

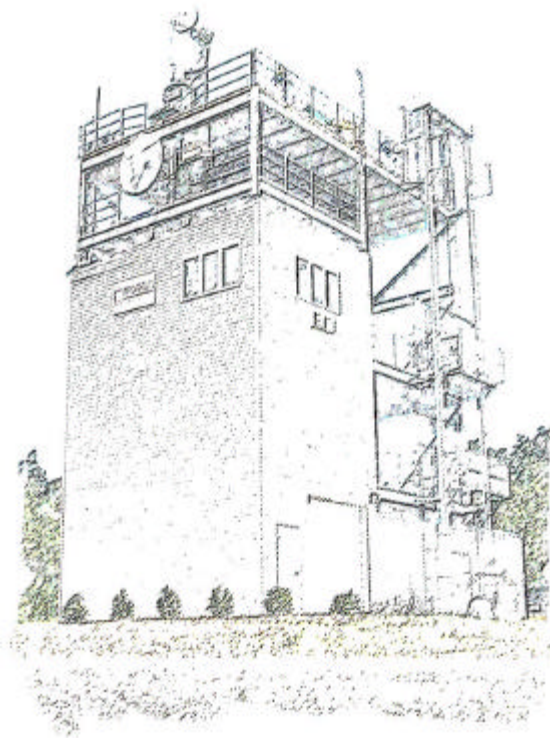
GENERAL DYNAMICS

SATCOM Technologies

Antenna Test Report

Test No. 1383

Project: 1.8M Ku-Band Rx/Tx Series 1184 Antenna System



General Dynamics SATCOM Technologies

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

Test report prepared by Dwight B. Lutz

General Dynamics SATCOM Technologies

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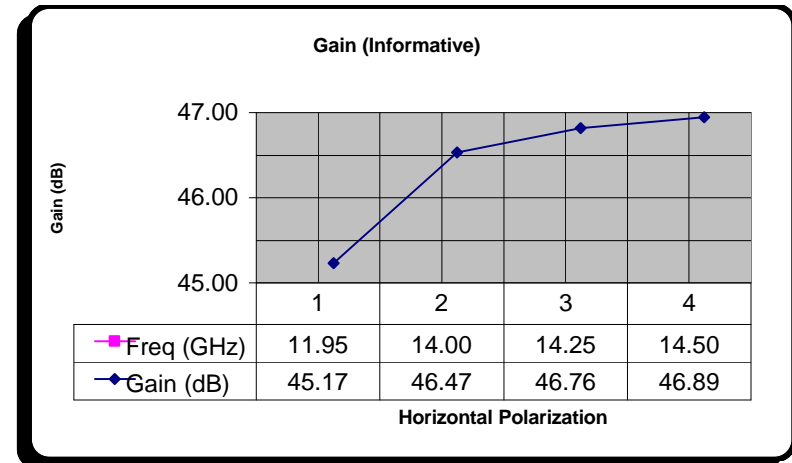
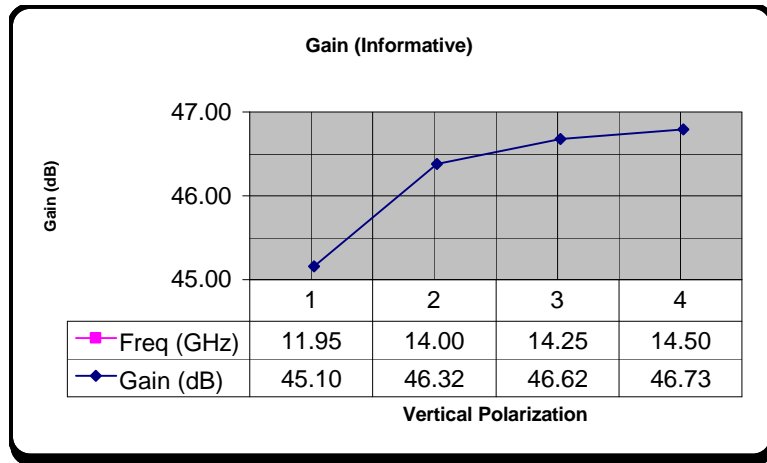


Section I



Project: 1.8M Ku-Band Rx/Tx Antenna System Series 1184
Test No.1383

Gain Analysis





Section II



X-Pol Analysis
1.8M Ku-Band Rx/Tx Antenna System
Series 1184
Test No. 1383

Frequency	Polarization Vertical	On Axis X-Pol Azimuth Plane (dB)	On Axis X-Pol Elevation Plane (dB)
11.95	Vertical	-47.97	-40.61
14.00	Vertical	-40.42	-53.39
14.25	Vertical	-41.77	-48.28
14.50	Vertical	-39.82	-39.19

Frequency	Polarization Horizontal	On Axis X-Pol Azimuth Plane (dB)	On Axis X-Pol Elevation Plane (dB)
11.95	Horizontal	-44.83	-39.19
14.00	Horizontal	-41.28	-36.15
14.25	Horizontal	-40.82	-34.83
14.50	Horizontal	-36.92	-33.10

Section III

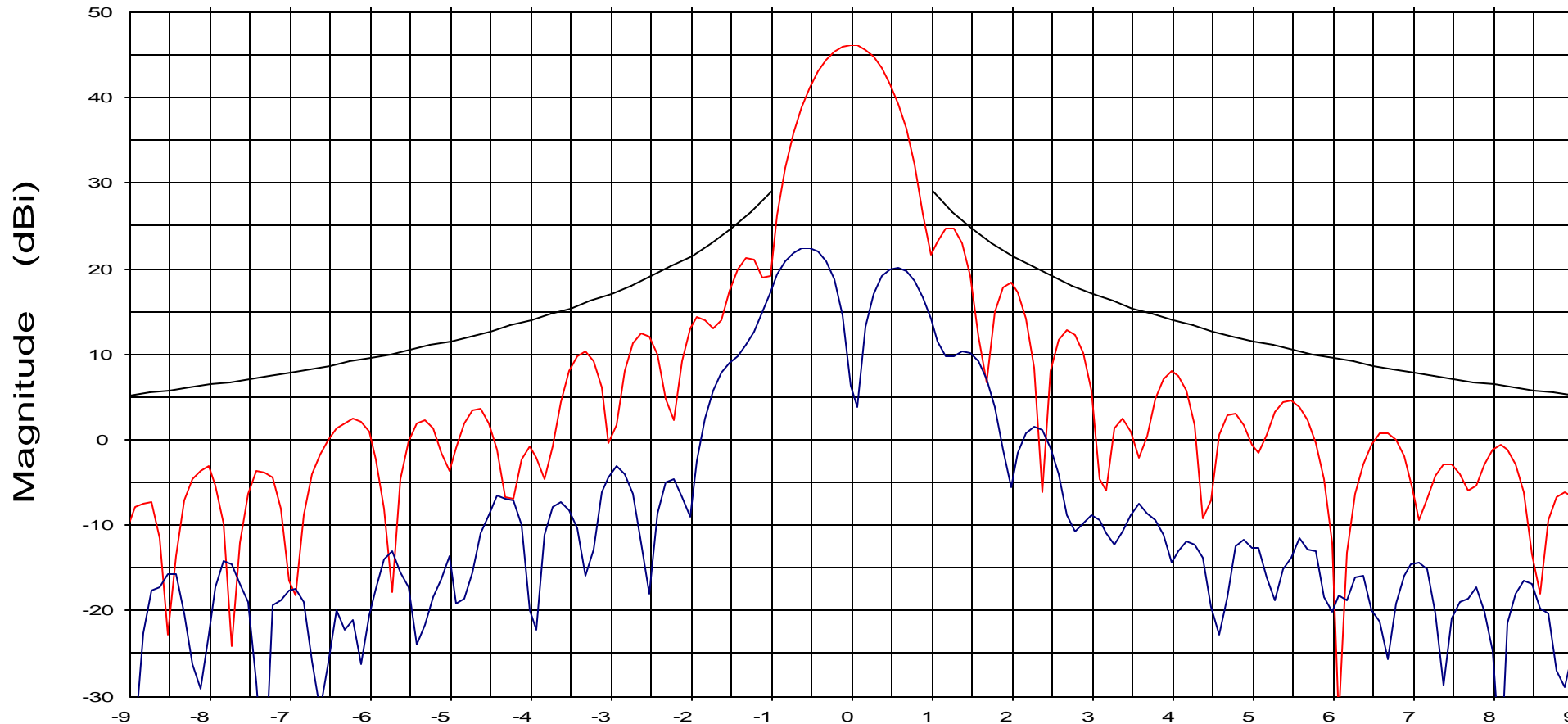


Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Overlays
138310.DAT-ant_under_test
138312.DAT-ant_under_test

Cal. file	units
138310.DAT	dBi
138312.DAT	dBi

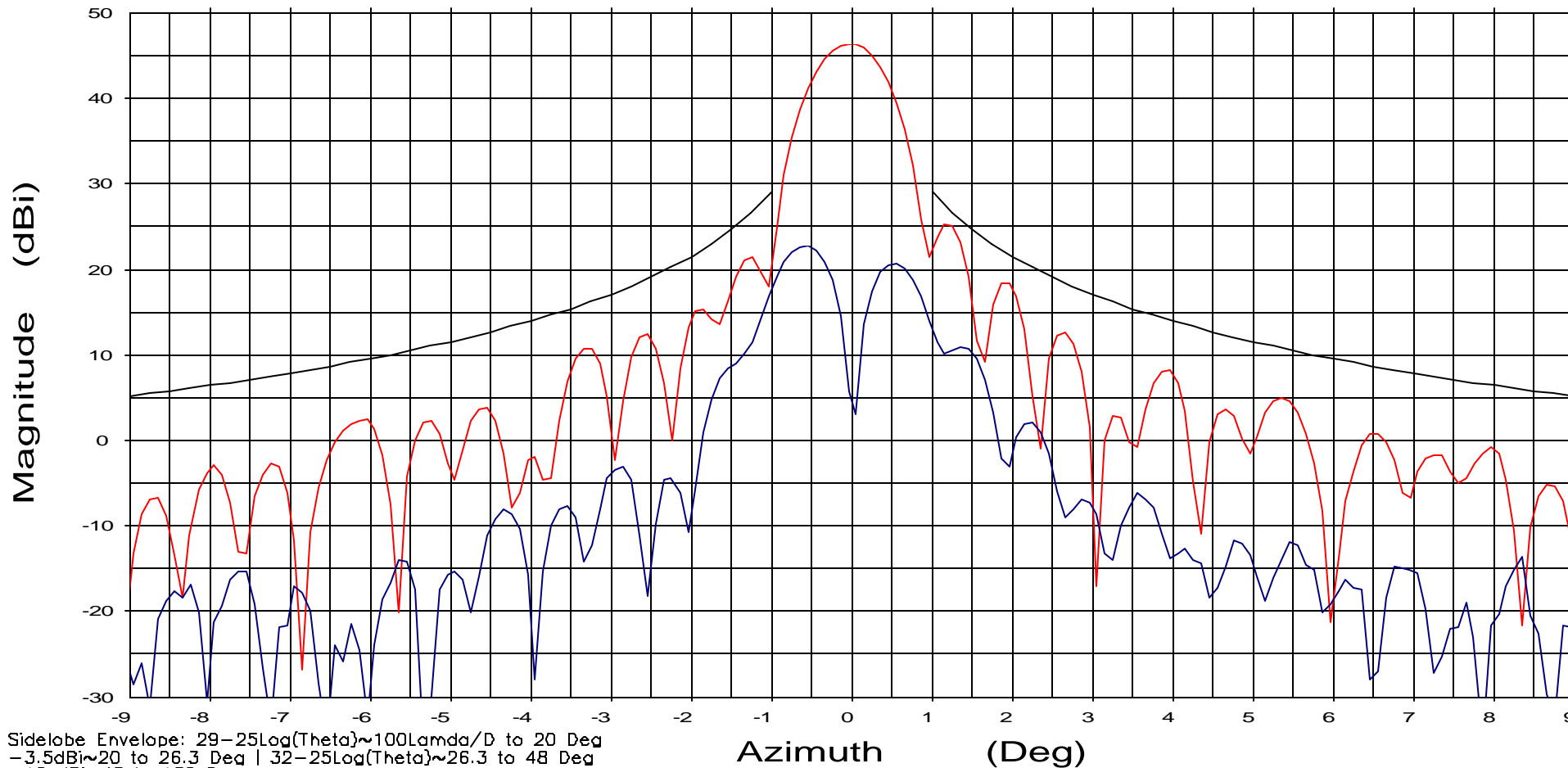
Beam Peak	
Deg	dB
-0.02	46.32

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Overlays
 138310.DAT-ant_under_test
 138312.DAT-ant_under_test

Cal. file	units
138310.DAT	dBi
138312.DAT	dBi

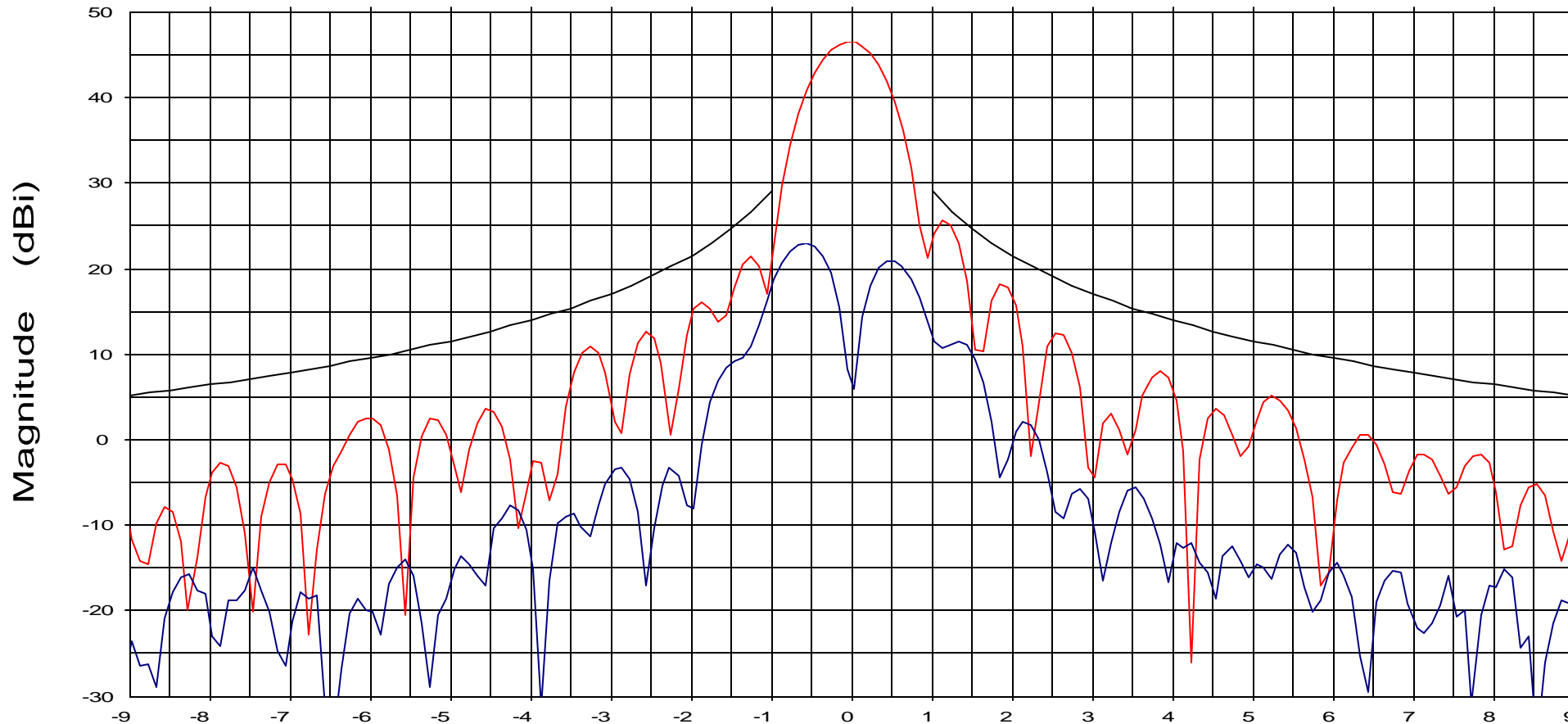
Beam Peak	
Deg	dB
-0.04	46.62

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
 138310.DAT-ant_under_test
 138312.DAT-ant_under_test

