Data in support of claim that proposed operation meets off-axis criteria of 1986 Declaratory Order

ID **Applicant:** Knight Sky **Date of Application:** 10/01/08

HEADING

a1	**Antenna Manufacturer:**	Prodelin	*c*	**main bore gain**	42.00	**dBi**
a2	**Antenna Model:**	2.4m	*d*	**frequency at which gain was measured**	5.85	**GHz**
a3	**Antenna ID:**	Ant1	*e*	**maximum input power density (dBw/4KHz)**	-10.00	**dBw/4Khz**
b	**Transmit band (b):**	5.925 GHz				

1.0 to 5 degrees calculated maximum difference in off-axis eirp density: **-0.30** **dBw/4Khz**

TABLE ***1.0 to 180 degrees calculated maximum difference in off-axis eirp density:*** **-0.30**

EIRP for Antenna Conforming to 25.209(a) operating at 25.212 power density limits			Gain and EIRP for Antenna Not Conforming to 25.209(a) operating at stated maximum power density			
1	2	3	4	5	6	7
Angle (degrees)	25.209 Gain (dBi)	Off-Axis EIRP Density for -2.70 dBw/4Kz	Gain relative to main bore gain (dB)	Actual Gain in dBi	Off-Axis EIRP Density for input of -10.00	Difference in Off-Axis EIRP Density (6) minus (3)
1.00	29.00	26.30	-6.00	36.00	26.00	-0.30
1.25	26.58	23.88	-9.00	33.00	23.00	-0.88
1.50	24.60	21.90	-15.00	27.00	17.00	-4.90
1.75	22.92	20.22	-21.00	21.00	11.00	-9.22
2.00	21.47	18.77	-24.00	18.00	8.00	-10.77
2.25	20.20	17.50	-22.50	19.50	9.50	-8.00
2.50	19.05	16.35	-24.50	17.50	7.50	-8.85
2.75	18.02	15.32	-29.00	13.00	3.00	-12.32
3.00	17.07	14.37	-29.00	13.00	3.00	-11.37
4.50	12.67	9.97	-33.00	9.00	-1.00	-10.97
8.50	5.76	3.06	-40.00	2.00	-8.00	-11.06
11.00	6.00	3.30	-44.00	-2.00	-12.00	-15.30
18.00	0.60	-2.10	-49.00	-7.00	-17.00	-14.90
27.00	-3.78	-6.48	-52.00	-10.00	-20.00	-13.52
36.00	-9.91	-12.61	-52.00	-10.00	-20.00	-7.39
43.00	-8.80	-11.50	-57.00	-15.00	-25.00	-13.50
60.00	-10.00	-12.70	-54.00	-12.00	-22.00	-9.30
82.00	-10.00	-12.70	-46.00	-4.00	-14.00	-1.30
100.00	-10.00	-12.70	-45.00	-3.00	-13.00	-0.30
115.00	-10.00	-12.70	-46.00	-4.00	-14.00	-1.30
160.00	-10.00	-12.70	-47.00	-5.00	-15.00	-2.30
180.00	-10.00	-12.70	-47.00	-5.00	-15.00	-2.30

Data in support of claim that proposed operation meets off-axis criteria of 1986 Declaratory Order

ID **Applicant:** Knight Sky **Date of Application:** 10/01/08

HEADING

a1	**Antenna Manufacturer:**	Prodelin	*c*	**main bore gain**	42.00	**dBi**
a2	**Antenna Model:**	2.4m	*d*	**frequency at which gain was measured**	6.14	**GHz**
a3	**Antenna ID:**	Ant1	*e*	**maximum input power density (dBw/4KHz)**	-10.00	**dBw/4Khz**
b	**Transmit band (b):**	6.175 GHz				

1.0 to 7 degrees calculated maximum difference in off-axis eirp density: **-1.30** **dBw/4Khz**

TABLE ***1.0 to 180 degrees calculated maximum difference in off-axis eirp density:*** **-1.30**

EIRP for Antenna Conforming to 25.209(a) operating at 25.212 power density limits			Gain and EIRP for Antenna Not Conforming to 25.209(a) operating at stated maximum power density			
1	2	3	4	5	6	7
Angle (degrees)	25.209 Gain (dBi)	Off-Axis EIRP Density for -2.70 dBw/4Kz	Gain relative to main bore gain (dB)	Actual Gain in dBi	Off-Axis EIRP Density for input of -10.00	Difference in Off-Axis EIRP Density (6) minus (3)
1.00	29.00	26.30	-7.00	35.00	25.00	-1.30
1.25	26.58	23.88	-11.50	30.50	20.50	-3.38
1.50	24.60	21.90	-18.00	24.00	14.00	-7.90
1.75	22.92	20.22	-22.50	19.50	9.50	-10.72
2.00	21.47	18.77	-22.00	20.00	10.00	-8.77
2.25	20.20	17.50	-23.00	19.00	9.00	-8.50
2.50	19.05	16.35	-26.00	16.00	6.00	-10.35
2.75	18.02	15.32	-29.50	12.50	2.50	-12.82
3.00	17.07	14.37	-28.00	14.00	4.00	-10.37
4.50	12.67	9.97	-33.00	9.00	-1.00	-10.97
8.50	5.76	3.06	-40.00	2.00	-8.00	-11.06
11.00	6.00	3.30	-44.00	-2.00	-12.00	-15.30
18.00	0.60	-2.10	-49.00	-7.00	-17.00	-14.90
27.00	-3.78	-6.48	-52.00	-10.00	-20.00	-13.52
36.00	-9.91	-12.61	-52.00	-10.00	-20.00	-7.39
43.00	-8.80	-11.50	-57.00	-15.00	-25.00	-13.50
60.00	-10.00	-12.70	-54.00	-12.00	-22.00	-9.30
82.00	-10.00	-12.70	-44.00	-2.00	-12.00	0.70
100.00	-10.00	-12.70	-45.00	-3.00	-13.00	-0.30
120.00	-10.00	-12.70	-52.00	-10.00	-20.00	-7.30
160.00	-10.00	-12.70	-47.00	-5.00	-15.00	-2.30
180.00	-10.00	-12.70	-47.00	-5.00	-15.00	-2.30

Data in support of claim that proposed operation meets off-axis criteria of 1986 Declaratory Order

ID **Applicant:** Knight Sky **Date of Application:** 10/01/08

HEADING

a1	**Antenna Manufacturer:**	Prodelin	*c*	**main bore gain**	42.00	**dBi**
a2	**Antenna Model:**	2.4m	*d*	**frequency at which gain was measured**	6.25	**GHz**
a3	**Antenna ID:**	Ant1	*e*	**maximum input power density (dBw/4KHz)**	-10.00	**dBw/4Khz**
b	**Transmit band (b):**	6.425 GHz				

1.0 to 5 degrees calculated maximum difference in off-axis eirp density: **-1.80** **dBw/4Khz**

1.0 to 180 degrees calculated maximum difference in off-axis eirp density: **-1.80**

TABLE

EIRP for Antenna Conforming to 25.209(a) operating at 25.212 power density limits			Gain and EIRP for Antenna Not Conforming to 25.209(a) operating at stated maximum power density			
1	2	3	4	5	6	7
Angle (degrees)	25.209 Gain (dBi)	Off-Axis EIRP Density for -2.70 dBw/4Kz	Gain relative to main bore gain (dB)	Actual Gain in dBi	Off-Axis EIRP Density for input of -10.00	Difference in Off-Axis EIRP Density (6) minus (3)
1.00	29.00	26.30	-7.50	34.50	24.50	-1.80
1.25	26.58	23.88	-13.00	29.00	19.00	-4.88
1.50	24.60	21.90	-21.00	21.00	11.00	-10.90
1.75	22.92	20.22	-21.50	20.50	10.50	-9.72
2.00	21.47	18.77	-21.00	21.00	11.00	-7.77
2.25	20.20	17.50	-23.00	19.00	9.00	-8.50
2.50	19.05	16.35	-27.50	14.50	4.50	-11.85
2.75	18.02	15.32	-28.50	13.50	3.50	-11.82
3.00	17.07	14.37	-27.50	14.50	4.50	-9.87
4.50	12.67	9.97	-33.00	9.00	-1.00	-10.97
8.50	5.76	3.06	-40.00	2.00	-8.00	-11.06
11.00	6.00	3.30	-44.00	-2.00	-12.00	-15.30
18.00	0.60	-2.10	-49.00	-7.00	-17.00	-14.90
27.00	-3.78	-6.48	-52.00	-10.00	-20.00	-13.52
36.00	-9.91	-12.61	-52.00	-10.00	-20.00	-7.39
43.00	-8.80	-11.50	-57.00	-15.00	-25.00	-13.50
60.00	-10.00	-12.70	-54.00	-12.00	-22.00	-9.30
82.00	-10.00	-12.70	-44.00	-2.00	-12.00	0.70
100.00	-10.00	-12.70	-45.00	-3.00	-13.00	-0.30
120.00	-10.00	-12.70	-52.00	-10.00	-20.00	-7.30
160.00	-10.00	-12.70	-47.00	-5.00	-15.00	-2.30
180.00	-10.00	-12.70	-47.00	-5.00	-15.00	-2.30

