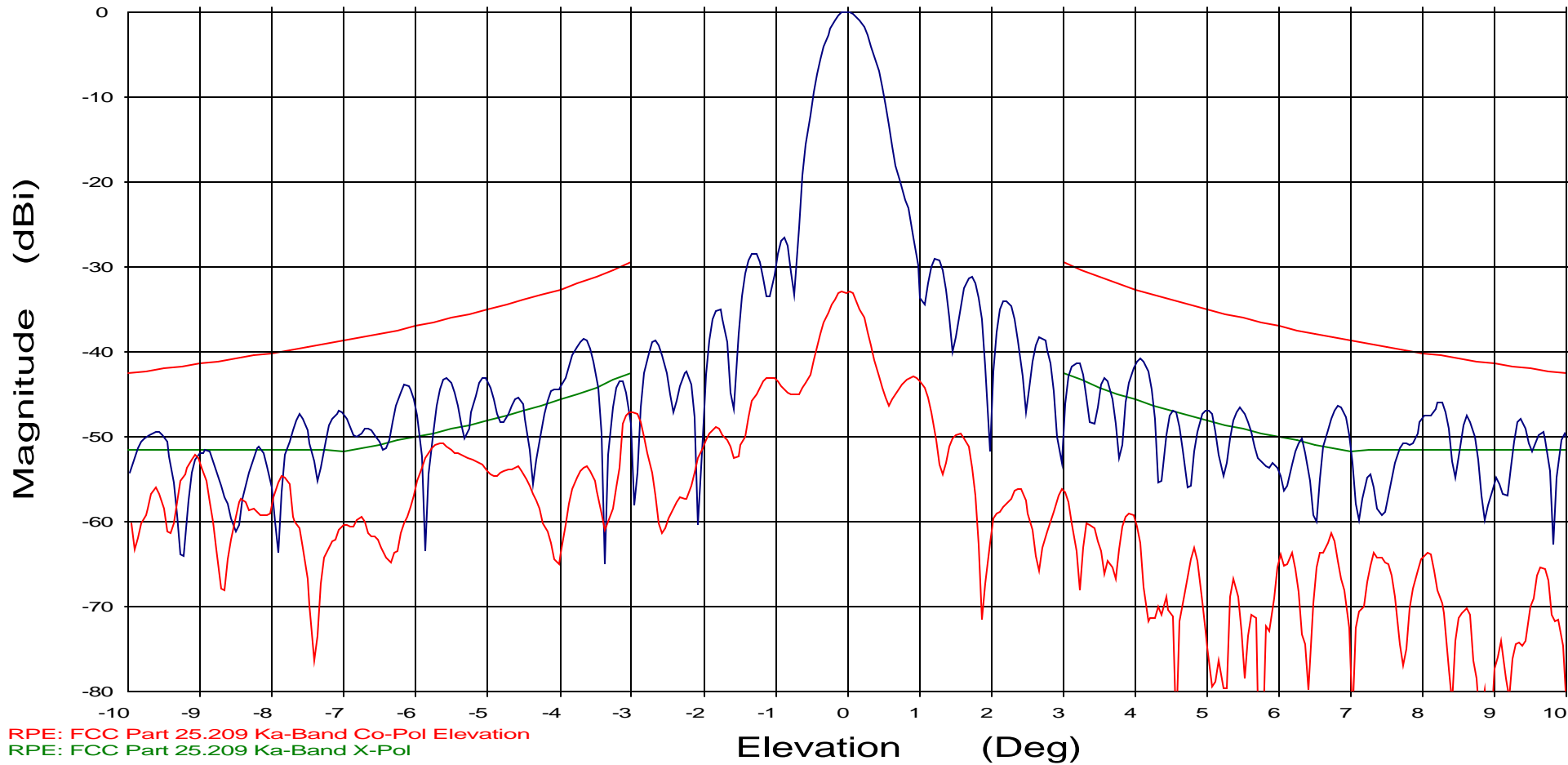
Operator: Dwight B. Lutz

Ser. no.:

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

2242 09.dat-ant_under_test — blue line
2242 11.dat-ant_under_test — red line

Cal. file

2242 09.dat
2242 11.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

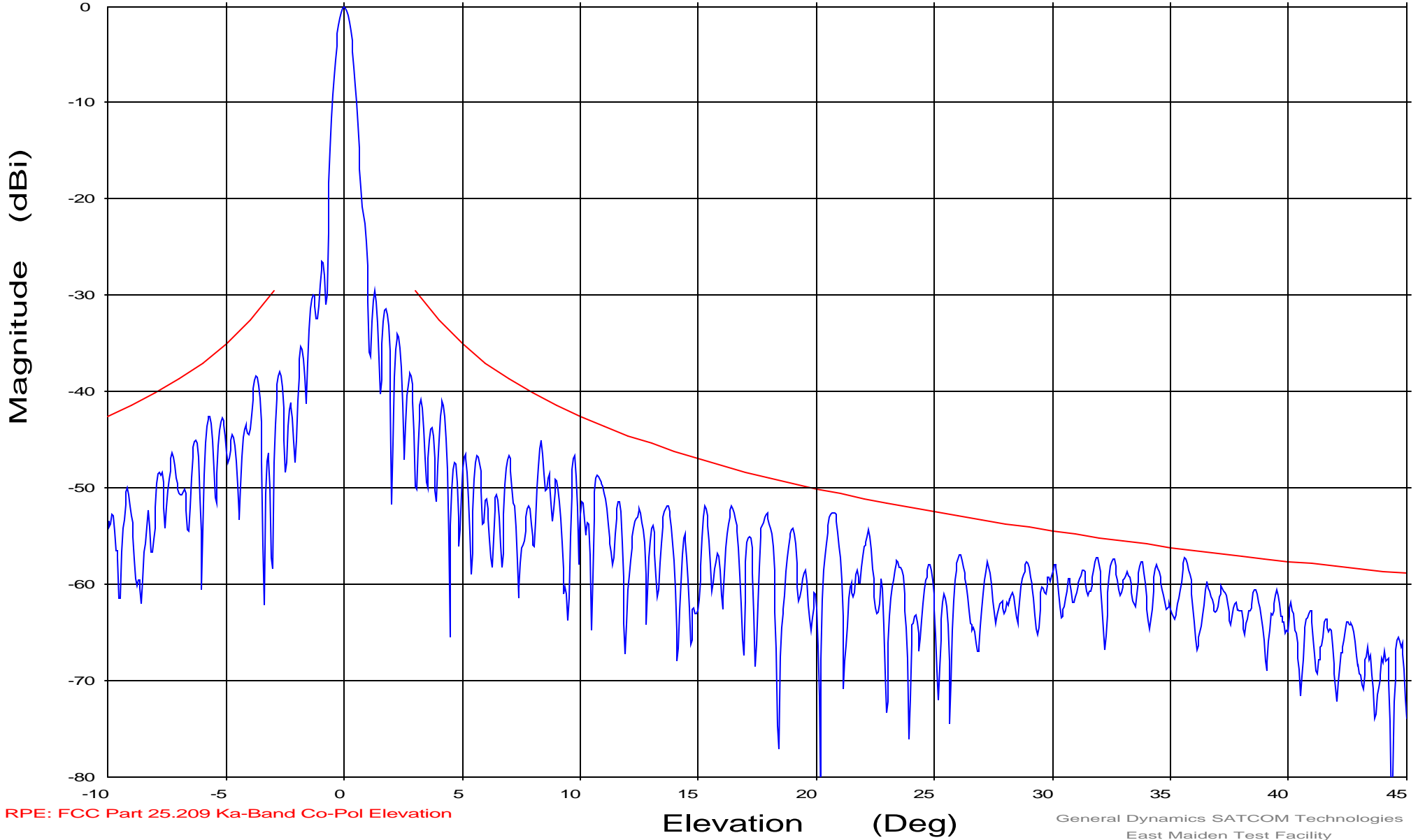
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