Cal. file	units
138310.DAT	dBi
138312.DAT	dBi

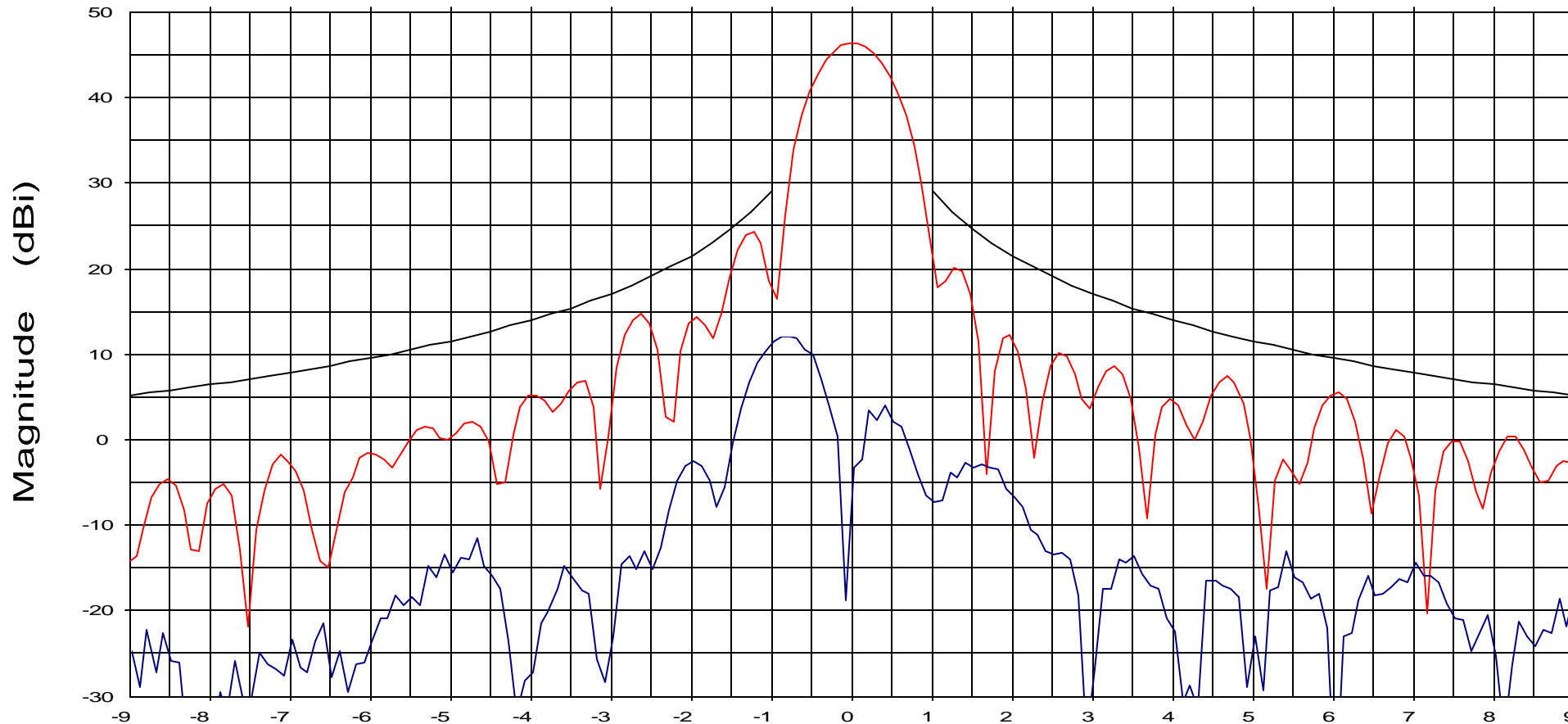
Beam Peak	
Deg	dB
-0.06	46.73

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Elevation (Deg)

Overlays

138311.DAT-ant_under_test
138313.DAT-ant_under_test

Cal. file
138311.DAT
138313.DAT

units
dBi
dBi

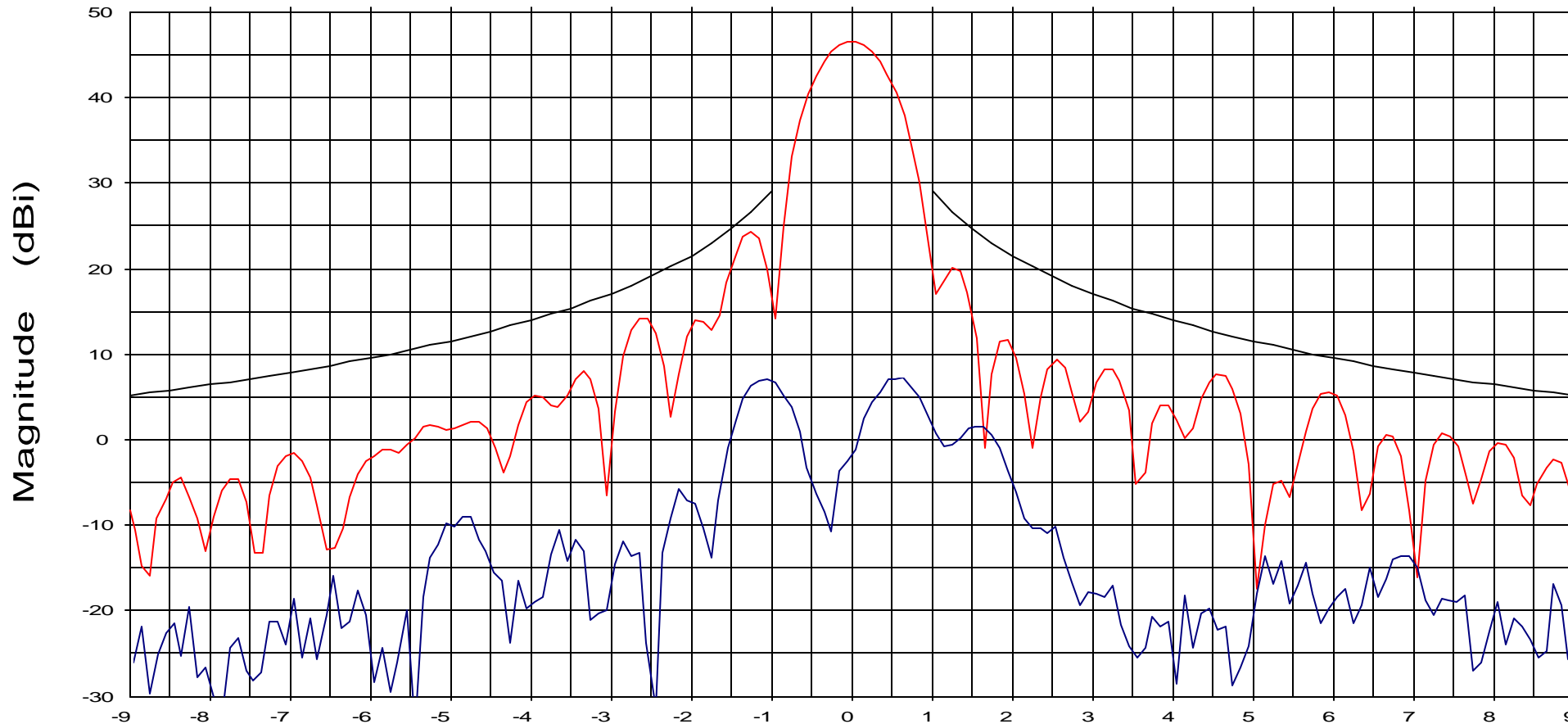
Beam Peak
Deg dB
-0.02 46.42

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Elevation (Deg)

Overlays
 138311.DAT-ant_under_test
 138313.DAT-ant_under_test

Cal. file	units
138311.DAT	dBi
138313.DAT	dBi

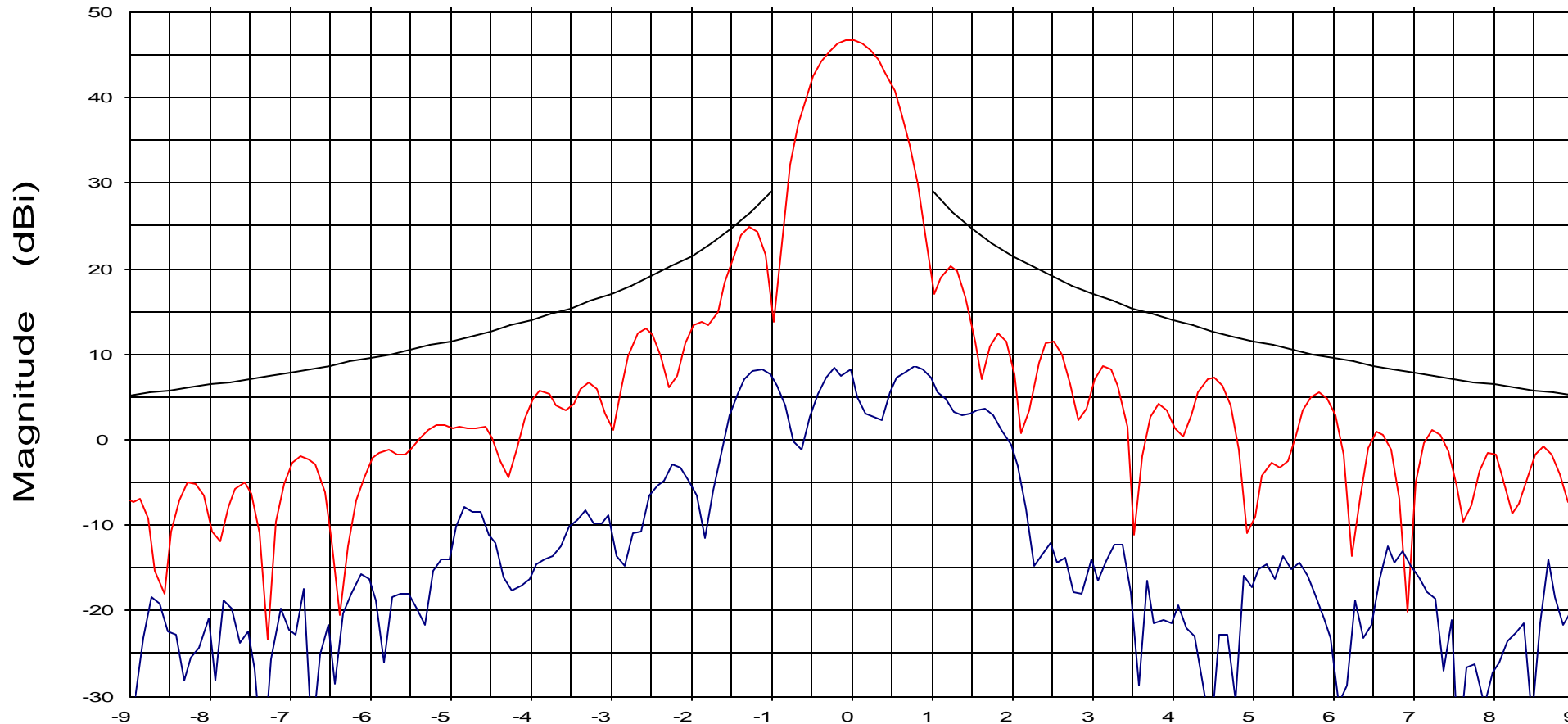
Beam Peak	
Deg	dB
0.05	46.58

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Elevation (Deg)