File: See Legend

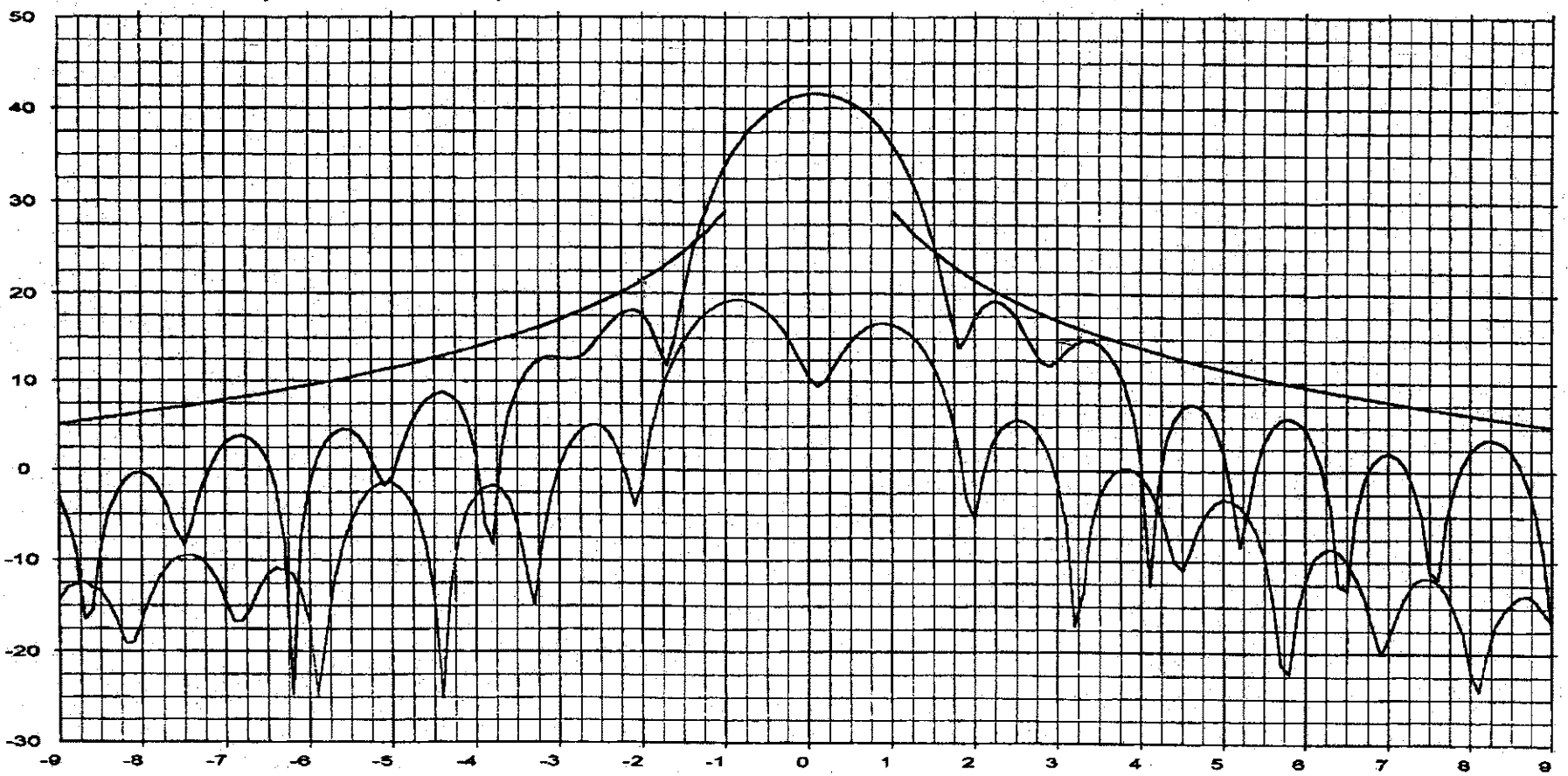
Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 5.845 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

Tx pol: Vert.

Rx pol: Vert.



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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064532.DAT-ant_under_test——	064532.DAT	dBi	0.10	41.64
064536.DAT-ant_under_test——	064536.DAT	dBi	-0.80	19.28

Prodelin Corporation
Riverbend st Range
Cl nont NC

File: See Legend

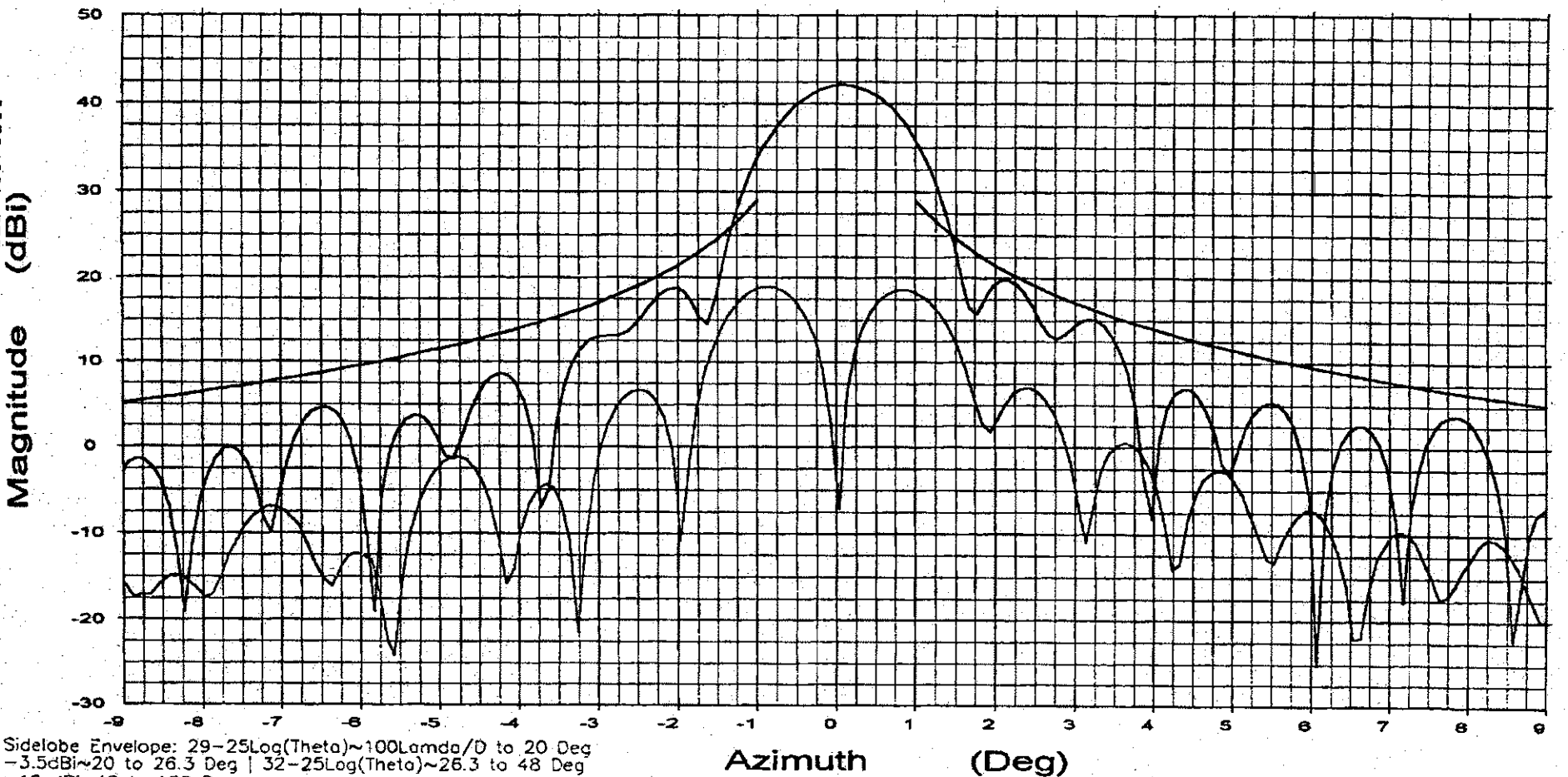
Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 6.138 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

Tx pol: Vert.