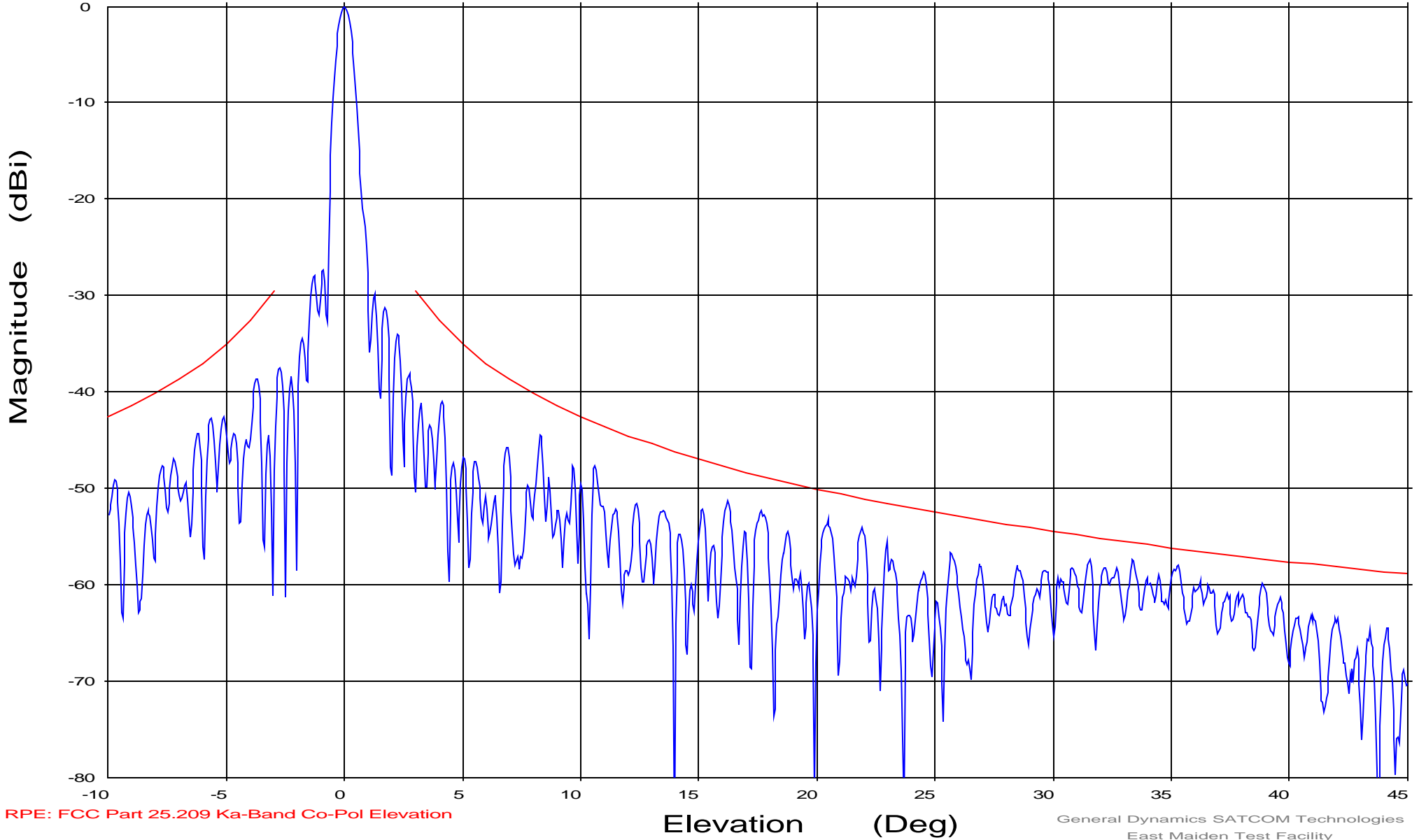
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

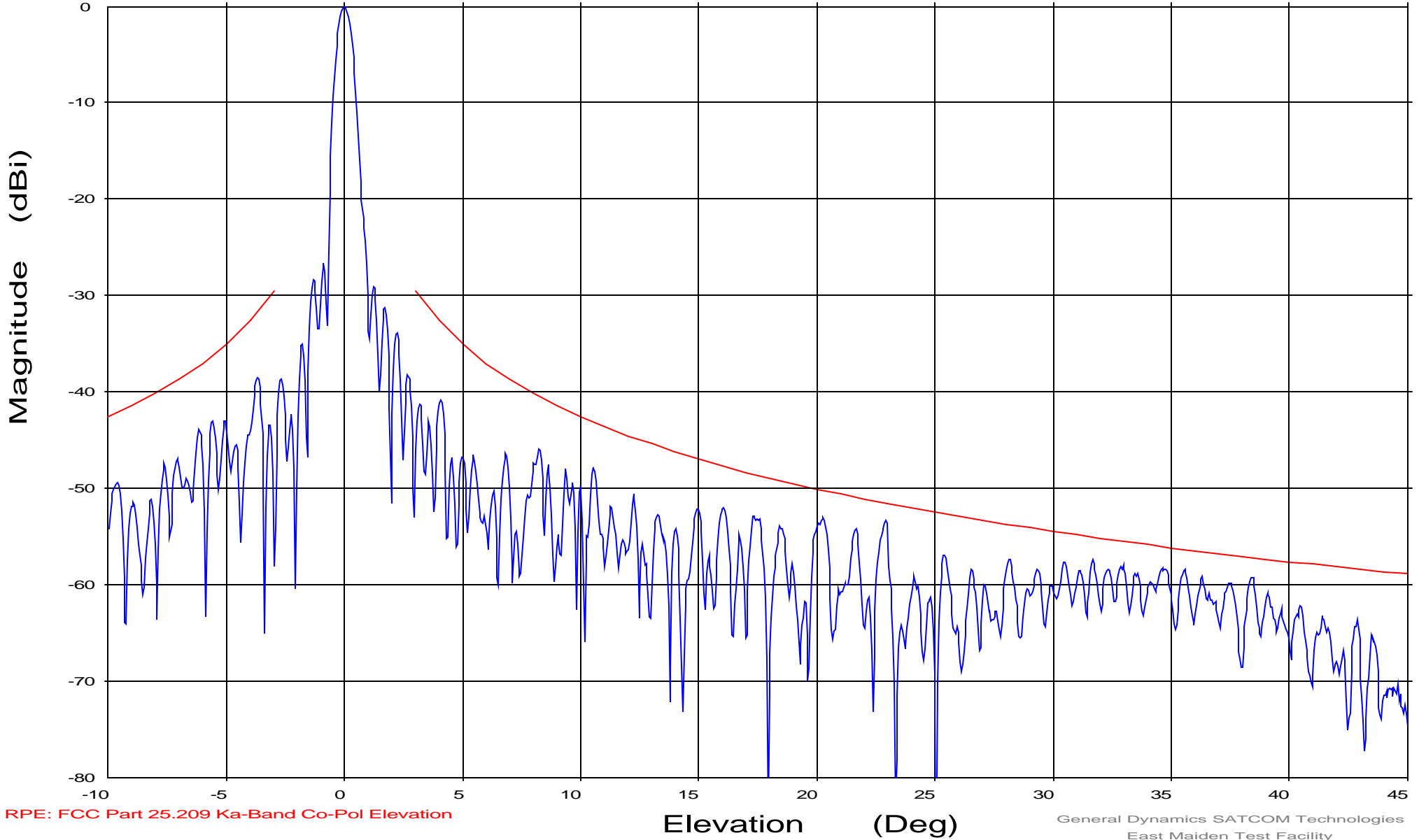
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

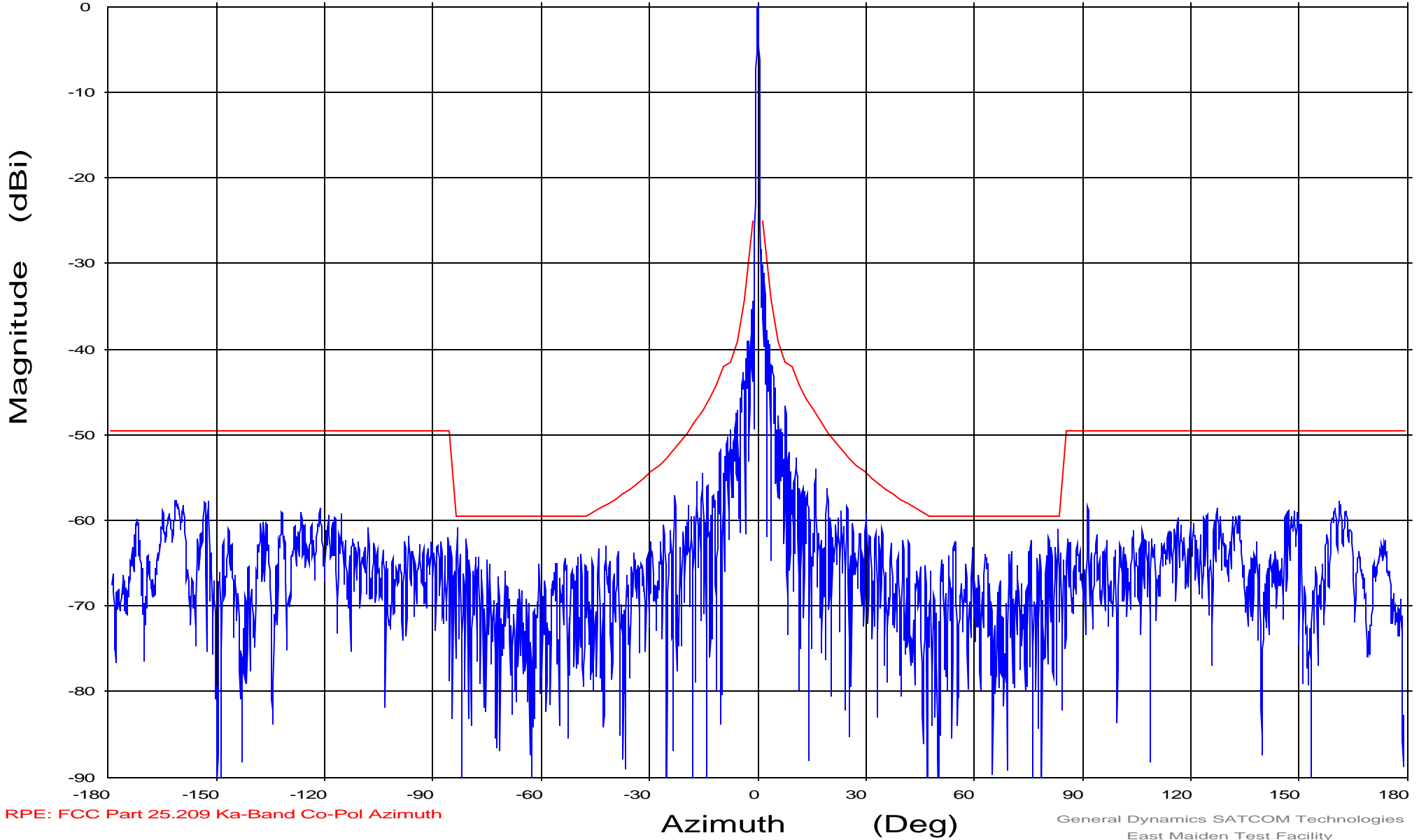
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