Overlays
 138311.DAT-ant_under_test
 138313.DAT-ant_under_test

Cal. file	units
138311.DAT	dBi
138313.DAT	dBi

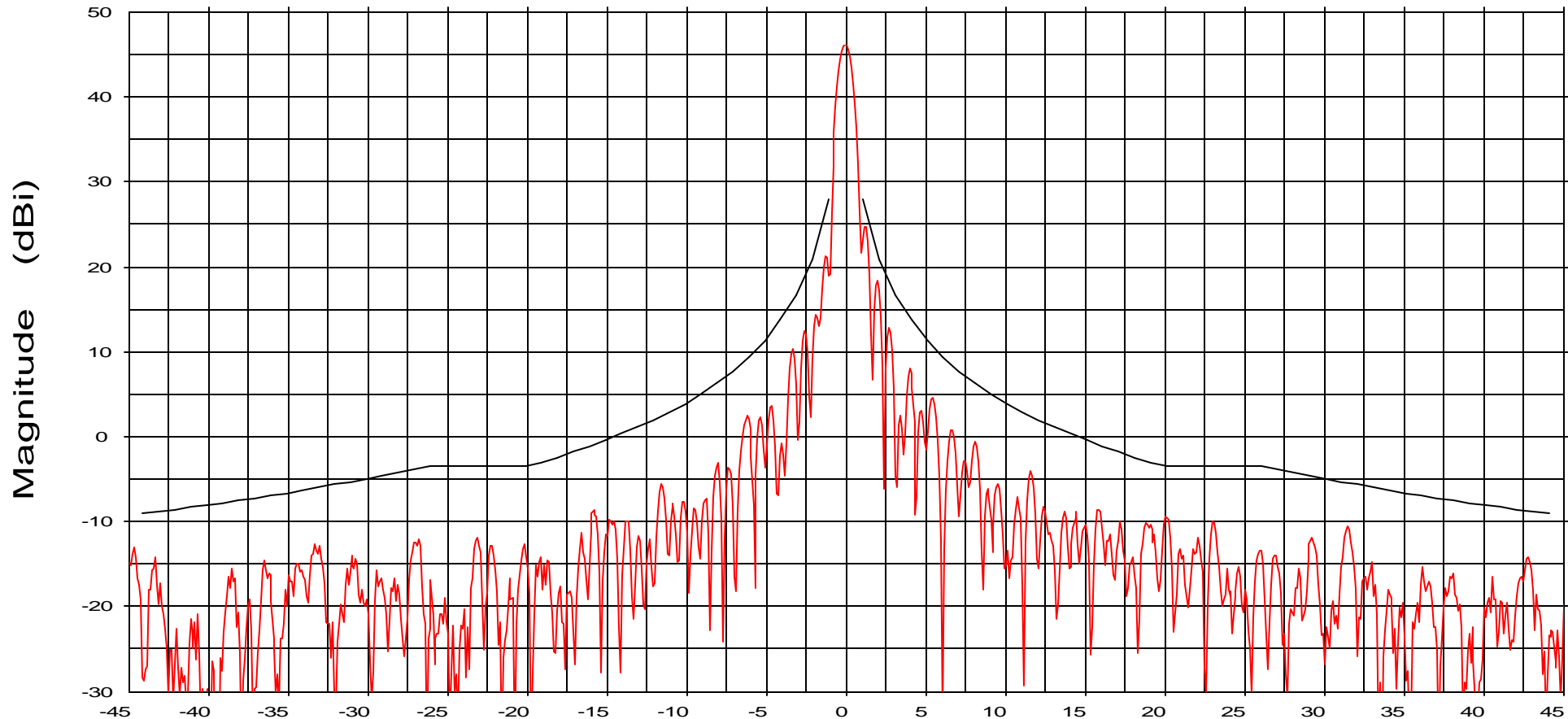
Beam Peak	
Deg	dB
0.03	46.68

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
138310.DAT-ant_under_test

Cal. file
138310.DAT

units
dBi

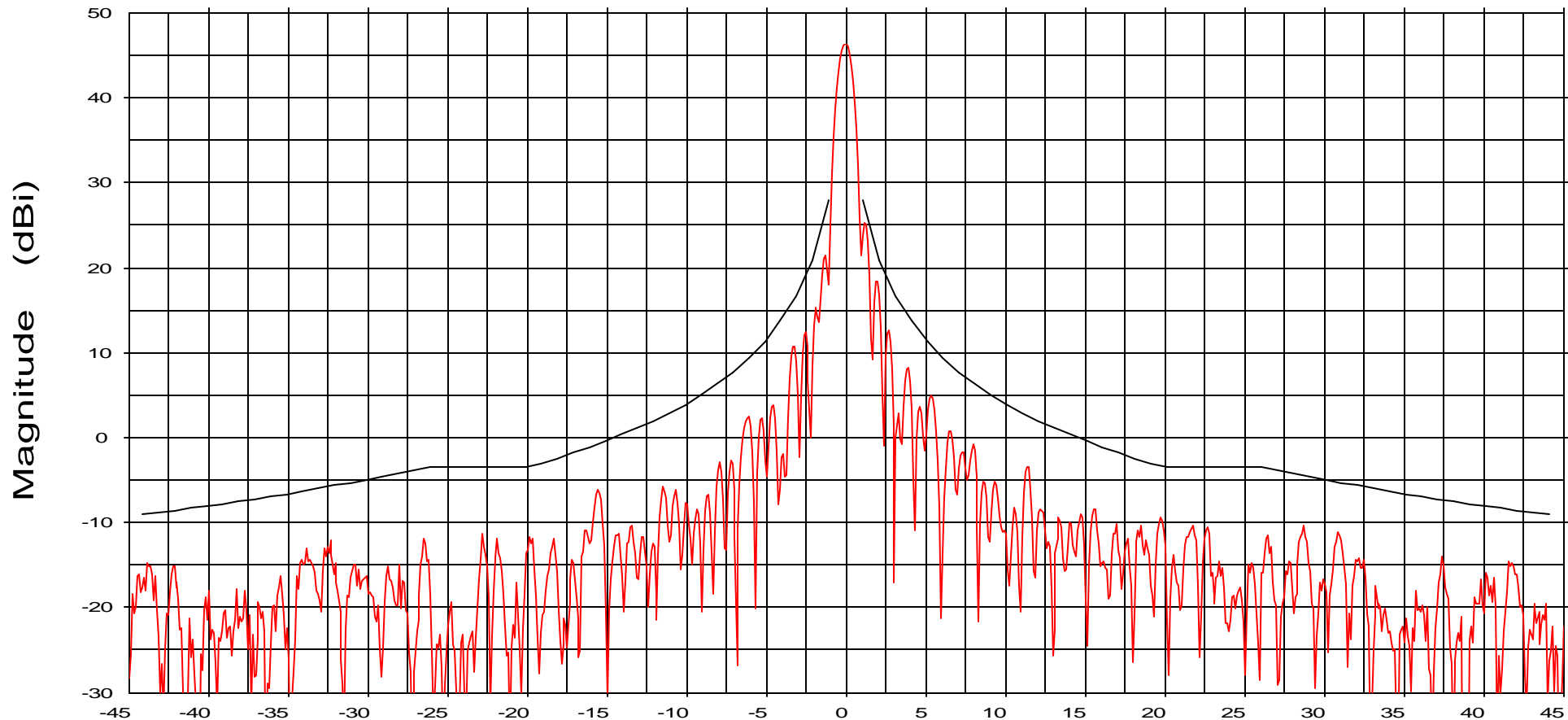
Beam Peak
Deg dB
-0.02 46.32

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
138310.DAT-ant_under_test

Cal. file units
138310.DAT dBi

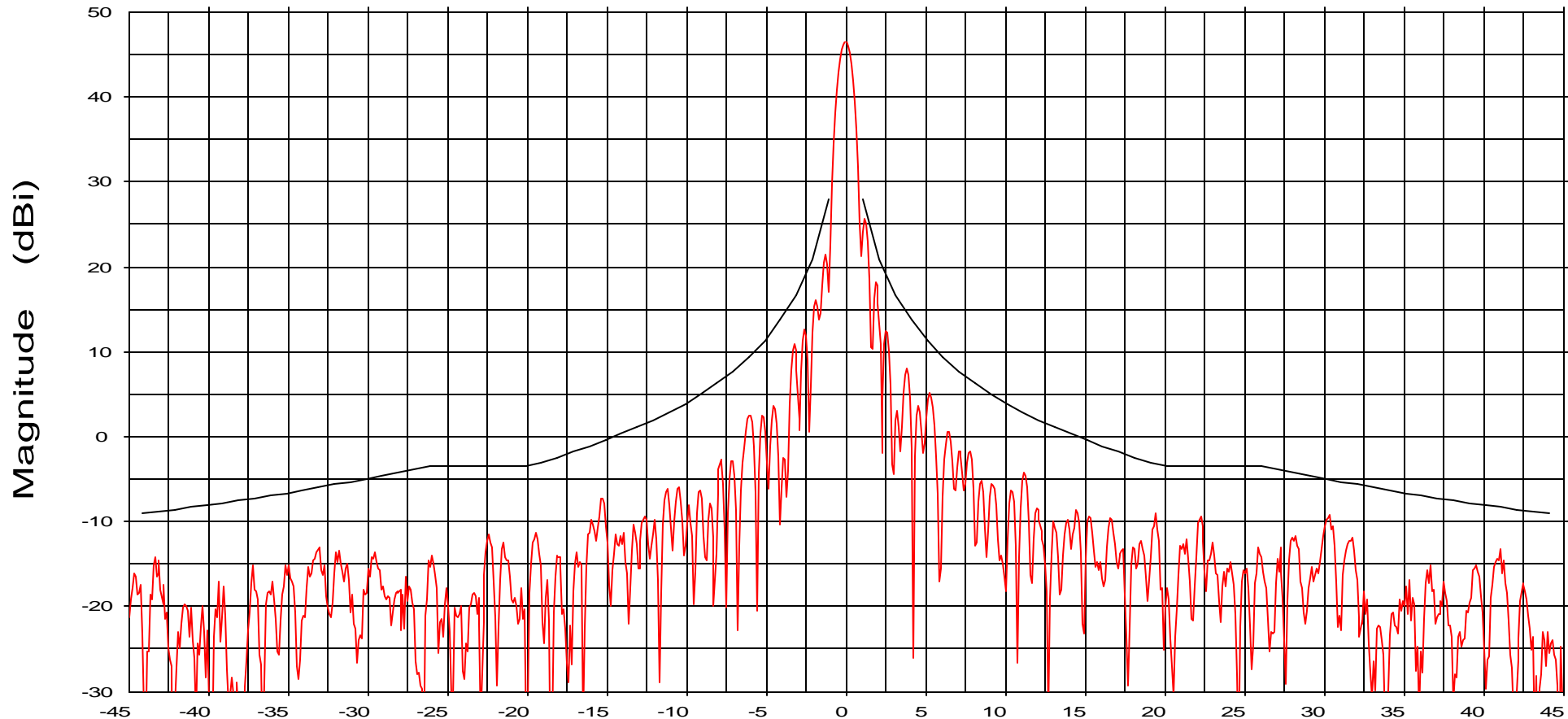
Beam Peak
Deg dB
-0.04 46.62

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Overlays
138310.DAT-ant_under_test

Cal. file units
138310.DAT dBi

Azimuth (Deg)

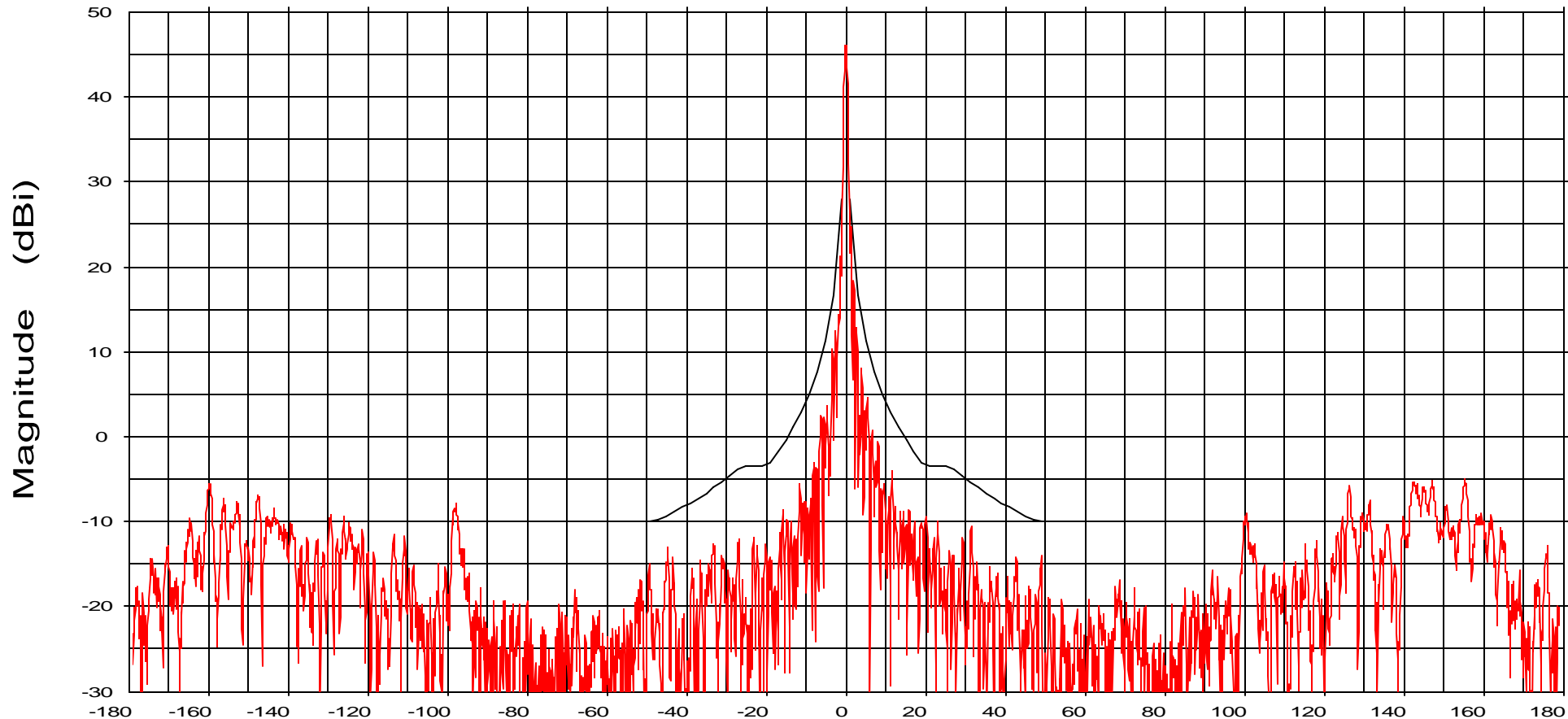
Beam Peak
Deg dB
-0.06 46.73

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
138310.DAT-ant_under_test

Cal. file units
138310.DAT dBi

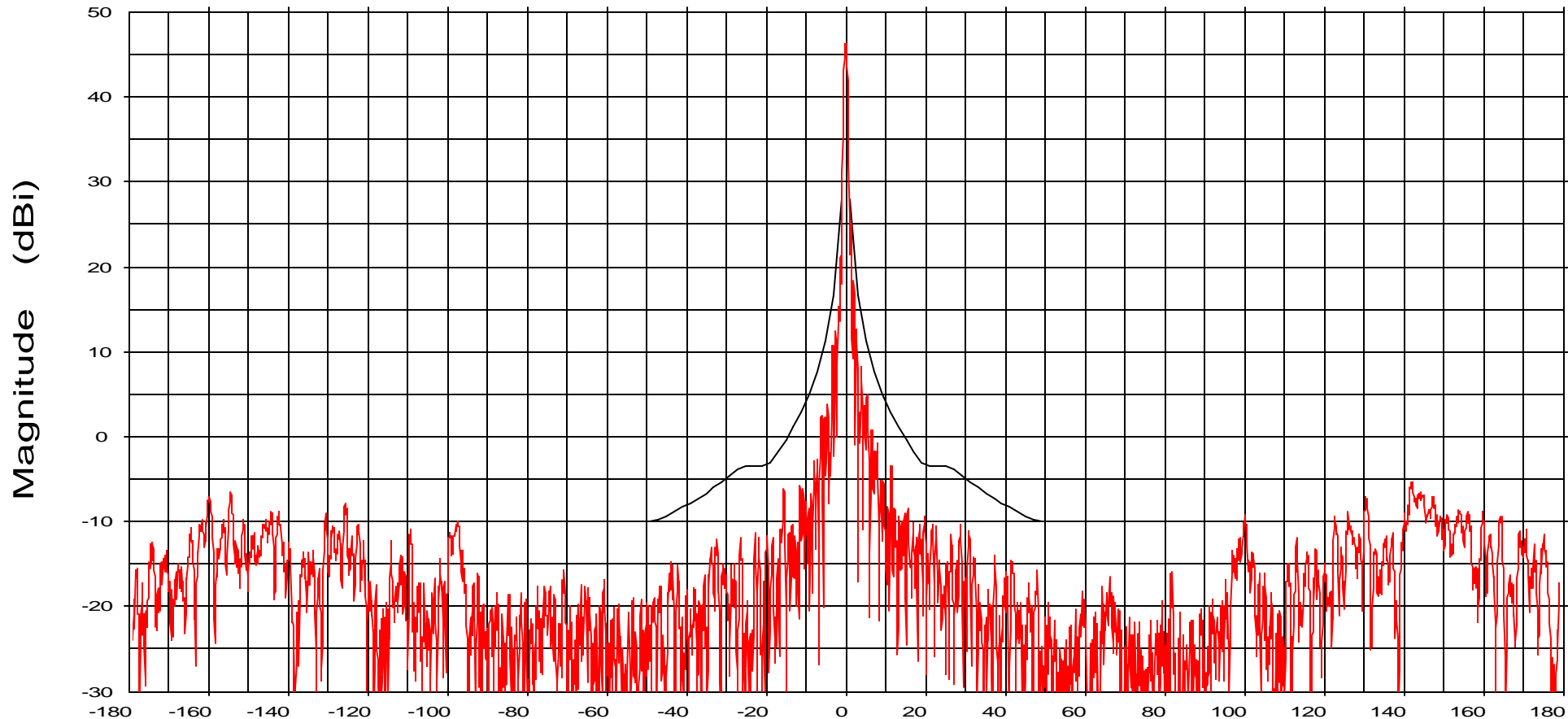
Beam Peak
Deg dB
-0.02 46.32

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Overlays
138310.DAT-ant_under_test

Cal. file units
138310.DAT dBi

Azimuth (Deg)