Rx pol: Vert.



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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064532.DAT-ant_under_test——	064532.DAT	dBi	0.07	42.14
064536.DAT-ant_under_test——	064536.DAT	dBi	-0.87	18.92

Prodelin Corporation
Riverbend st Range
C mont NC

File: See Legend

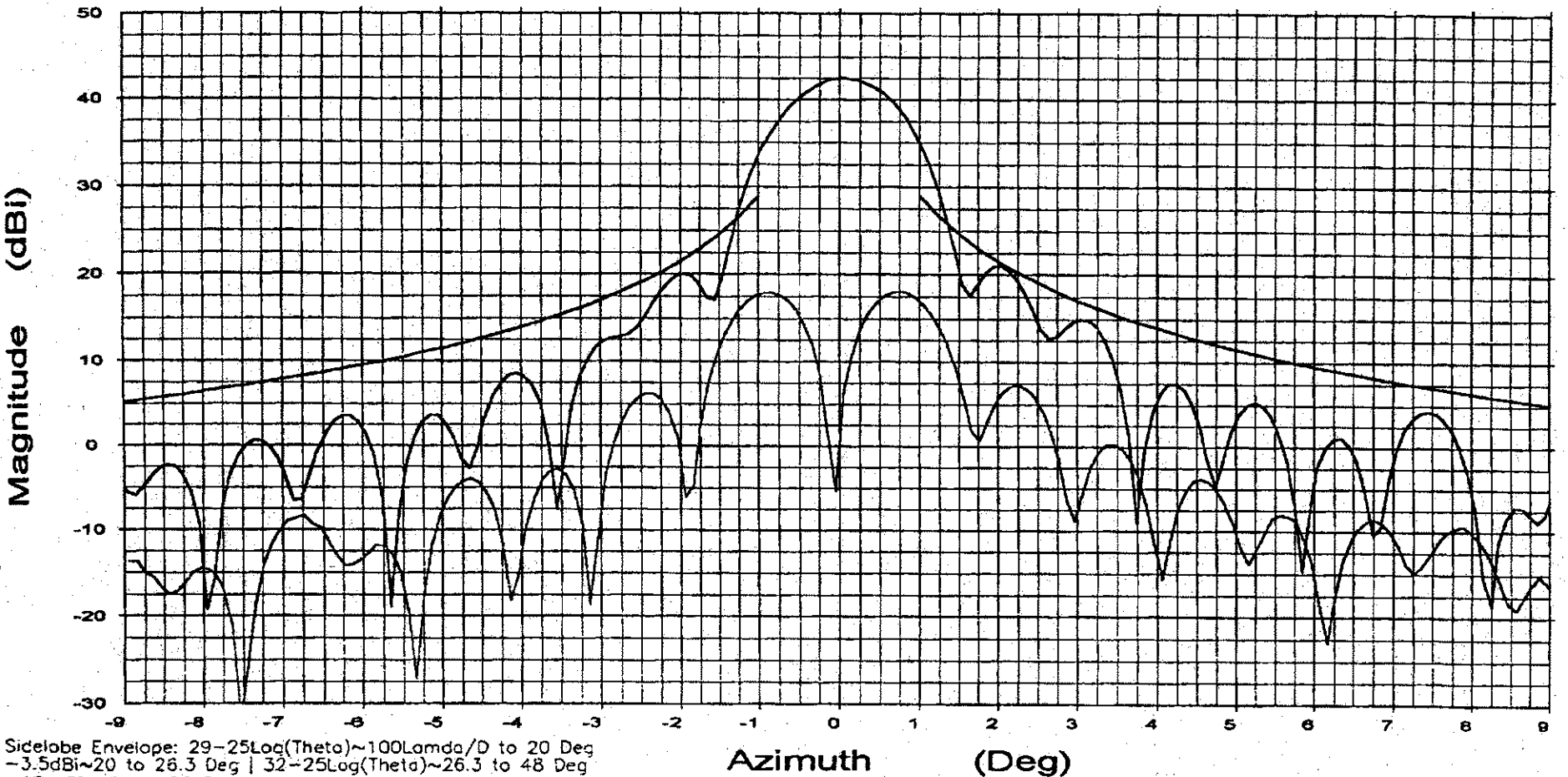
Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 6.425 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

Tx pol: Vert.

Rx pol: Vert.



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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064532.DAT-ant_under_test——	064532.DAT	dBi	0.04	42.49
064536.DAT-ant_under_test——	064536.DAT	dBi	0.76	18.02

Prodelin Corporation
Riverbend st Range
C mont NC

File: See Legend

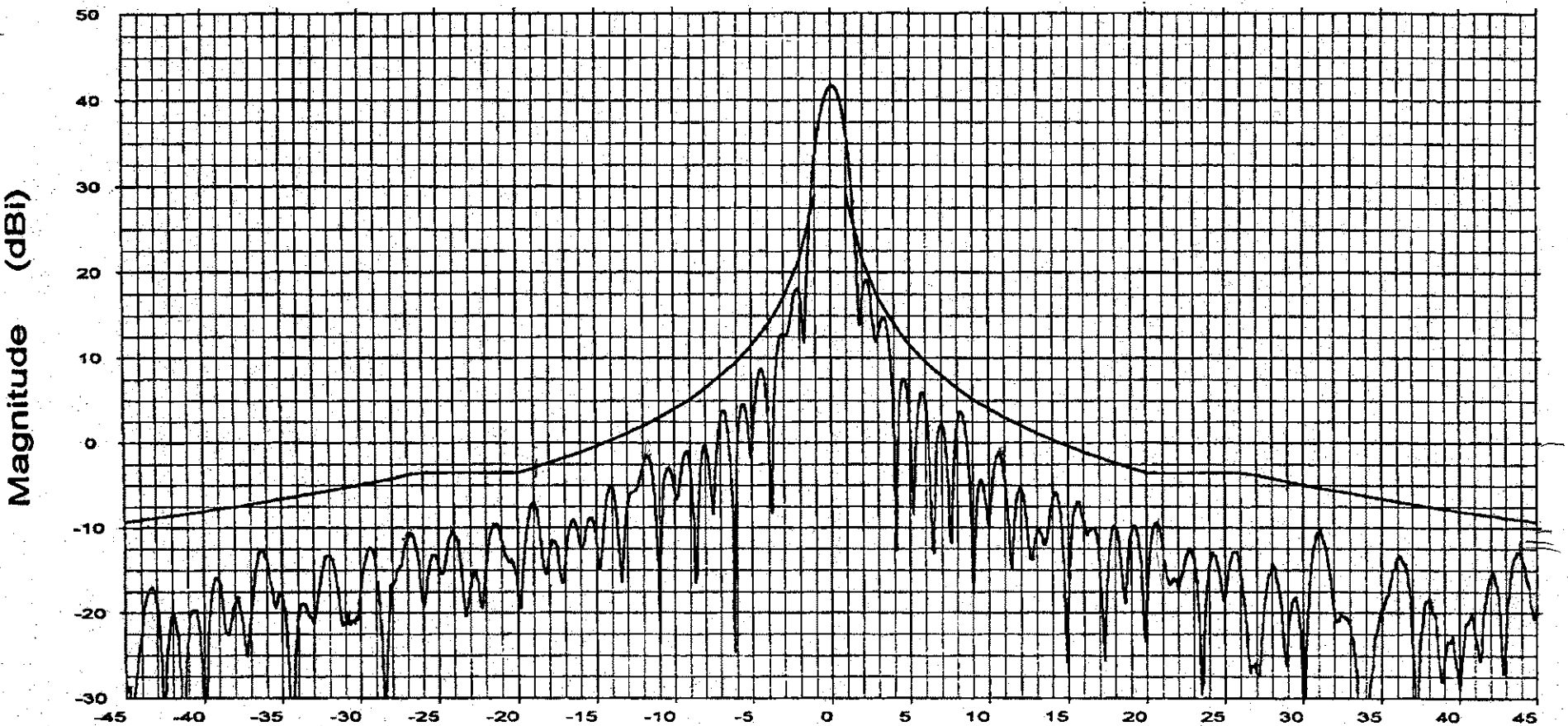
Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 5.845 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

Tx pol: Vert.