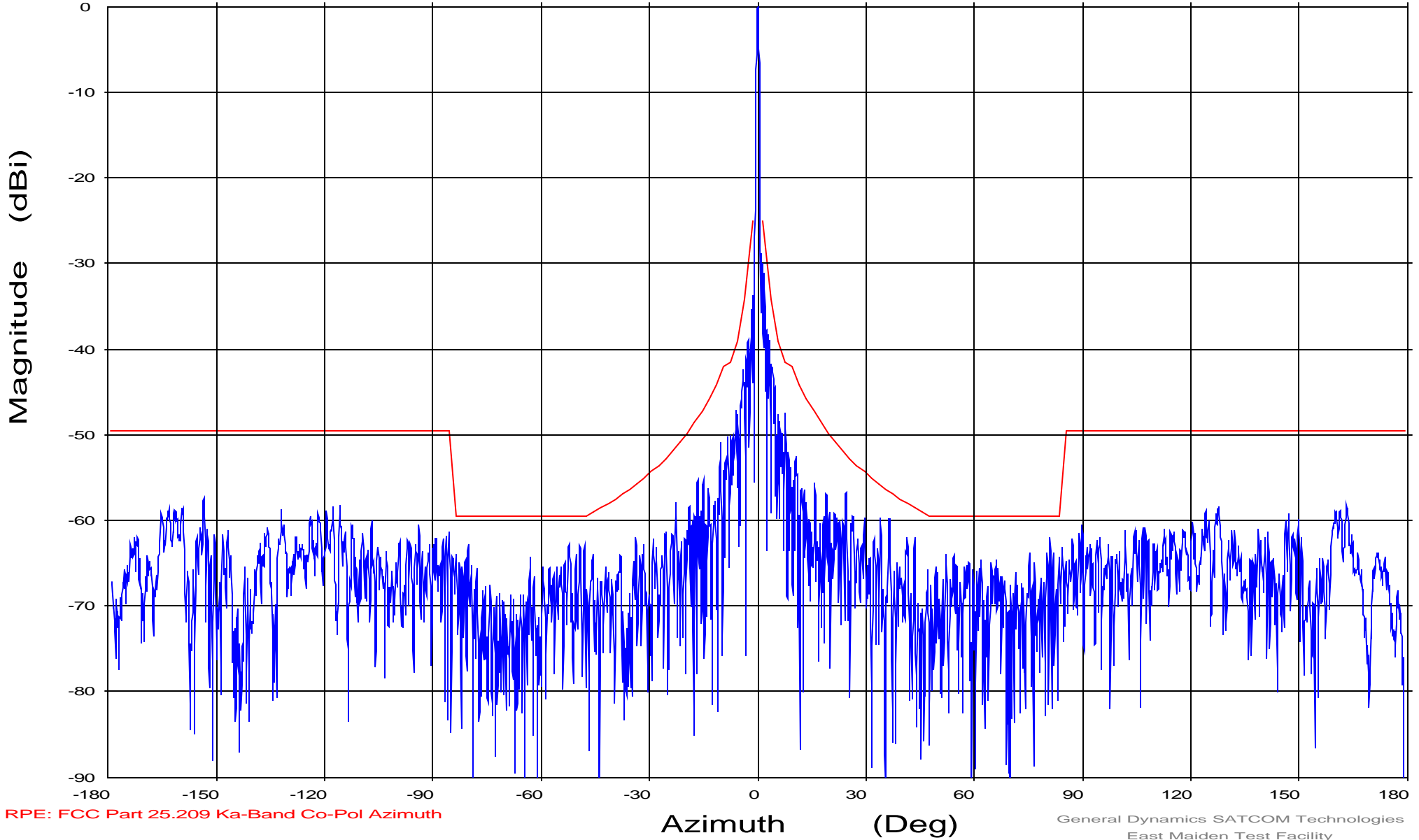
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

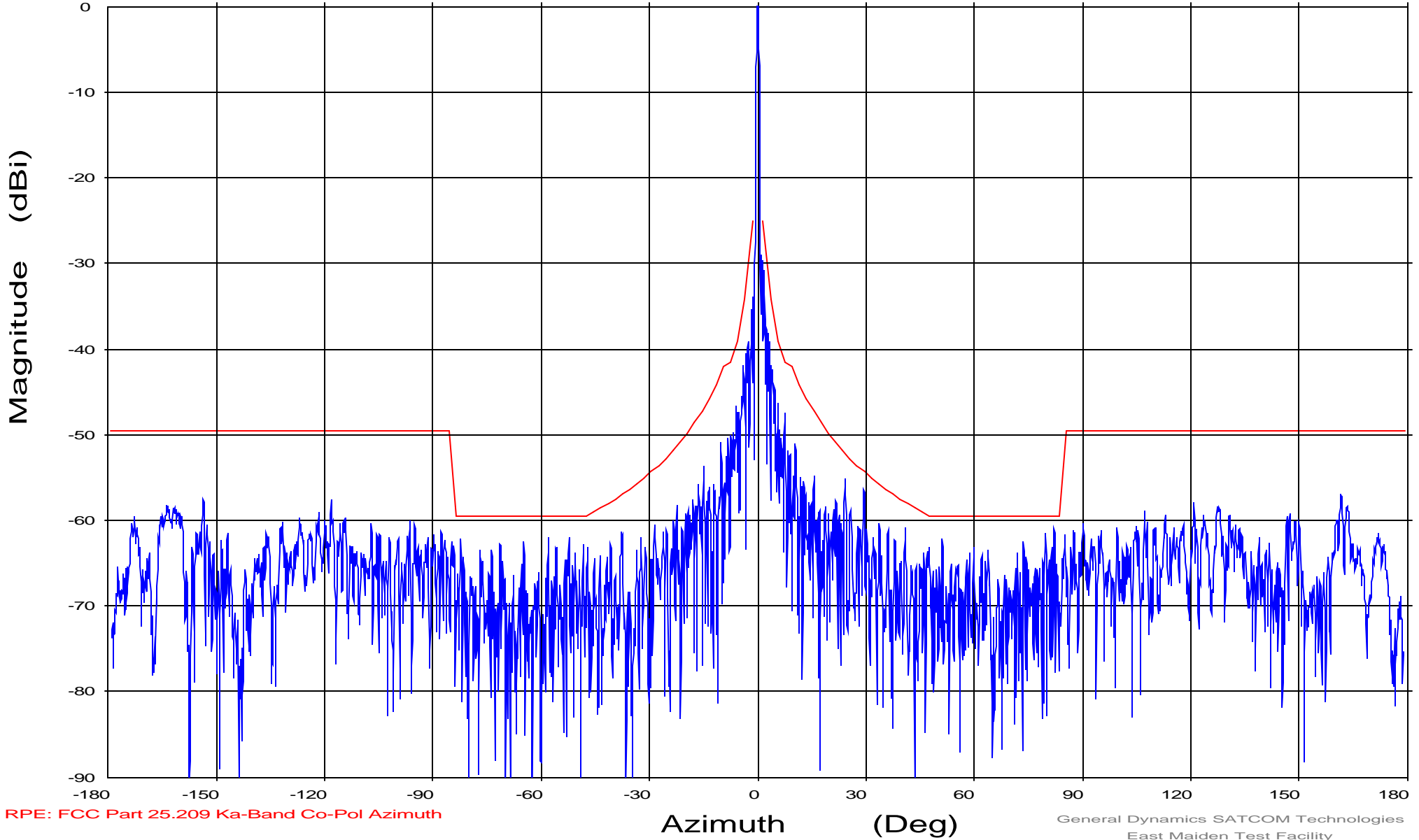
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: LHCP