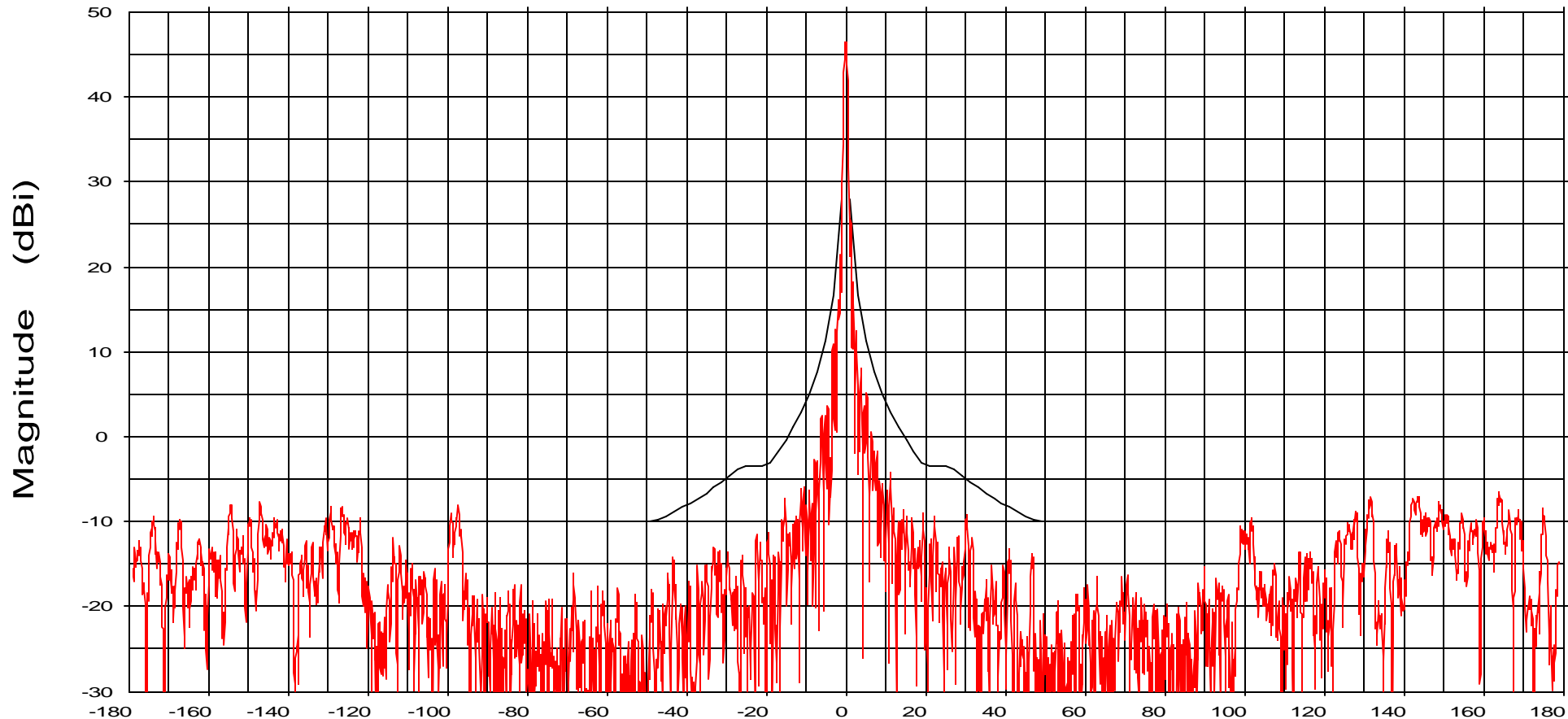
Beam Peak
Deg dB
-0.04 46.62

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Overlays
138310.DAT-ant_under_test

Cal. file units
138310.DAT dBi

Azimuth (Deg)

Beam Peak
Deg dB
-0.06 46.73



Section IV

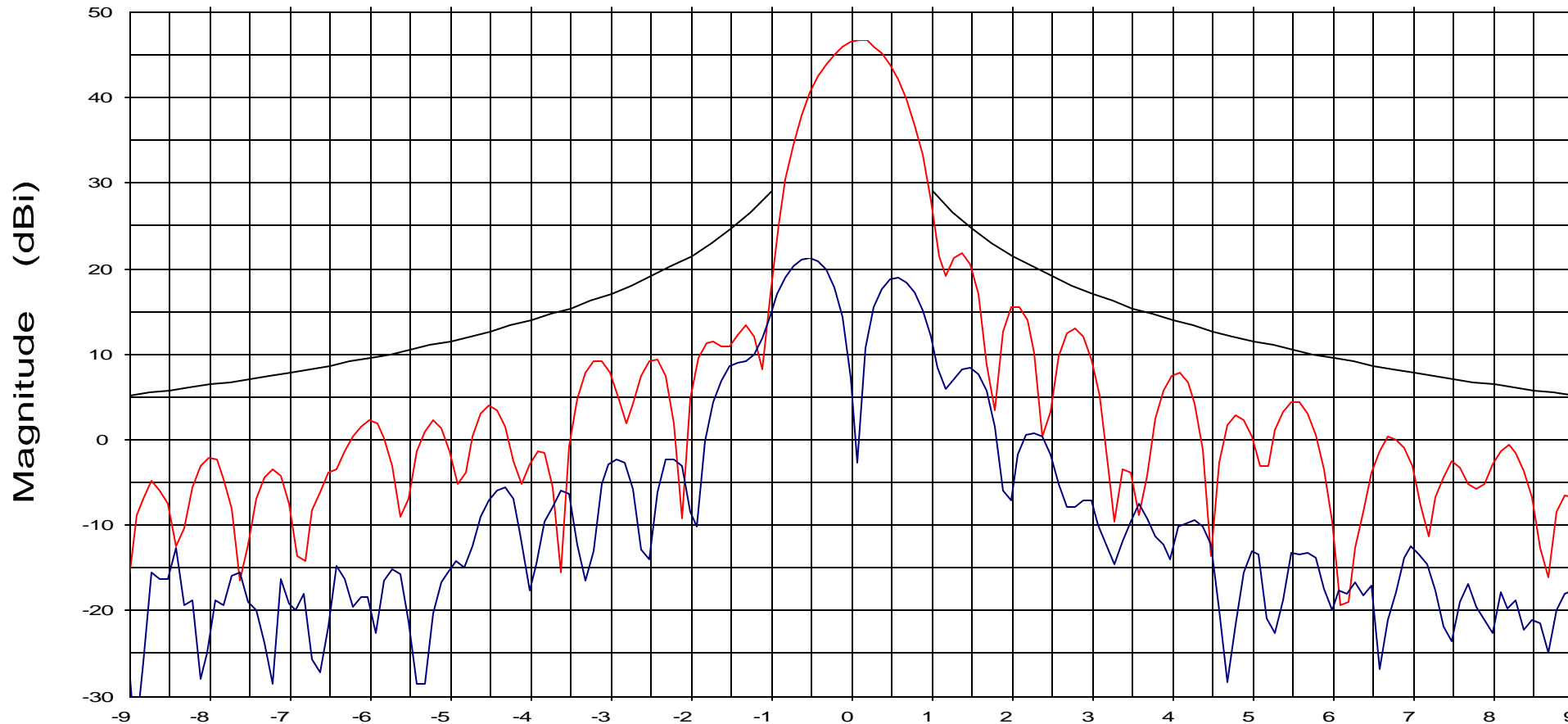


Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
 138314.DAT-ant_under_test
 138316.DAT-ant_under_test

Cal. file	units
138314.DAT	dBi
138316.DAT	dBi

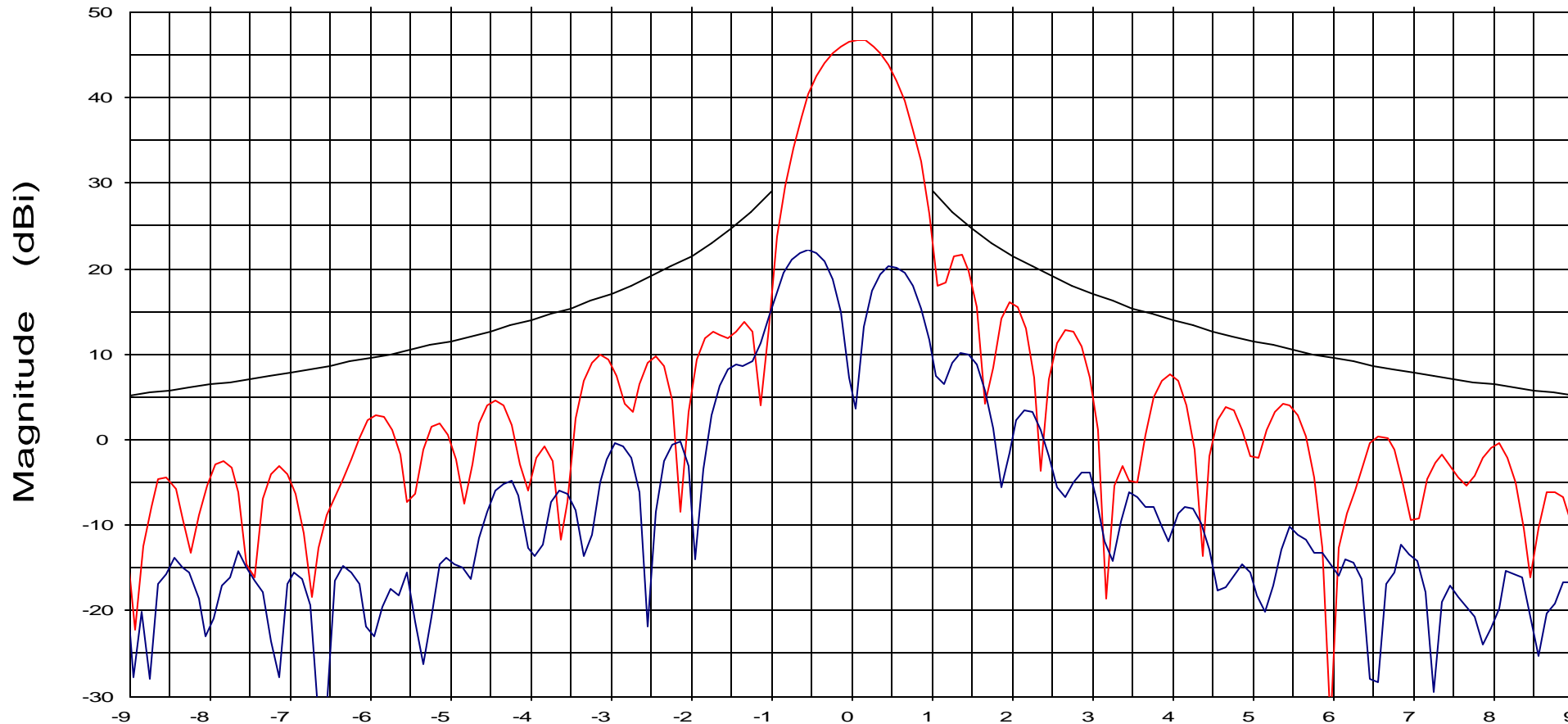
Beam Peak	
Deg	dB
0.08	46.47

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays

138314.DAT-ant_under_test
 138316.DAT-ant_under_test

Cal. file
 138314.DAT
 138316.DAT

units
 dBi
 dBi

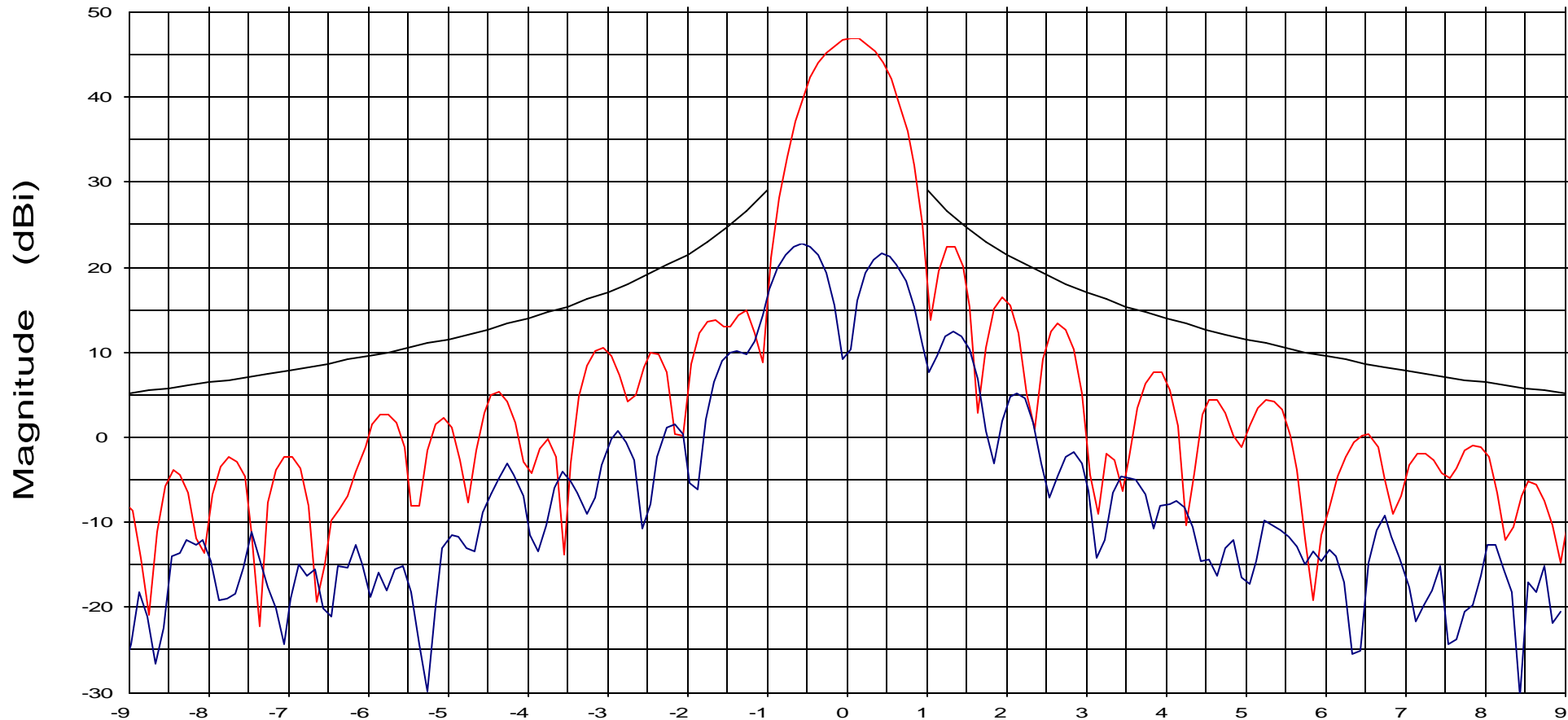
Beam Peak
 Deg dB
 0.07 46.76

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
 138314.DAT-ant_under_test
 138316.DAT-ant_under_test