Rx pol: Vert.



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	Cal. file	units	Beam Peak Deg	dB
064532.DAT-ant_under_test——	064532.DAT	dBi	0.10	41.64

Prodelin Corporation
Riverbend [illegible] st Range
C [illegible] mont NC

File: See Legend

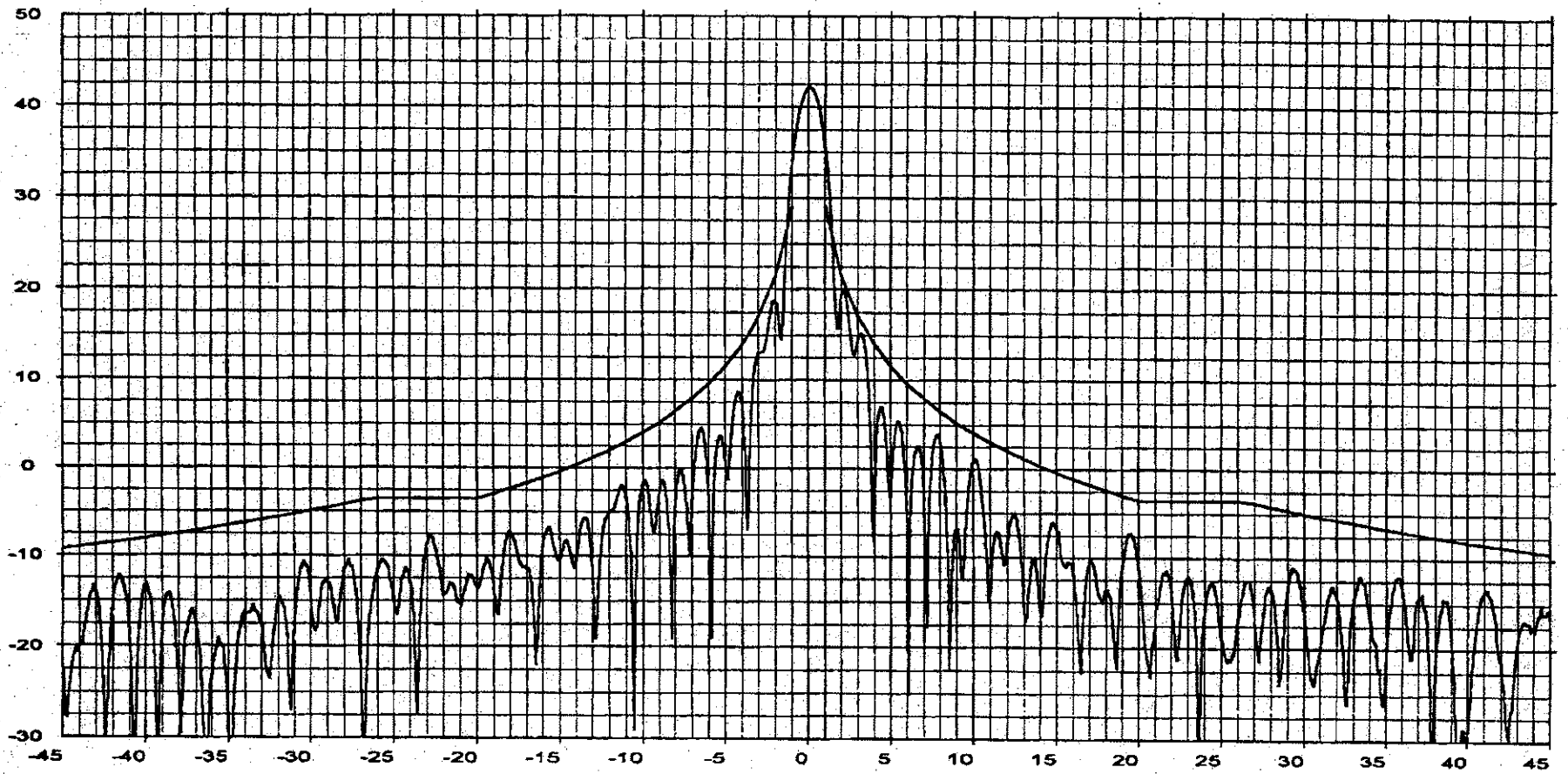
Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 6.138 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

Tx pol: Vert.

Rx pol: Vert.



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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064532.DAT-ant_under_test——	064532.DAT	dBi	0.07	42.14

Prodelin Corporation
Riverbend st Range
C. mont NC

File: See Legend

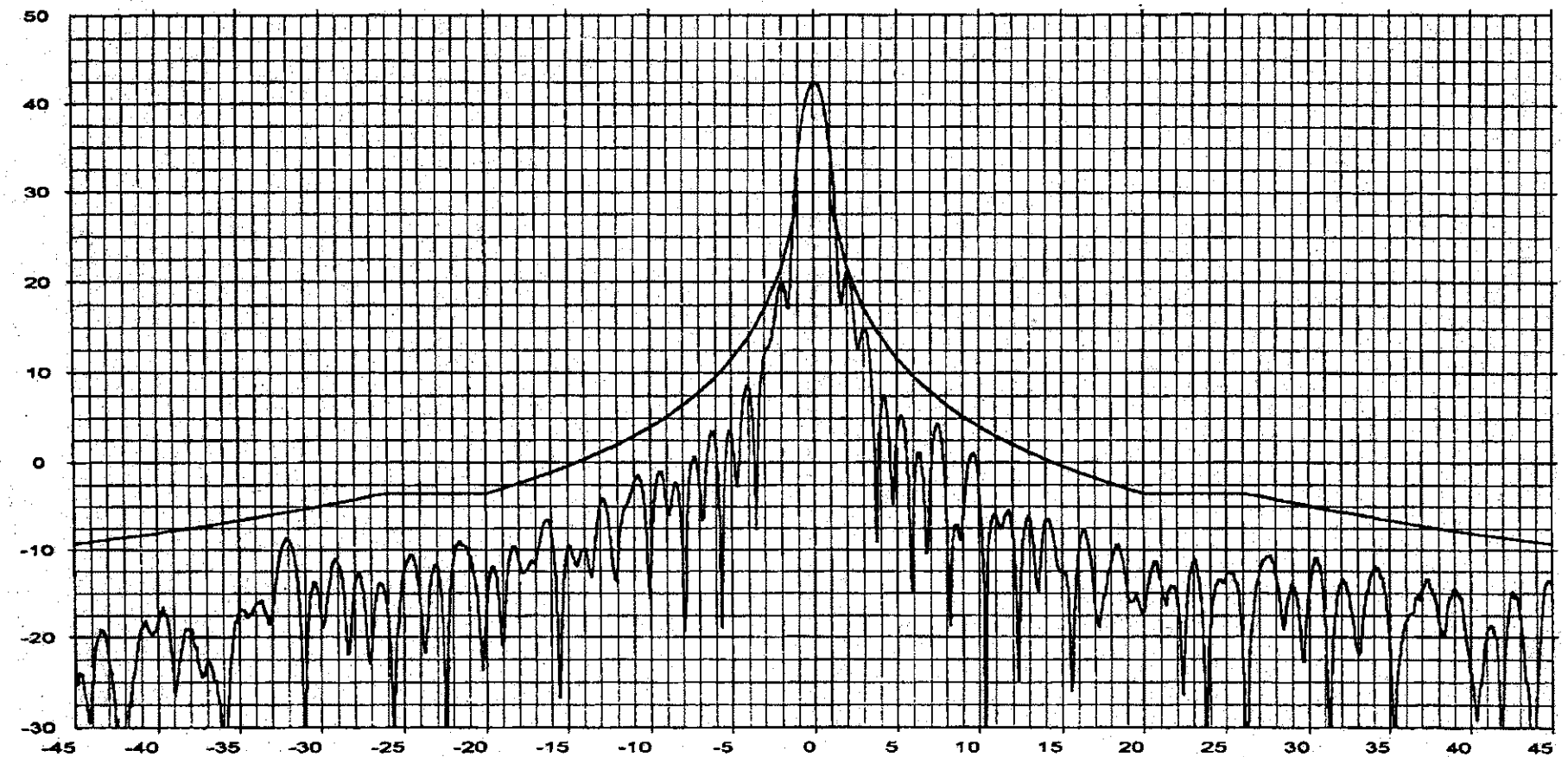
Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 6.425 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

Tx pol: Vert.

