AutoZone, Inc.
FCC Form 312
Response to Question E15

Attachment 3

Non-Conforming Antennas

In this application AutoZone, Inc. ("AutoZone") proposes to operate, on a blanket basis, the 1.0 meter equivalent diameter remote terminals. These terminals will be fully compliant with the uniform two-degree orbital satellite spacings operations in both the transmit and receive bands. Therefore, AutoZone should be entitled to protection from interference to these remote terminals from the satellite networks operating in the two degrees environment.

Attachment 3-A provides the engineering analysis demonstrating compliance with the two-degree spacing policy for these one meter terminals. Attachment 3-B provides the manufacturers' antenna patterns for low, mid and high frequencies for both receive and transmit bands.

Attachment 3-A

This Attachment 3-A provides the technical analysis demonstrating that the performance and transmission parameters of the Prodelin model number 1102 (135cm x 58cm) antenna, which has an equivalent circular diameter of 1.0 meter are fully compliant with the Commission's two-degree spacing policy. This Attachment will demonstrate that the adjacent satellite interference caused by transmission from this 1.0 meter equivalent antenna will not be greater than an antenna fully compliant with the combined FCC Rules 47 C.F.R Parts 25.209 and 25.212 for uplink EIRP density interference toward adjacent satellite spaced at two degrees in the GSO plane.

The following sections describe the technical analysis:

1. Compliance with the Antenna Performance Standards 25.209

As discussed above, the proposed Prodelin antenna model number 1102 is a rectangular antenna and has a dimension of 1.35 meters in the azimuth plane. This antenna meets the requirements for the minimum conforming antenna size of 1.2 meters in the Ku-band, as specified in Section 25.209(g) of the Commission's Rules. In fact, due to the larger azimuth plane dimension, this 1.0 meter equivalent antenna has better performance than a circular 1.2 meter antenna, as demonstrated in Attachment 3-B of this application. Thus, the proposed antenna fully complies with the antenna pattern envelope, as specified in Section 25.209(a) for off-axis angles greater than 1.25 degrees and up to 90 degrees. Therefore, the proposed Prodelin antenna is fully compliant with the Commission's two-degree spacing policy.

This antenna does not comply with the FCC rules beyond 90 degrees in the azimuth plane. However, this will not cause interference to other satellites as they are not visible. The antenna does not fully comply in the elevation plane, but in this domestic FSS Ku-Band, there is no sharing with the terrestrial systems, therefore the use of this antenna should be acceptable.

Finally, this 1.0 meter antenna is fully compliant with the Section 25.209(b) as illustrated by the cross-polarized patterns in Attachment 3-B.

2. Power Density into the Antenna

FCC Rules in 47 C.F.R.Parts 25.212 and 25.134 require that the maximum power density into the antenna will not exceed –14 dBW/4 KHz for the routine licensing of the VSAT networks. This 1.0 meter terminal will use a maximum of 2 Watt SSPA for the transmit carrier. Bandwidth of the transmit carrier will be 400 KHz. Therefore, the EIRP density of this carrier will be –17 dBW/4 KHz, which below the FCC requirement.

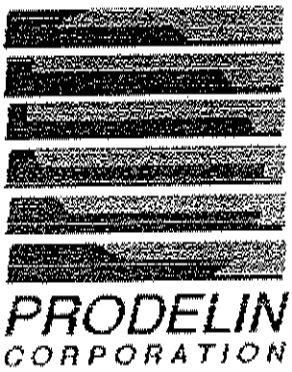
3. Conclusion

Off-axis EIRP density from a transmit earth station towards an adjacent satellite is a function of the sidelobe antenna gain in the azimuth axis and the power density into the antenna. Based on the analysis of this section, these 1.0 meter terminals are fully compliant with the two-degree satellite spacing environment.

Attachment 3-B

Antenna Pattern for

Prodelin Model Number 1102 (135cm x 58cm) Antenna



Prodelin Corporation

Riverbend Antenna Range
7945 Riverbend Road
Claremont, NC 28610

Test No. 0795

HNS 1.0M Rectangle Antenna System

Series 1102
Model #
1102-141

This package contains original patterns

Frequencies Tested

11.70 GHz
11.95 GHz
12.20 GHz
14.00 GHz
14.25 GHz
14.50 GHz

Vertical Polarization

Vertical Polarization

Receive Frequencies

: See Legend

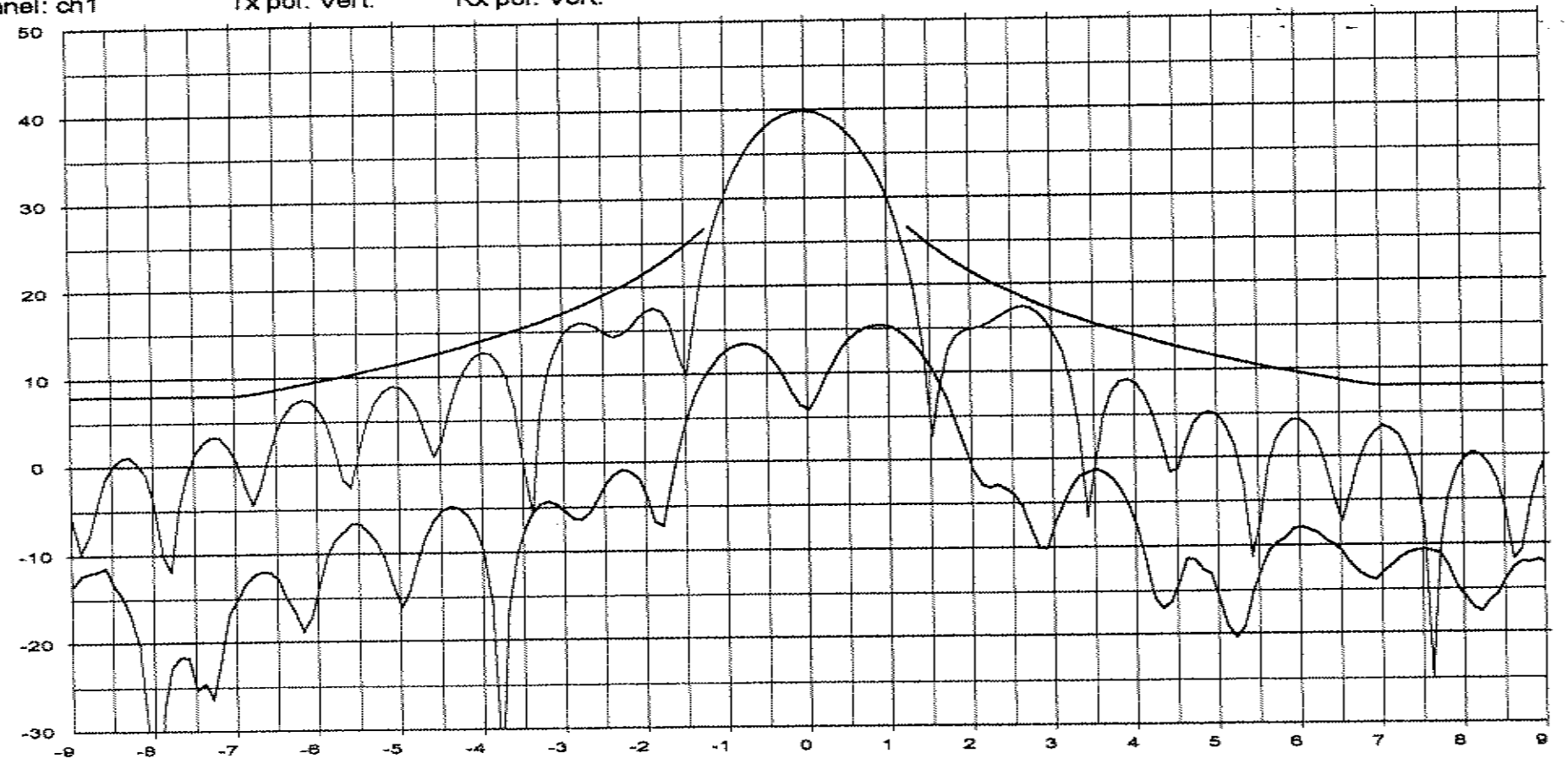
HNS 1.0M Rectangular Antenna System

Frequency : 11.950 GHz

erator: B.Good.
, no.:
annel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg ; 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	dB
'9511.DAT-ant_under_test———	079511.DAT	dBi	-0.02	39.81
'9517.DAT-ant_under_test———	079517.DAT	dBi	0.89	15.36

Prodelin C oration
Riverbend t Range
C nont NC

See Legend

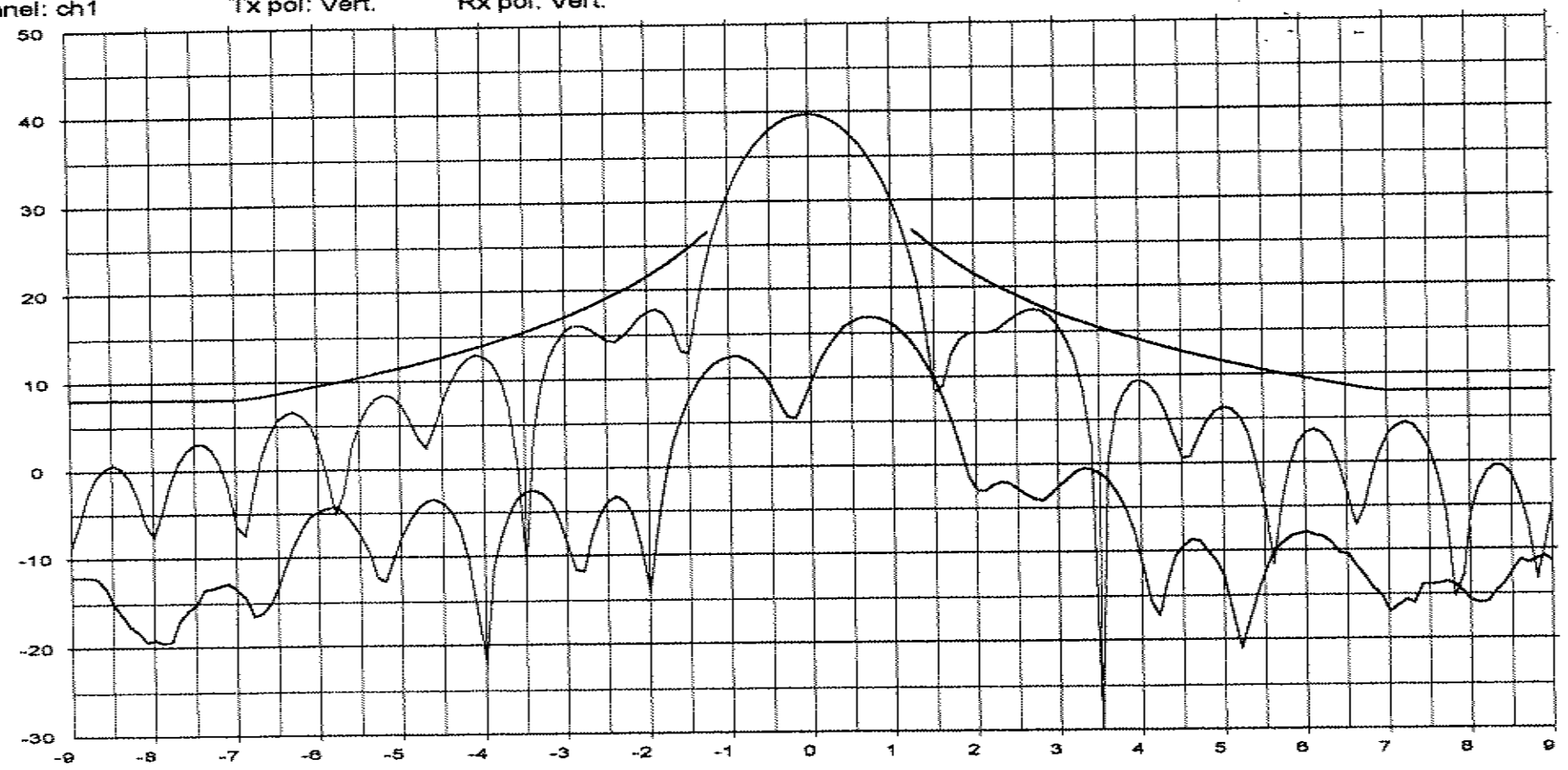
HNS 1.0M Rectangular Antenna System

Frequency : 11.700 GHz

rator: B.Good.
no.:
nnel: ch1

Tx pol: Vert.

Rx pol: Vert.



lobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	dB
511.DAT-ant_under_test———	079511.DAT	dBi	-0.03	39.66
516.DAT-ant_under_test———	079516.DAT	dBi	0.74	16.75

Prodelin C poration
Riverbend t Range
Cl nont NC

: See Legend

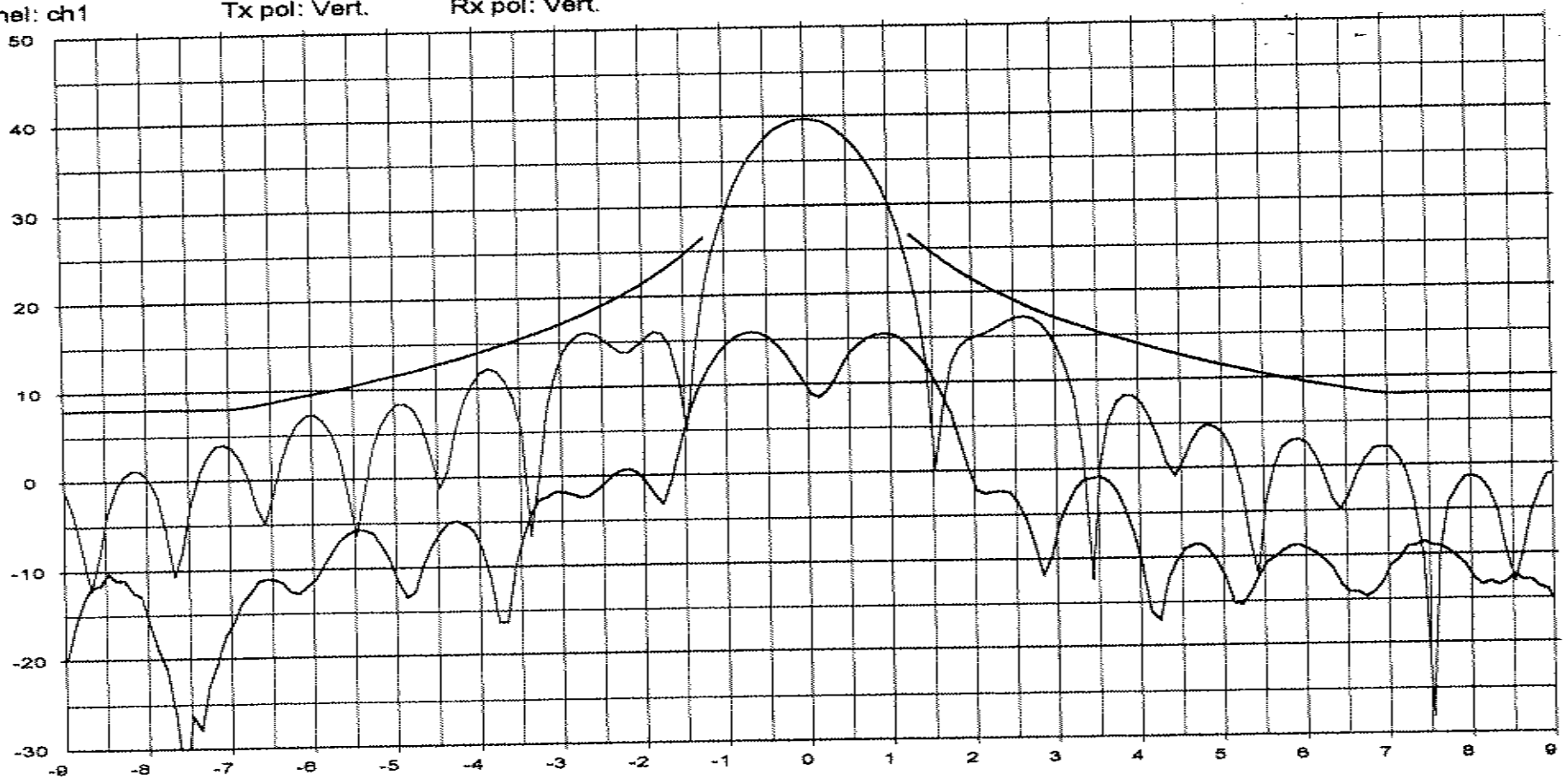
HNS 1.0M Rectangular Antenna System

Frequency : 12.200 GHz

ɛrator: B.Good.
. no.:
annel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

/erlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
'9511.DAT-ant_under_test———	079511.DAT	dBi	0.01	39.63
'9517.DAT-ant_under_test———	079517.DAT	dBi	-0.69	15.74

Prodelin C rporation
Riverbenc t Range
C. nont NC

: See Legend

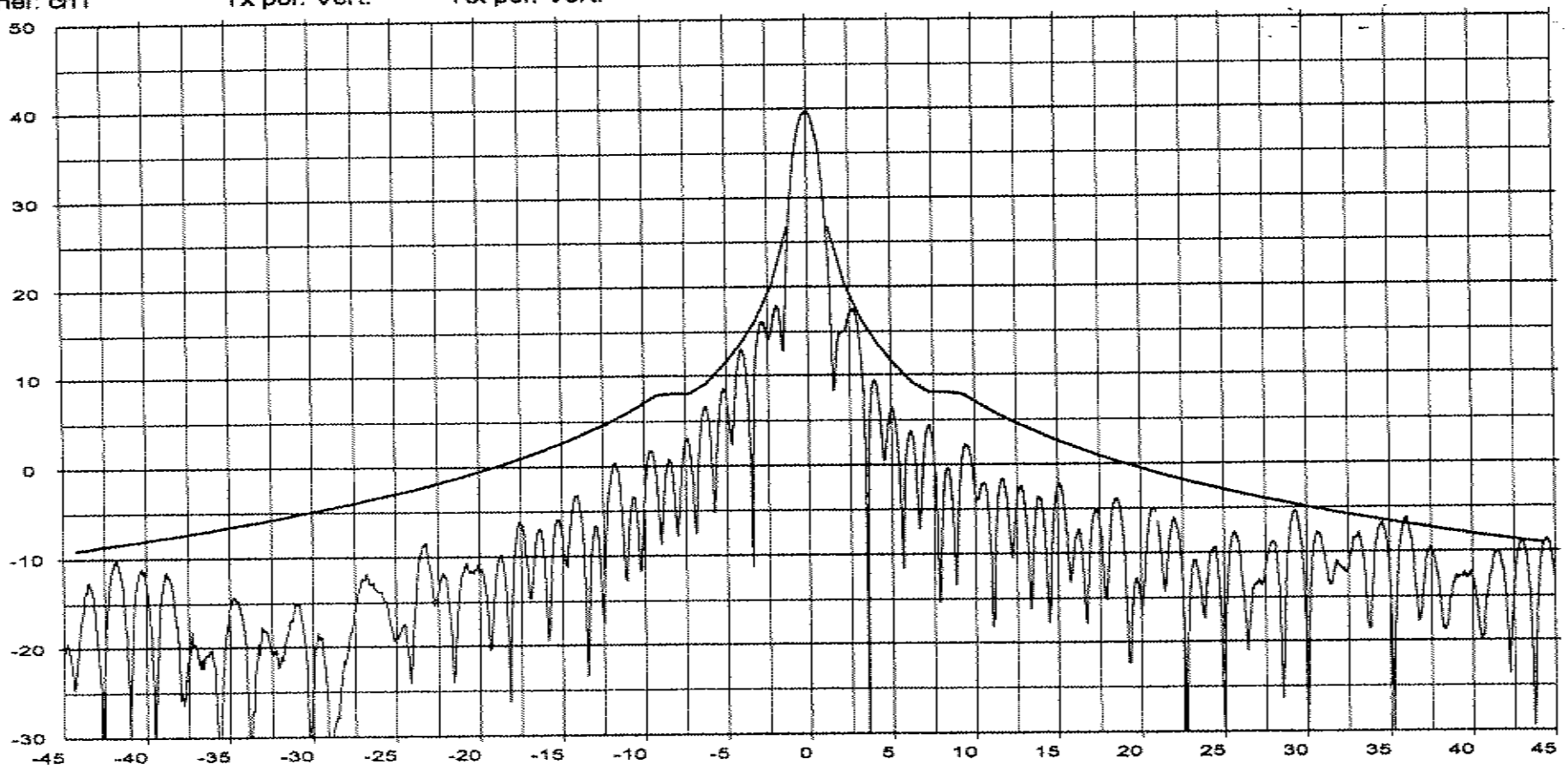
HNS 1.0M Rectangular Antenna System

Frequency : 11.700 GHz

erator: B.Good.
, no.:
annel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	dB
9511.DAT-ant_under_test———	079511.DAT	dBi	-0.03	39.66

Prodelin C oration
Riverbend t Range
Cl appl NC

: See Legend

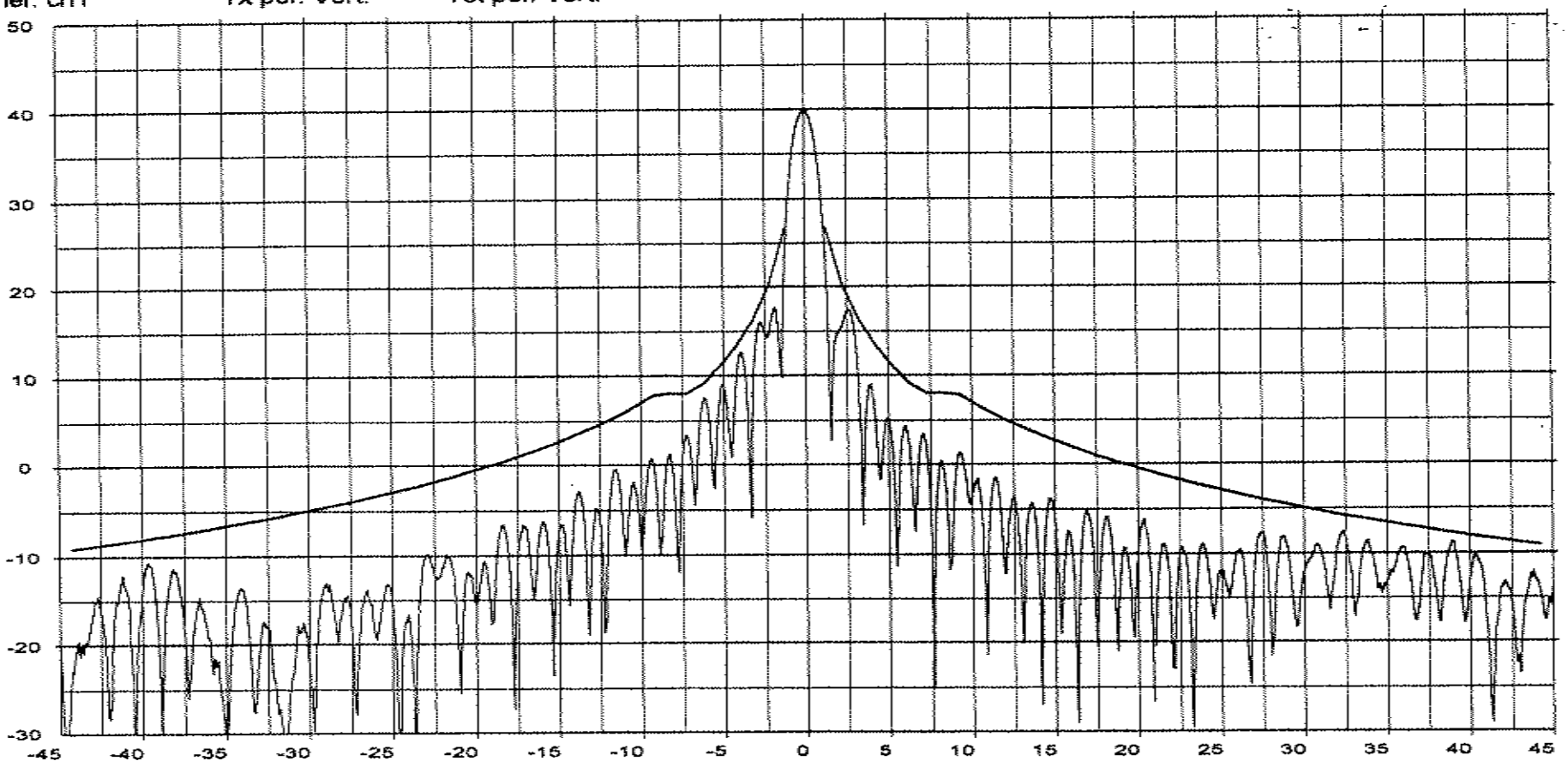
HNS 1.0M Rectangular Antenna System

Frequency : 11.950 GHz

erator: B.Good.
: no.:
annel: ch1

Tx pol: Vert.