Cal. file	units
138314.DAT	dBi
138316.DAT	dBi

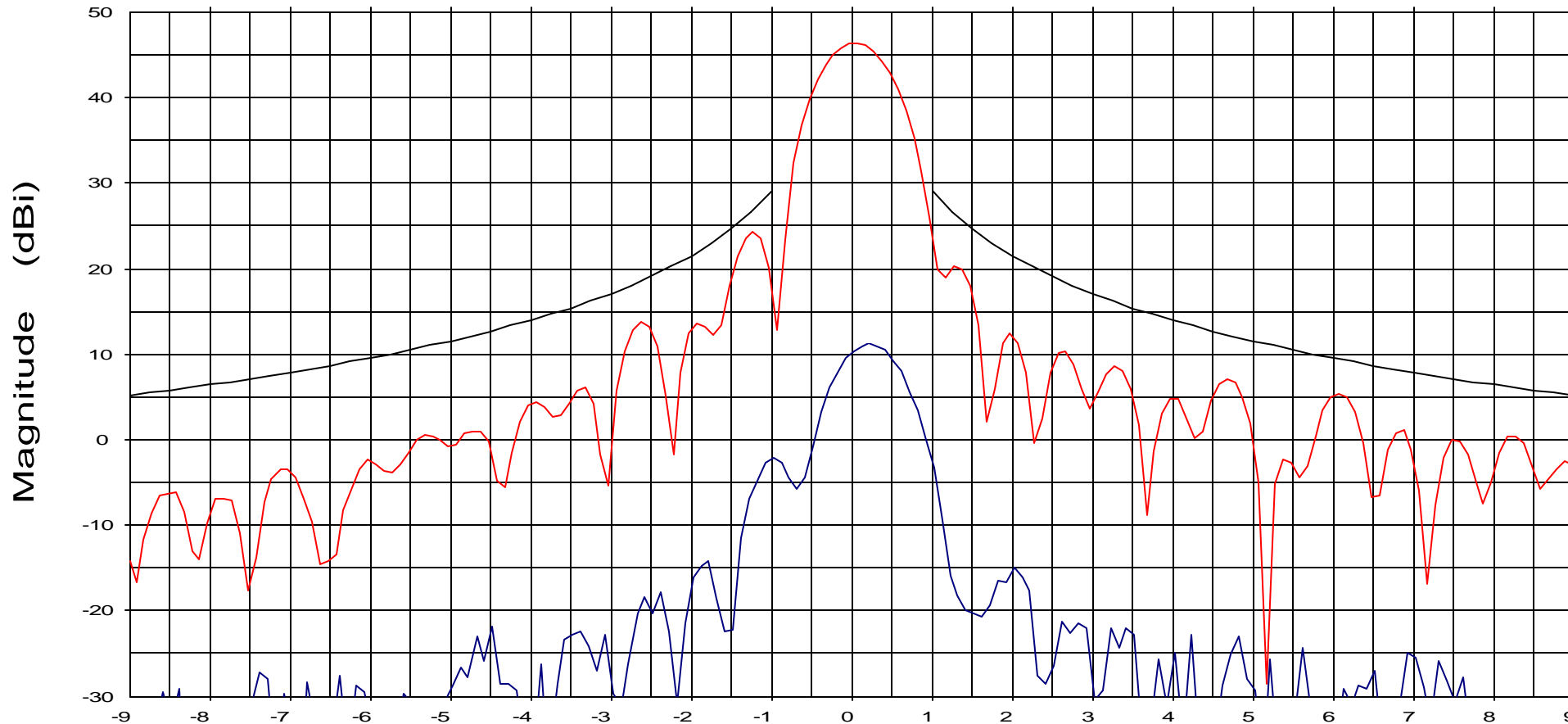
Beam Peak	
Deg	dB
0.05	46.89

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Elevation (Deg)

Overlays
 138315.DAT-ant_under_test
 138317.DAT-ant_under_test

Cal. file	units
138315.DAT	dBi
138317.DAT	dBi

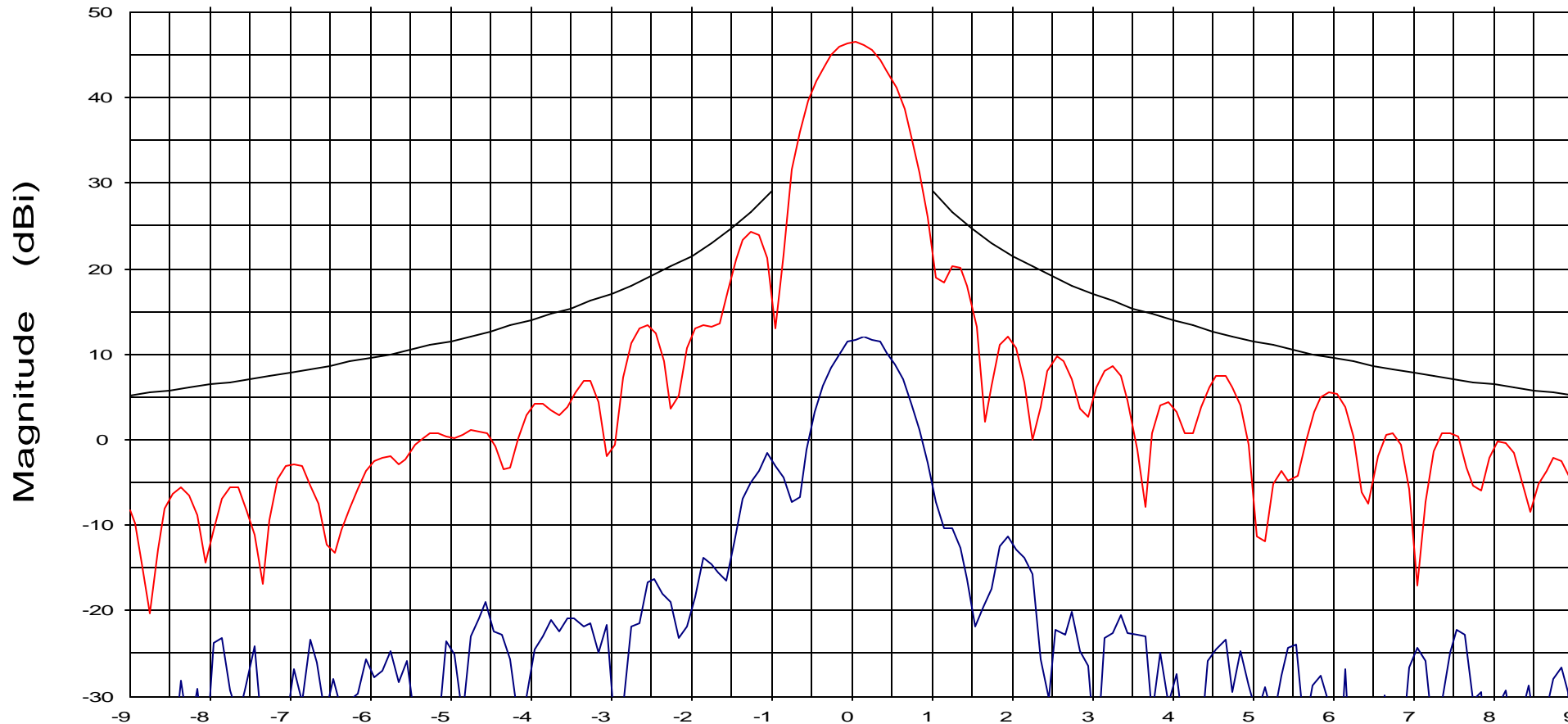
Beam Peak	
Deg	dB
0.07	46.35

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Elevation (Deg)

Overlays
 138315.DAT-ant_under_test
 138317.DAT-ant_under_test

Cal. file	units
138315.DAT	dBi
138317.DAT	dBi

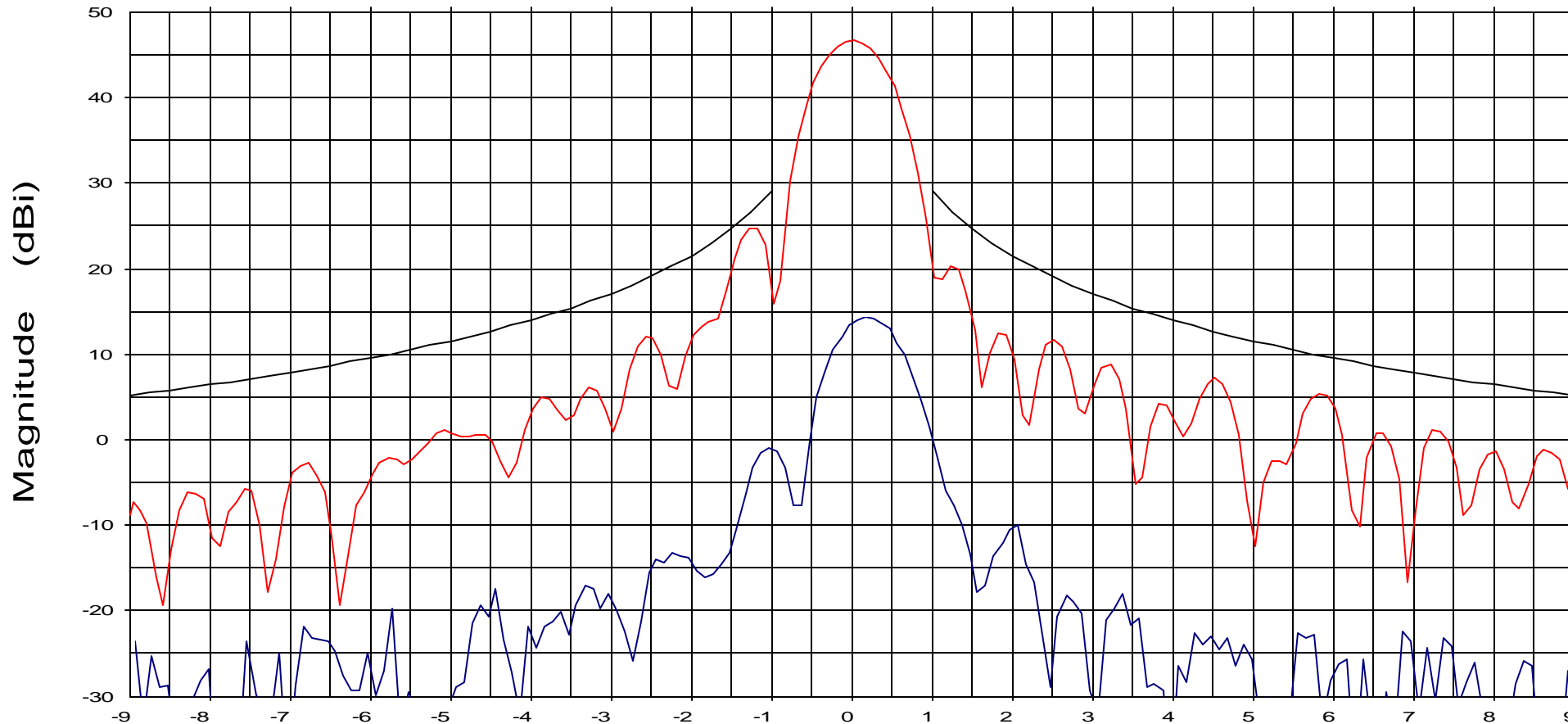
Beam Peak	
Deg	dB
0.05	46.59

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Elevation (Deg)