Rx pol: Vert.



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	Cal. file	units	Beam Peak Deg	dB
064532.DAT-ant_under_test——	064532.DAT	dBi	0.04	42.49

Prodelin Corporation
Riverbend st Range
Ci nont NC

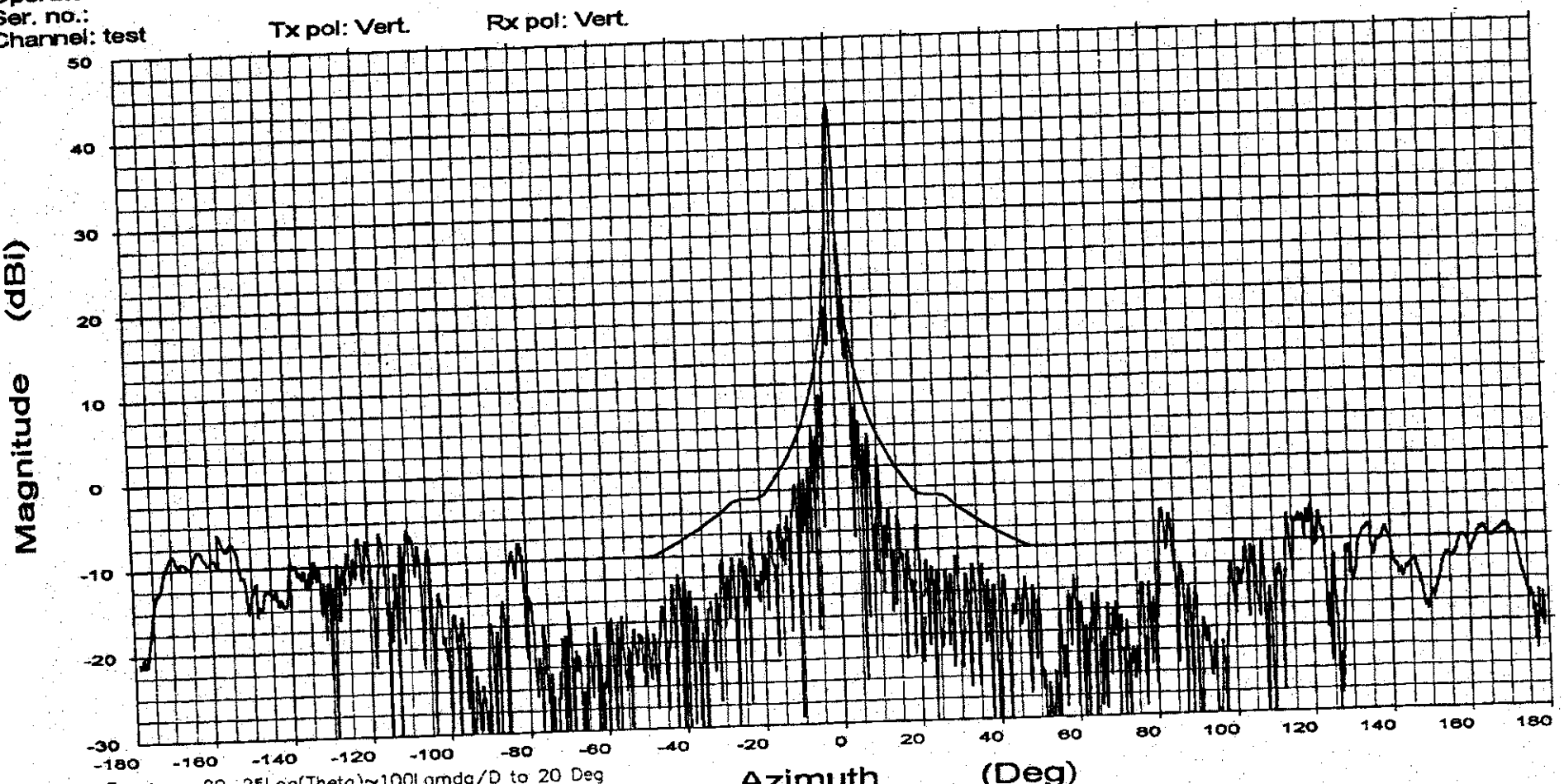
File: See Legend

Operator: Ken Poovey
Ser. no.:
Channel: test

Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 6.138 GHz

Tx pol: Vert. Rx pol: Vert.



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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064532.DAT-ant_under_test ——	064532.DAT	dBi	0.07	42.14

Prodelin Corporation
Riverbend [illegible] st Range
C. [illegible]mont NC

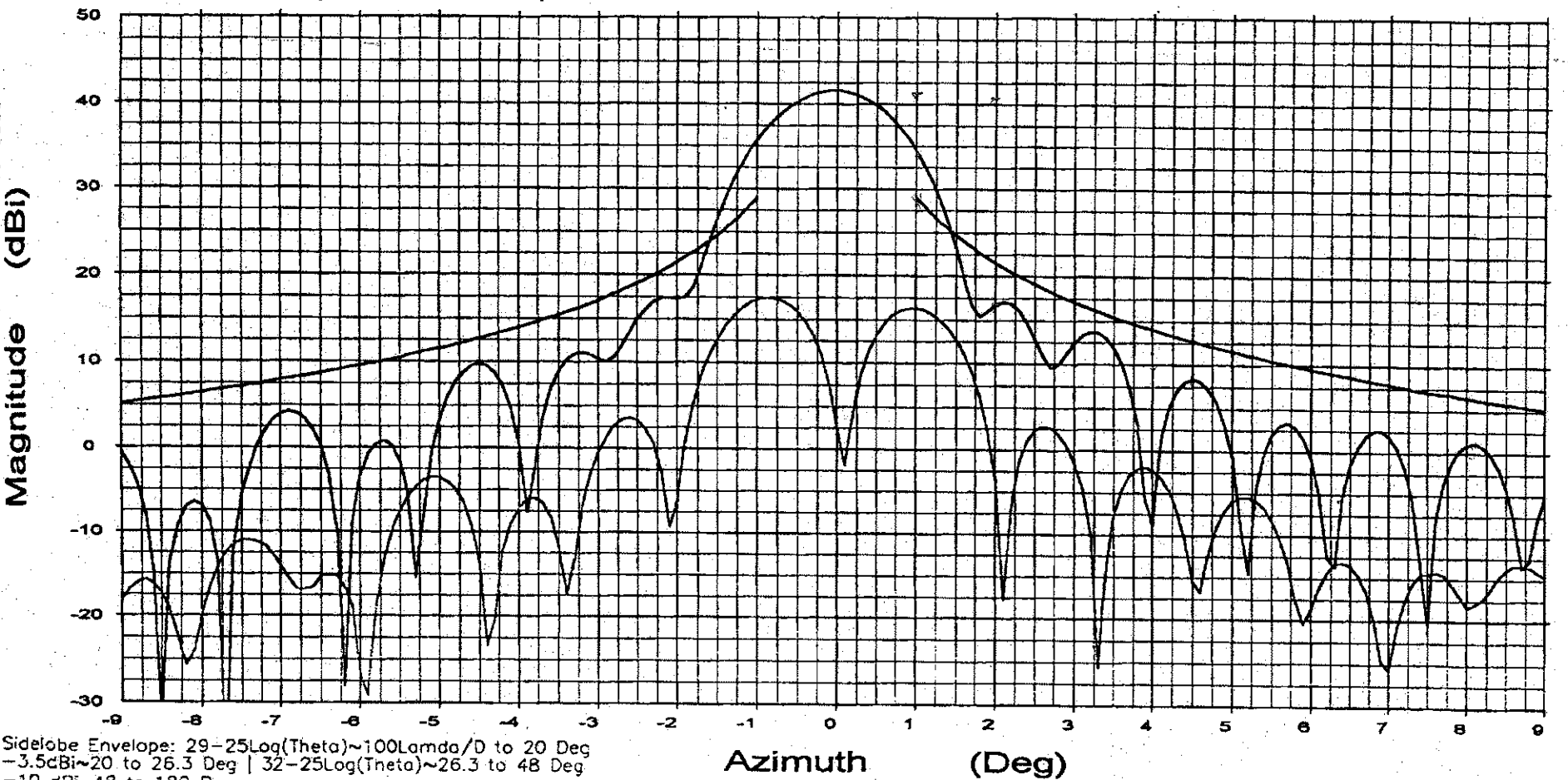
File: See Legend

Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 5.845 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064539.DAT-ant_under_test——	064539.DAT	dBi	0.00	41.54
064542.DAT-ant_under_test——	064542.DAT	dBi	-0.90	17.40