Rx pol: Vert.



elope Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
) dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
9511.DAT-ant_under_test———	079511.DAT	dBi	-0.02	39.81

Prodelin C oration
Riverbend t Range
Cl nnnt NC

: See Legend

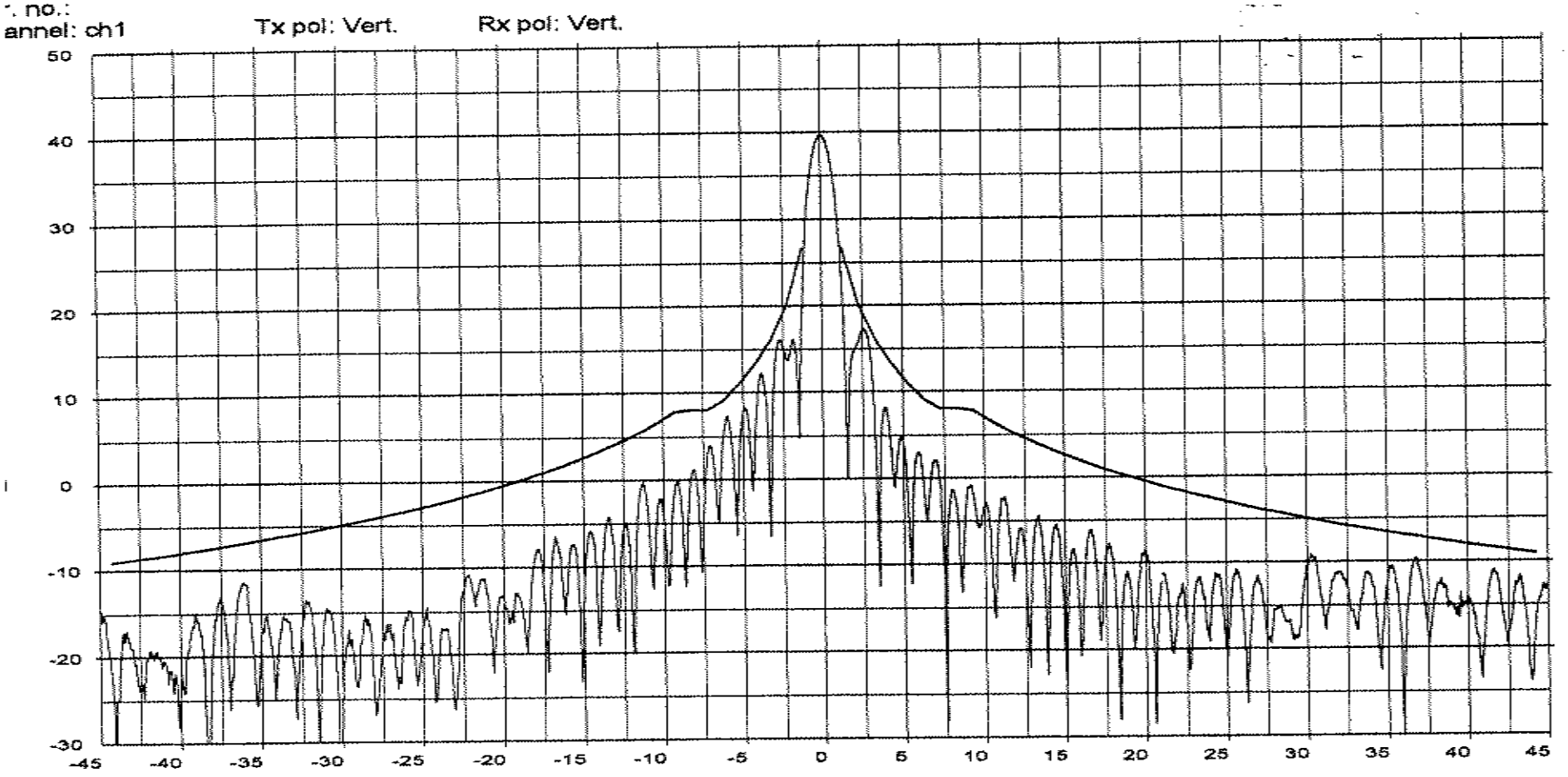
HNS 1.0M Rectangular Antenna System

Frequency : 12.200 GHz

erator: B.Good.
. no.:
annel: ch1

Tx pol: Vert.

Rx pol: Vert.



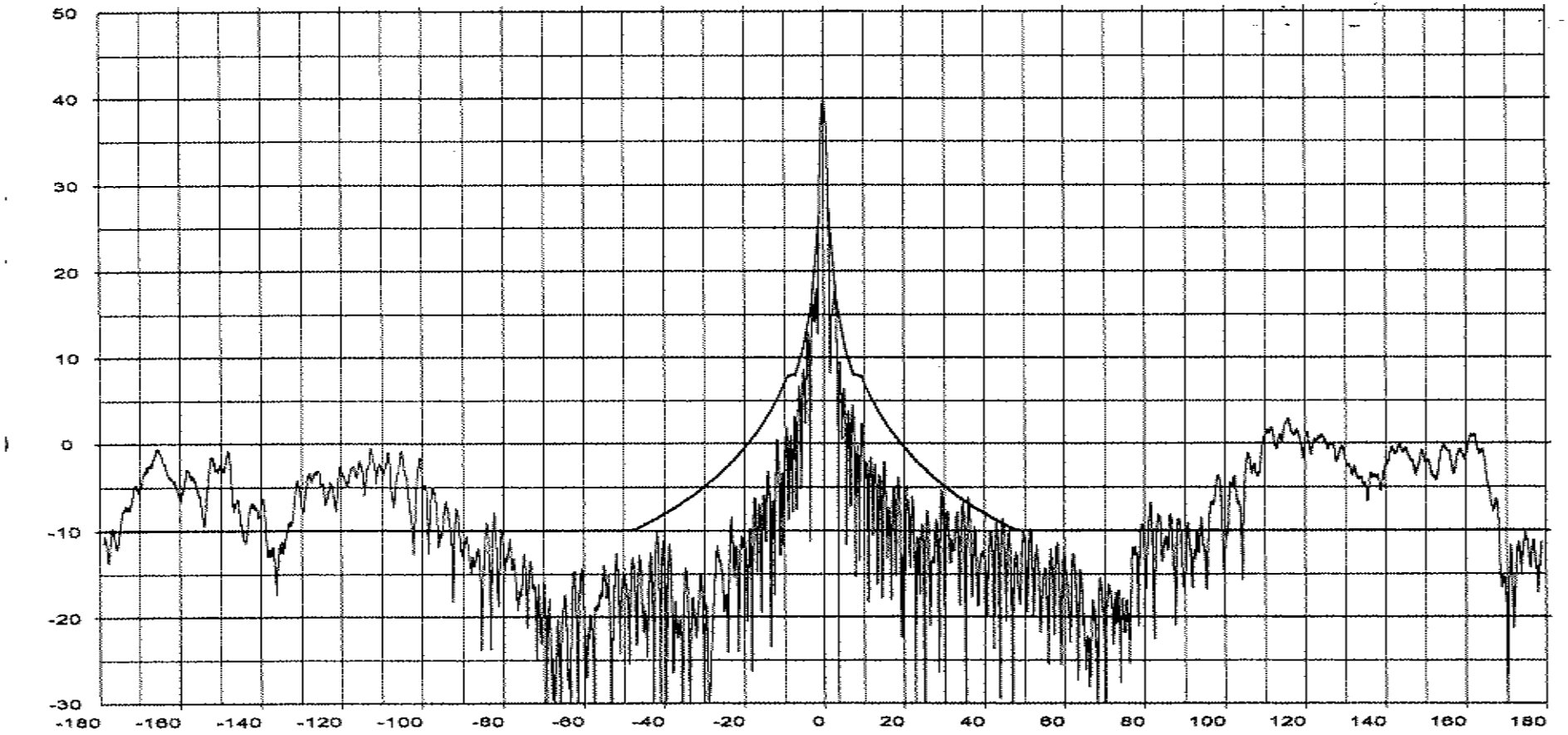
lelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
i dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
'9511.DAT-ant_under_test———	079511.DAT	dBi	0.01	39.63

Prodelin C oration
Riverbend t Range
Ci nont NC

e: See Legend HNS 1.0M Rectangular Antenna System Frequency : 11.700 GHz

erator: B.Good.
r. no.:
annel: ch1 Tx pol: Vert. Rx pol: Vert.



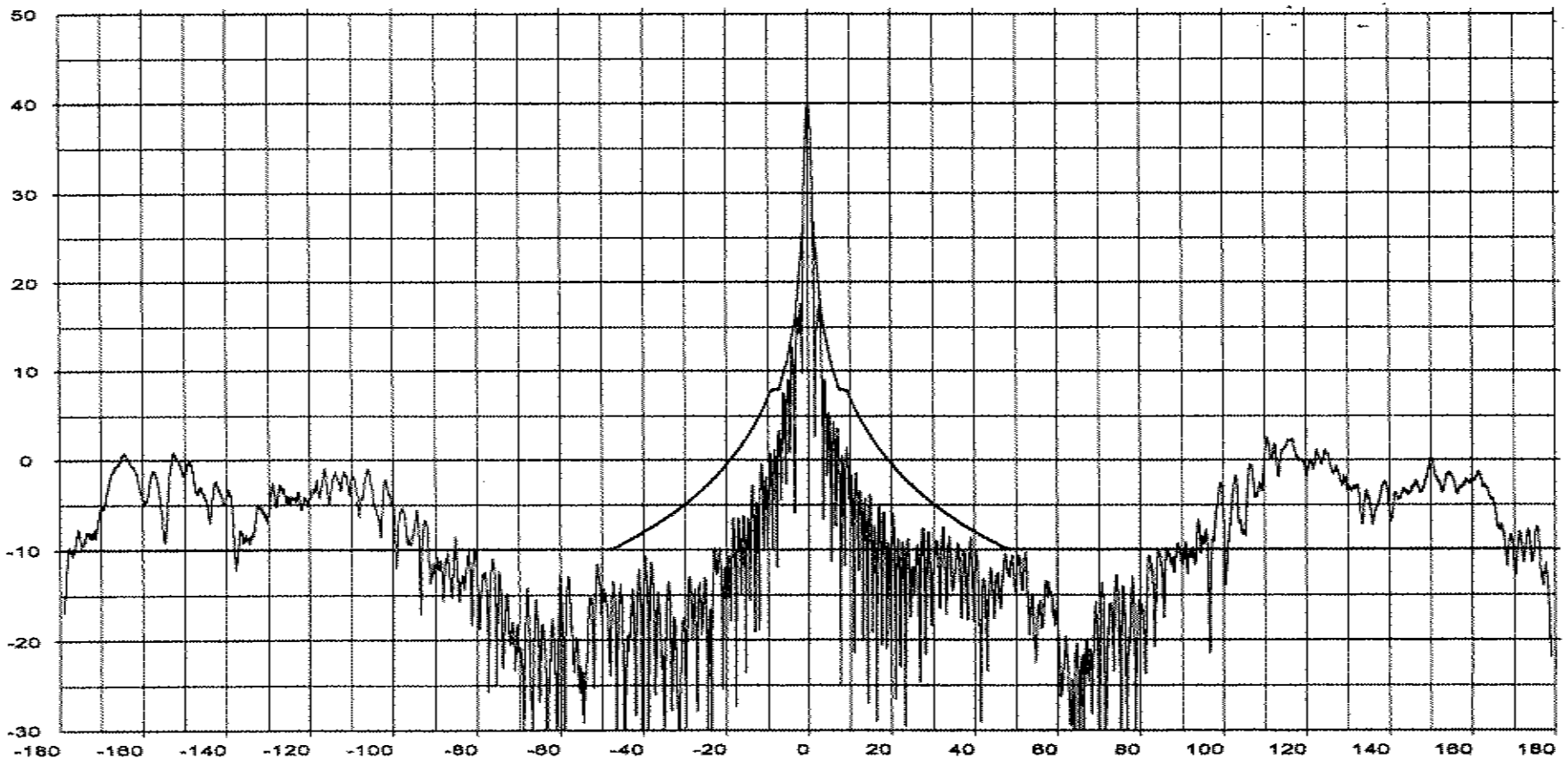
elobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	dB
9511.DAT-ant_under_test———	079511.DAT	dBi	-0.03	39.66

Prodelin C poration
Riverbend t Range
Cl nont NC

: See Legend HNS 1.0M Rectangular Antenna System Frequency : 11.950 GHz

erator: B.Good.
, no.:
annel: ch1 Tx pol: Vert. Rx pol: Vert.



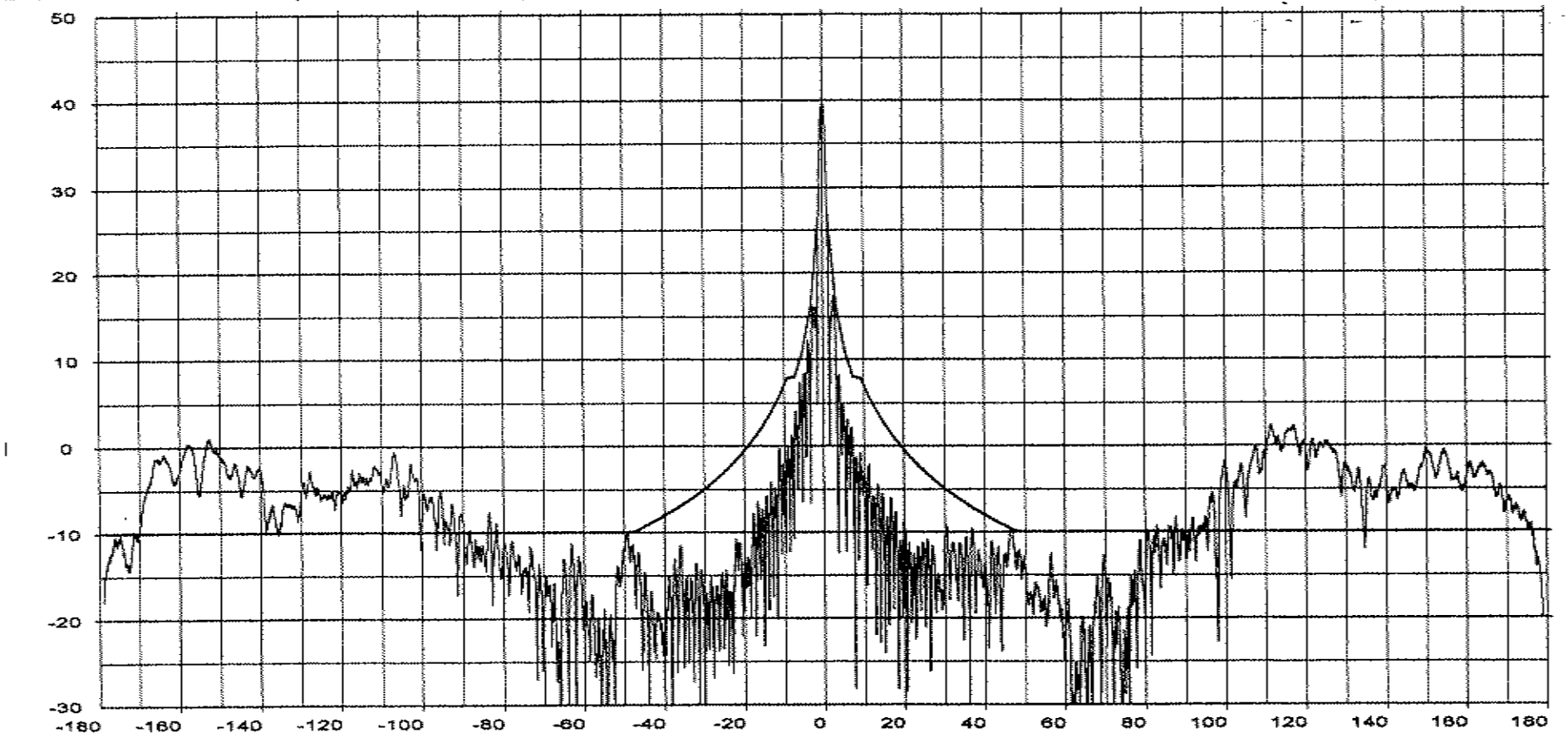
lobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
) dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	dB
9511.DAT-ant_under_test———	079511.DAT	dBi	-0.02	39.81

Prodelin C oration
Riverbend t Range
Cl. nont NC

B: See Legend HNS 1.0M Rectangular Antenna System Frequency : 12.200 GHz

erator: B.Good.
r. no.:
annel: ch1 Tx pol: Vert. Rx pol: Vert.



lelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	dB
'9511.DAT-ant_under_test———	079511.DAT	dBi	0.01	39.63

Prodelin C oration
Riverbend t Range

: See Legend

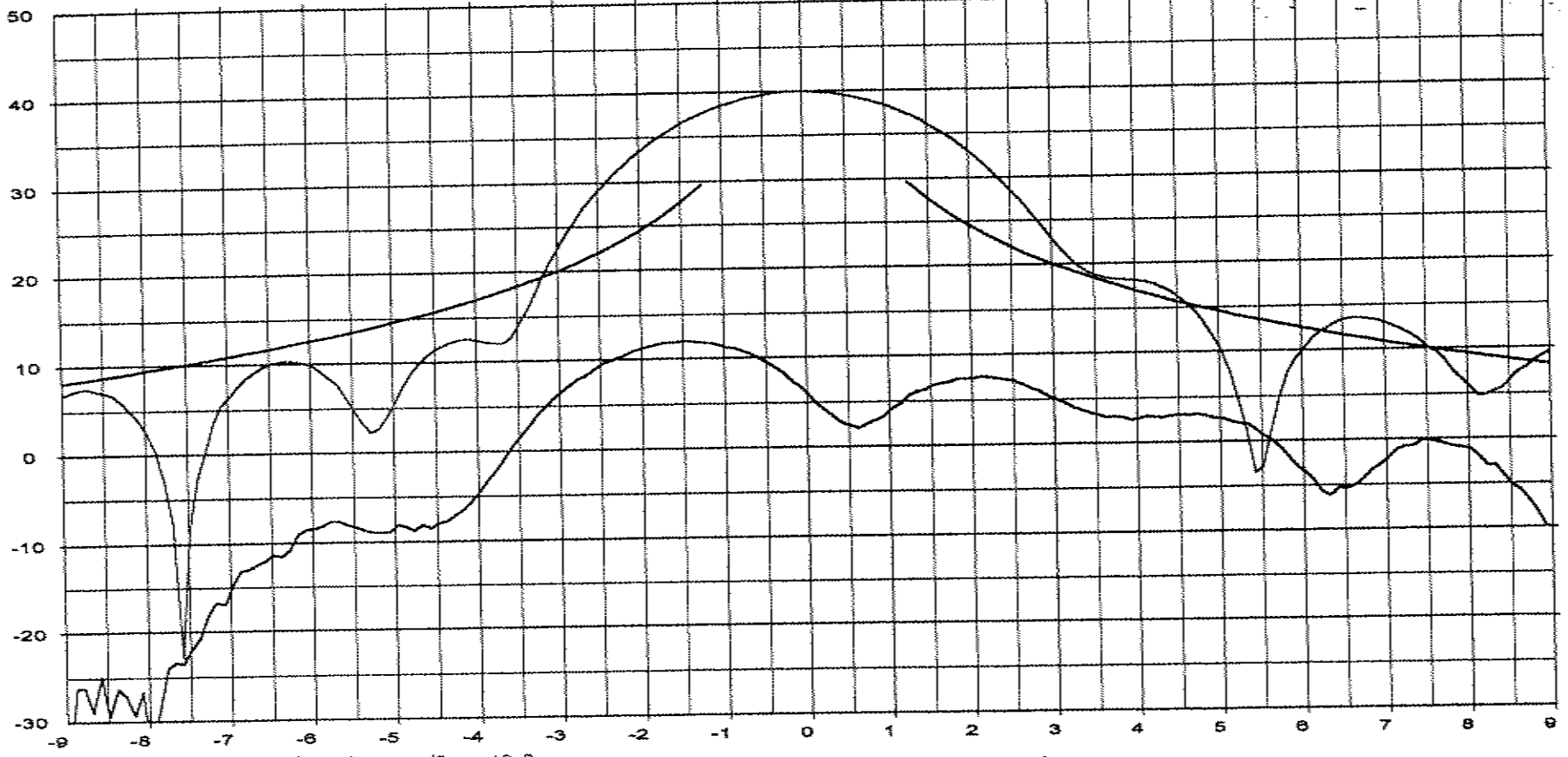
HNS 1.0M Rectangular Antenna System

Frequency : 11.950 GHz

ırator: B.Good.
. no.:
ınnel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 32-25Log(Theta)~100Lamda/D to 48 Deg
0 dBi~48 to 180 Deg

rerlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
9512.DAT-ant_under_test———	079512.DAT	dBi	-0.02	39.96
9520.DAT-ant_under_test———	079520.DAT	dBi	-1.48	11.97