Overlays

138315.DAT-ant_under_test
 138317.DAT-ant_under_test

Cal. file
 138315.DAT
 138317.DAT

units
 dBi
 dBi

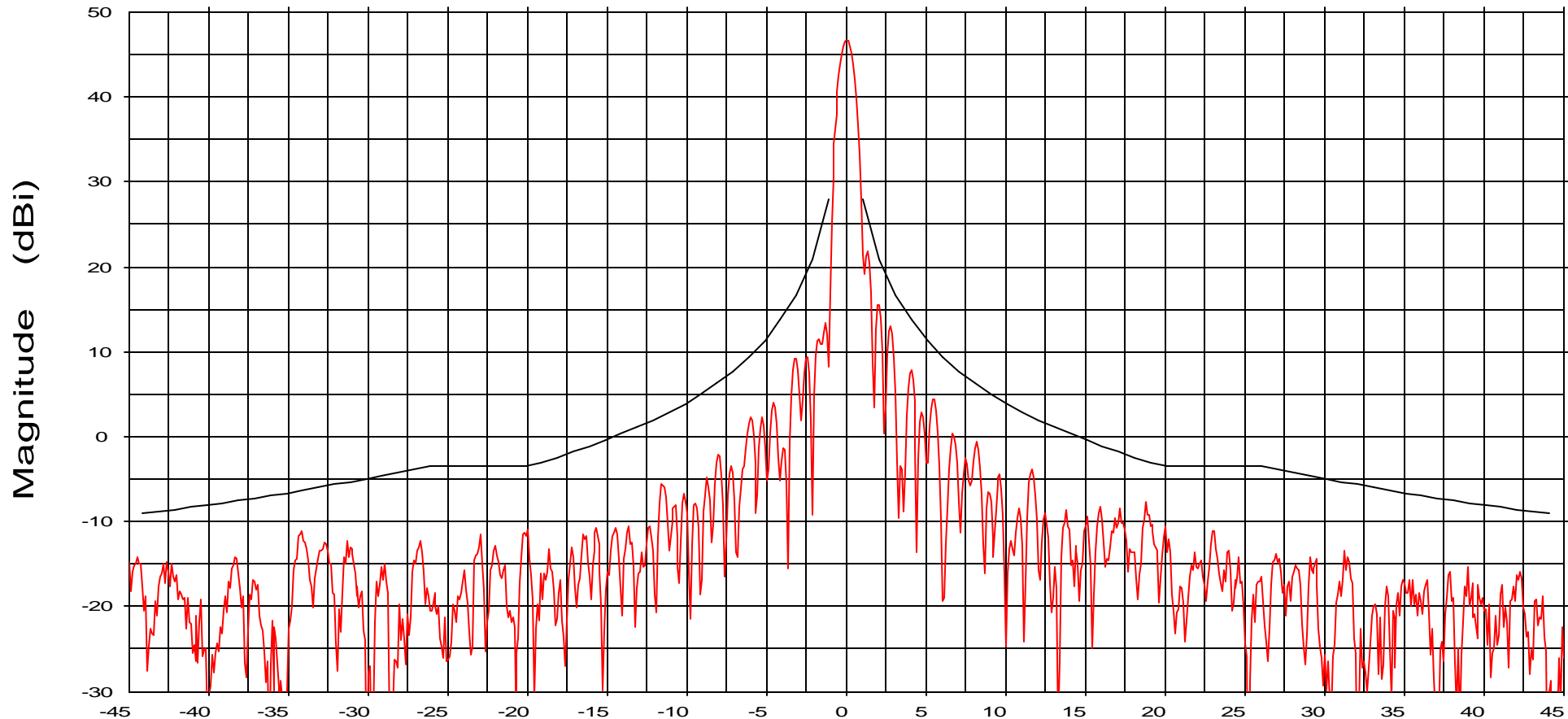
Beam Peak
 Deg dB
 0.02 46.69

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
138314.DAT-ant_under_test

Cal. file
138314.DAT

units
dBi

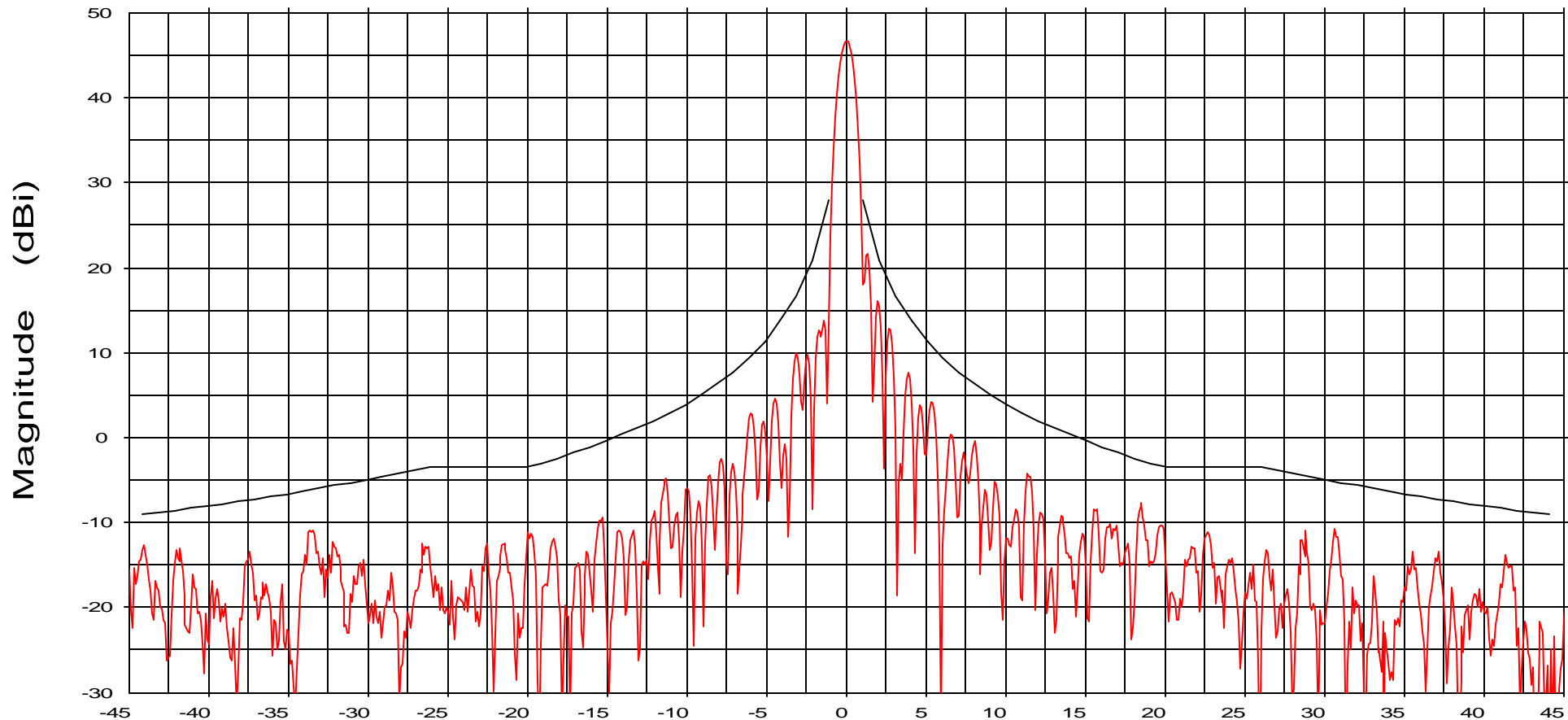
Beam Peak
Deg dB
0.08 46.47

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
138314.DAT-ant_under_test

Cal. file
138314.DAT

units
dBi

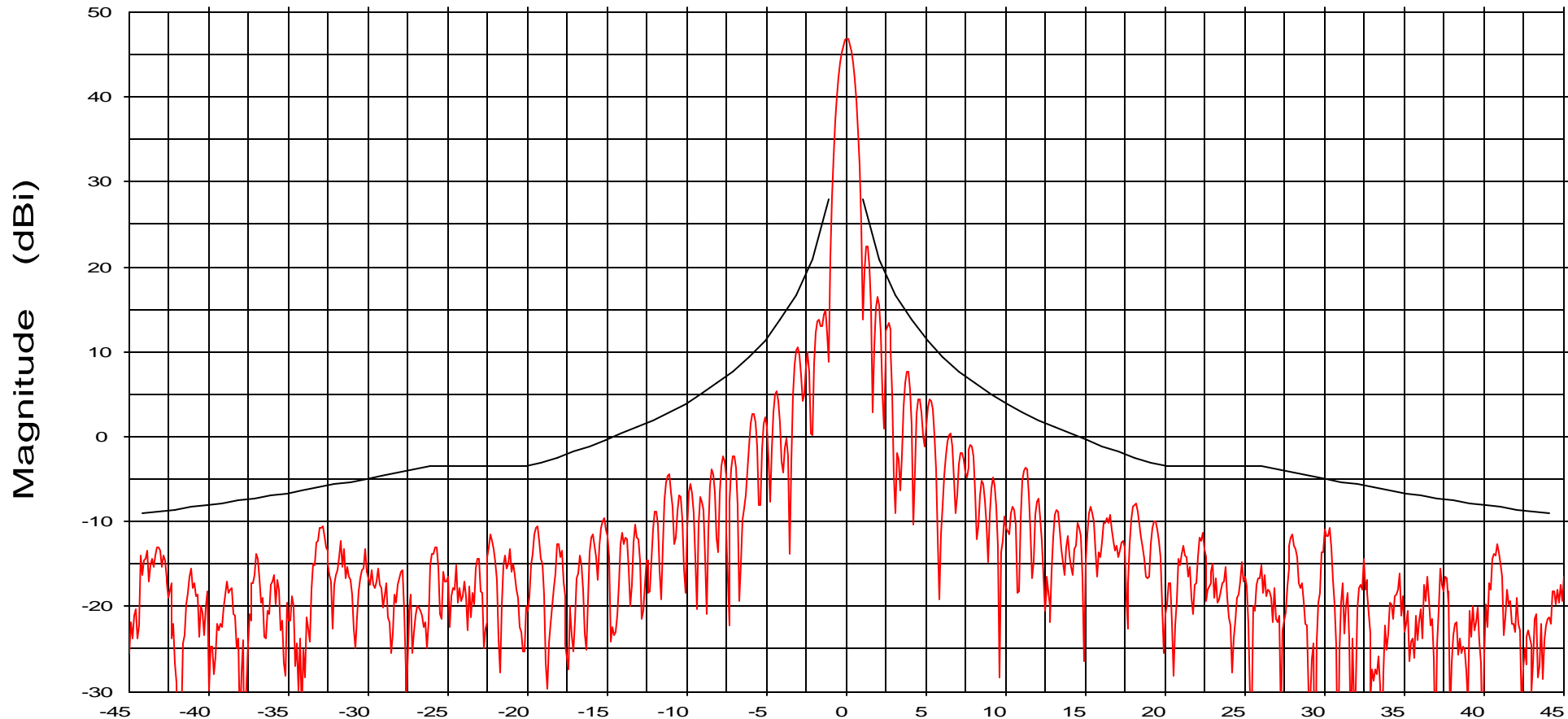
Beam Peak
Deg dB
0.07 46.76

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
138314.DAT-ant_under_test

Cal. file
138314.DAT

units
dBi

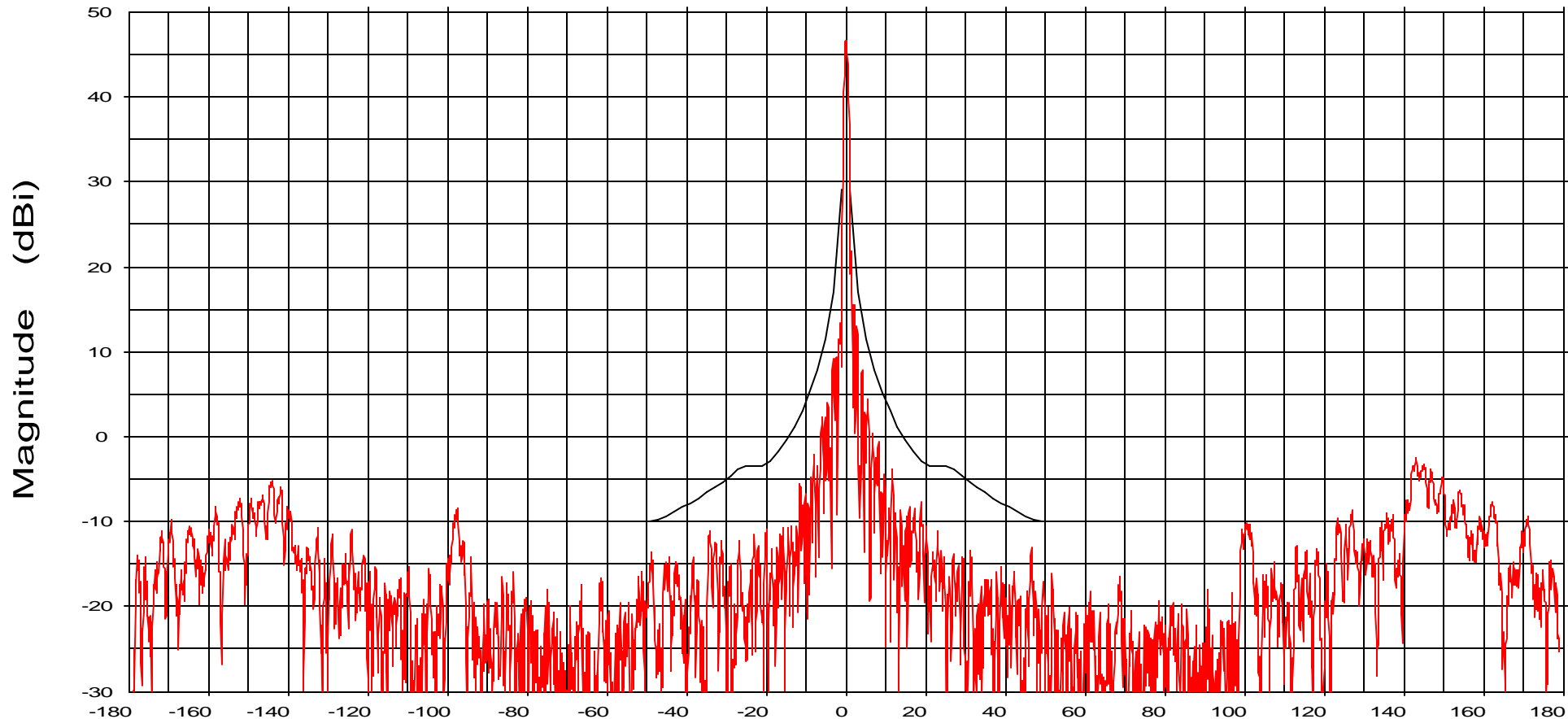
Beam Peak
Deg dB
0.05 46.89

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Overlays
138314.DAT-ant_under_test

Cal. file units
138314.DAT dBi

Azimuth (Deg)

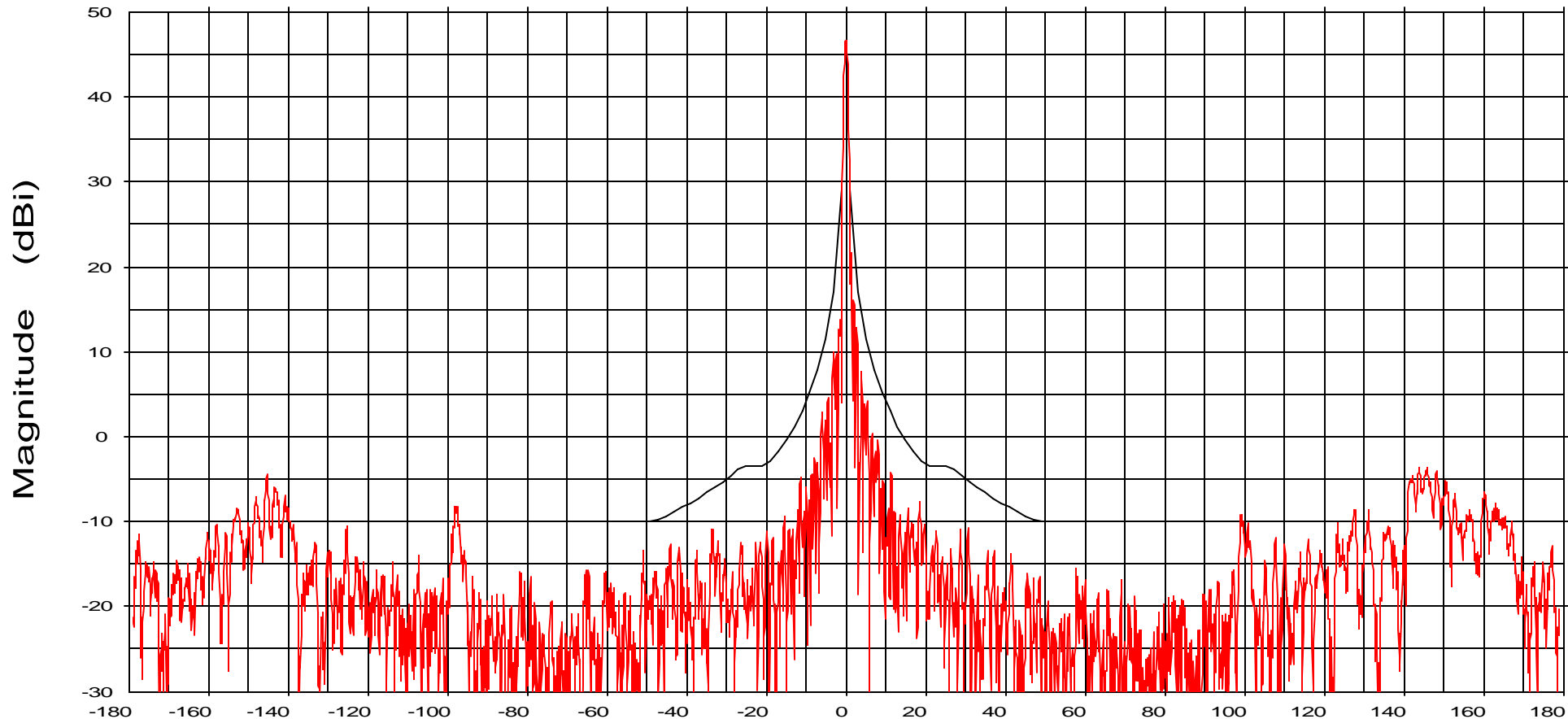
Beam Peak
Deg dB
0.08 46.47

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sideloobe Envelope: 29-25Log(Theta)~100Lamda/D to 20 Deg
-3.5dBi~20 to 26.3 Deg | 32-25Log(Theta)~26.3 to 48 Deg
-10 dBi~48 to 180 Deg

Azimuth (Deg)

Overlays
138314.DAT-ant_under_test

Cal. file
138314.DAT

units
dBi

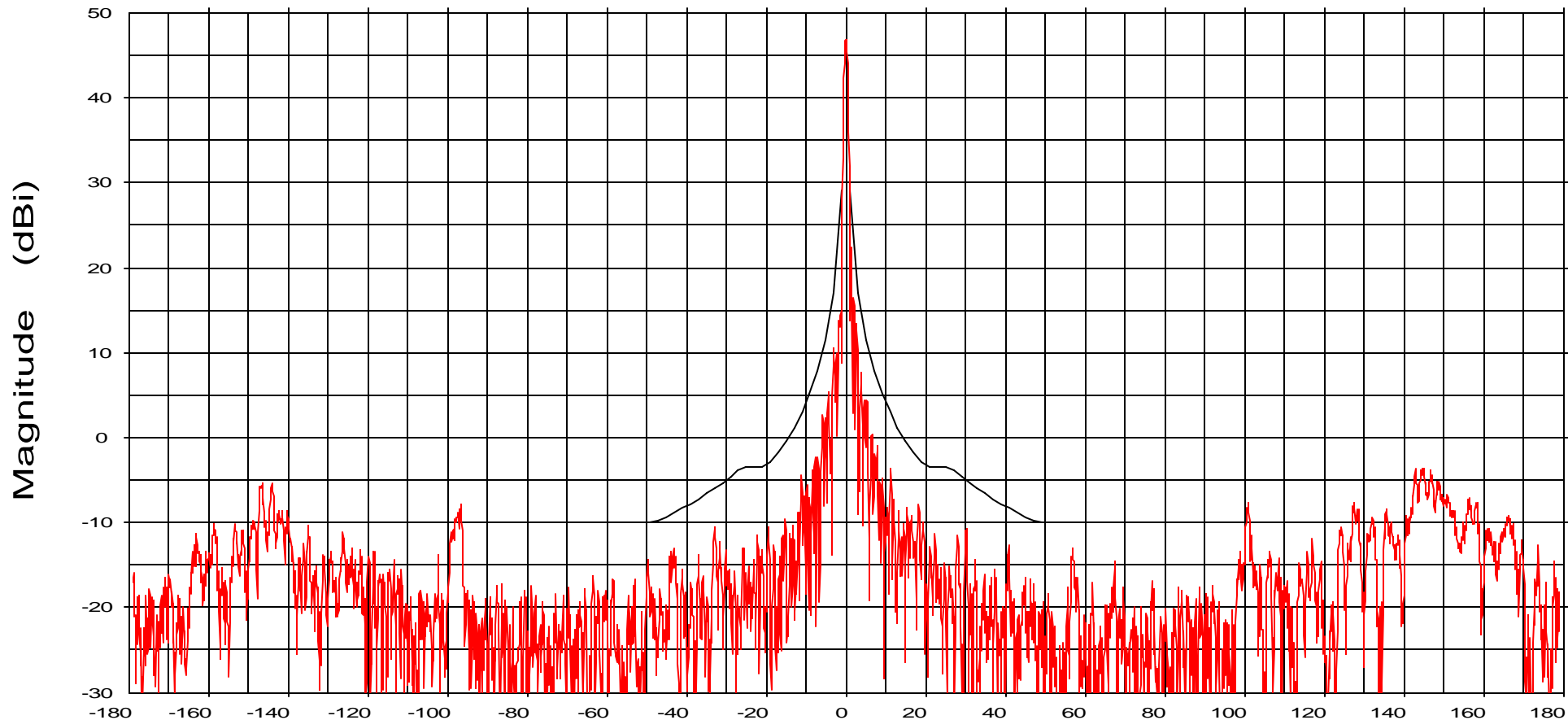
Beam Peak
Deg dB
0.07 46.76

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidlobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
138314.DAT-ant_under_test