Prodelin Corporation
Riverbend [illegible] st Range
Ci [illegible] nont NC

JUL-08-1998 THU 12:18 PM PRODELIN CORP. FAX NO. 828 466 0860

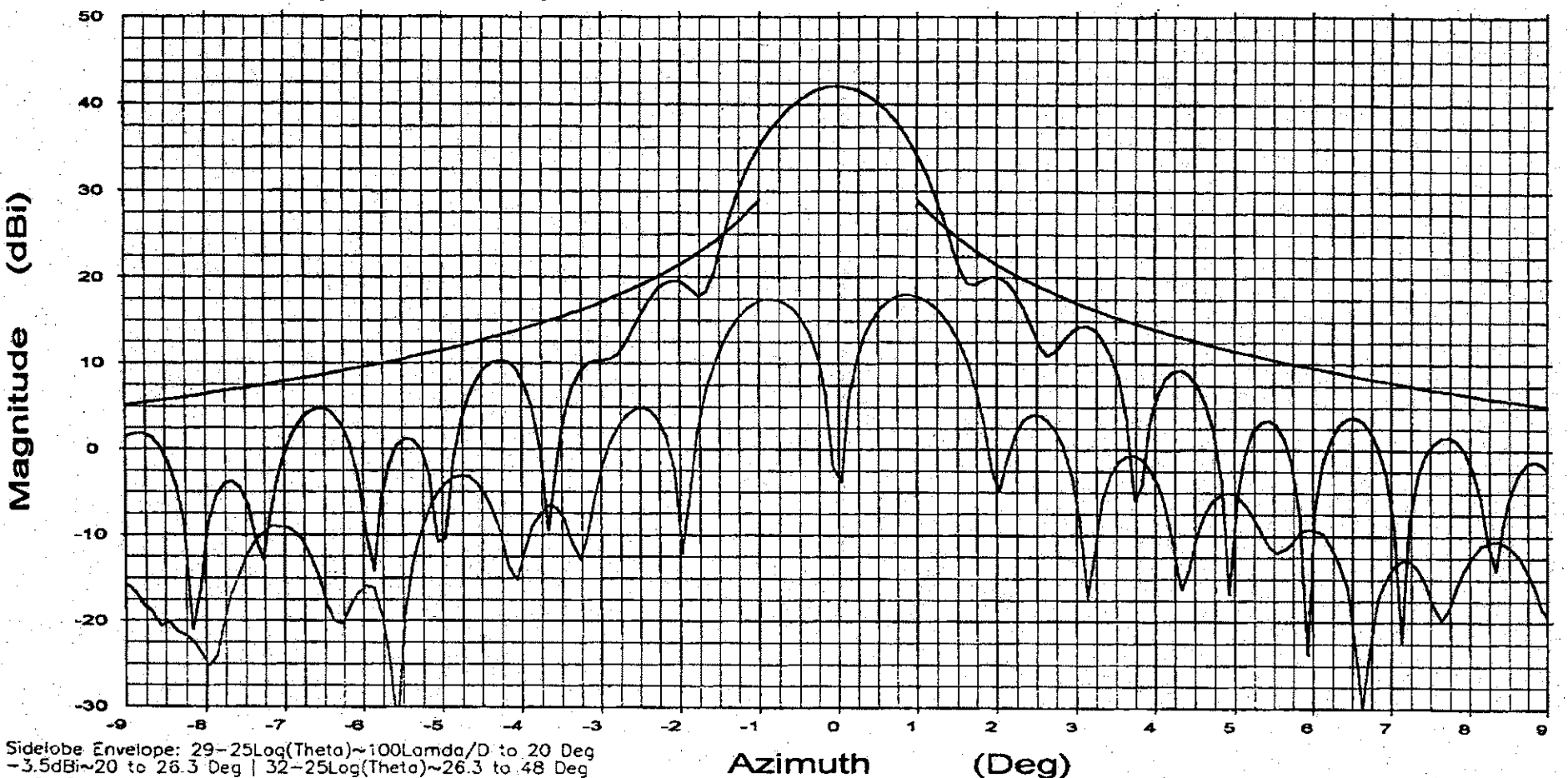
File: See Legend

Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 6.138 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064539.DAT-ant_under_test——	064539.DAT	dBi	-0.07	42.06
064542.DAT-ant_under_test——	064542.DAT	dBi	0.93	17.98

Prodelin Corporation
Riverbend [illegible] st Range
C[illegible] nont NC

File: See Legend

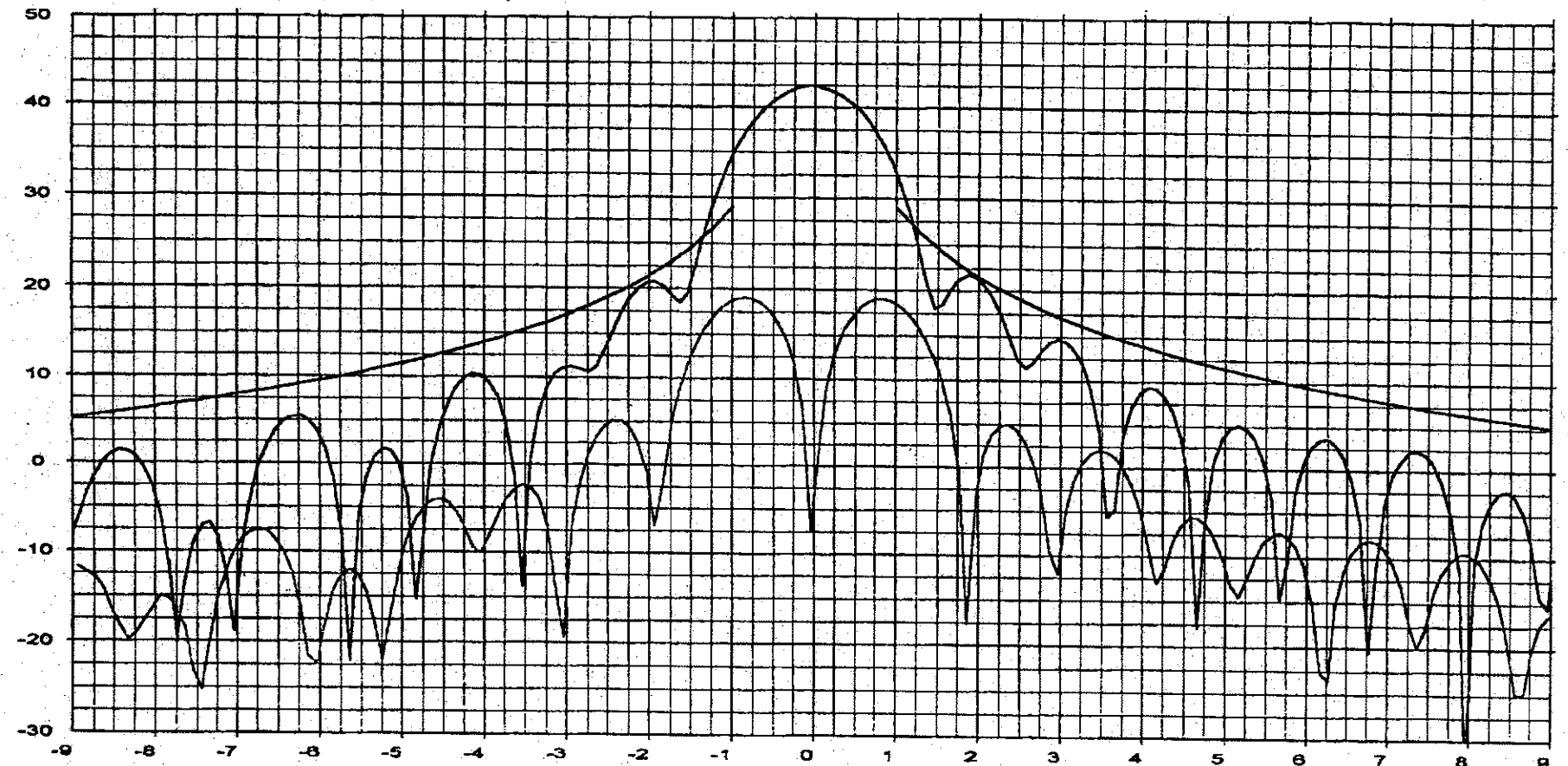
Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 6.425 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064539.DAT-ant_under_test——	064539.DAT	dBi	-0.04	42.36
064542.DAT-ant_under_test——	064542.DAT	dBi	-0.84	19.03