Prodelin C rporation
Riverbenc it Range
C nont NC

: See Legend

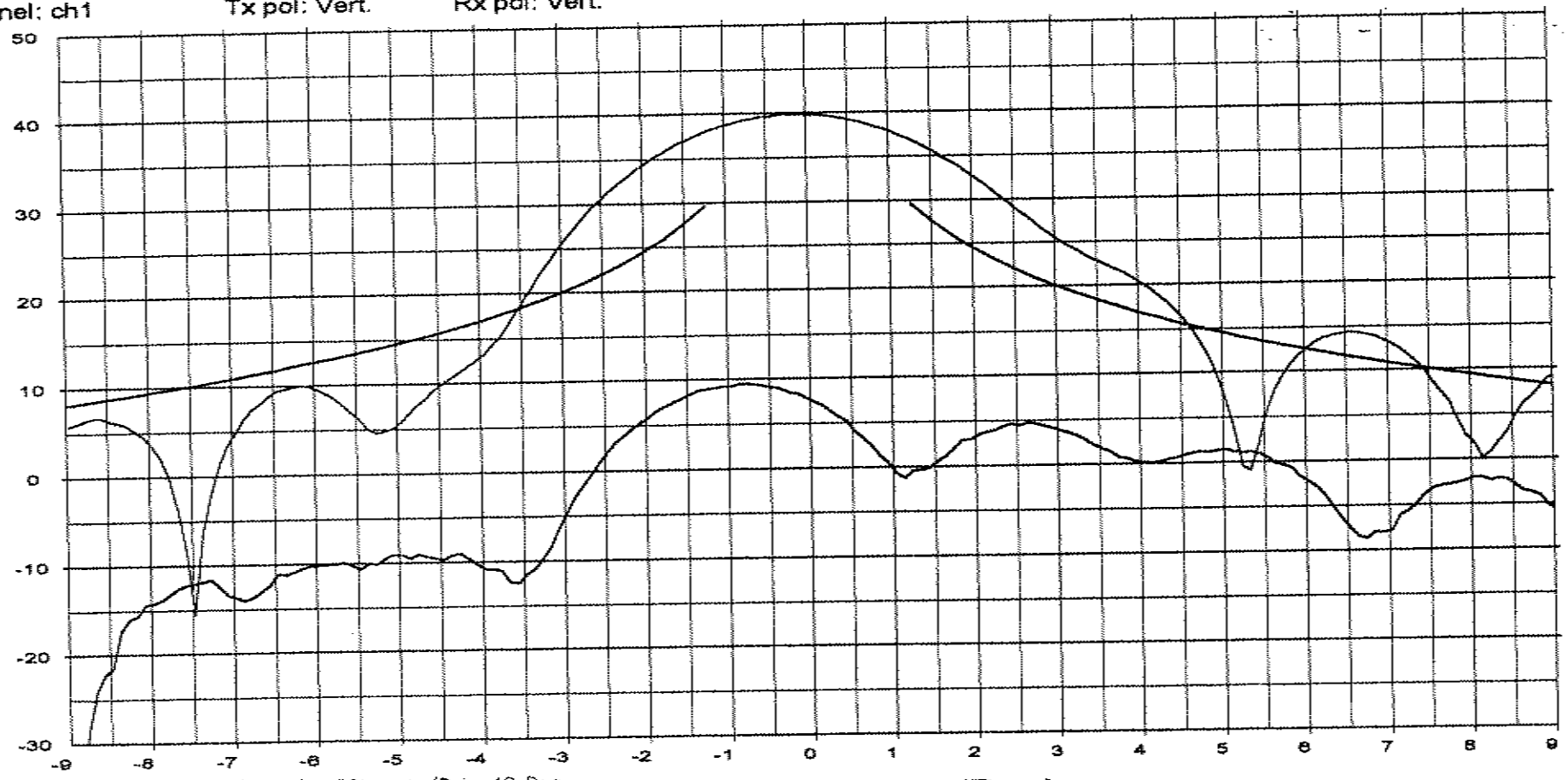
HNS 1.0M Rectangular Antenna System

Frequency : 12.200 GHz

ırator: B.Good.
. no.:
innel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 32-25Log(Theta)~100Lamda/D to 48 Deg
) dBi~48 to 180 Deg

Elevation (Deg)

erlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
9512.DAT-ant_under_test———	079512.DAT	dBi	-0.13	39.79
9520.DAT-ant_under_test———	079520.DAT	dBi	-0.84	9.46

Prodelin C rporation
Riverbenc st Range
C nont NC

: See Legend

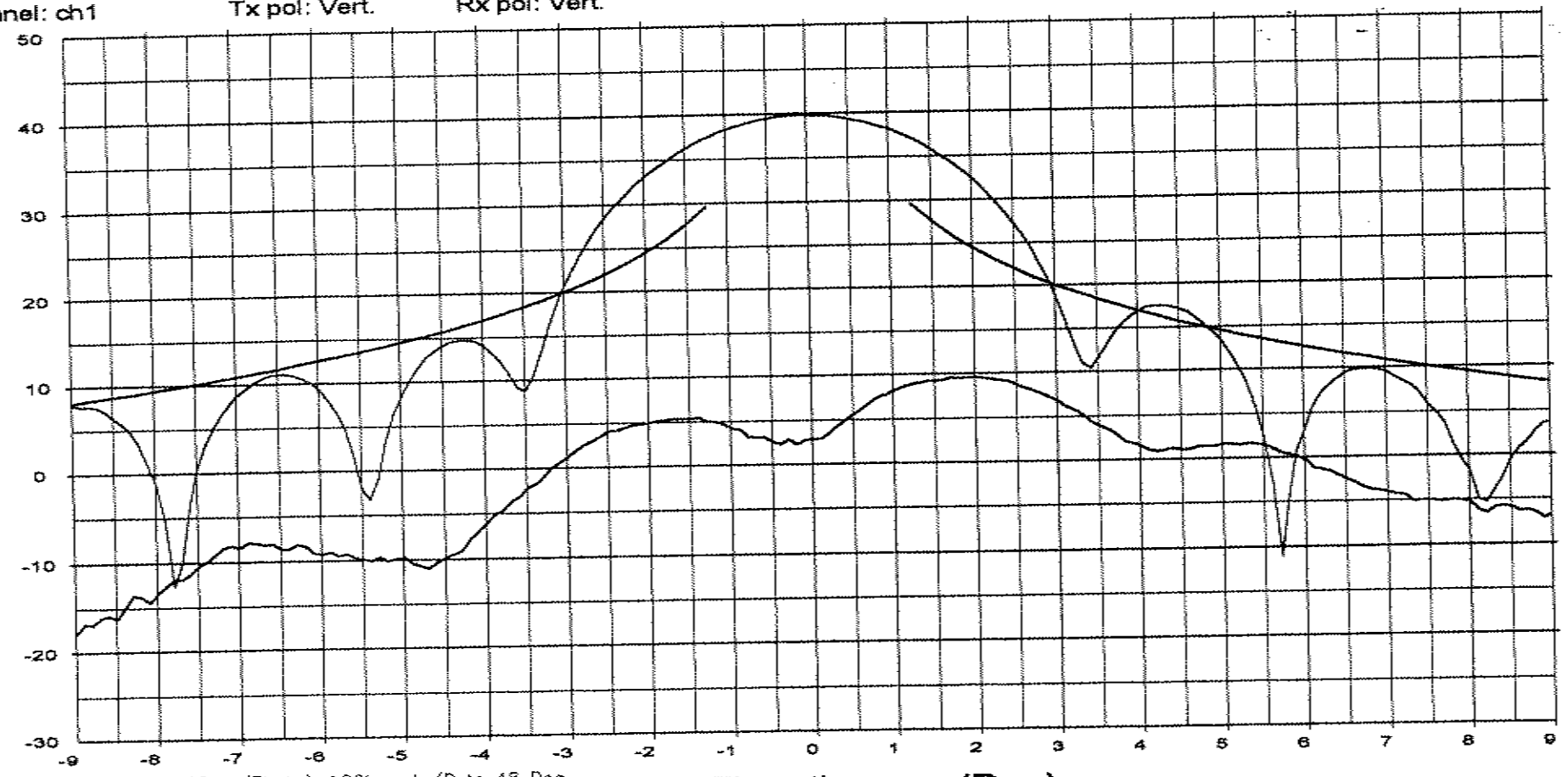
HNS 1.0M Rectangular Antenna System

Frequency : 11.700 GHz

ırator: B.Good.
. no.:
ınnel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 32-25Log(Theta)~100Lamda/D to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
9512.DAT-ant_under_test———	079512.DAT	dBi	-0.03	39.81
9520.DAT-ant_under_test———	079520.DAT	dBi	1.85	9.46

Prodelin C poration
Riverbend it Range
C. nont NC

Vertical Polarization

Transmit Frequencies

: See Legend

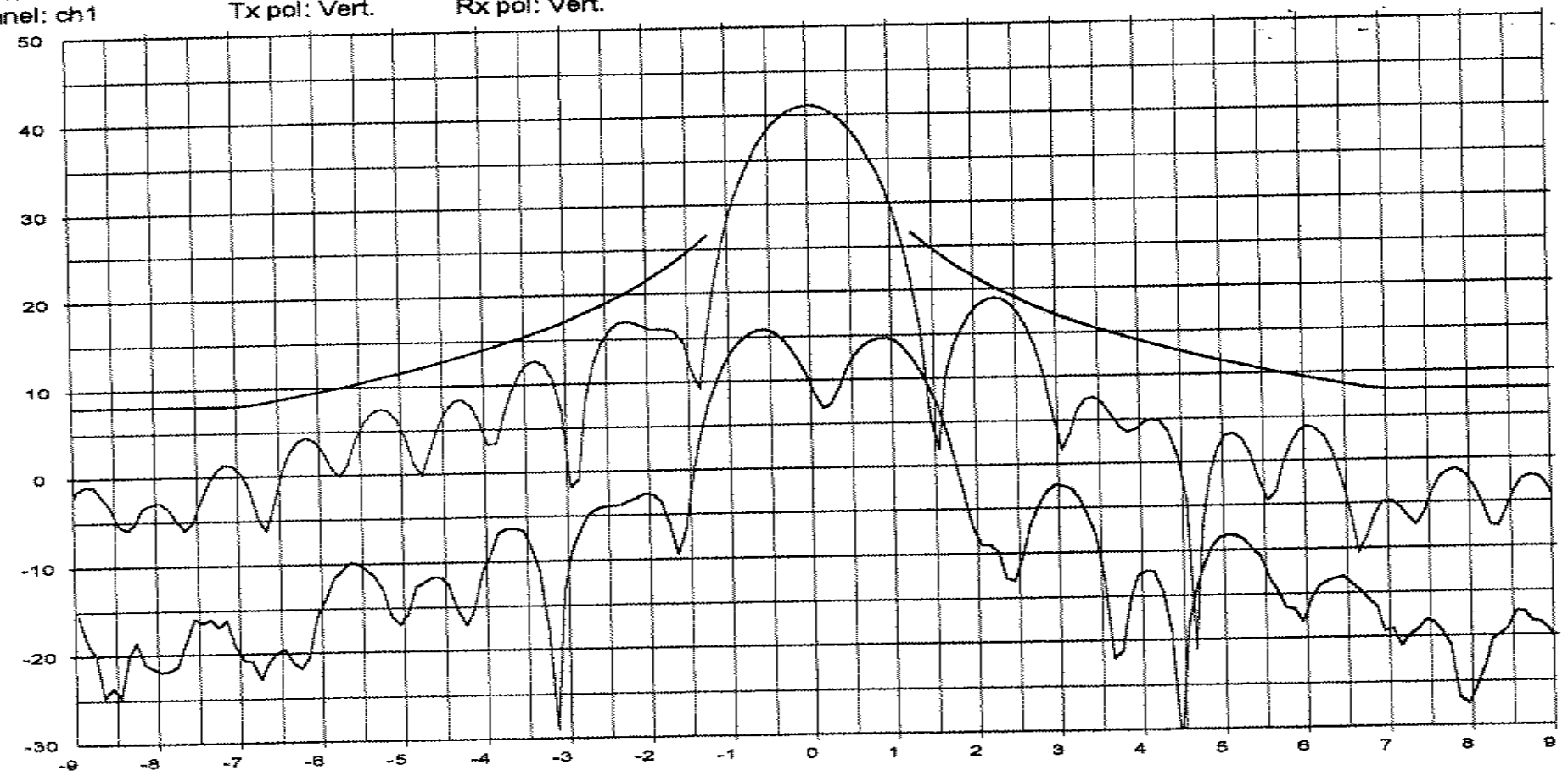
HNS 1.0M Rectangular Antenna System

Frequency : 14.000 GHz

ɪrator: B.Good.
. no.:
ınnel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

rerlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
9511.DAT-ant_under_test——	079511.DAT	dBi	0.01	41.06
9517.DAT-ant_under_test——	079517.DAT	dBi	-0.59	15.77

Prodelin C oration
Riverbenc t Range
Ci nont NC

See Legend

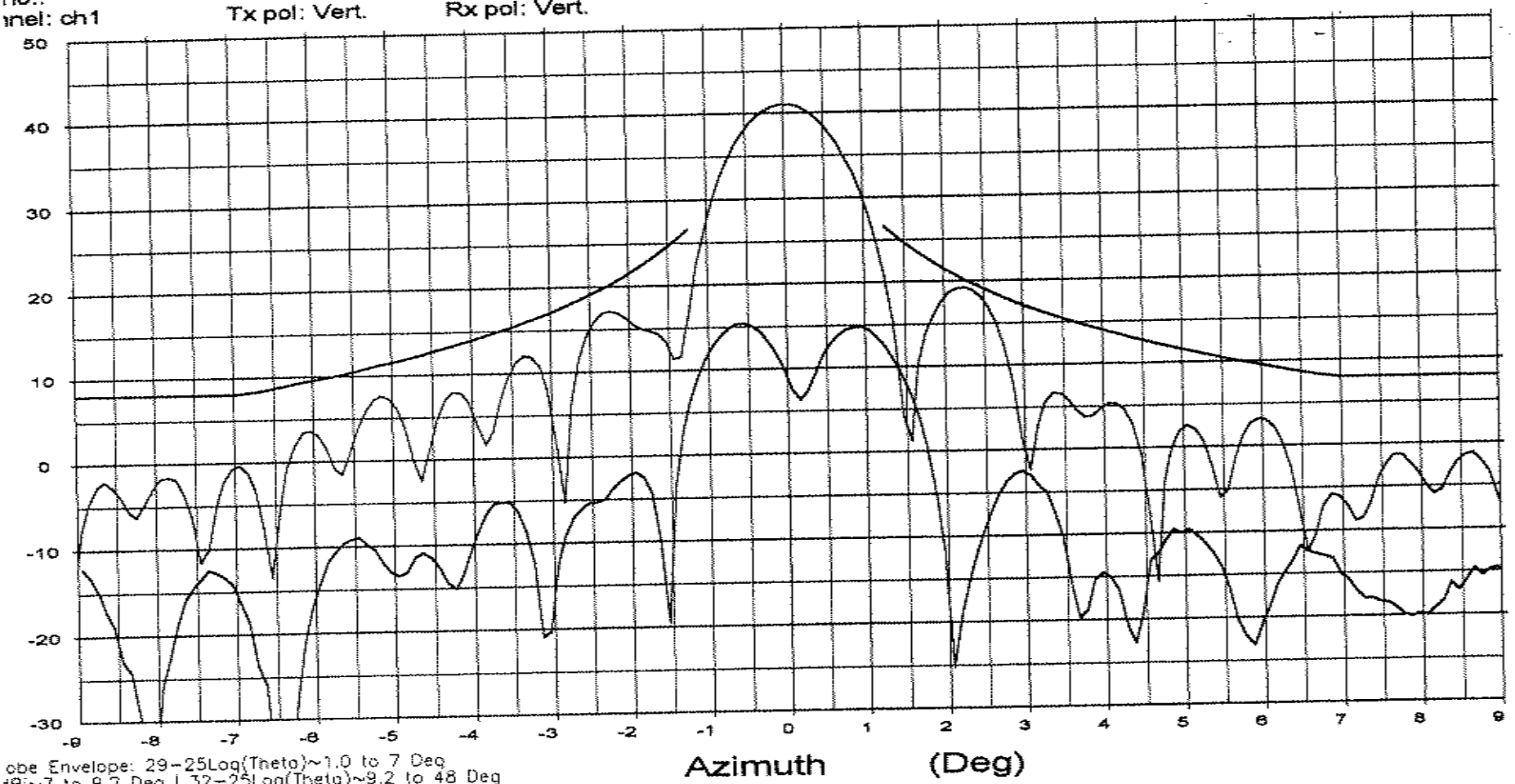
HNS 1.0M Rectangular Antenna System

Frequency : 14.250 GHz

ator: B.Good.
no.:
nnel: ch1

Tx pol: Vert.

Rx pol: Vert.



obe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
511.DAT-ant_under_test——	079511.DAT	dBi	0.02	40.97
517.DAT-ant_under_test——	079517.DAT	dBi	-0.58	15.33

Prodelin C oration
Riverbend t Range
C nont NC

: See Legend

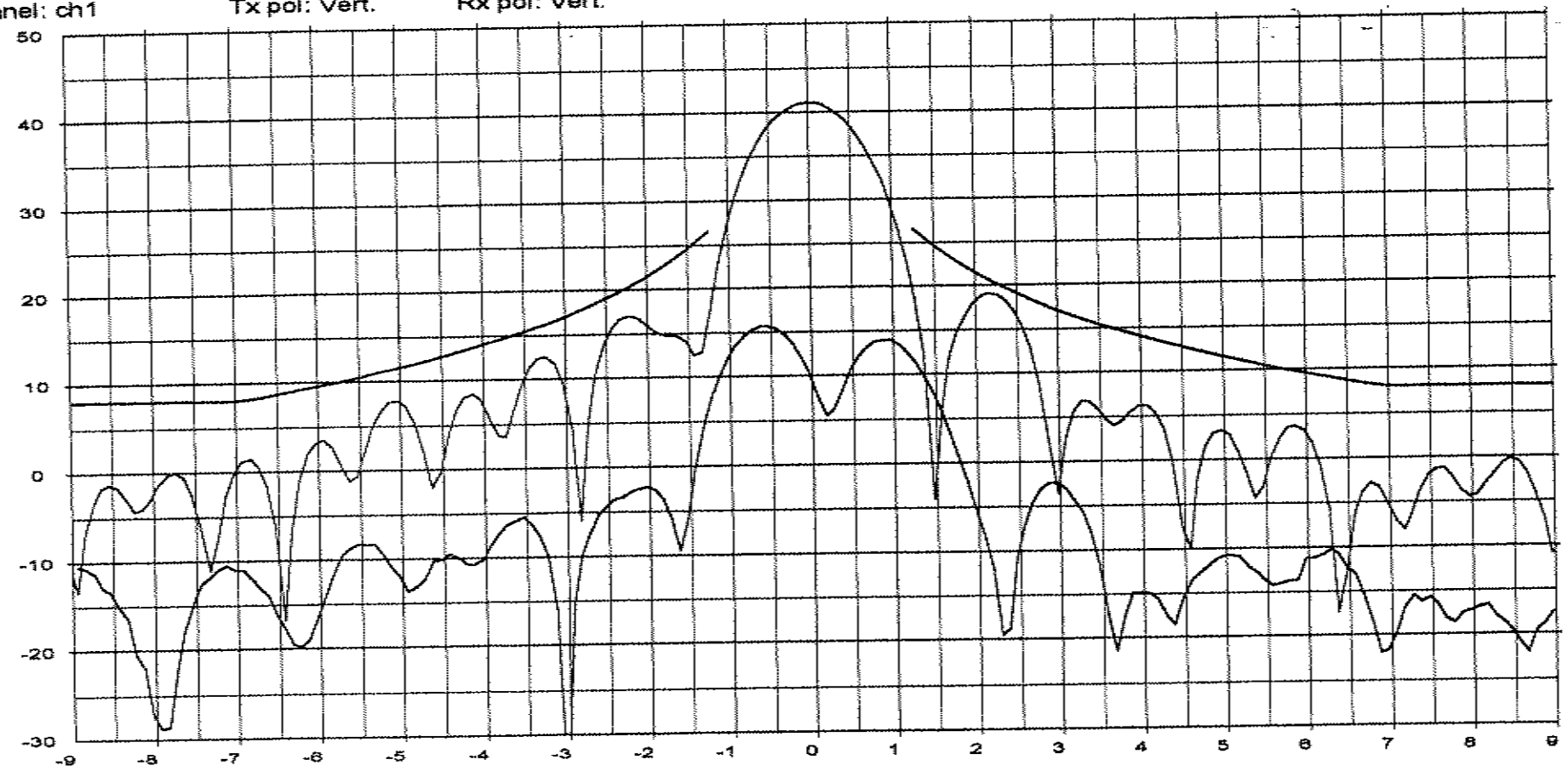
HNS 1.0M Rectangular Antenna System

Frequency : 14.500 GHz

erator: B.Good.
. no.:
nnel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	dB
9511.DAT-ant_under_test——	079511.DAT	dBi	-0.00	41.11
9517.DAT-ant_under_test——	079517.DAT	dBi	-0.58	15.65