Cal. file
138314.DAT

units
dBi

Beam Peak
Deg dB
0.05 46.89

Section V

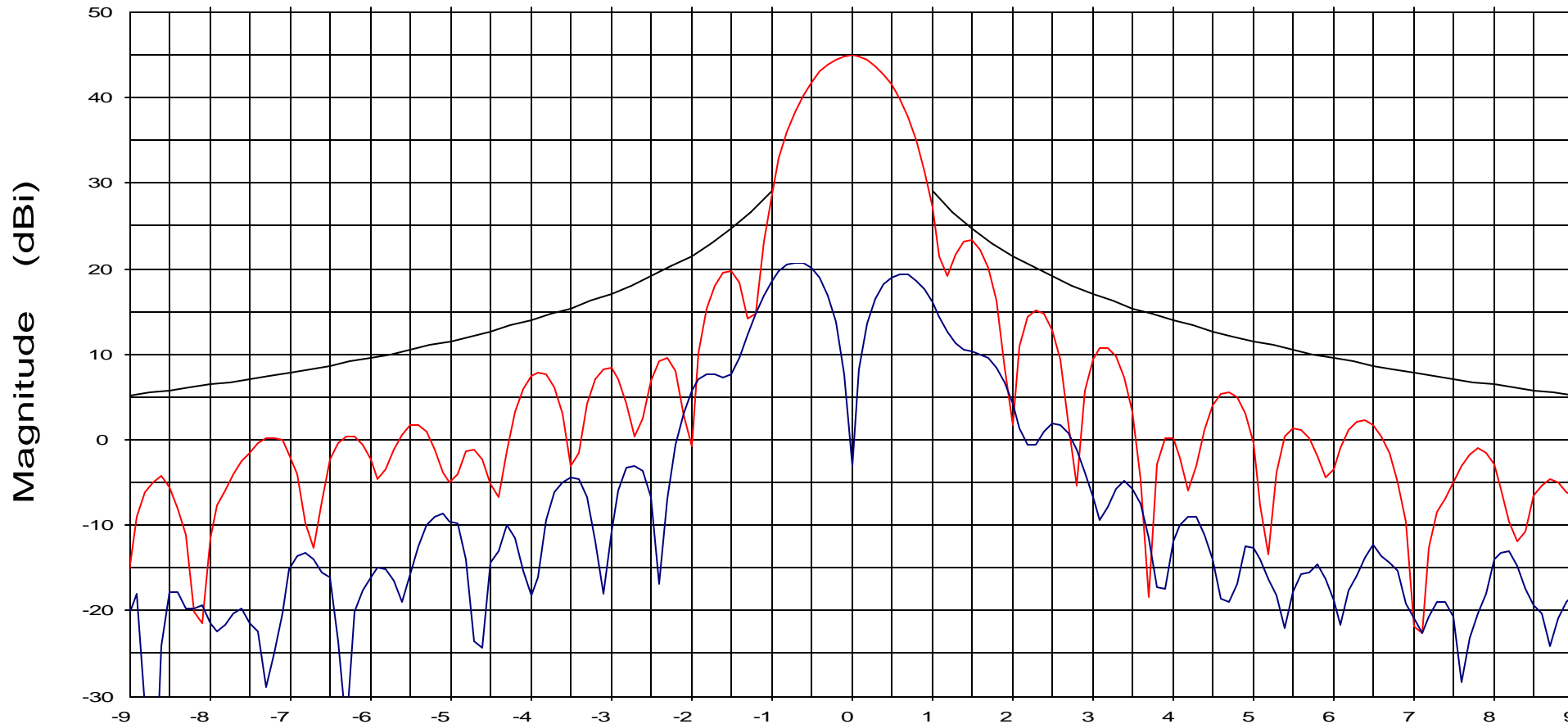


Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
 138310.DAT-ant_under_test
 138312.DAT-ant_under_test

Cal. file	units
138310.DAT	dBi
138312.DAT	dBi

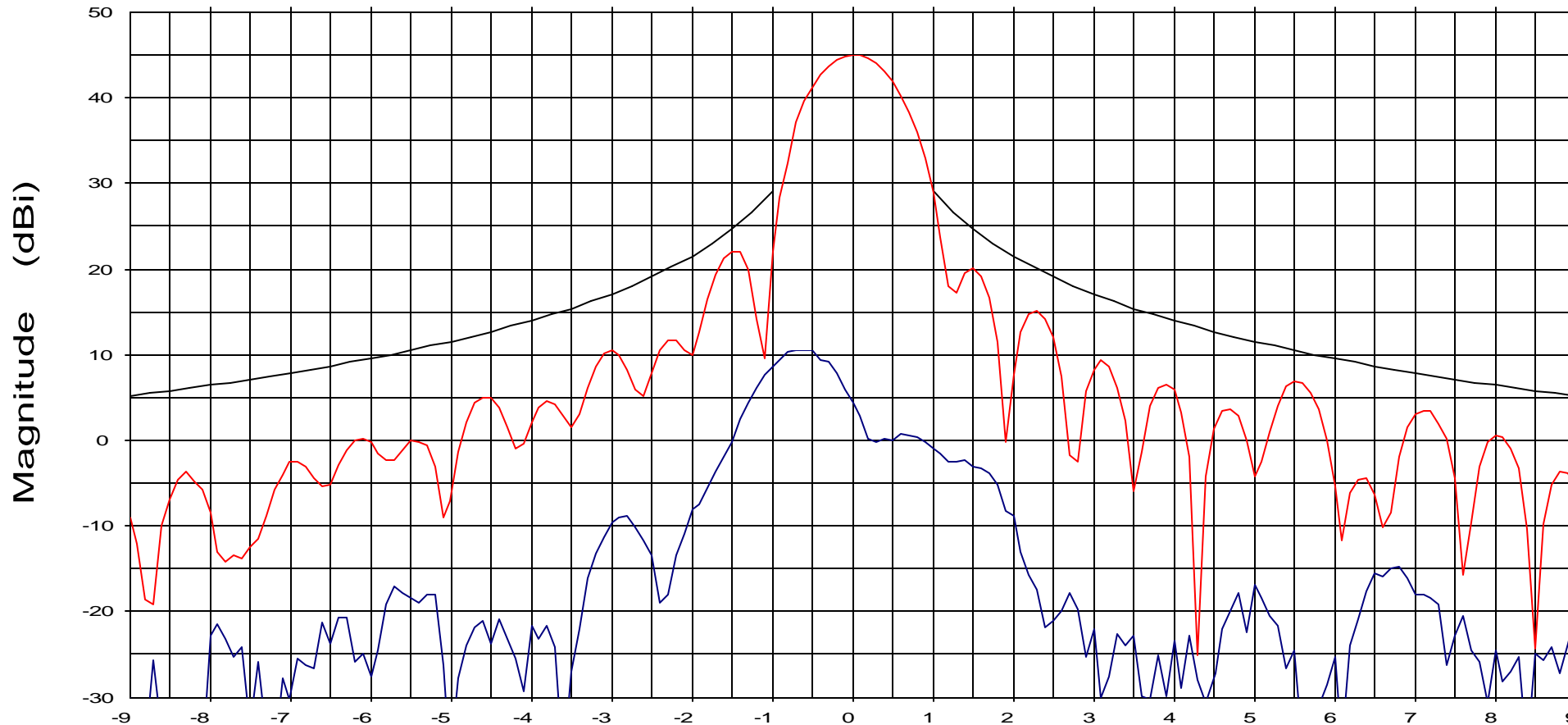
Beam Peak	
Deg	dB
0.00	45.10

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Elevation (Deg)

Overlays

138311.DAT-ant_under_test
 138313.DAT-ant_under_test

Cal. file
 138311.DAT
 138313.DAT

units
 dBi
 dBi

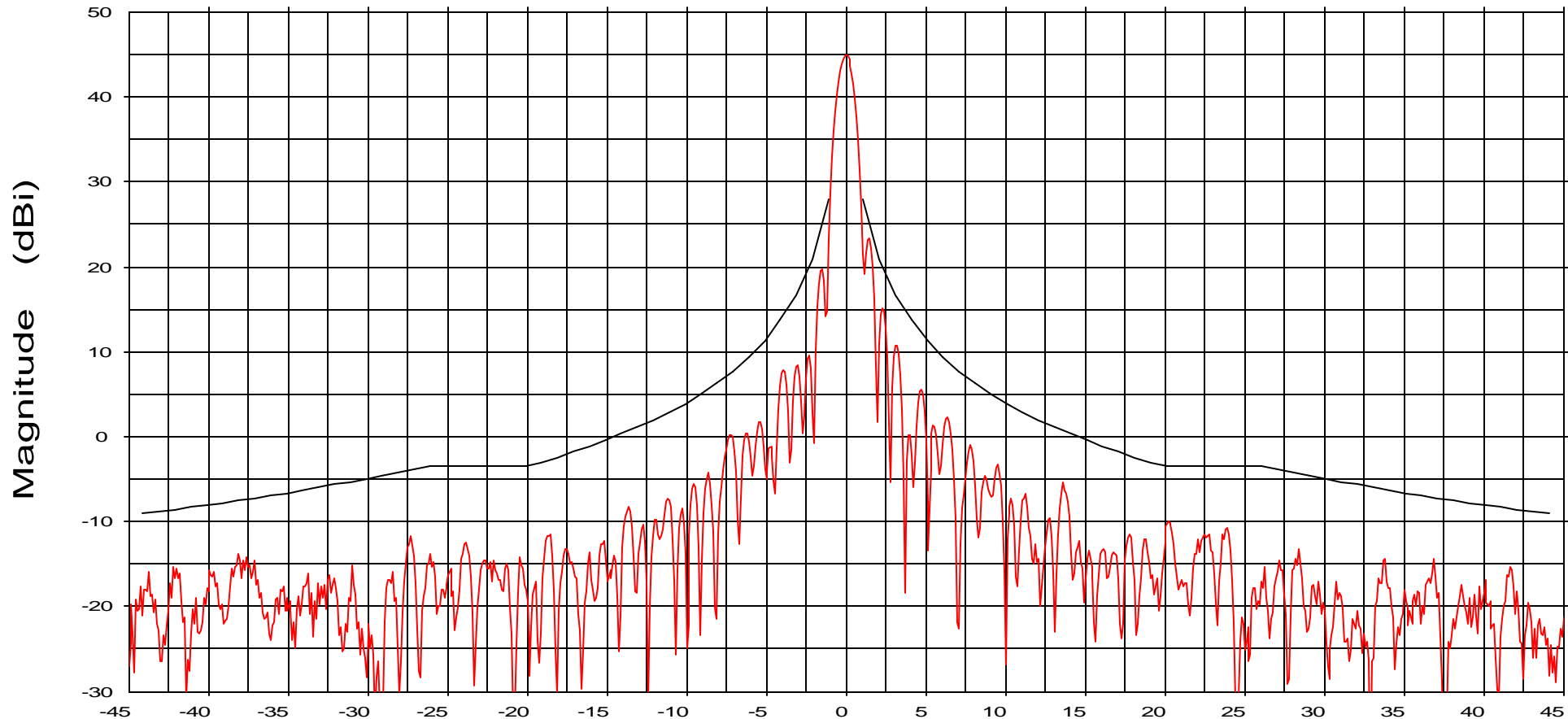
Beam Peak
 Deg dB
 0.00 45.01

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
138310.DAT-ant_under_test

Cal. file units
138310.DAT dBi

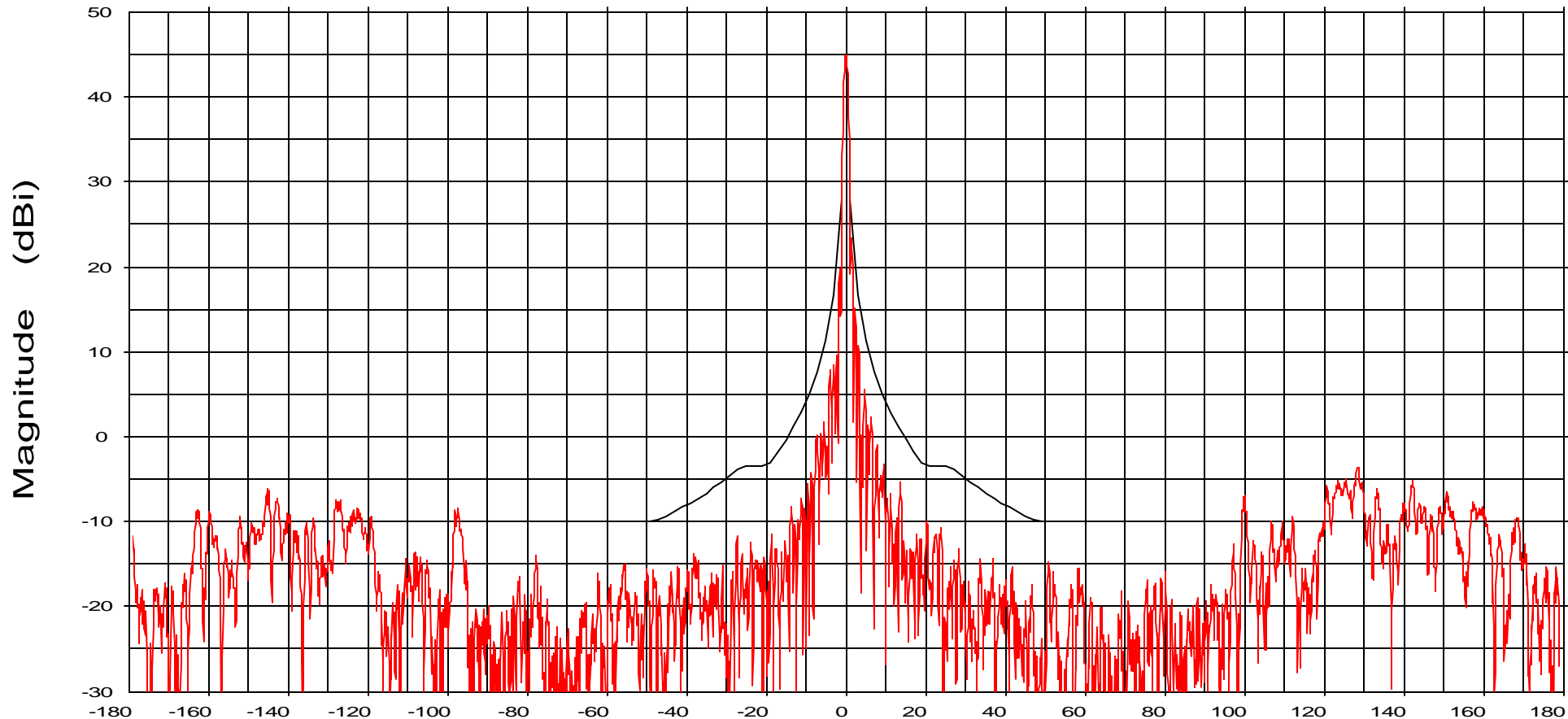
Beam Peak
Deg dB
0.00 45.10

Operator: Ken Poovey

Channel: ch1

Tx pol: Vert.