Rx pol: LHCP



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

RHCP Radiation Patterns
Receive Frequencies

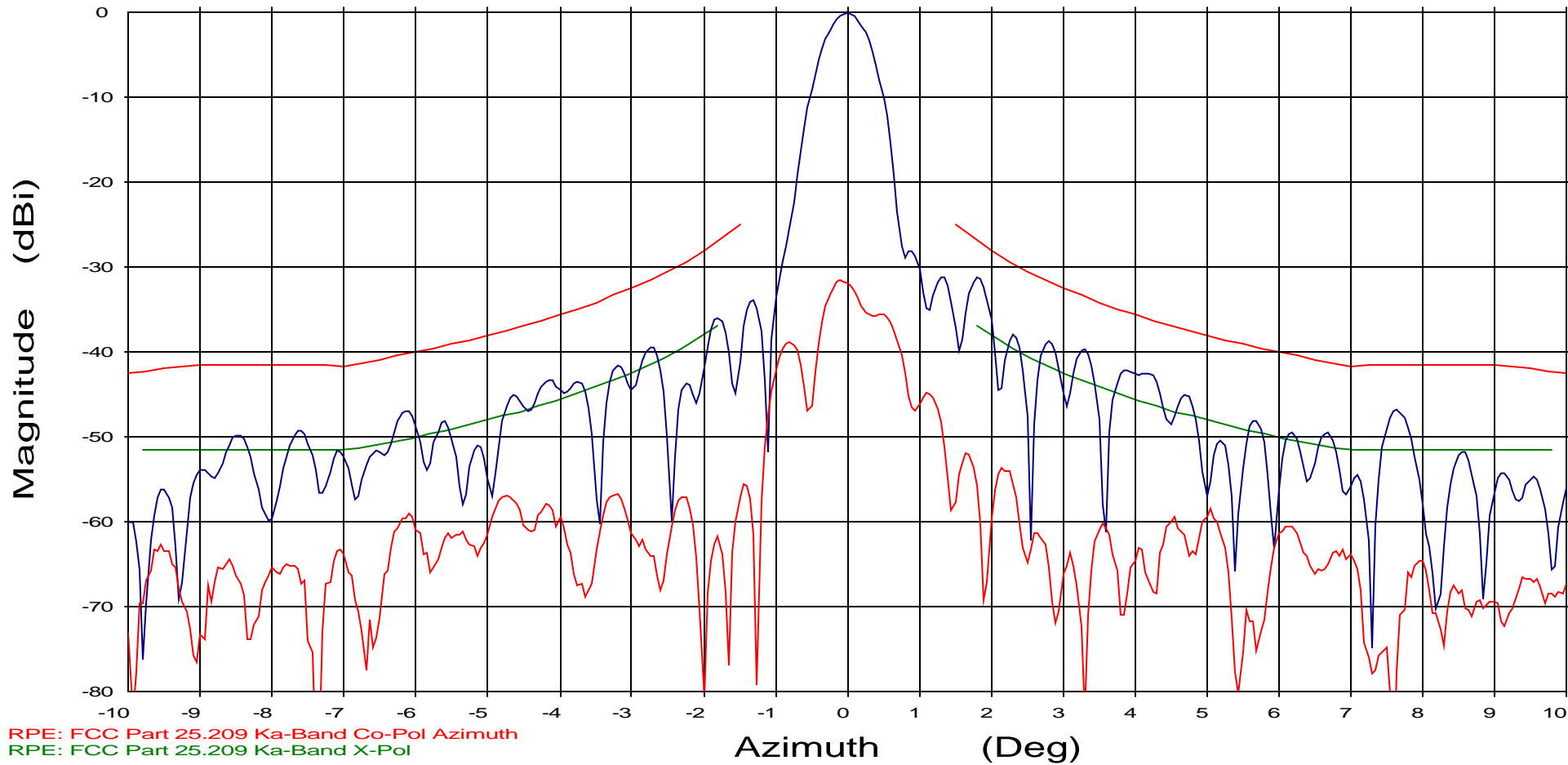
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 02.dat-ant_under_test
2242 04.dat-ant_under_test

Cal. file

2242 02.dat
2242 04.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

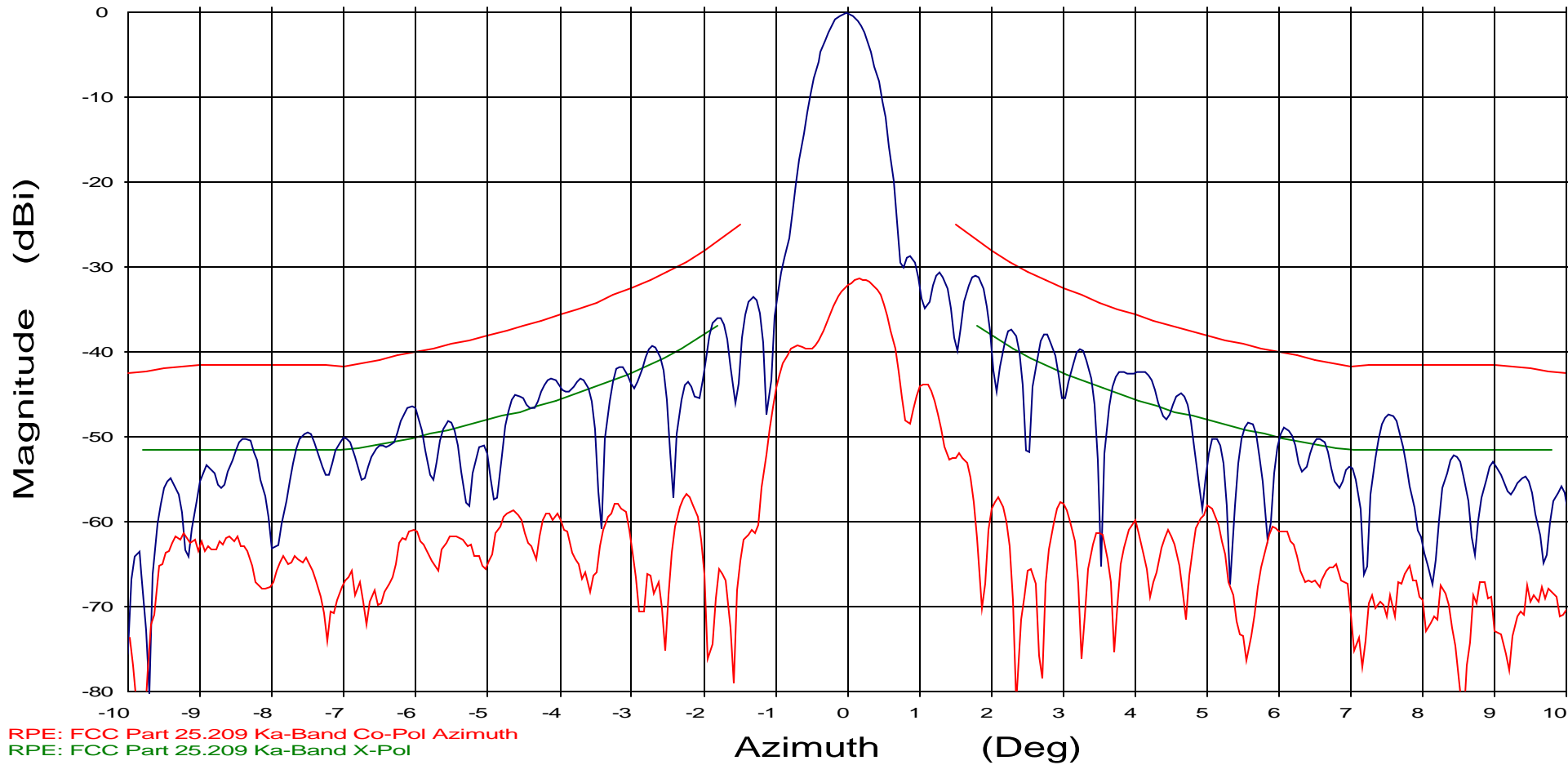
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 02.dat-ant_under_test
2242 04.dat-ant_under_test

Cal. file

2242 02.dat
2242 04.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

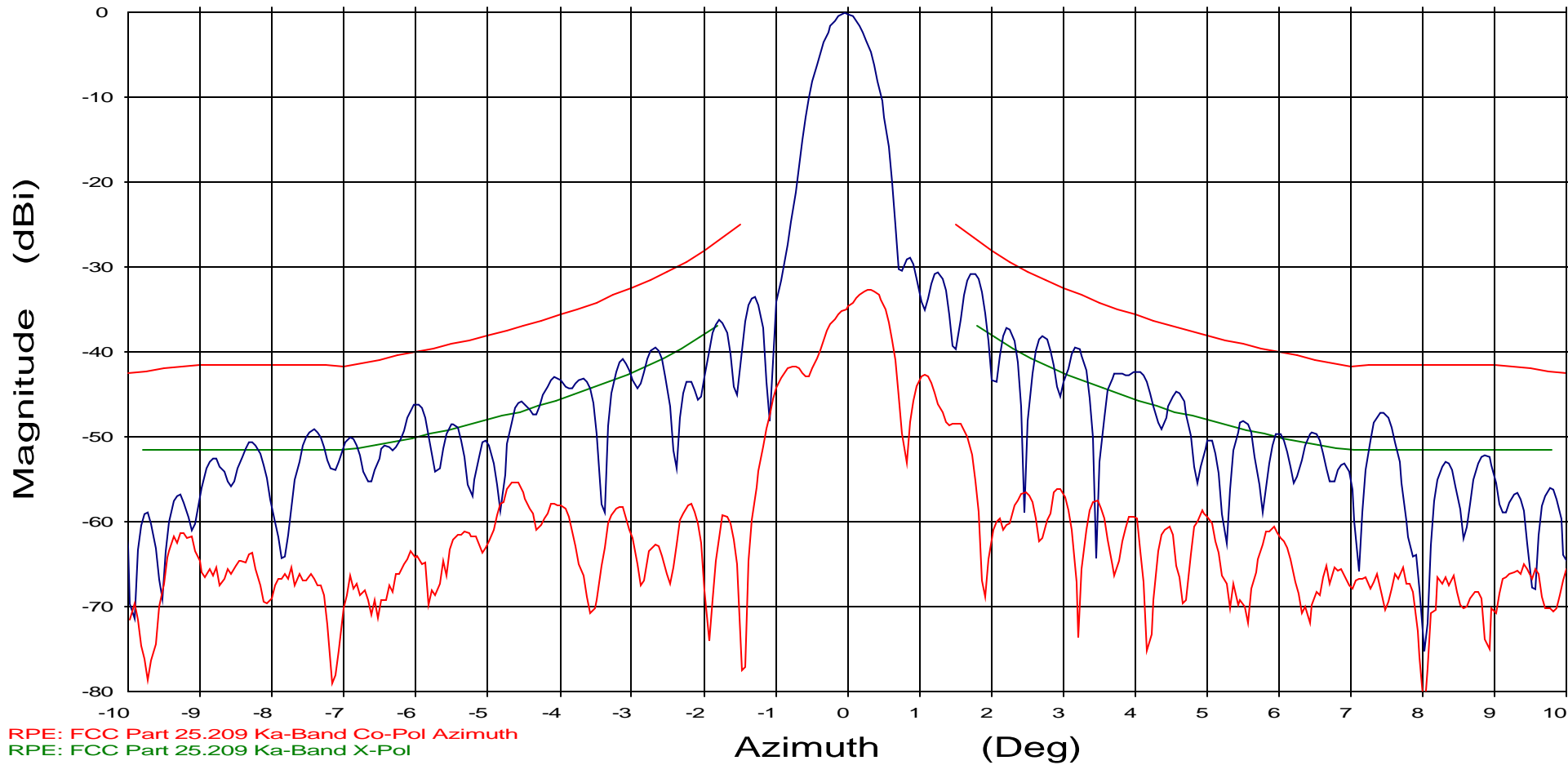
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 02.dat-ant_under_test
2242 04.dat-ant_under_test