Prodelin C oration
Riverbend t Range
Cl nont NC

r: See Legend

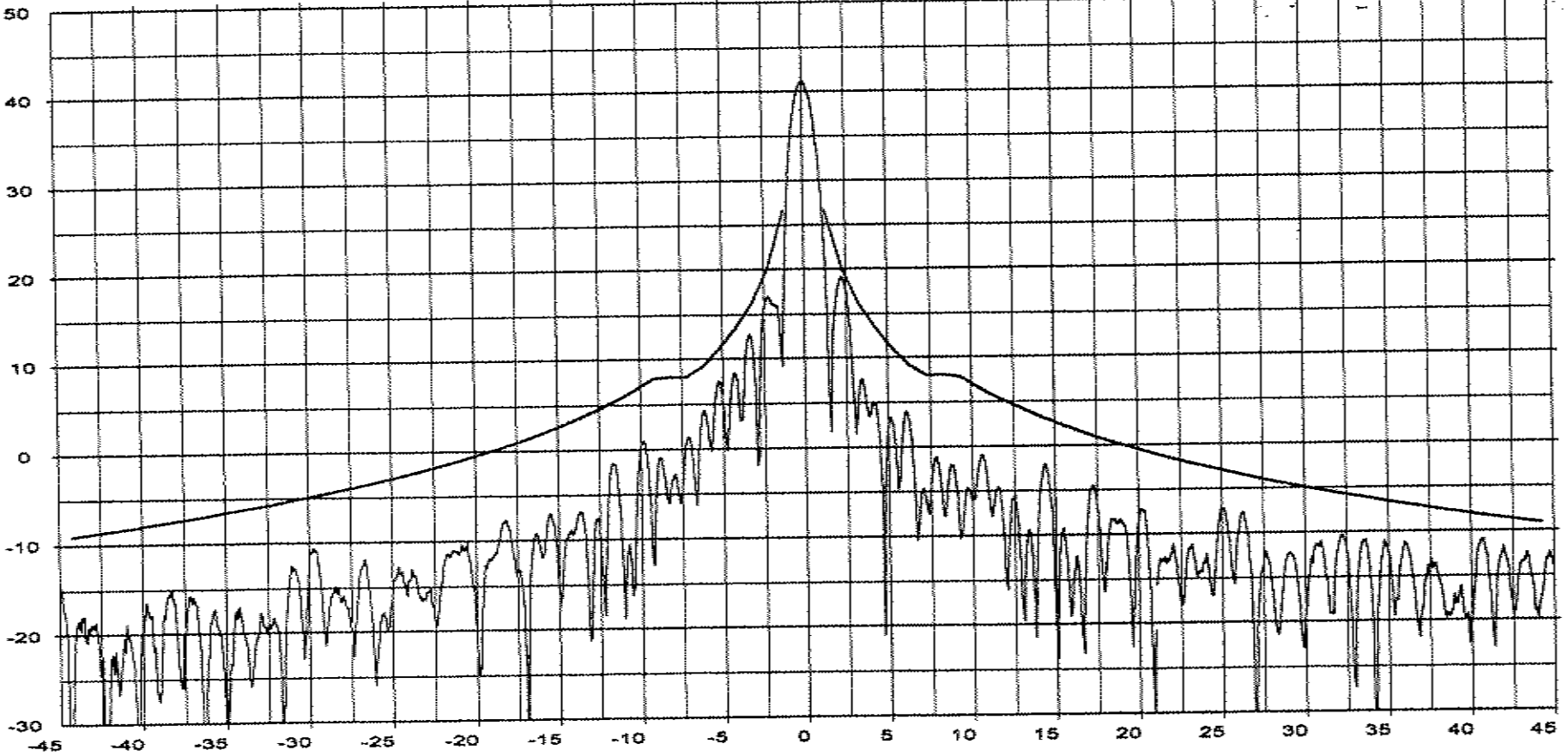
HNS 1.0M Rectangular Antenna System

Frequency : 14.000 GHz

erator: B.Good.
', no.:
annel: ch1

Tx pol: Vert.

Rx pol: Vert.



lelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
, dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
'9511.DAT-ant_under_test———	079511.DAT	dBi	0.01	41.06

Prodelin C poration
Riverbenc t Range
Ci nont NC

: See Legend

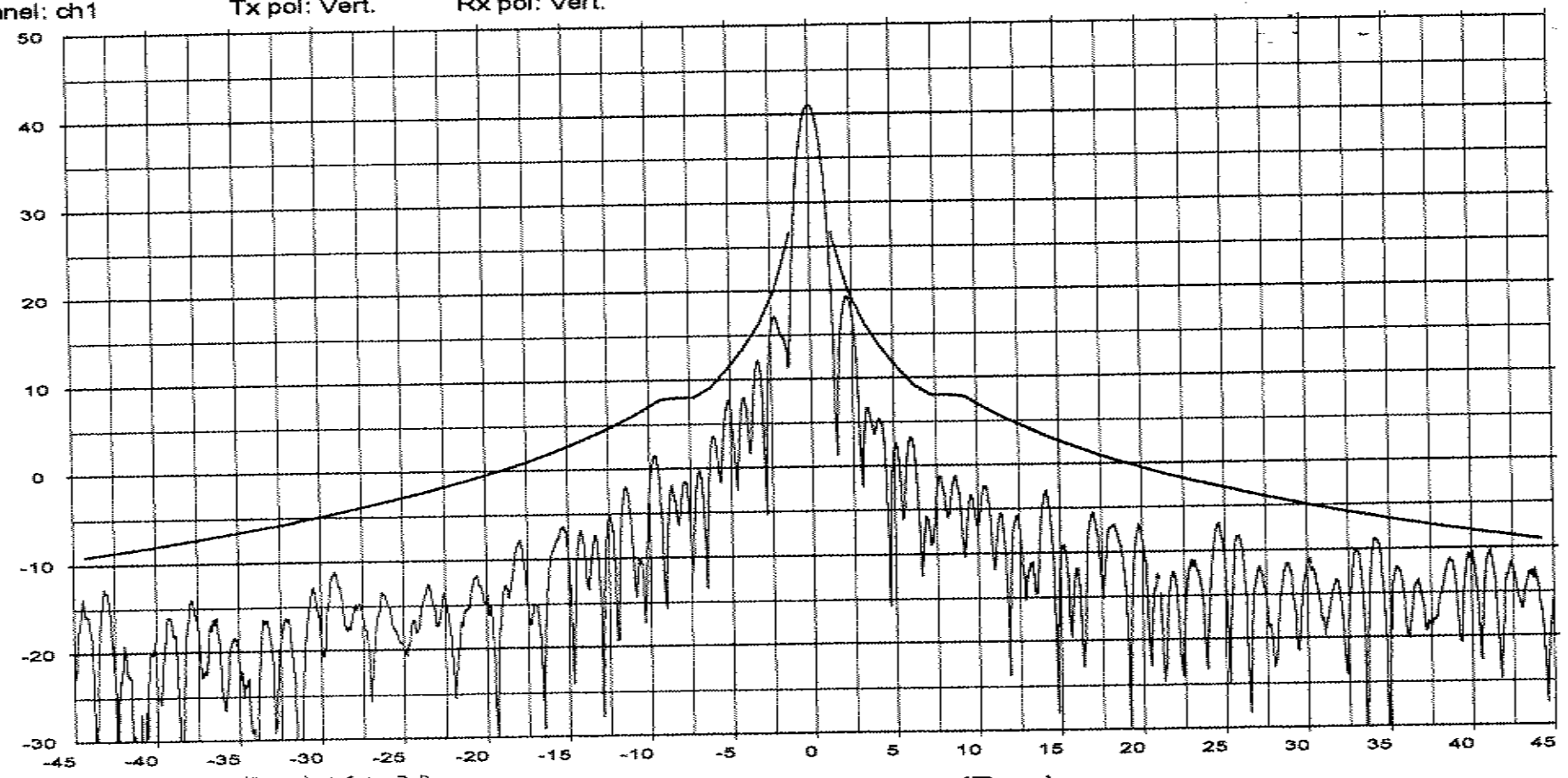
HNS 1.0M Rectangular Antenna System

Frequency : 14.250 GHz

arator: B.Good.
. no.:
annel: ch1

Tx pol: Vert.

Rx pol: Vert.



lelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
. dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
'9511.DAT-ant_under_test———	079511.DAT	dBi	0.02	40.97

Prodelin C poration
Riverbend t Range
C. nont NC

: See Legend

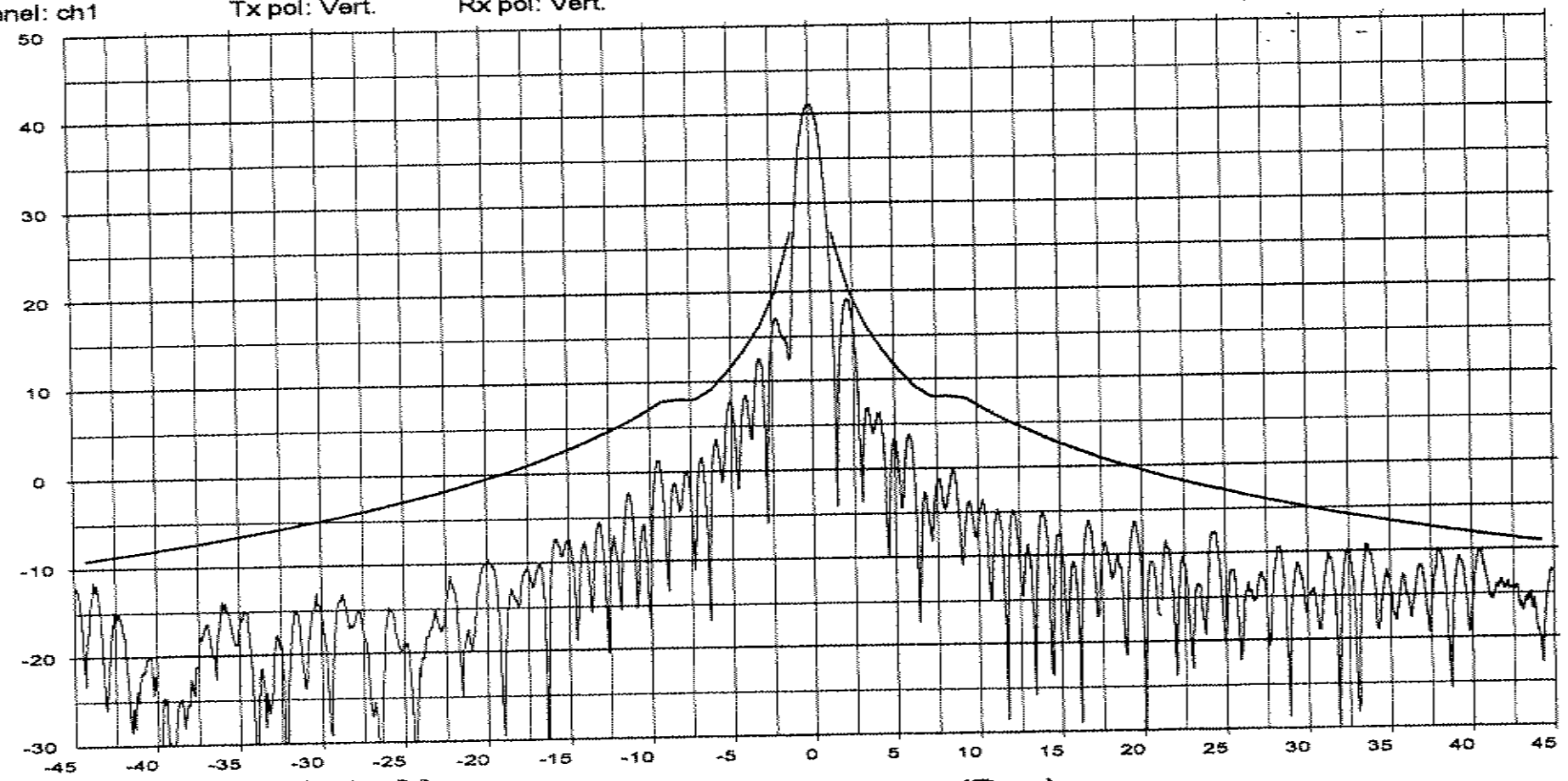
HNS 1.0M Rectangular Antenna System

Frequency : 14.500 GHz

erator: B.Good.
, no.:
annel: ch1

Tx pol: Vert.

Rx pol: Vert.



lelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
'9511.DAT-ant_under_test———	079511.DAT	dBi	-0.00	41.11

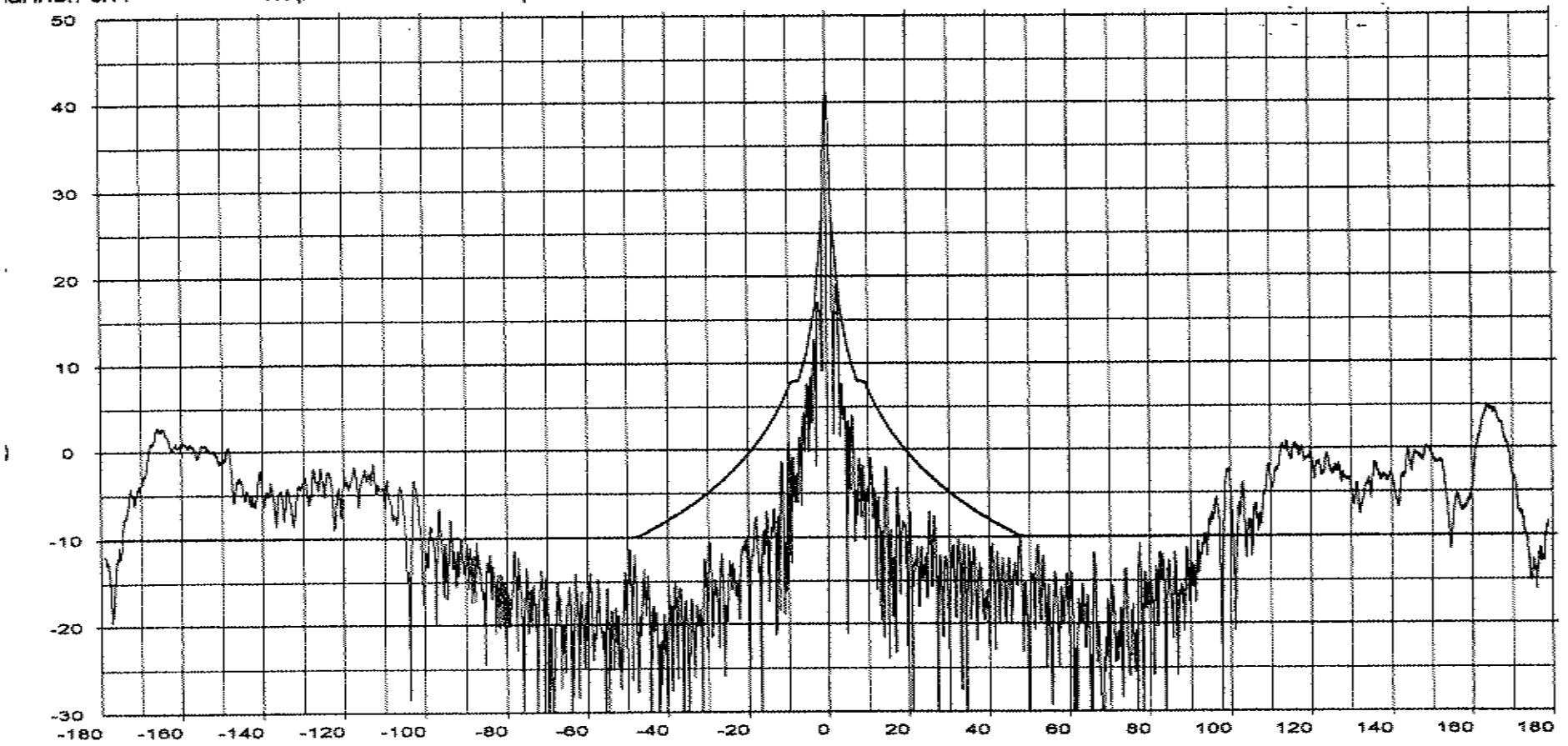
Prodelin C poration
Riverbenc t Range
C nont NC

B: See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 14.000 GHz

erator: B.Good.
r. no.:
annel: ch1 Tx pol: Vert. Rx pol: Vert.



elobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	dB
'9511.DAT-ant_under_test———	079511.DAT	dBi	0.01	41.06

Prodelin C oration
Riverbend t Range
Cl nont NC

: See Legend

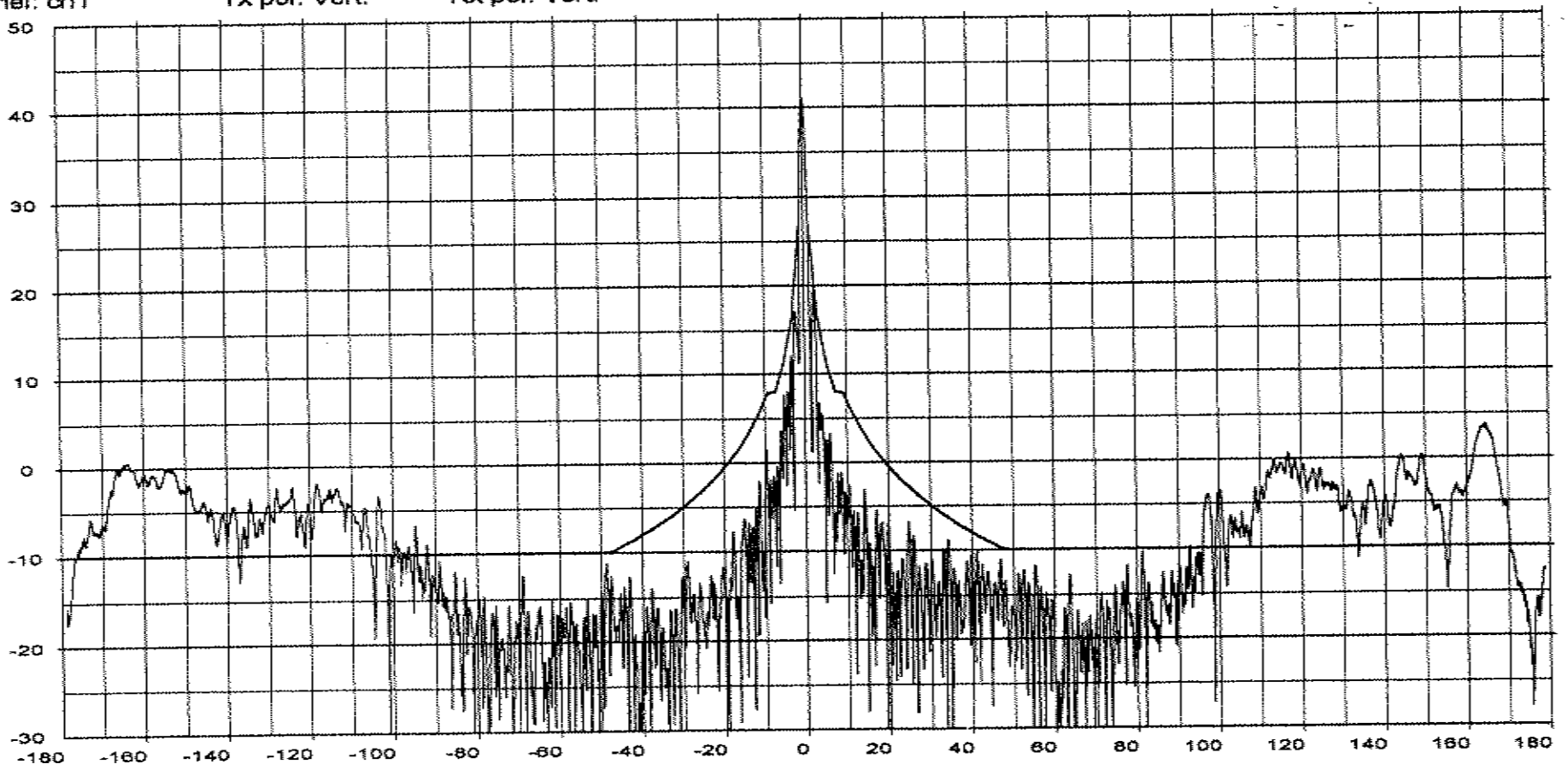
HNS 1.0M Rectangular Antenna System

Frequency : 14.250 GHz

erator: B.Good.
: no.:
annel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	dB
9511.DAT-ant_under_test———	079511.DAT	dBi	0.02	40.97