Rx pol: Vert.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Overlays
138310.DAT-ant_under_test

Cal. file units
138310.DAT dBi

Azimuth (Deg)

Beam Peak
Deg dB
0.00 45.10

Section VI

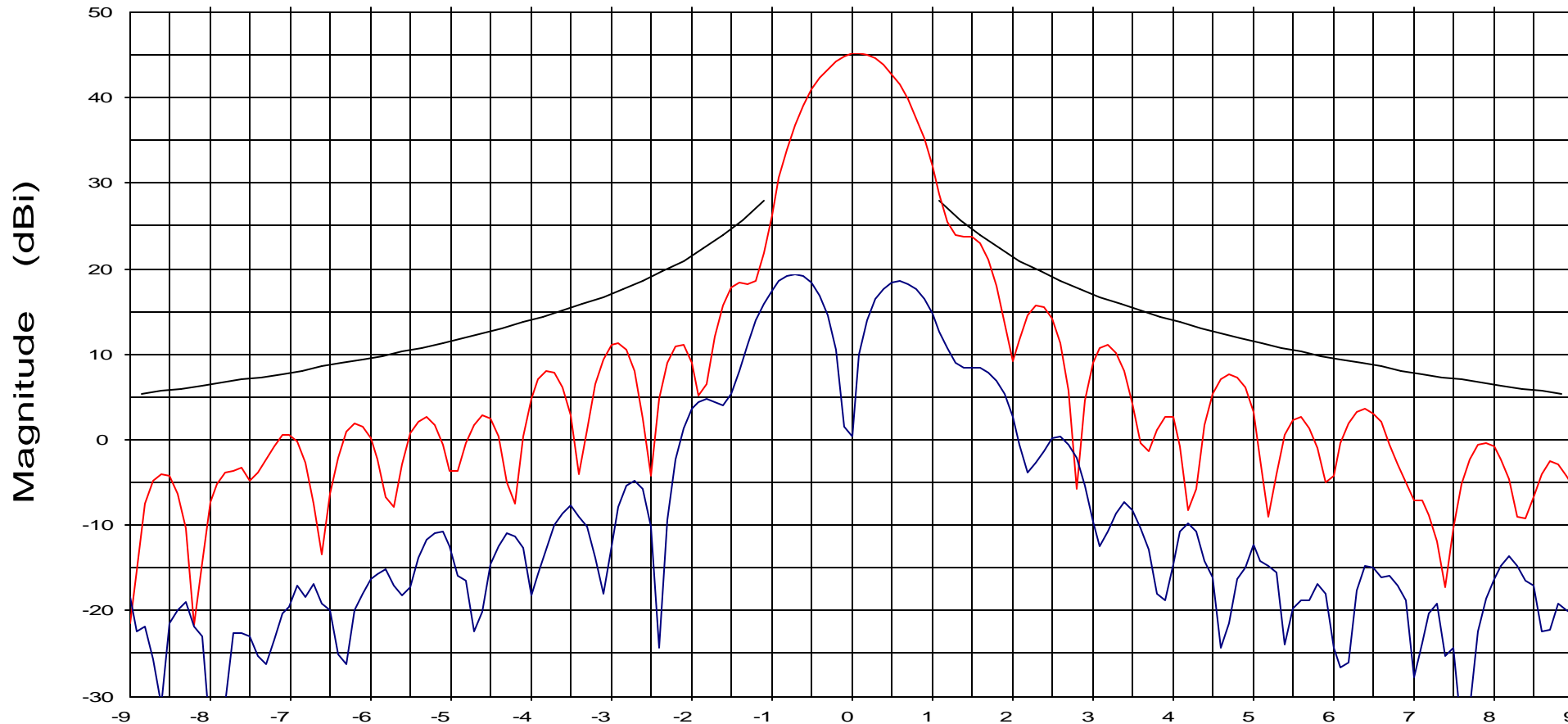


Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
 138314.DAT-ant_under_test
 138316.DAT-ant_under_test

Cal. file	units
138314.DAT	dBi
138316.DAT	dBi

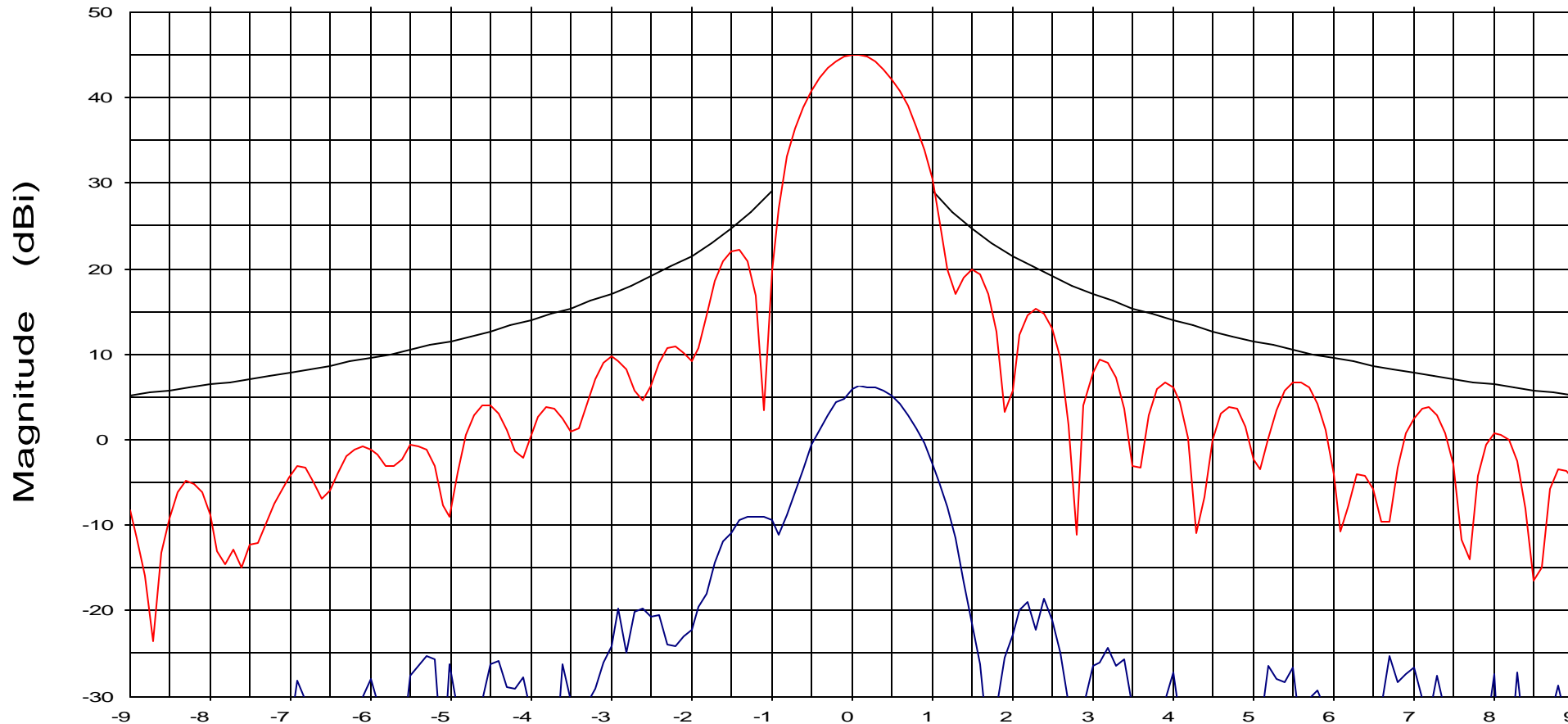
Beam Peak	Deg	dB
0.10		45.17

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda / D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Elevation (Deg)

Overlays

138315.DAT-ant_under_test
 138317.DAT-ant_under_test

Cal. file
 138315.DAT
 138317.DAT

units
 dBi
 dBi

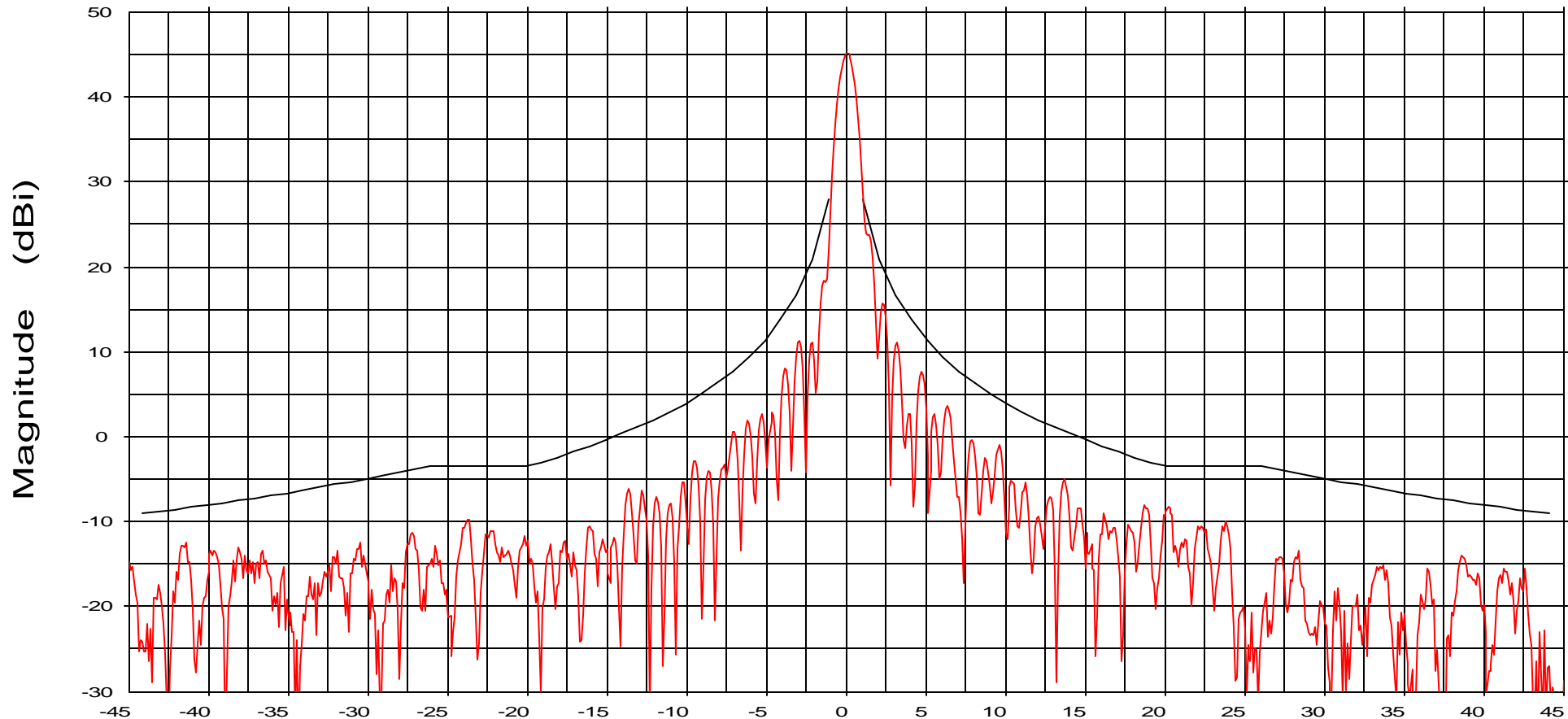
Beam Peak
 Deg dB
 0.10 45.10
 0.10

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: 29-25Log(Theta)~100Lamda/D to 20 Deg
-3.5dBi~20 to 26.3 Deg | 32-25Log(Theta)~26.3 to 48 Deg
-10 dBi~48 to 180 Deg

Overlays
138314.DAT-ant_under_test

Cal. file units
138314.DAT dBi

Azimuth (Deg)

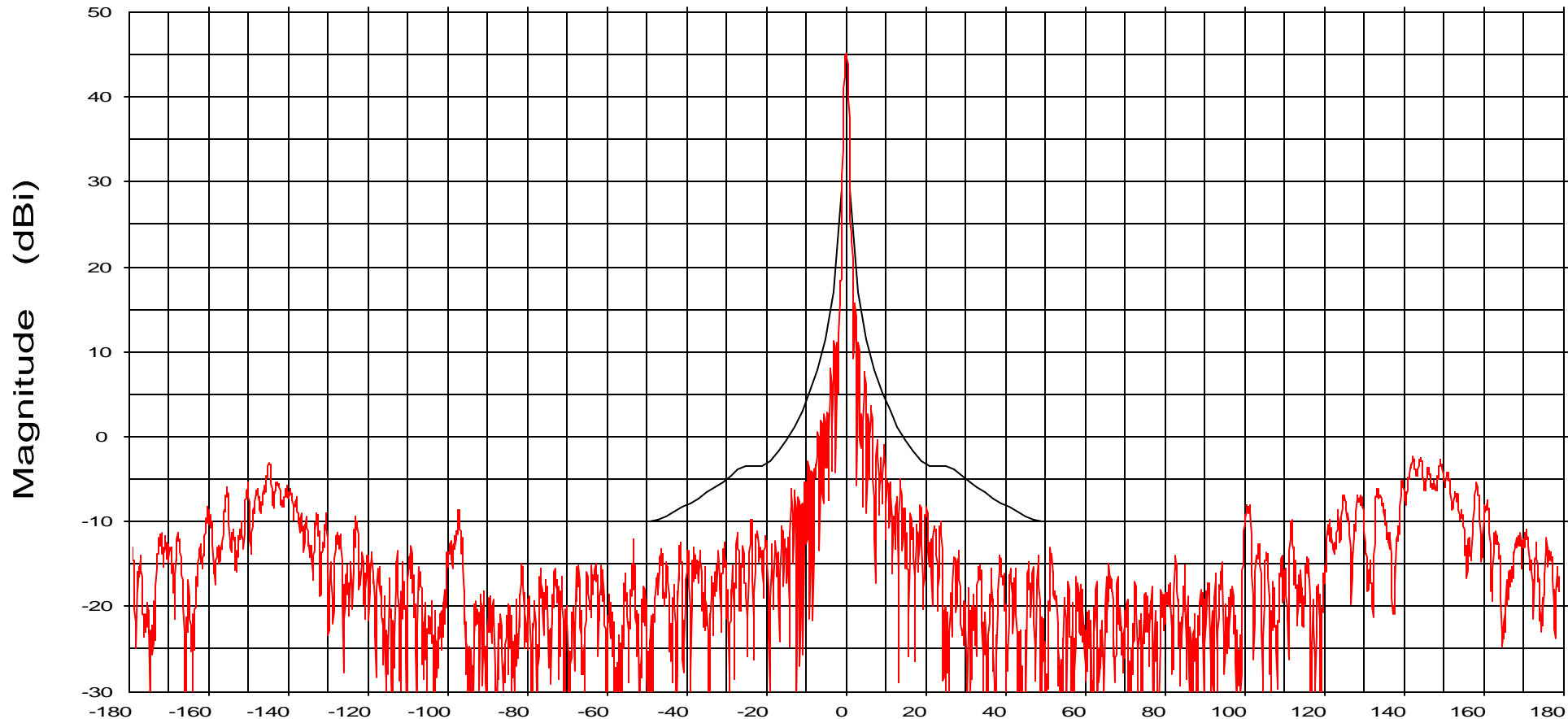
Beam Peak
Deg dB
0.10 45.17

Operator: Ken Poovey

Channel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: $29 - 25 \log(\theta) \sim 100 \lambda/D$ to 20 Deg
 $-3.5 \text{ dBi} \sim 20$ to 26.3 Deg | $32 - 25 \log(\theta) \sim 26.3$ to 48 Deg
 $-10 \text{ dBi} \sim 48$ to 180 Deg

Azimuth (Deg)

Overlays
138314.DAT-ant_under_test

Cal. file
138314.DAT

units
dBi

Beam Peak
Deg dB
0.10 45.17

End of Report

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