Cal. file

2242 02.dat
2242 04.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

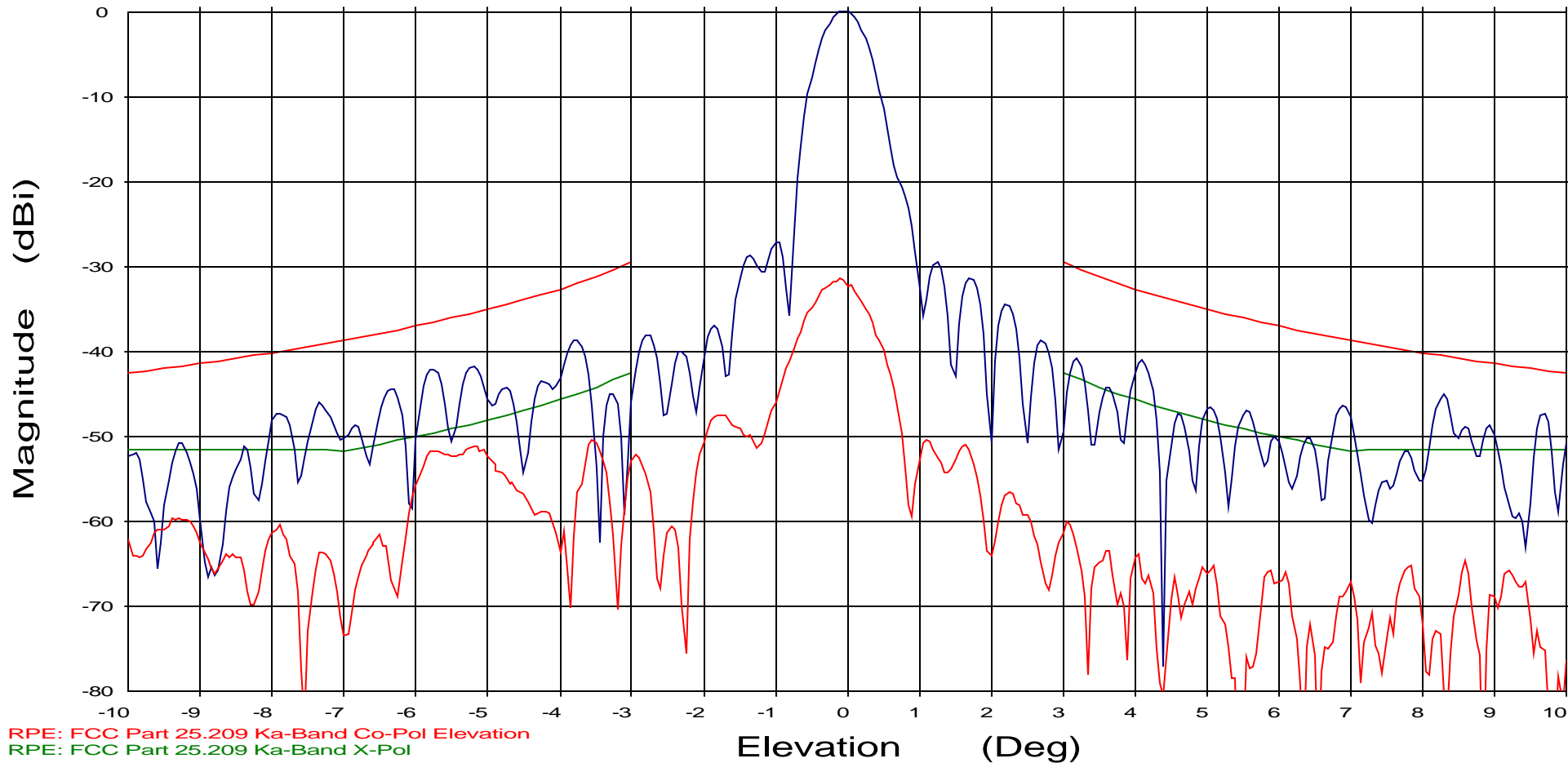
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 03.dat-ant_under_test
2242 05.dat-ant_under_test

Cal. file

2242 03.dat
2242 05.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

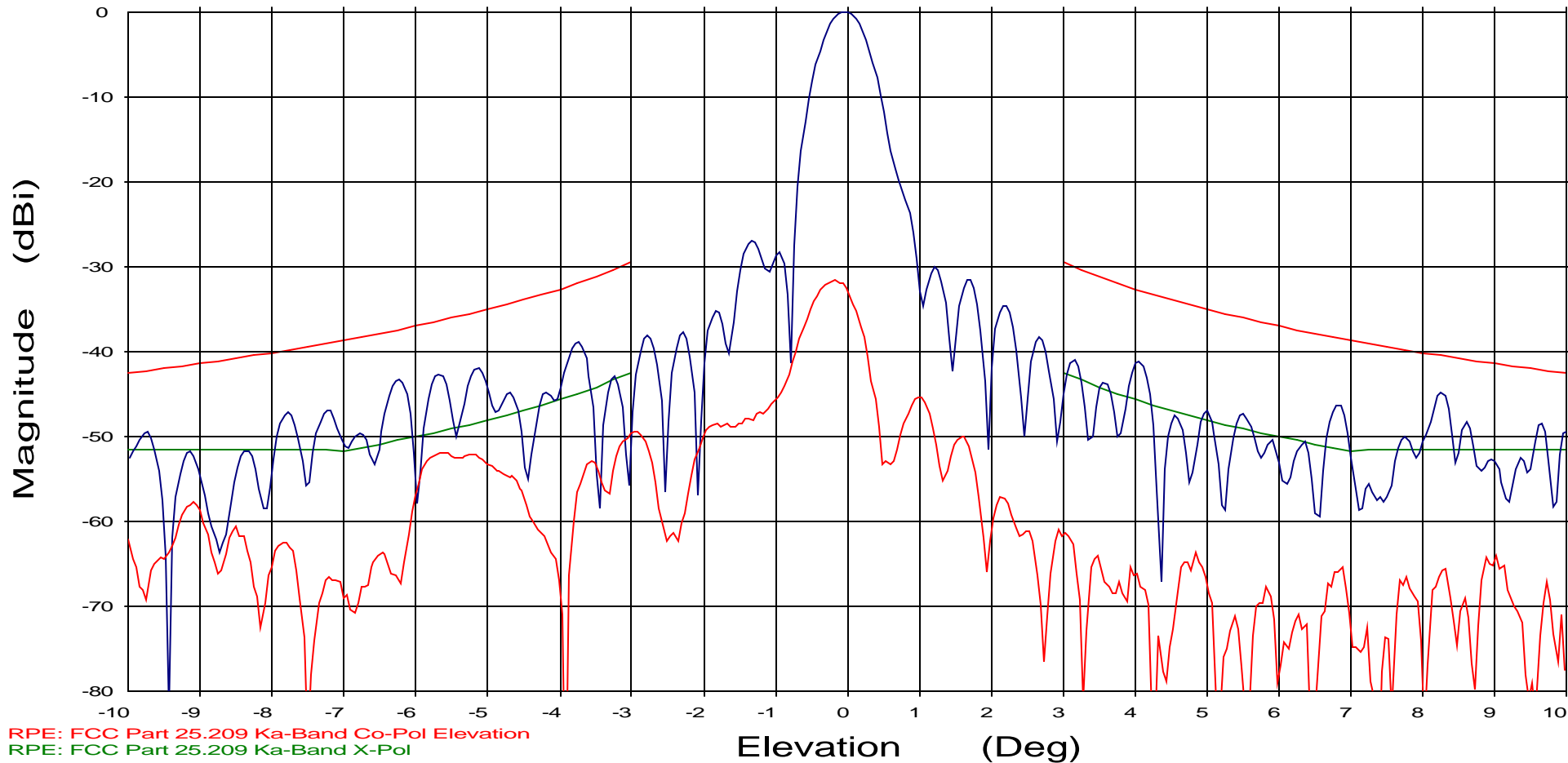
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 03.dat-ant_under_test
2242 05.dat-ant_under_test