Prodelin C oration
Riverbend t Range
Cl. ont NC

s: See Legend

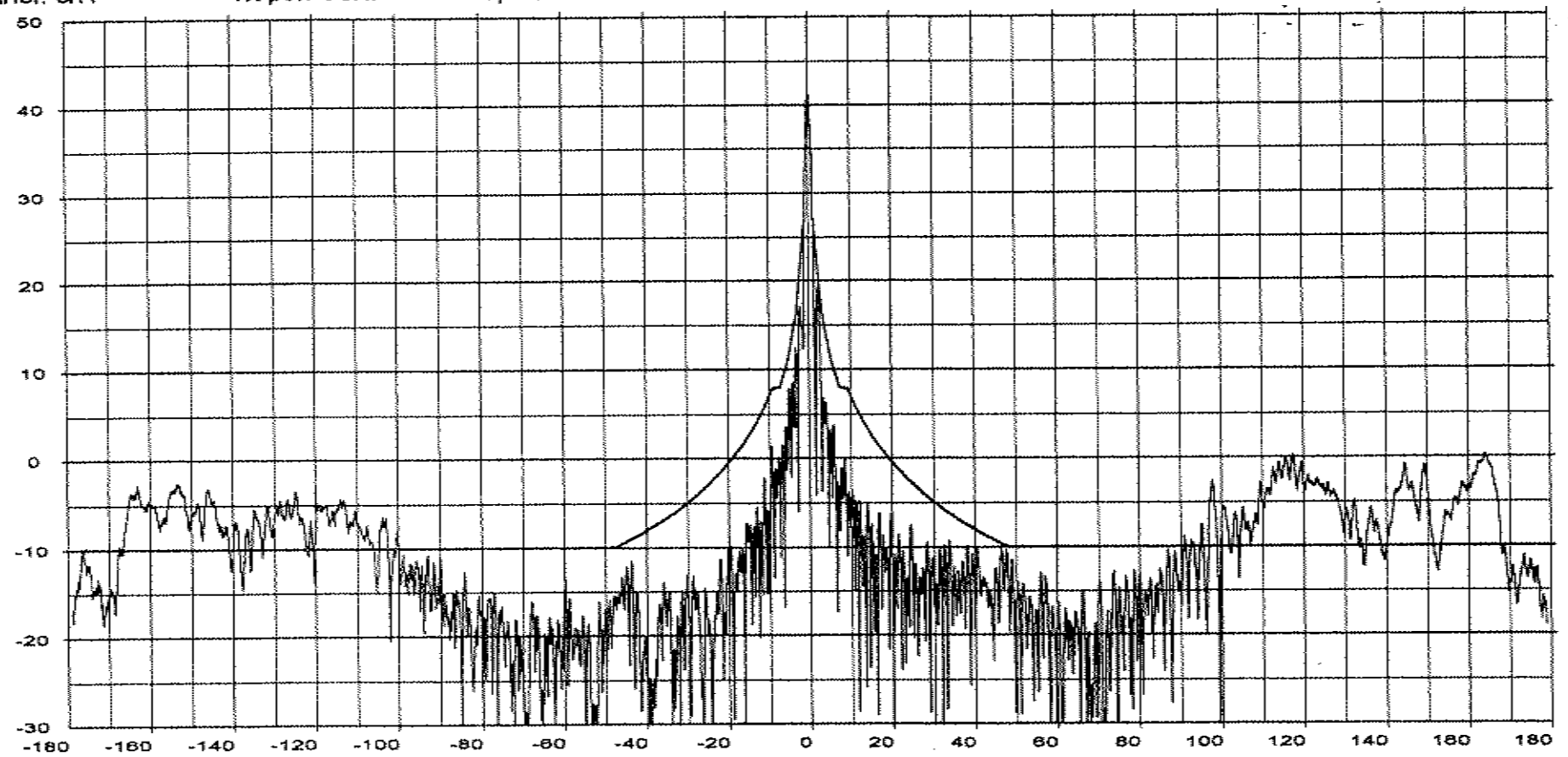
HNS 1.0M Rectangular Antenna System

Frequency : 14.500 GHz

erator: B.Good.
. no.:
annel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	dB
9511.DAT-ant_under_test———	079511.DAT	dBi	-0.00	41.11

Prodelin C oration
Riverbend t Range
Cle ort NC

: See Legend

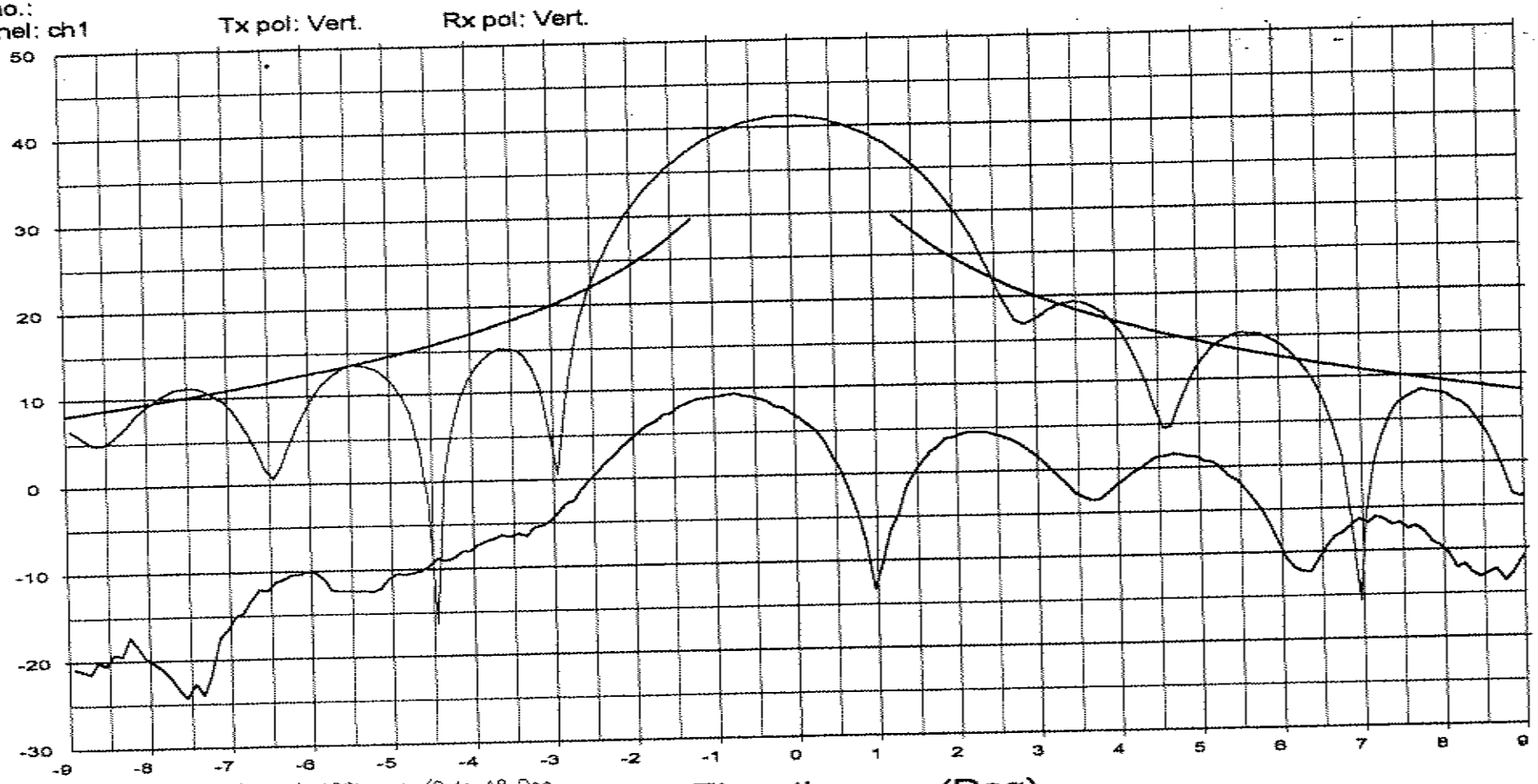
HNS 1.0M Rectangular Antenna System

Frequency : 14.000 GHz

ırator: B.Good.
. no.:
ınnel: ch1

Tx pol: Vert.

Rx pol: Vert.



elobe Envelope: 32-25Log(Theta)~100Lamda/D to 48 Deg
0 dBi~48 to 180 Deg

Elevation (Deg)

verlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
'9512.DAT-ant_under_test———	079512.DAT	dBi	-0.03	41.14
'9520.DAT-ant_under_test———	079520.DAT	dBi	-0.84	9.30

Prodelin C oration
Riverbenc t Range
C nont NC

See Legend

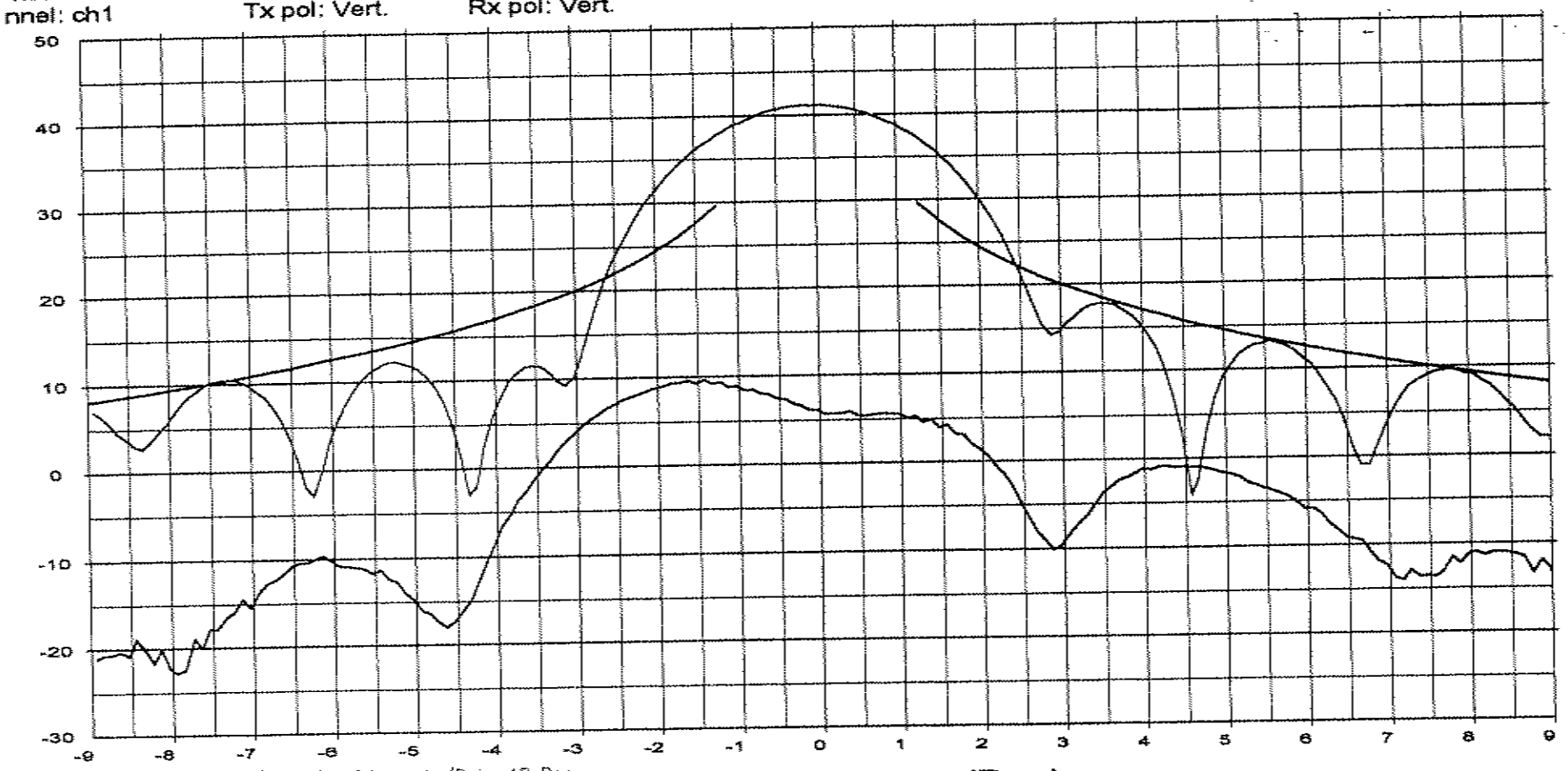
HNS 1.0M Rectangular Antenna System

Frequency : 14.250 GHz

rator: B.Good.
no.:
nnel: ch1

Tx pol: Vert.

Rx pol: Vert.



lobe Envelope: 32-25Log(Theta)~100Lamda/D to 48 Deg
dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
9512.DAT-ant_under_test———	079512.DAT	dBi	-0.03	41.12
9520.DAT-ant_under_test———	079520.DAT	dBi	-1.43	9.62

Prodelin C oration
Riverbend t Range
C nont NC

: See Legend

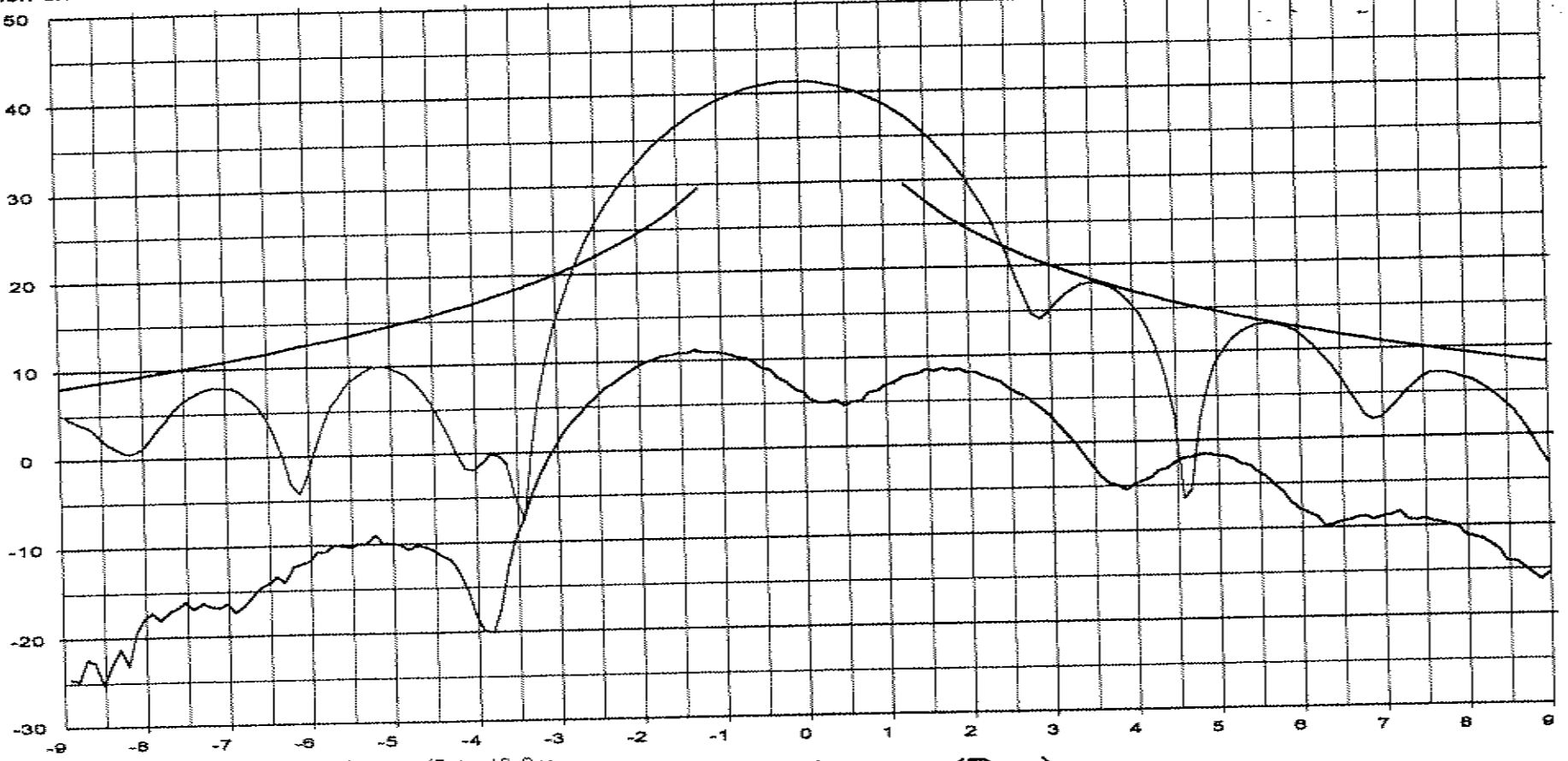
HNS 1.0M Rectangular Antenna System

Frequency : 14.500 GHz

ırator: B.Good.
. no.:
innel: ch1

Tx pol: Vert.

Rx pol: Vert.



eiobe Envelope: 32-25Log(Theta)~10DLomda/D to 48 Deg
0 dBi~48 to 180 Deg

Beam Peak	Deg	dB
	-0.06	41.27
	-1.30	11.10

verlays	Cal. file	units
'9512.DAT-ant_under_test———	079512.DAT	dBi
'9520.DAT-ant_under_test———	079520.DAT	dBi

Prodelin C rporation
Riverbend t Range
C, nont NC

Horizontal Polarization

Receive Frequencies

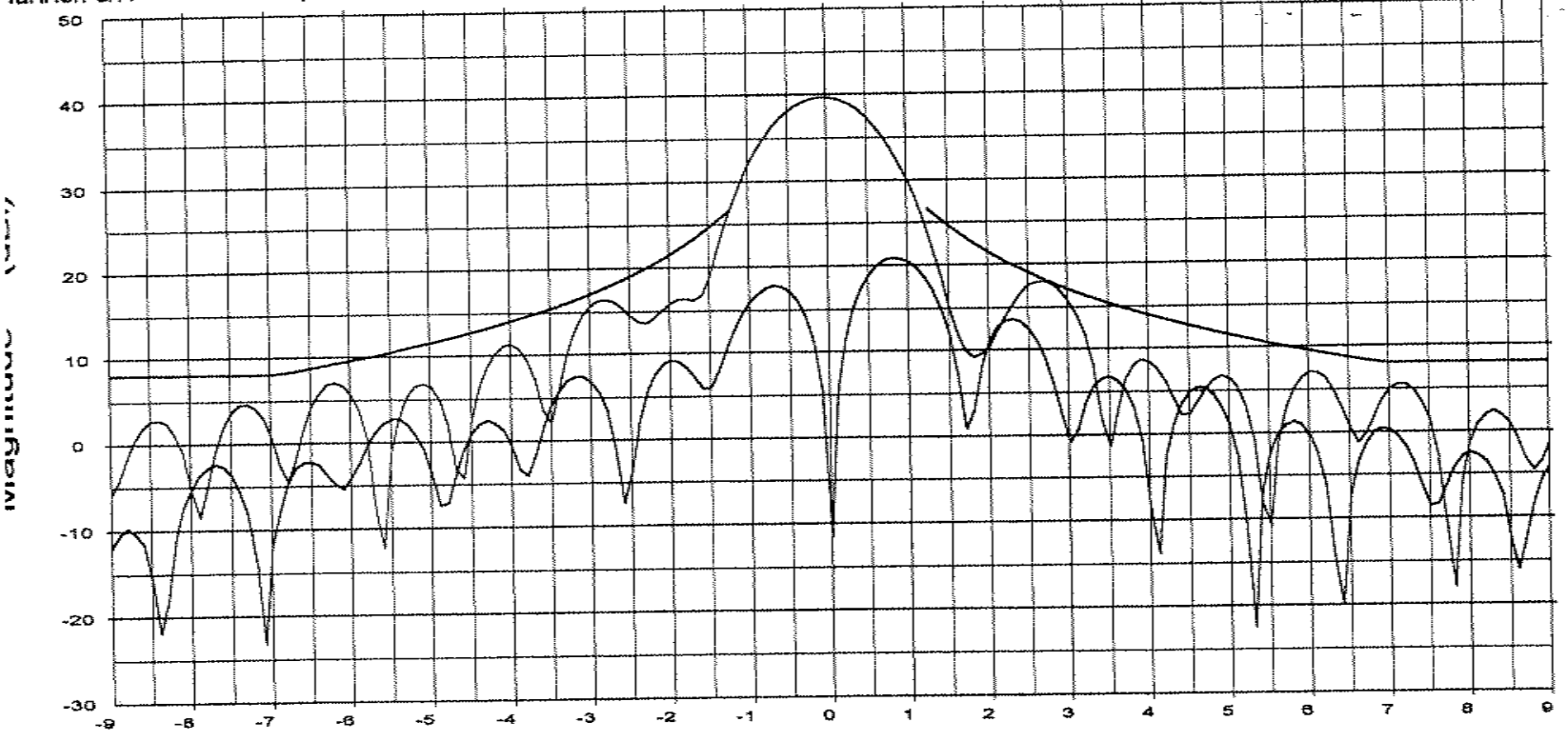
e: See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 11.700 GHz

perator: B.Good.
r. no.:
hannel: ch1

Tx pol: Horiz. Rx pol: Horiz.



delobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
8 dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
10 dBi~48 to 180 Deg

Overlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
079521.DAT-ant_under_test———	079521.DAT	dBi	-0.05	39.61
079529.DAT-ant_under_test———	079529.DAT	dBi	0.85	20.82