Prodelin Corporation
Riverbend [illegible] st Range
Ci[illegible] nont NC

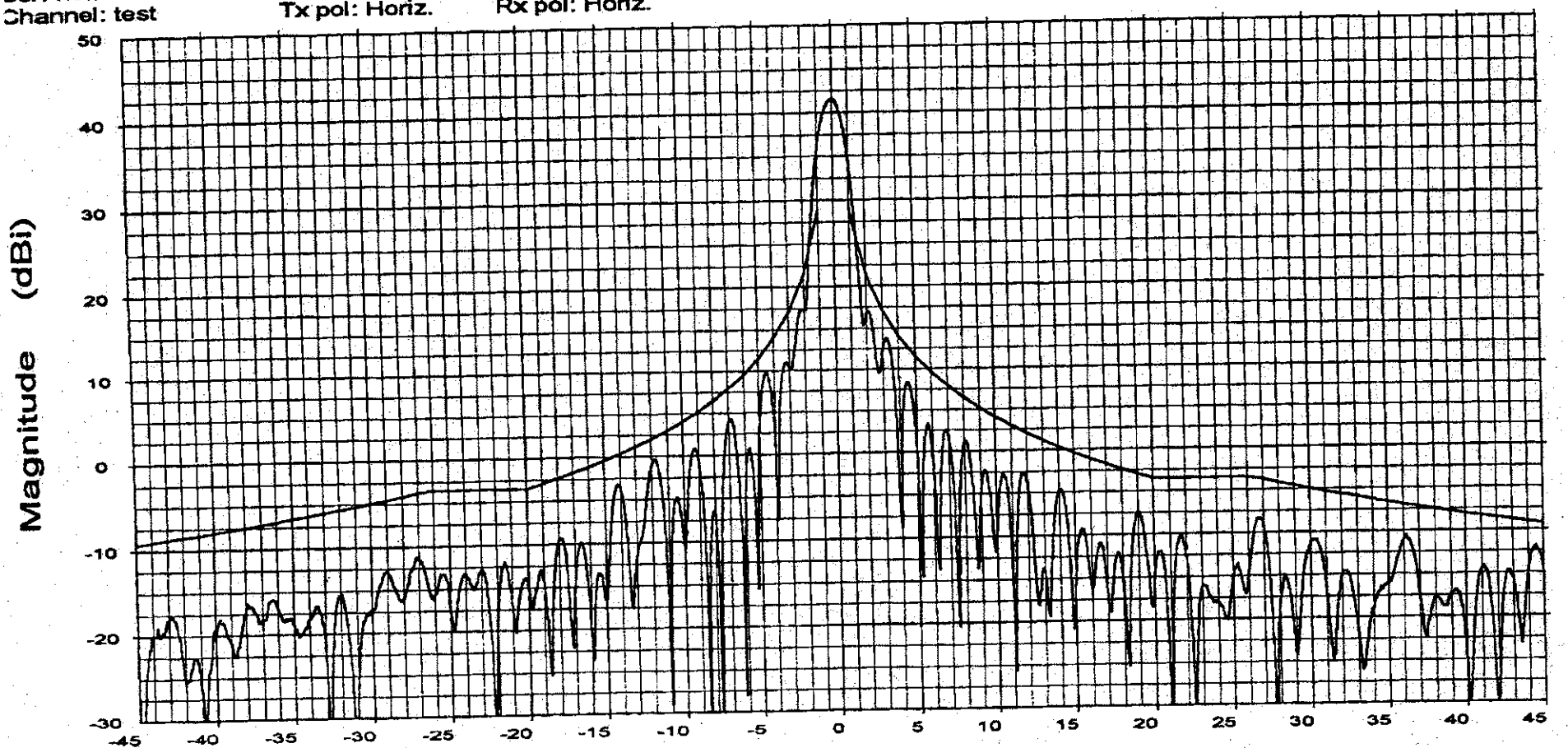
File: See Legend

Operator: Ken Poovey
Ser. no.:
Channel: test

Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 5.845 GHz

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	Cal. file	units	Beam Peak Deg	dB
064539.DAT-ant_under_test——	064539.DAT	dBi	0.00	41 54

Prodelin Corporation
Riverbend st Range
Ci nont NC

File: See Legend

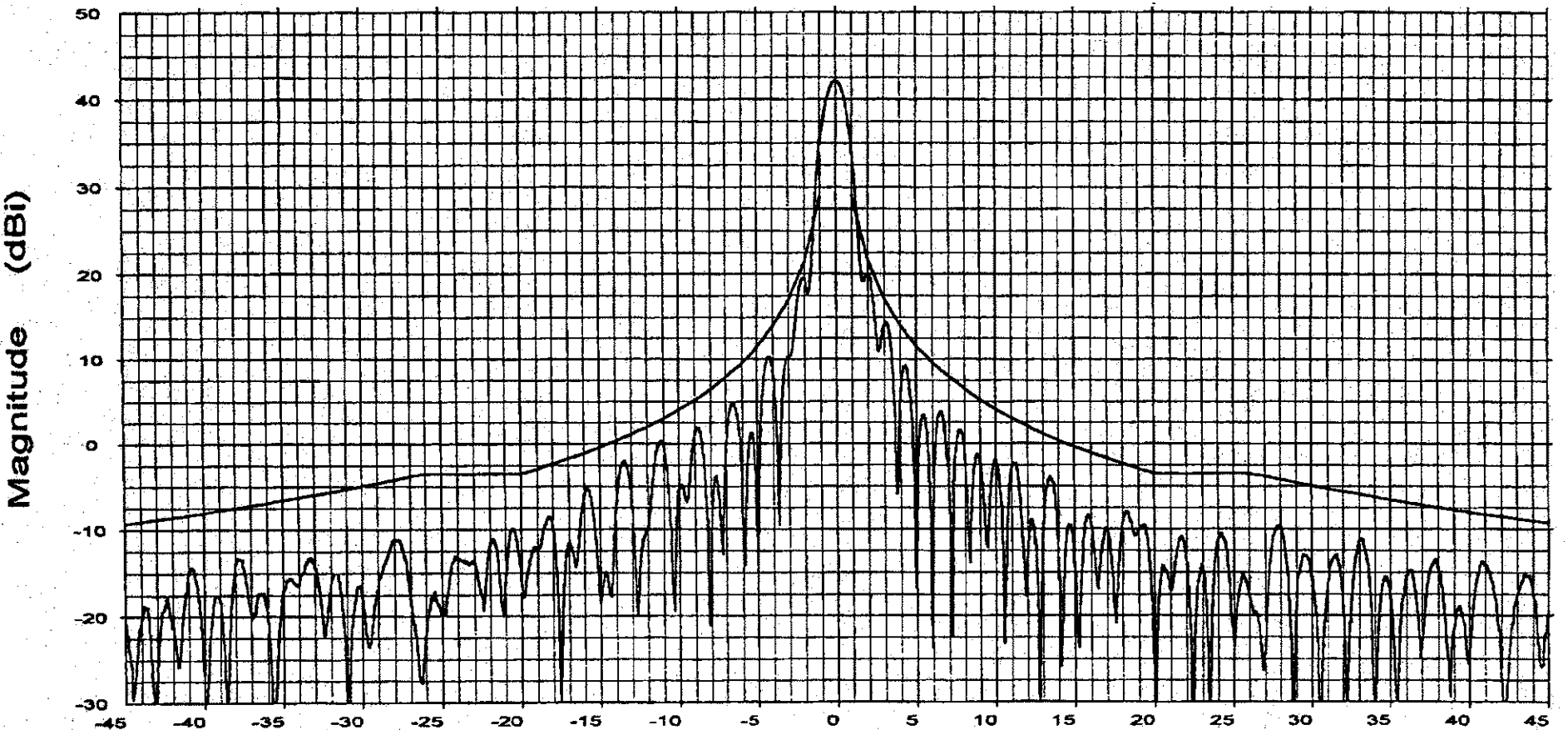
Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 6.138 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064539.DAT-ant_under_test——	064539.DAT	dBi	-0.07	42.06