Cal. file

2242 03.dat
2242 05.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

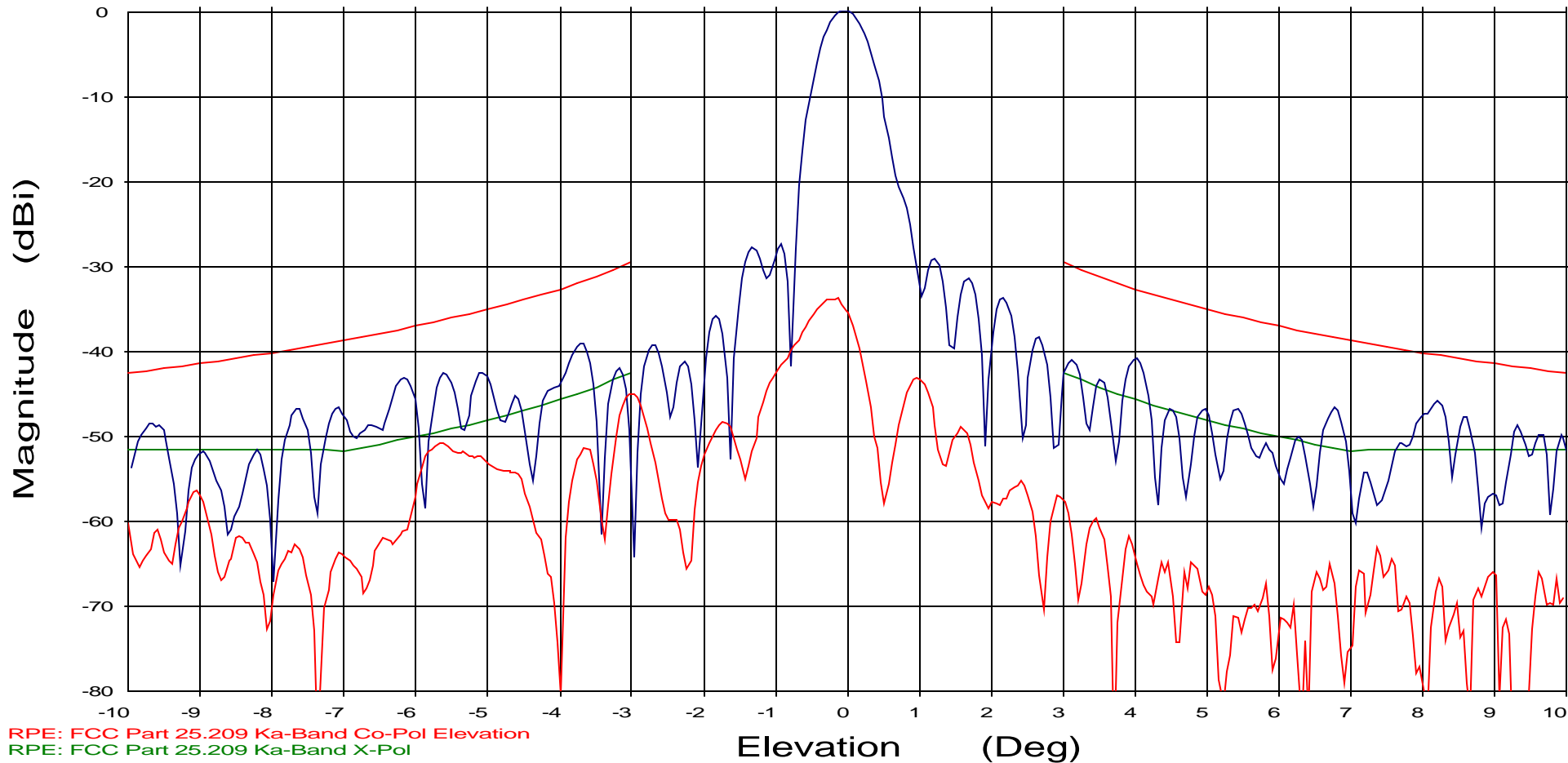
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



Overlays

2242 03.dat-ant_under_test
2242 05.dat-ant_under_test

Cal. file

2242 03.dat
2242 05.dat

table

Reference
Reference

channel

AUT
AUT

units

dBi
dBi

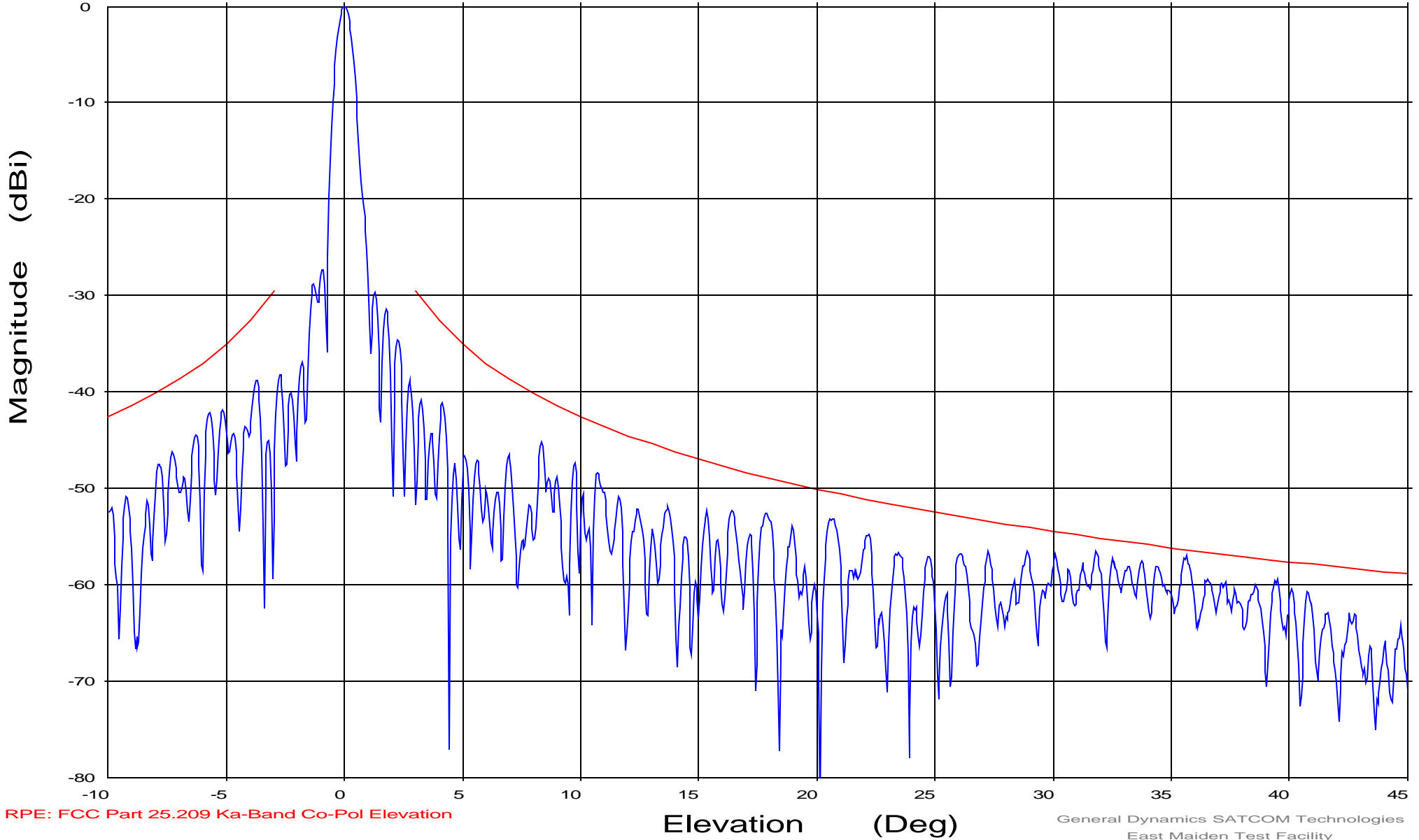
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