Prodelin Corporation
Riverbend Test Range
Tramont NC

le: See Legend

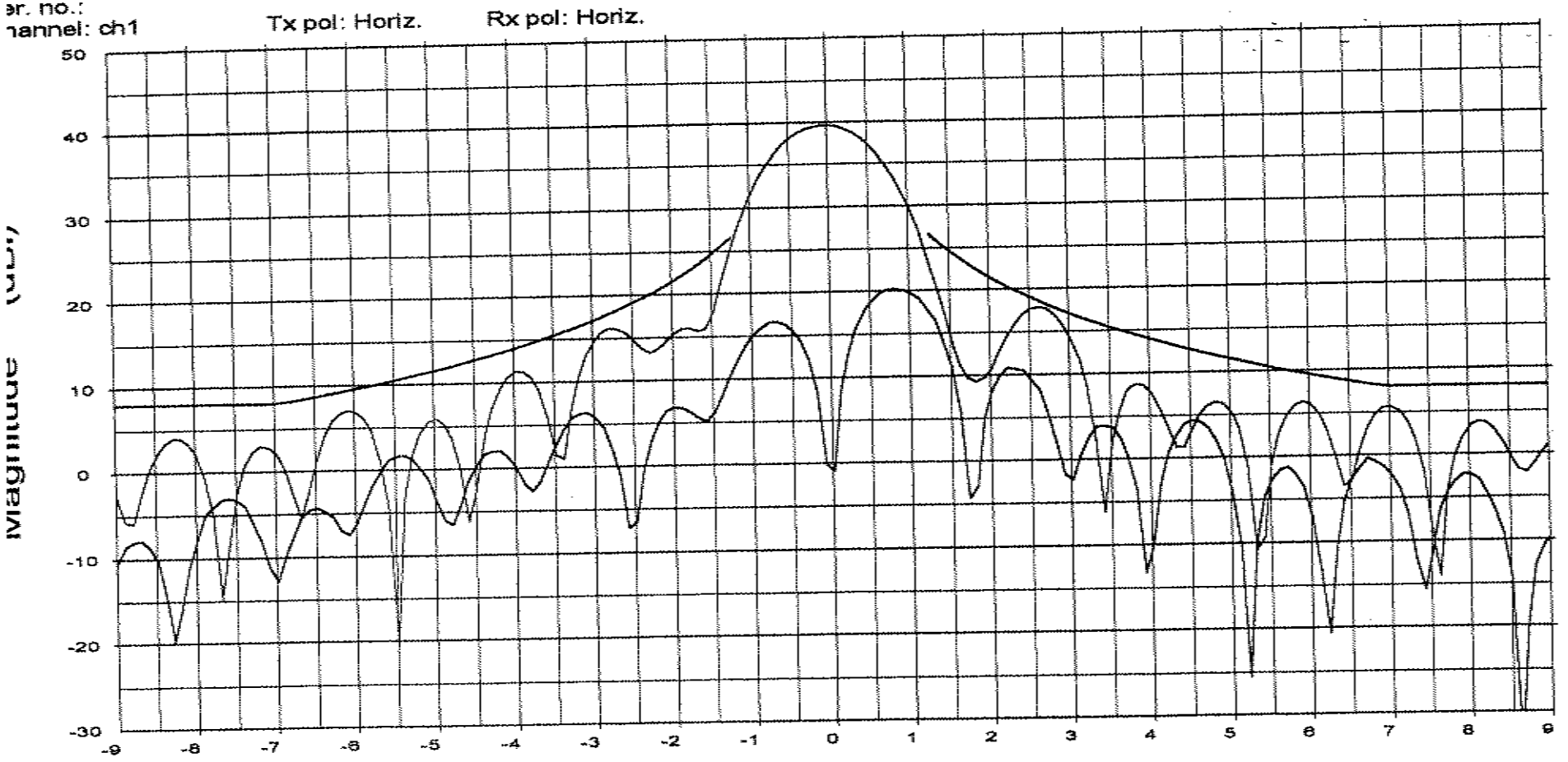
HNS 1.0M Rectangular Antenna System

Frequency : 11.950 GHz

perator: B.Good.
er. no.:
hannel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



Sidelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
+8 dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
-10 dBi~48 to 180 Deg

Overlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
079521.DAT-ant_under_test———	079521.DAT	dBi	-0.04	39.64
079528.DAT-ant_under_test———	079528.DAT	dBi	0.83	20.24

Prodelin Corporation
Riverbor est Range
amont NC

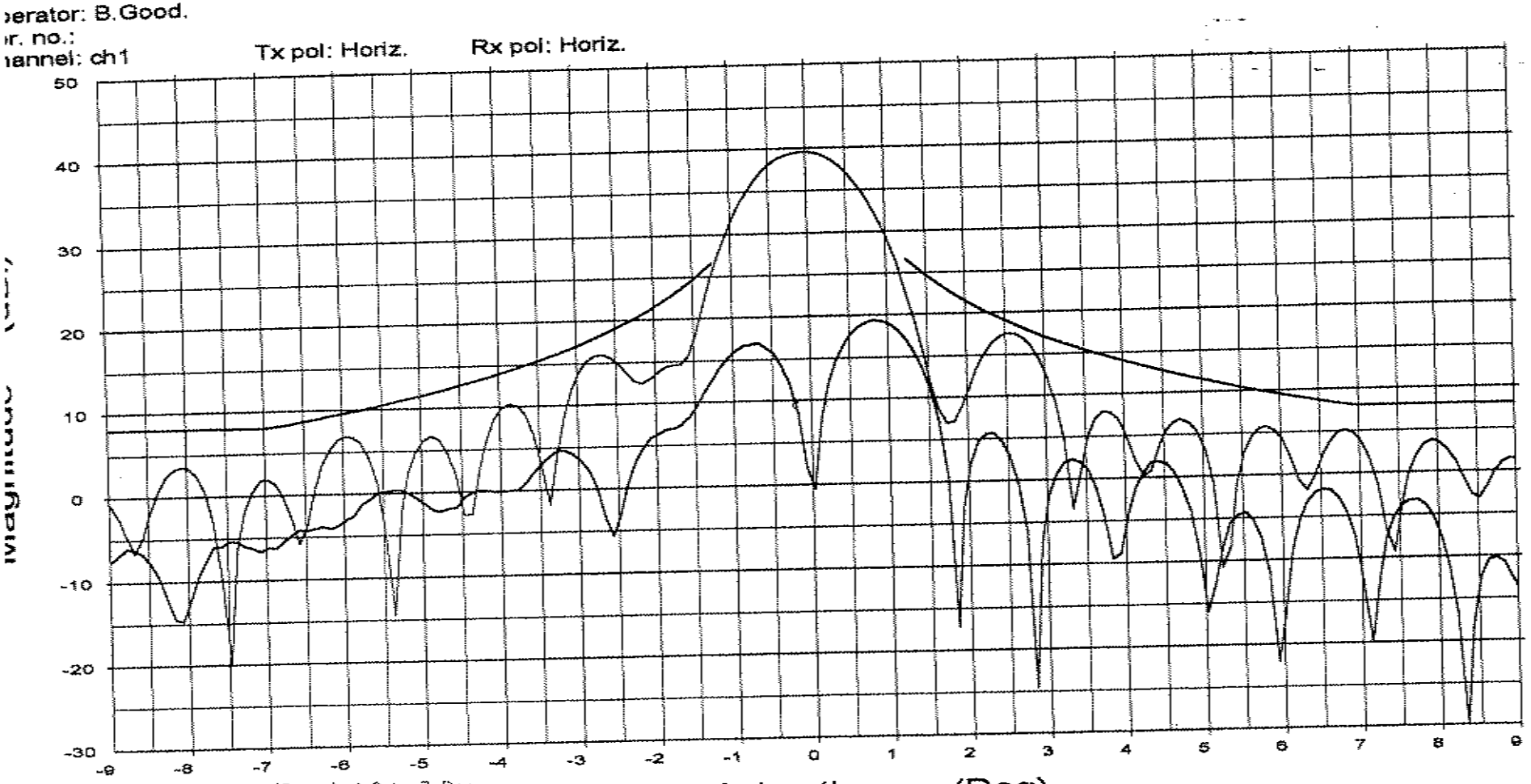
e: See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 12.200 GHz

erator: B.Good.
r. no.:
annel: ch1

Tx pol: Horiz. Rx pol: Horiz.



idelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
-8 dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
-10 dBi~48 to 180 Deg

Overlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
079521.DAT-ant_under_test	079521.DAT	dBi	-0.05	39.57
079525.DAT-ant_under_test	079525.DAT	dBi	0.85	19.37

Prodelin Corporation
Riverbend Test Range
Tamont NC

le: See Legend

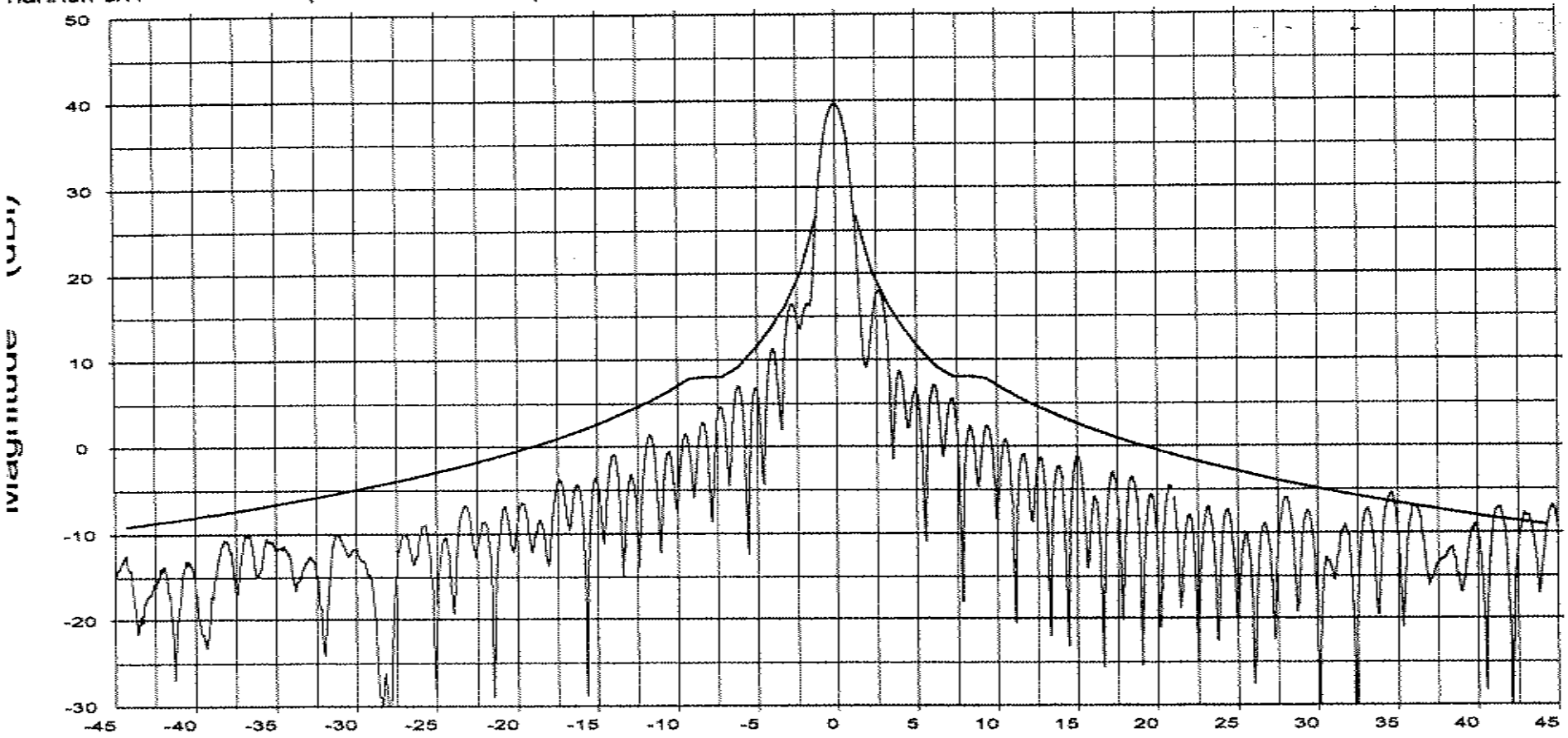
HNS 1.0M Rectangular Antenna System

Frequency : 11.700 GHz

perator: B.Good.
er. no.:
hannel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



idelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
8 dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
10 dBi~48 to 180 Deg

Overlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
079521.DAT-ant_under_test———	079521.DAT	dBi	-0.05	39.61

Prodelin Corporation
Riverbend Test Range
Claremont NC

e: See Legend

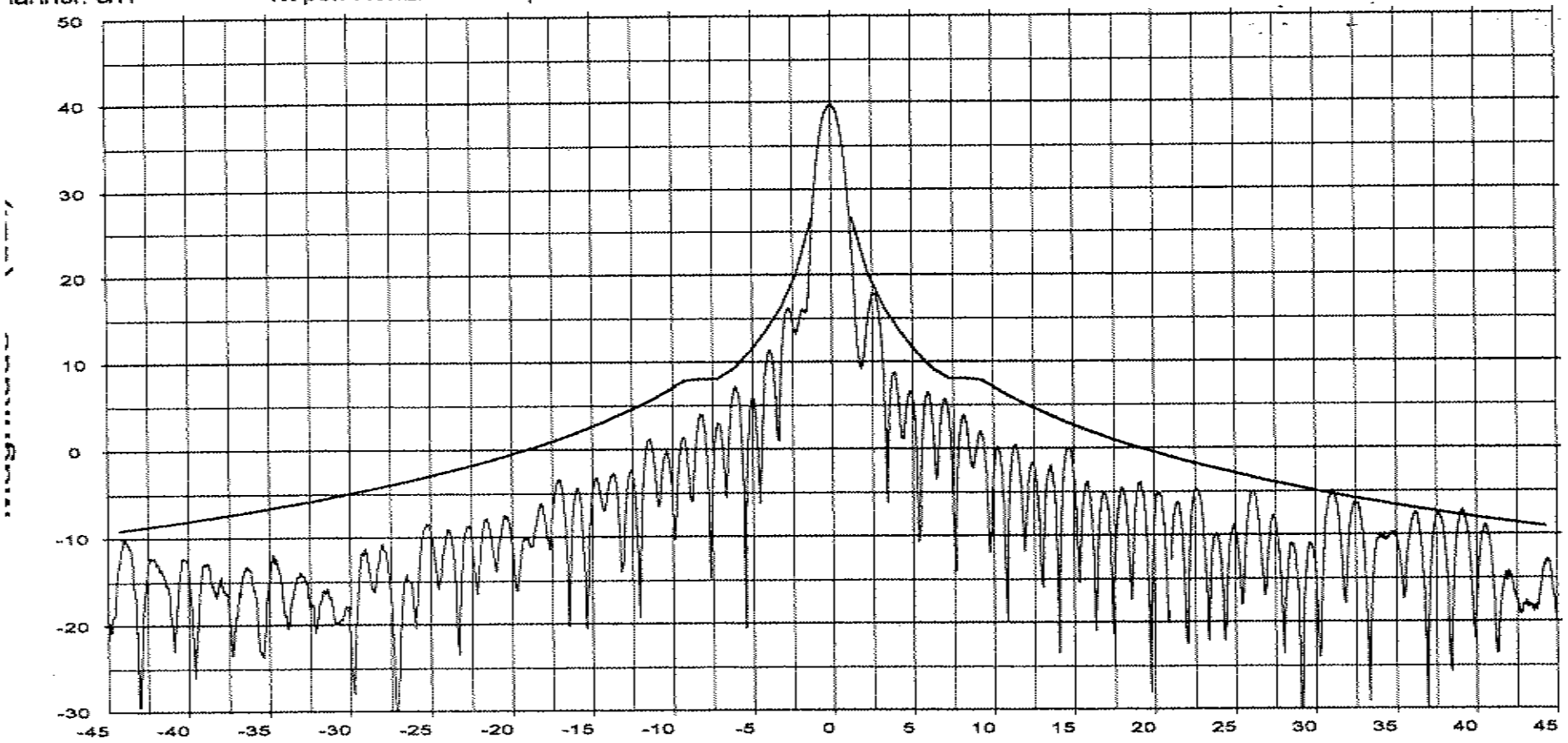
HNS 1.0M Rectangular Antenna System

Frequency : 11.950 GHz

perator: B.Good.
er. no.:
hannel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



delobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
8 dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
10 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
79521.DAT-ant_under_test———	079521.DAT	dBi	-0.04	39.64

Prodelin orporation
Riverber st Range

le: See Legend

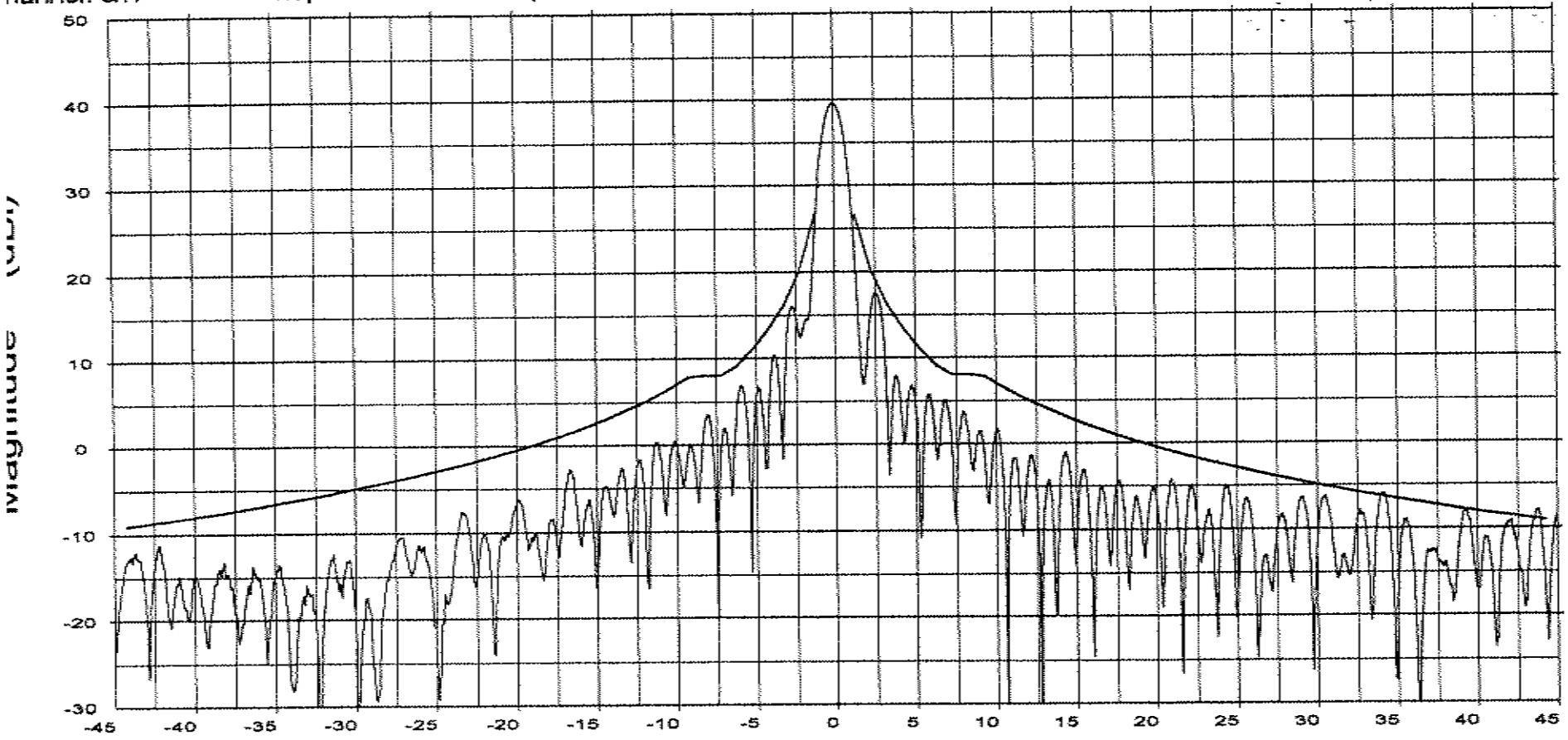
HNS 1.0M Rectangular Antenna System

Frequency : 12.200 GHz

perator: B.Good.
er. no.:
hannel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



idelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
8 dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
10 dBi~48 to 180 Deg

Overlays	Cal. file	units	Beam Peak Deg	dB
079521.DAT-ant_under_test———	079521.DAT	dBi	-0.05	39.57

Prodelin orporation
Riverber st Range
mont NC

e: See Legend

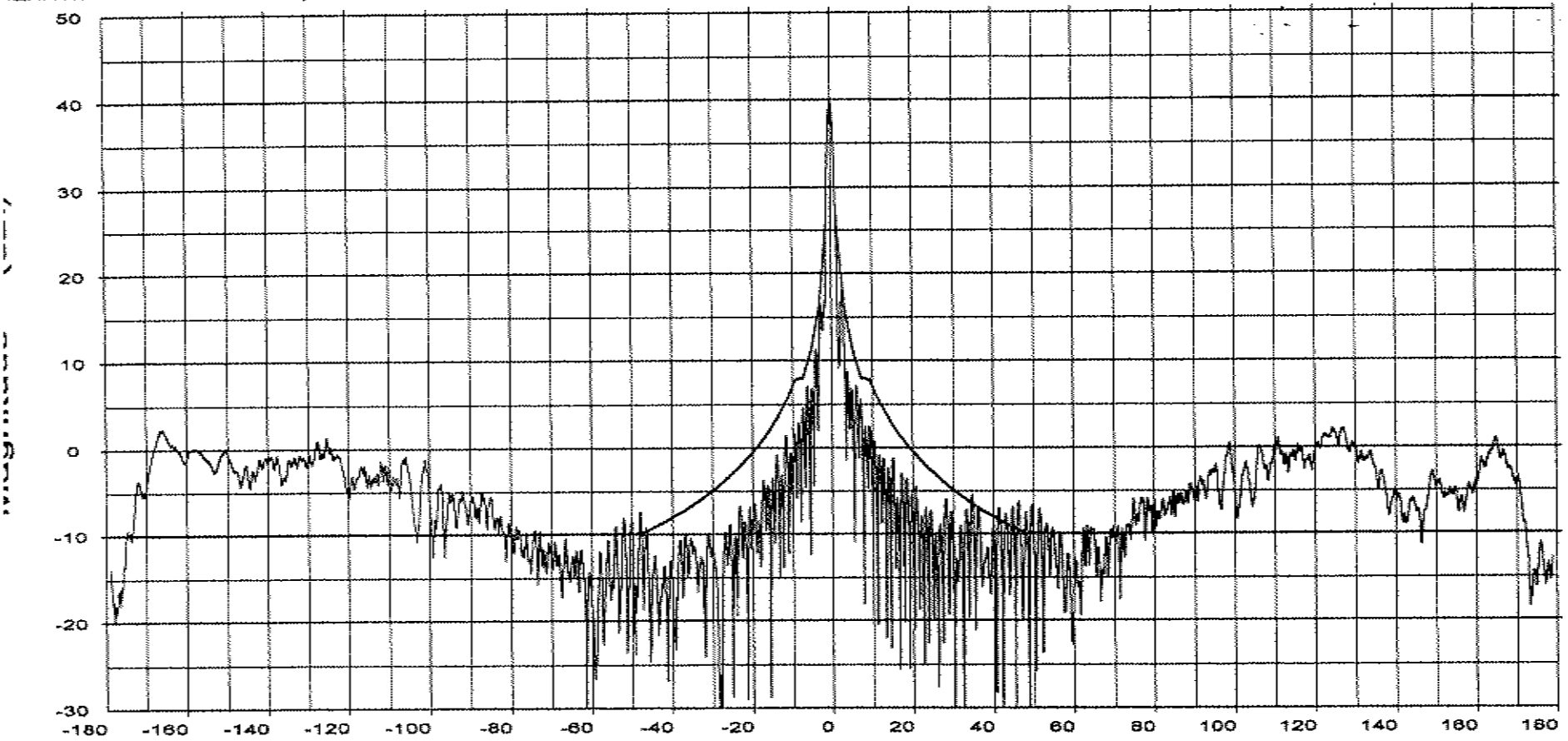
HNS 1.0M Rectangular Antenna System

Frequency : 11.700 GHz

perator: B.Good.
r. no.:
hannel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



delobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
8 dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
10 dBi~48 to 180 Deg

verlays	Cal. file	units	Beam Peak Deg	dB
79521.DAT-ant_under_test———	079521.DAT	dBi	-0.05	39.61