Prodelin Corporation
Riverbend [illegible]st Range
C[illegible]nont NC

File: See Legend

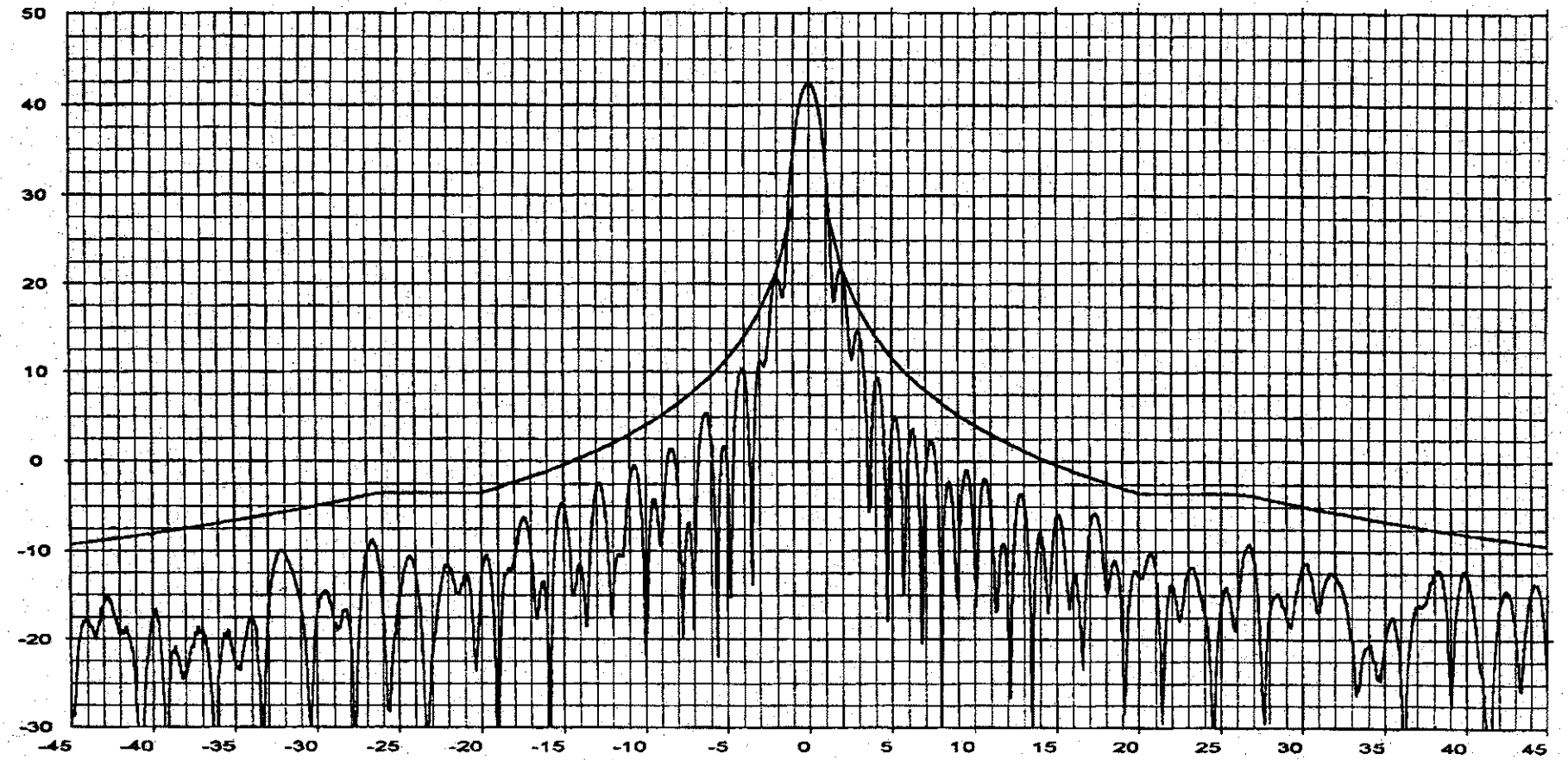
Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 6.425 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064539.DAT-ant_under_test——	064539.DAT	dBi	-0.04	42.36

Prodelin Corporation
Riverbend Test Range
C[illegible]mont NC

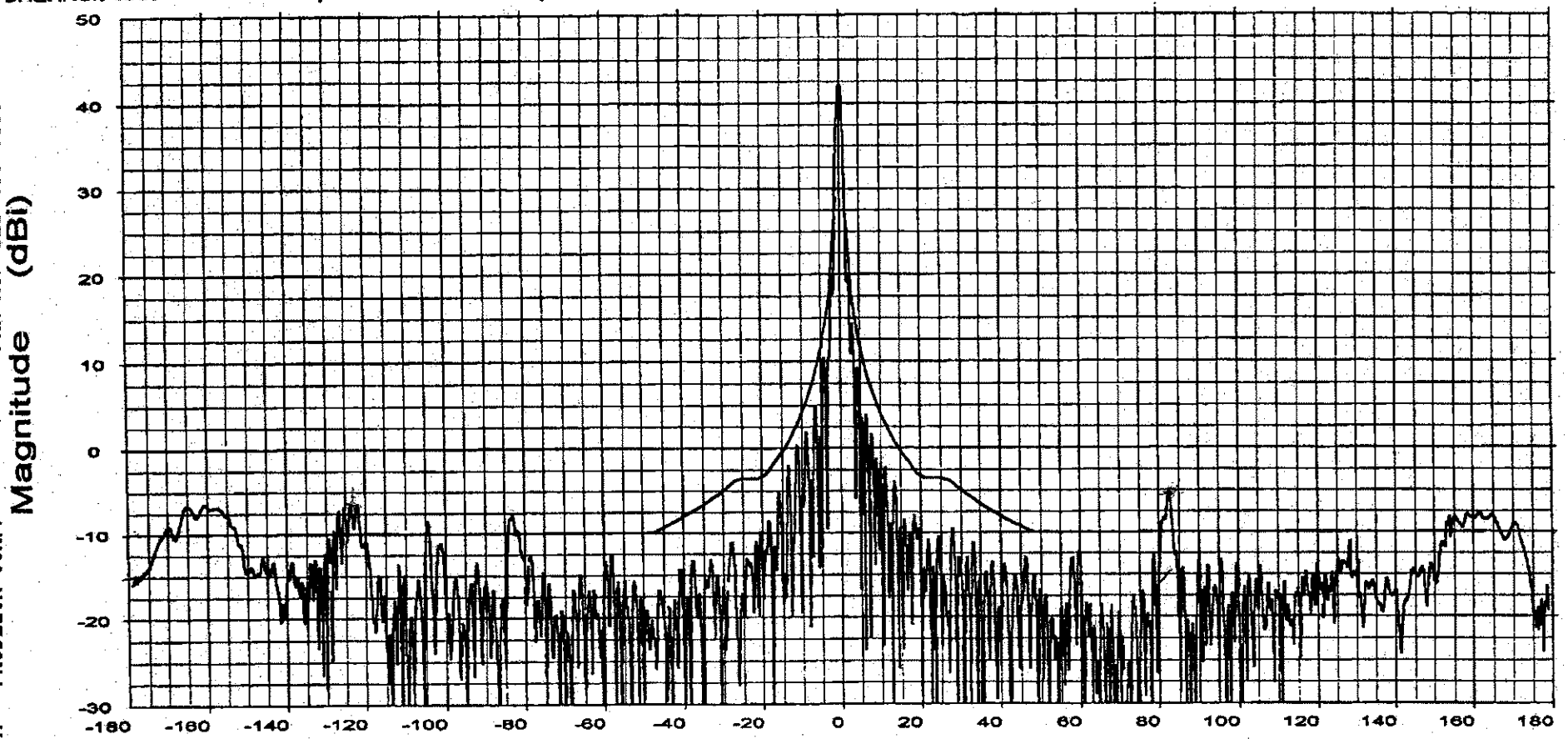
File: See Legend

Prodelin 2.4M 4-Pc
Receive / Transmit
Offset Antenna System
C-Band Linear

Frequency : 6.138 GHz

Operator: Ken Poovey
Ser. no.:
Channel: test

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	Cal. file	units	Beam Peak Deg	Beam Peak dB
064539.DAT-ant_under_test——	064539.DAT	dBi	-0.07	42.06

Prodelin Corporation
Riverbend st Range
C nont NC