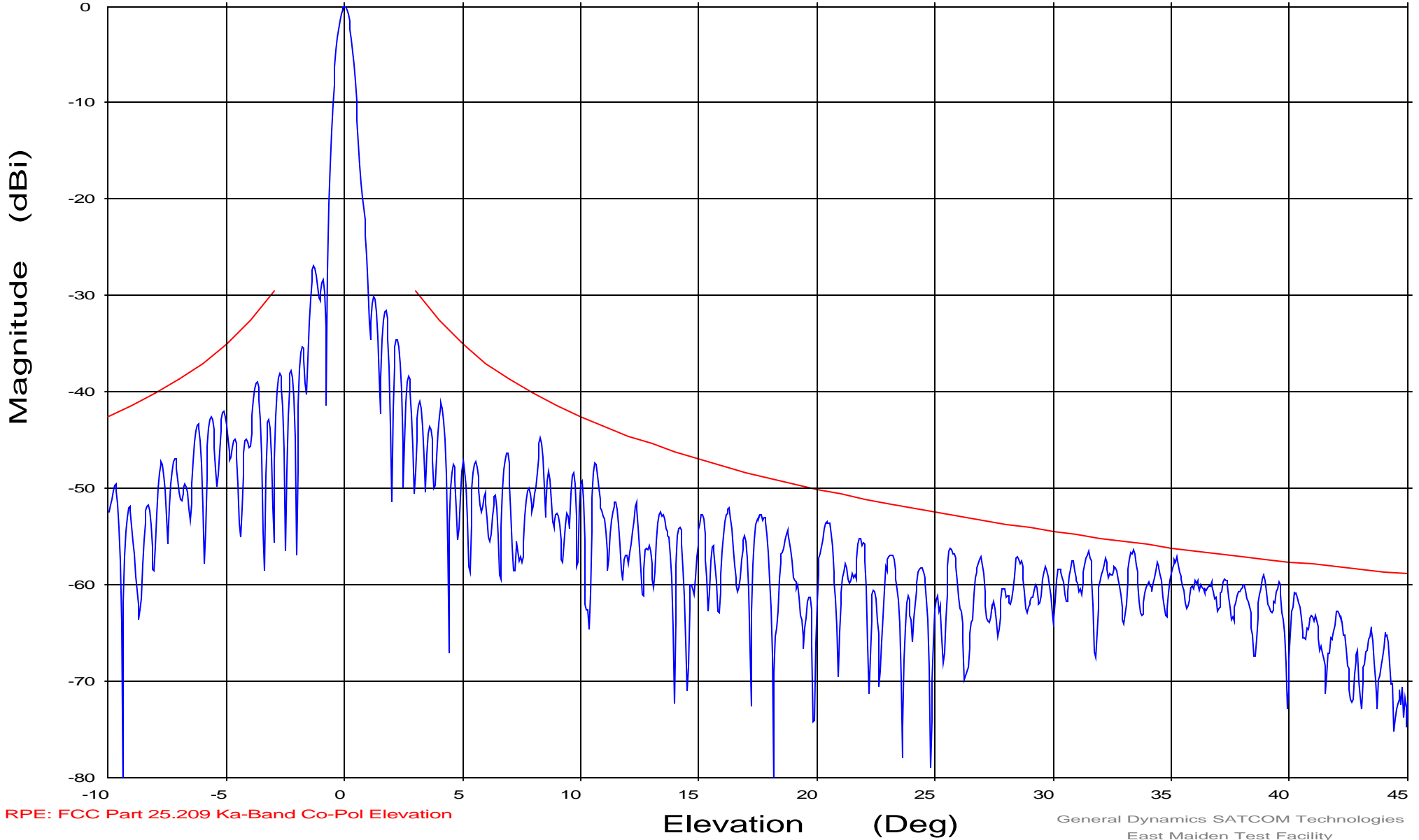
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

File: 2242 03.dat

1.8M Ka-Band CP Rx/Tx Antenna System
Series 3180

Frequency : 20.200 GHz

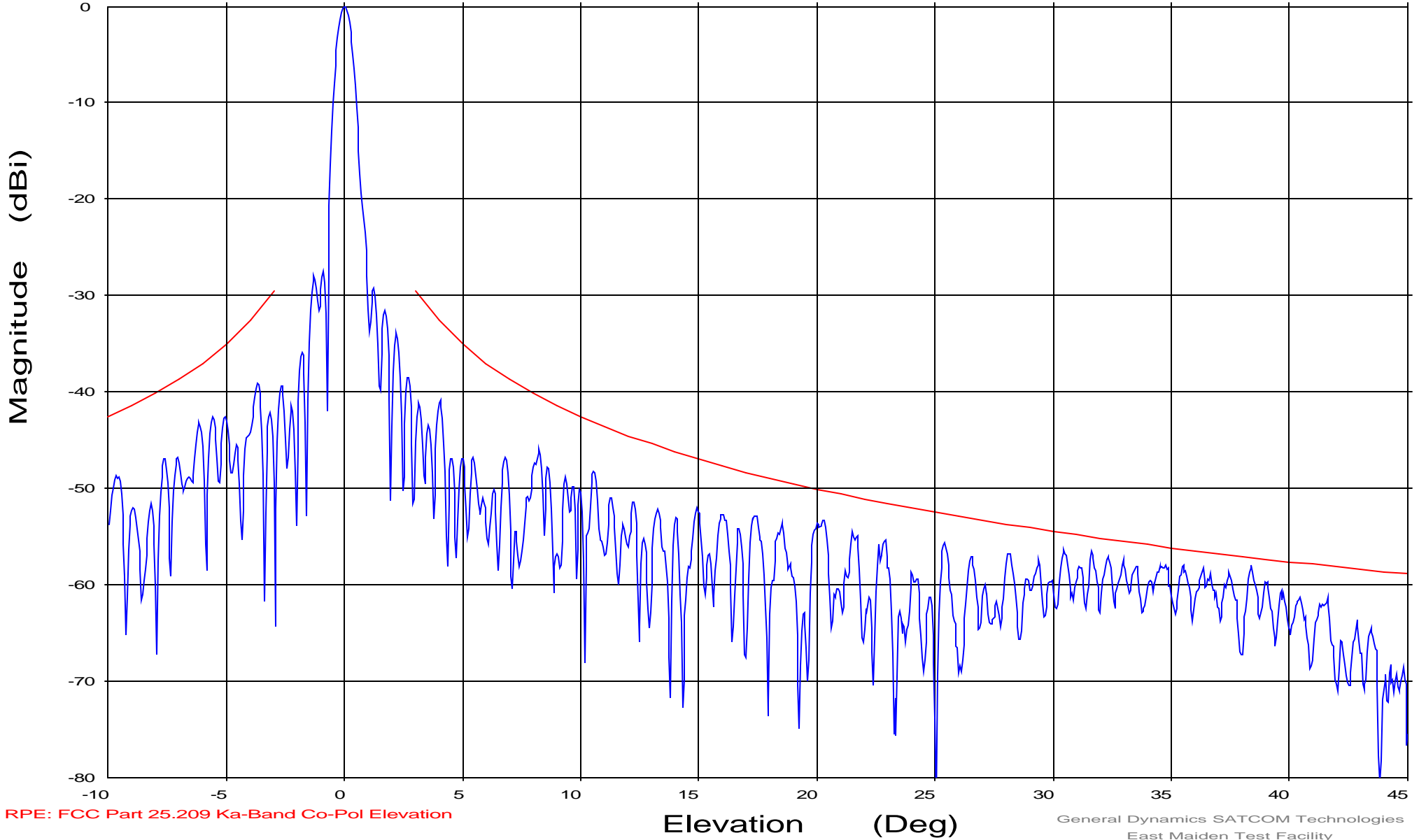
Operator: Dwight B. Lutz

Ser. no.:

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

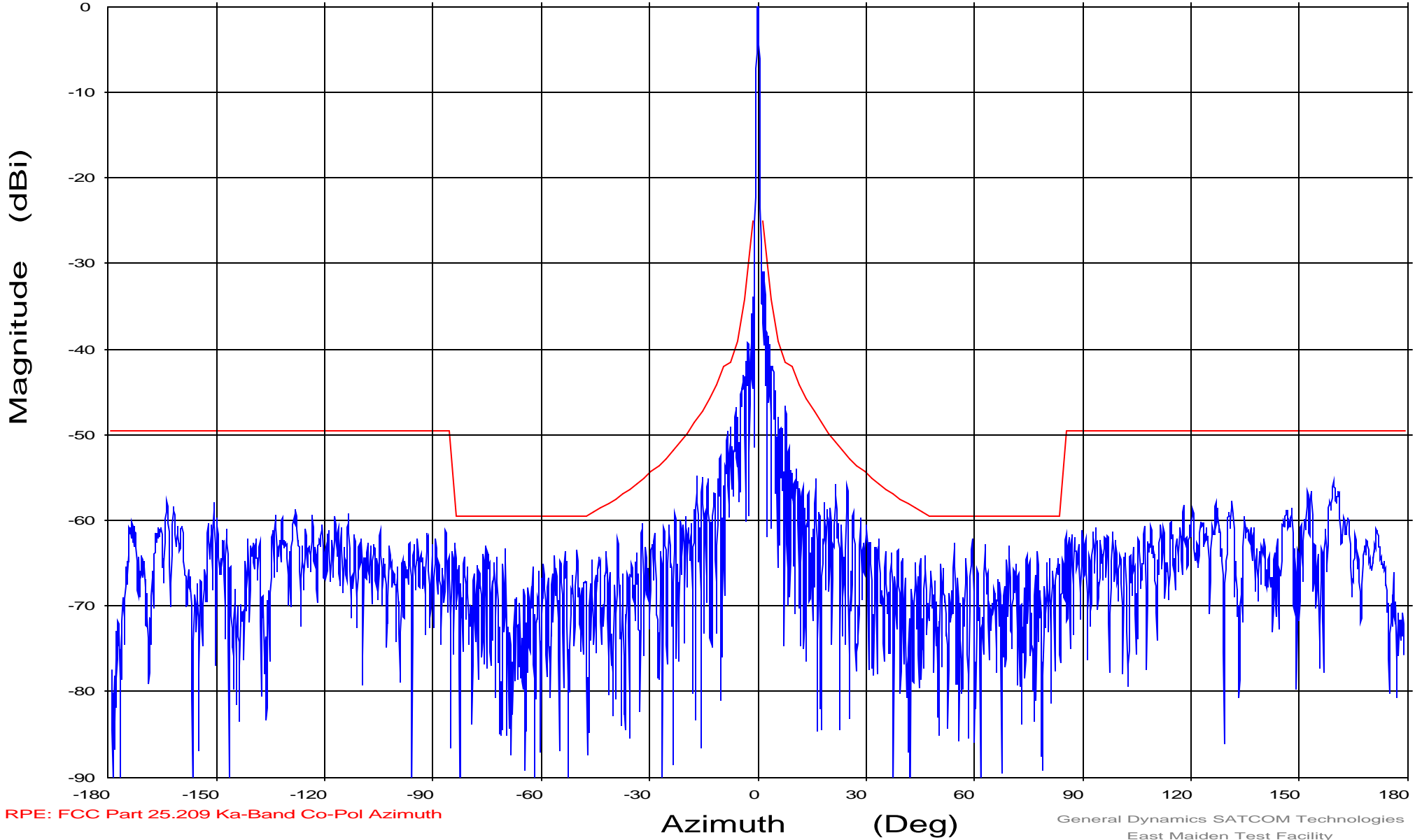
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

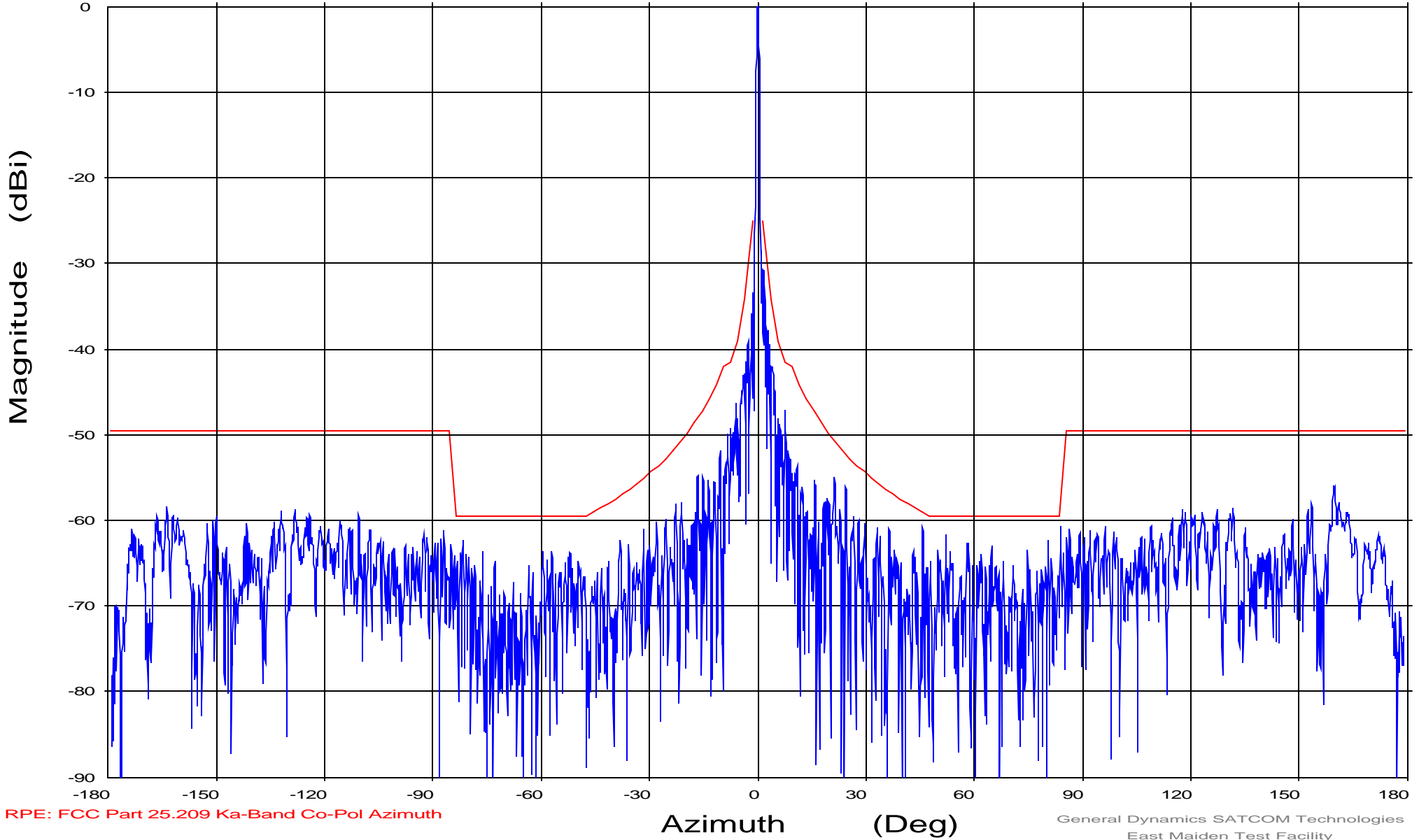
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

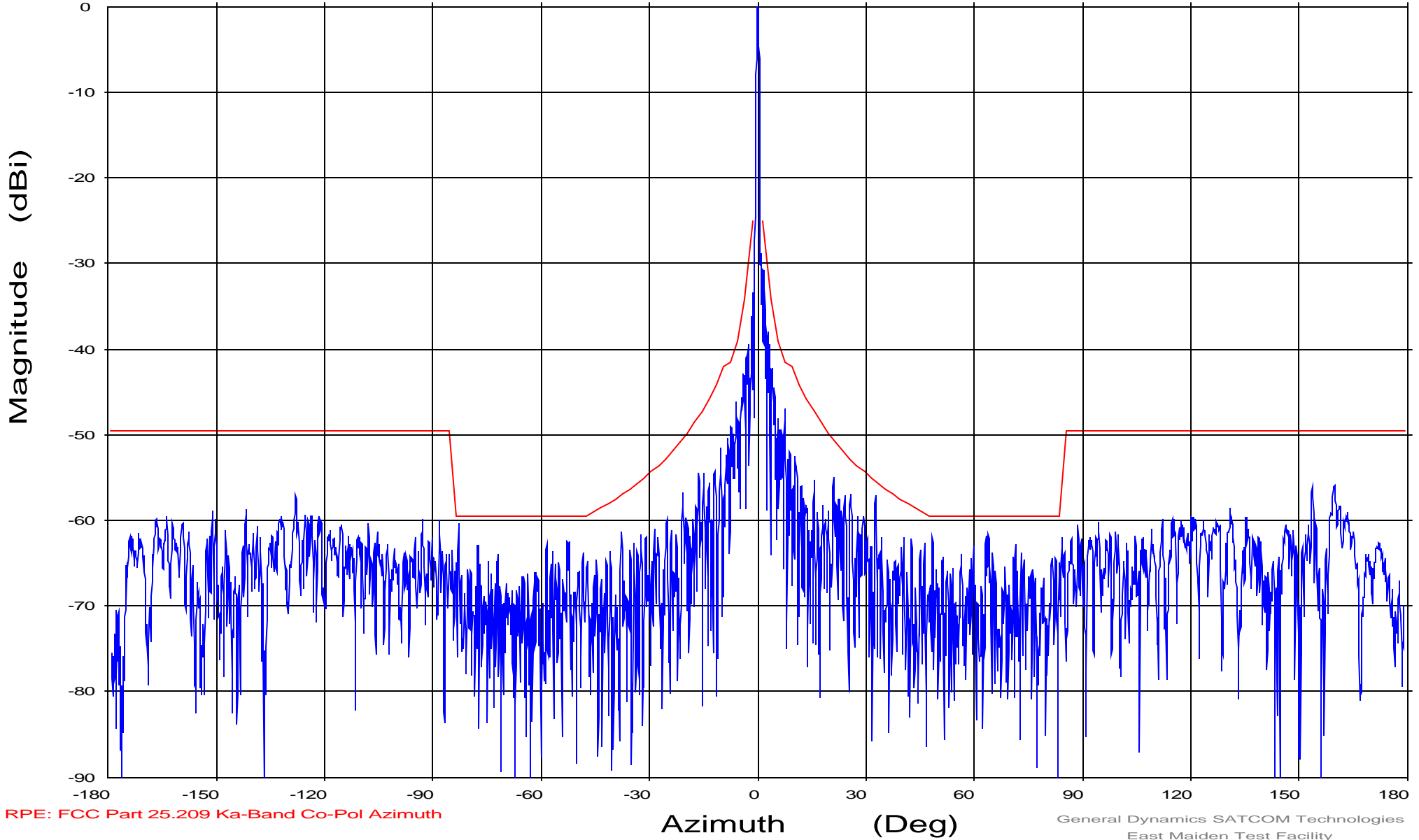
Operator: Dwight B. Lutz

Ser. no.:

Channel: AUT

Tx pol: RHCP

Rx pol: RHCP



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

Azimuth (Deg)

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Test Photos







End of Report

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