Prodelin Corporation
Riverber[illegible]est Range
[illegible]mont NC

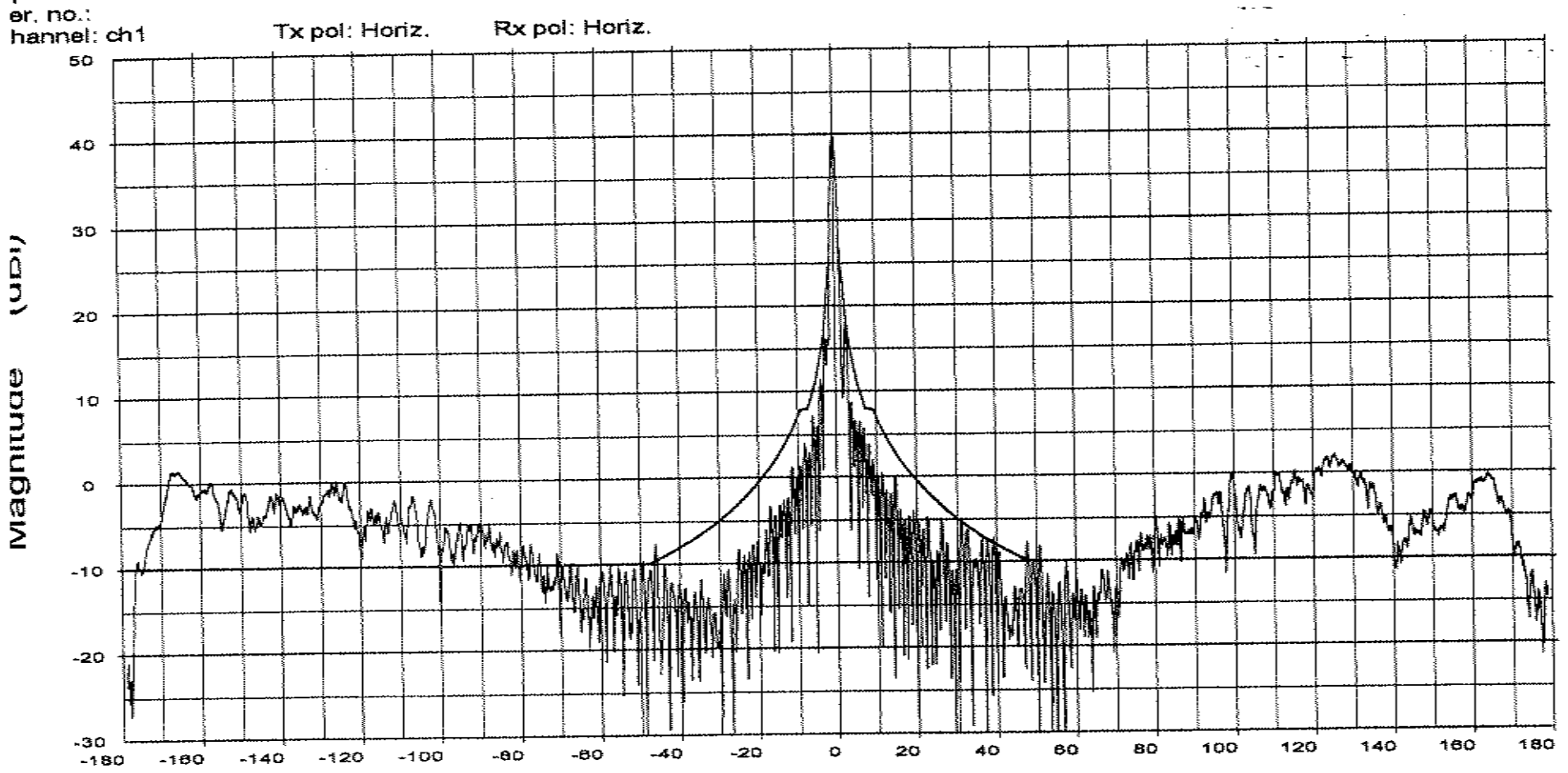
le: See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 11.950 GHz

perator: B.Good.
er. no.:
hannel: ch1

Tx pol: Horiz. Rx pol: Horiz.



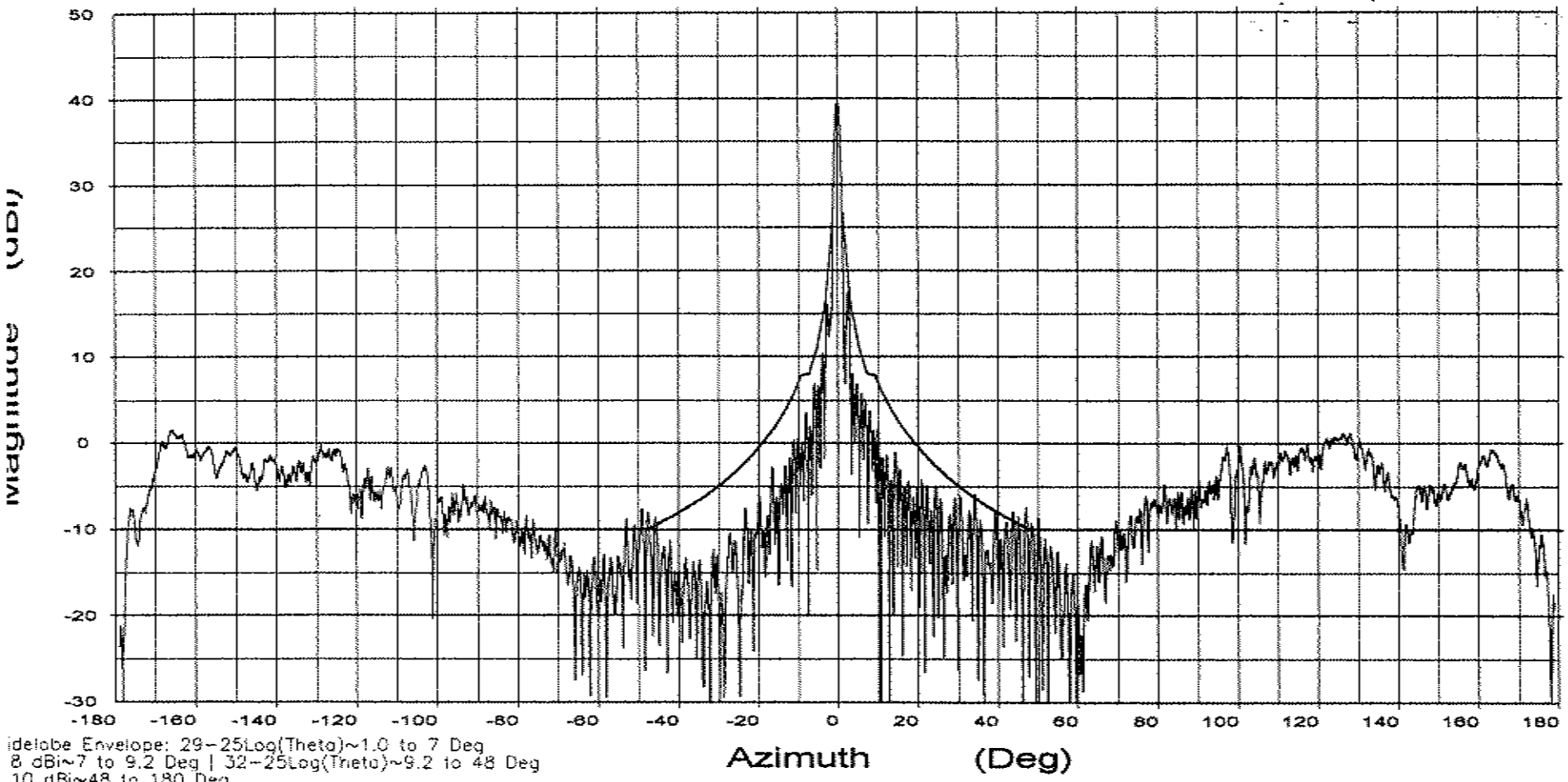
Sidelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
+8 dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
-10 dBi~48 to 180 Deg

Overlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
079521.DAT-ant_under_test———	079521.DAT	dBi	-0.04	39.64

Prodelin Corporation
Riverbend Test Range
Claremont NC

ile: See Legend HNS 1.0M Rectangular Antenna System Frequency : 12.200 GHz

perator: B.Good.
er. no.:
hannel: ch1 Tx pol: Horiz. Rx pol: Horiz.



idelobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
8 dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
10 dBi~48 to 180 Deg

Overlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
79521.DAT-ant_under_test———	079521.DAT	dBi	-0.05	39.57

Prodelin orporation
Riverber st Range

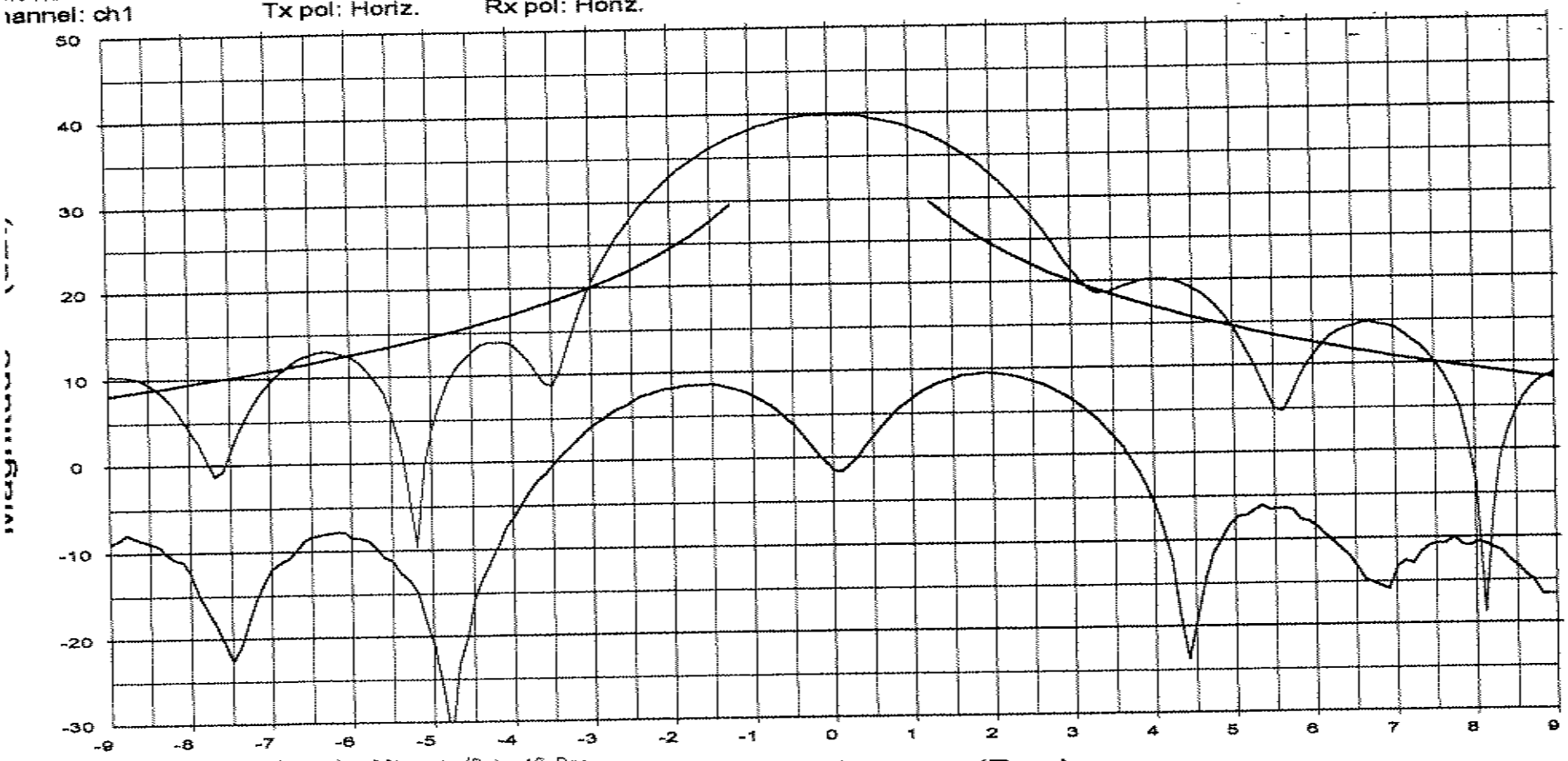
e: See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 11.700 GHz

perator: B.Good.
r. no.:
hannel: ch1

Tx pol: Horiz. Rx pol: Horiz.



idelobe Envelope: 32-25Log(Theta)~100Lamda/D to 48 Deg
10 dBi~48 to 180 Deg

Elevation (Deg)

Overlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
079523.DAT-ant_under_test	079523.DAT	dBi	0.01	39.84
079532.DAT-ant_under_test	079532.DAT	dBi	1.96	9.48

Prodelin Corporation
Riverbend Test Range
Claremont NC

e: See Legend

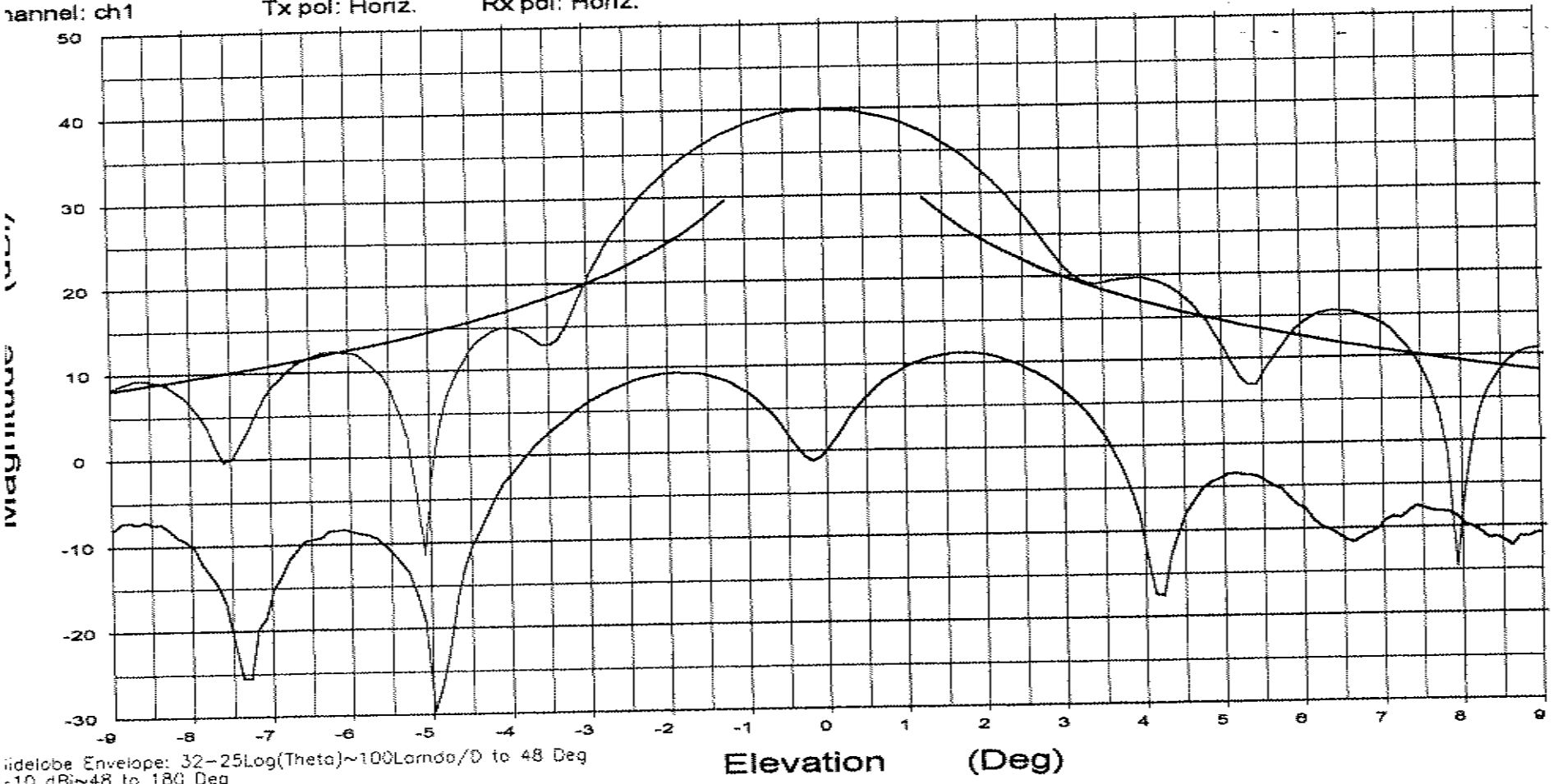
HNS 1.0M Rectangular Antenna System

Frequency : 11.950 GHz

perator: B.Good.
r. no.:
hannel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



idelobe Envelope: 32-25Log(Theta)~100Lambda/D to 48 Deg
-10 dBi~48 to 180 Deg

Overlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
079523.DAT-ant_under_test——	079523.DAT	dBi	-0.00	39.90
079532.DAT-ant_under_test——	079532.DAT	dBi	1.75	11.15

Prodelin Corporation
Riverber est Range
emont NC

e: See Legend

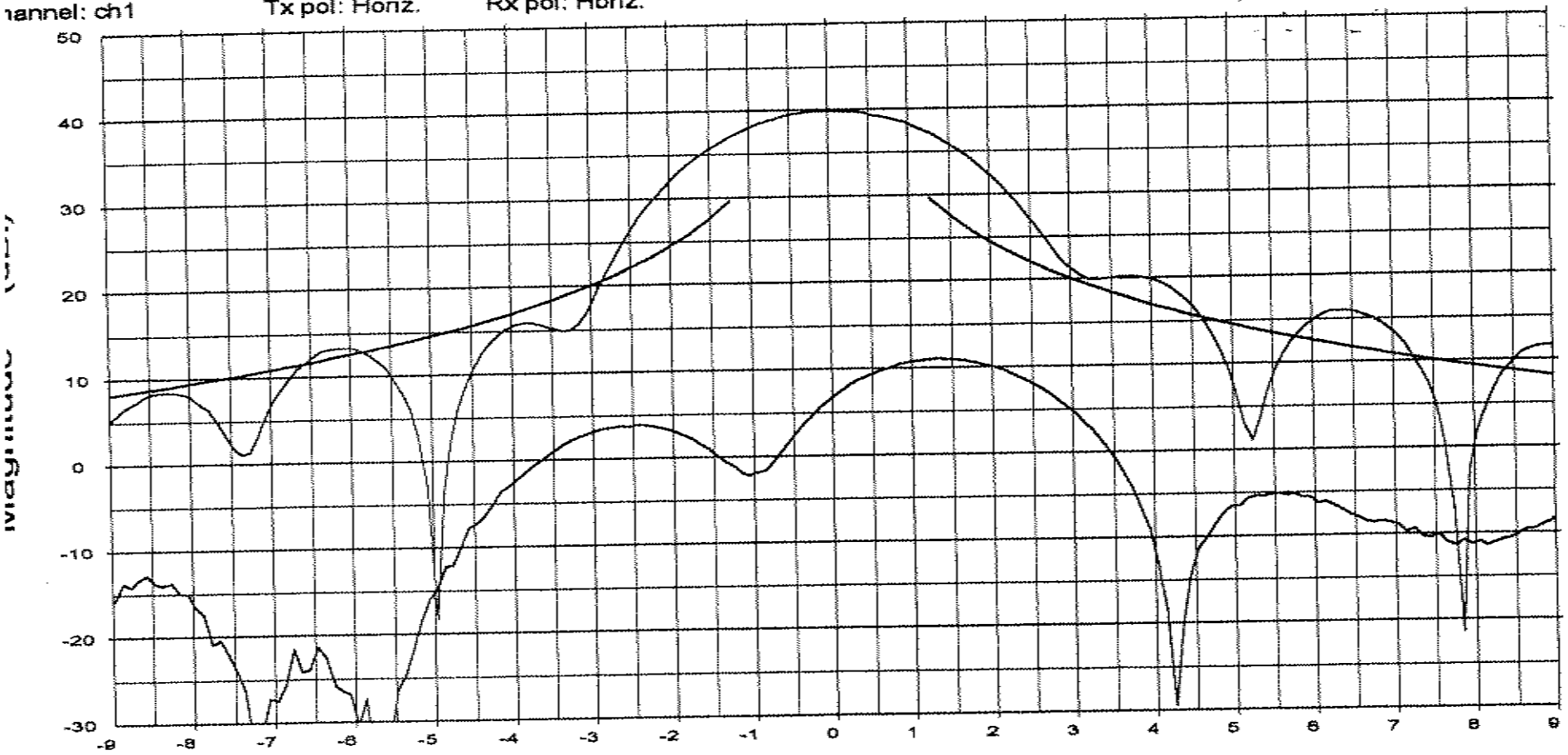
HNS 1.0M Rectangular Antenna System

Frequency : 12.200 GHz

perator: B.Good.
r, no.:
hannel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



idelobe Envelope: 32-25Log(Theta)~10Lamda/D to 48 Deg
-10 dBi~48 to 180 Deg

Elevation (Deg)

Overlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
079523.DAT-ant_under_test——	079523.DAT	dBi	0.03	39.82
079532.DAT-ant_under_test——	079532.DAT	dBi	1.35	11.02

Prodelin Corporation
Riverber est Range
amont NC

Horizontal Polarization

Horizontal Polarization

Transmit Frequencies

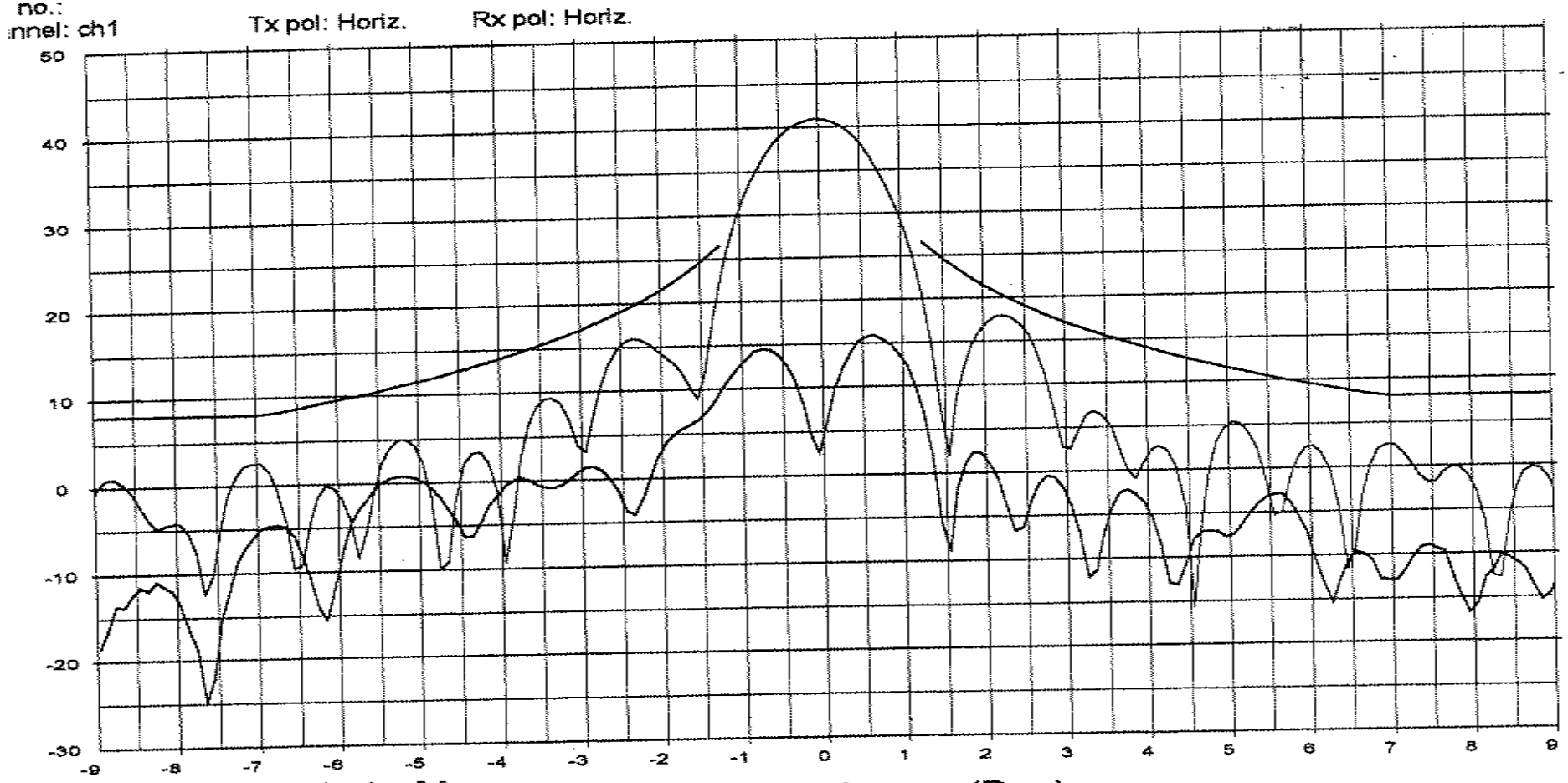
. See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 14.000 GHz

rator: B.Good.
no.:
nnel: ch1

Tx pol: Horiz. Rx pol: Horiz.



elobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
0 dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
9521.DAT-ant_under_test——	079521.DAT	dBi	-0.03	40.97
9524.DAT-ant_under_test——	079524.DAT	dBi	0.65	15.82

Prodelin Corporation
Riverbend Test Range
Claremont NC

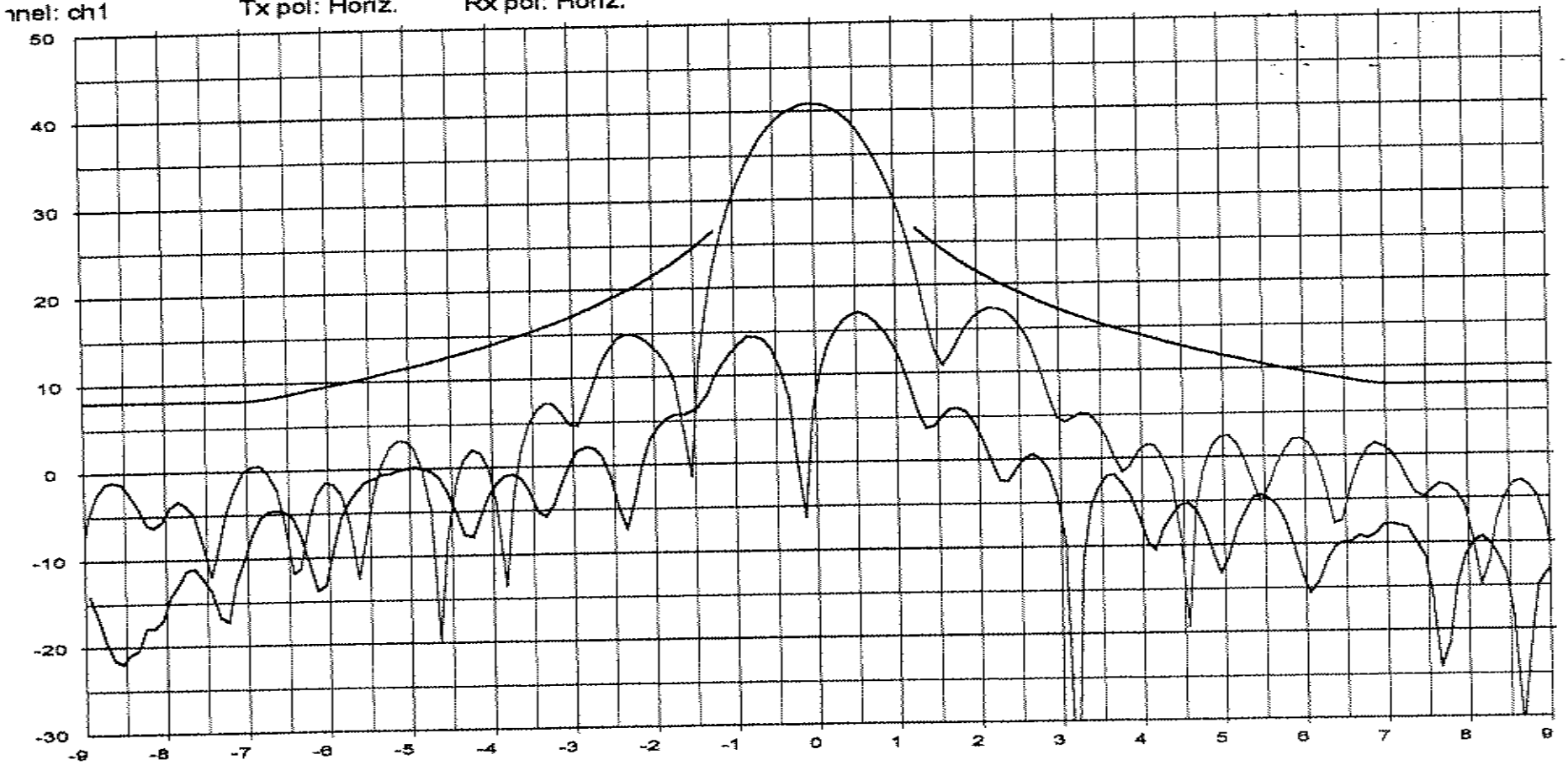
See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 14.250 GHz

rator: B.Good.
no.:
nnel: ch1

Tx pol: Horiz. Rx pol: Horiz.



lobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	dB
521.DAT-ant_under_test	079521.DAT	dBi	-0.02	40.84
524.DAT-ant_under_test	079524.DAT	dBi	0.55	17.00

Prodelin Corporation
Riverbend Test Range
Claremont NC

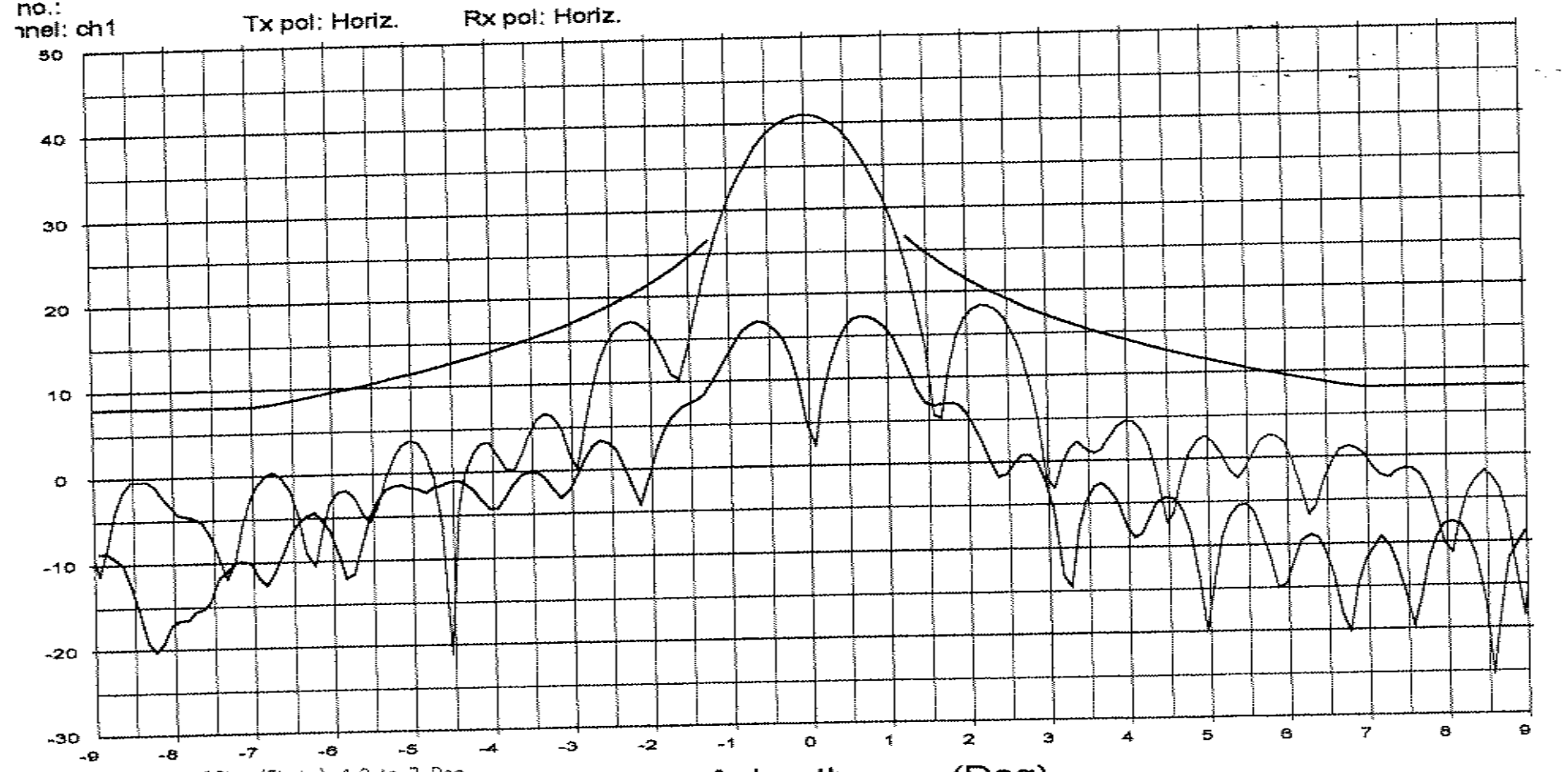
See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 14.500 GHz

ator: B.Good.
no.:
nnel: ch1

Tx pol: Horiz. Rx pol: Horiz.



lobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
) dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	dB
9521.DAT-ant_under_test——	079521.DAT	dBi	-0.01	40.95
9524.DAT-ant_under_test——	079524.DAT	dBi	0.73	17.21

Prodelin Corporation
Riverbend Test Range
Claremont NC

: See Legend

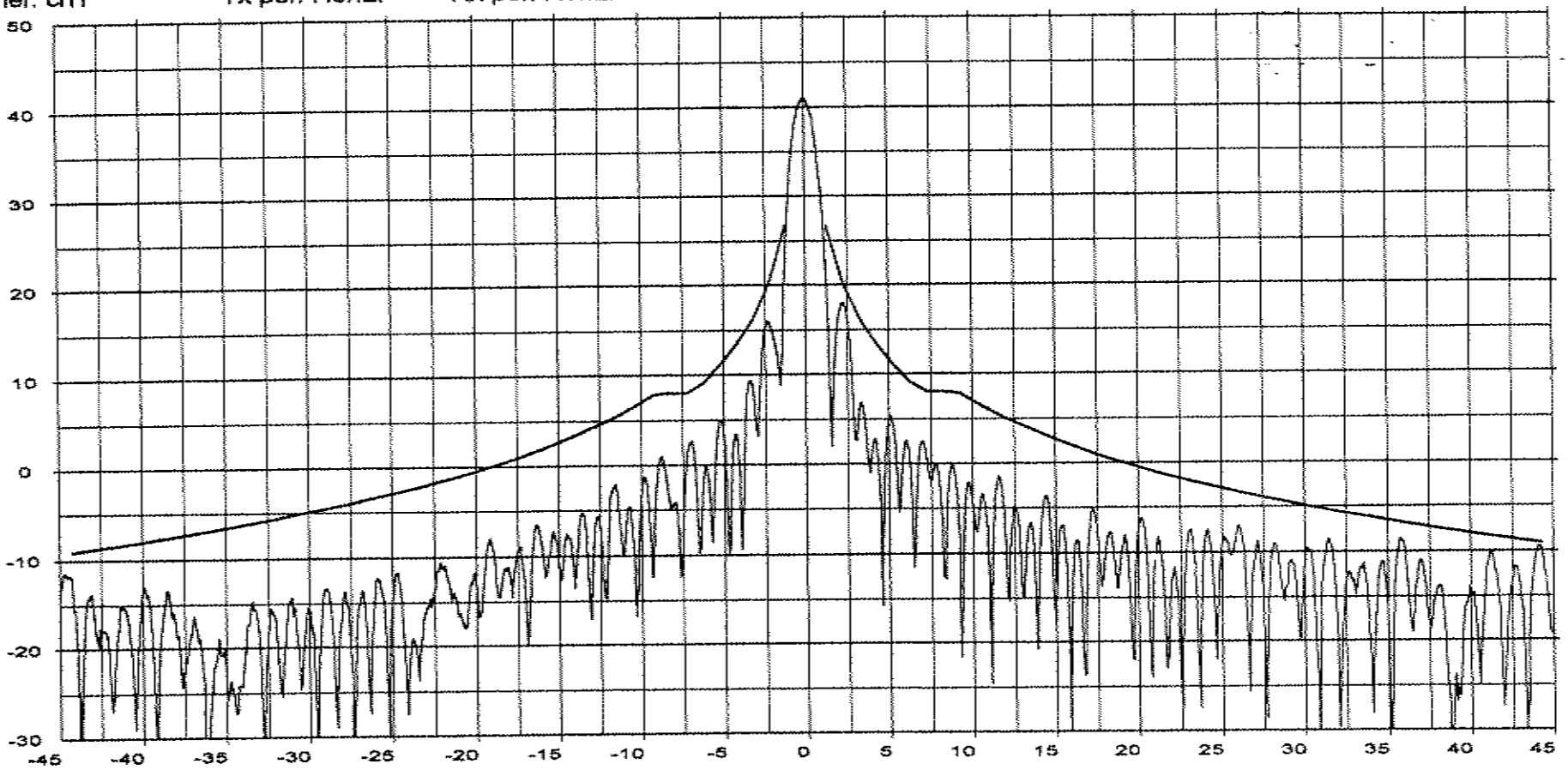
HNS 1.0M Rectangular Antenna System

Frequency : 14.000 GHz

ırator: B.Good.
no.:
ınnel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



lobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
9521.DAT-ant_under_test———	079521.DAT	dBi	-0.03	40.97

Prodelin Corporation
Riverbend Test Range
Claremont NC

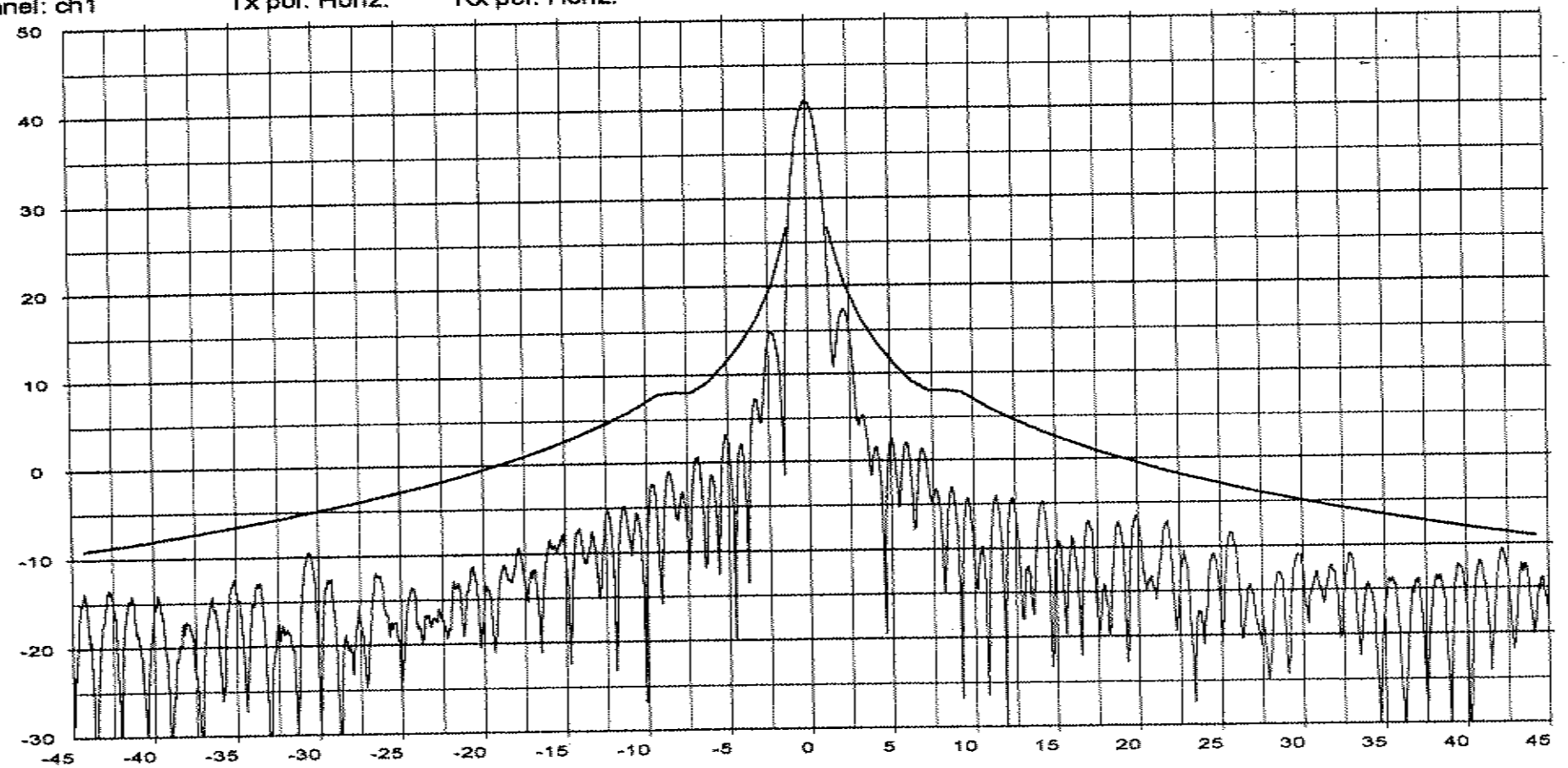
: See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 14.250 GHz

rator: B.Good.
no.:
nnel: ch1

Tx pol: Horiz. Rx pol: Horiz.



lobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
) dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	dB
9521.DAT-ant_under_test———	079521.DAT	dBi	-0.02	40.84

Prodelin Corporation
Riverbend Test Range
Claremont NC

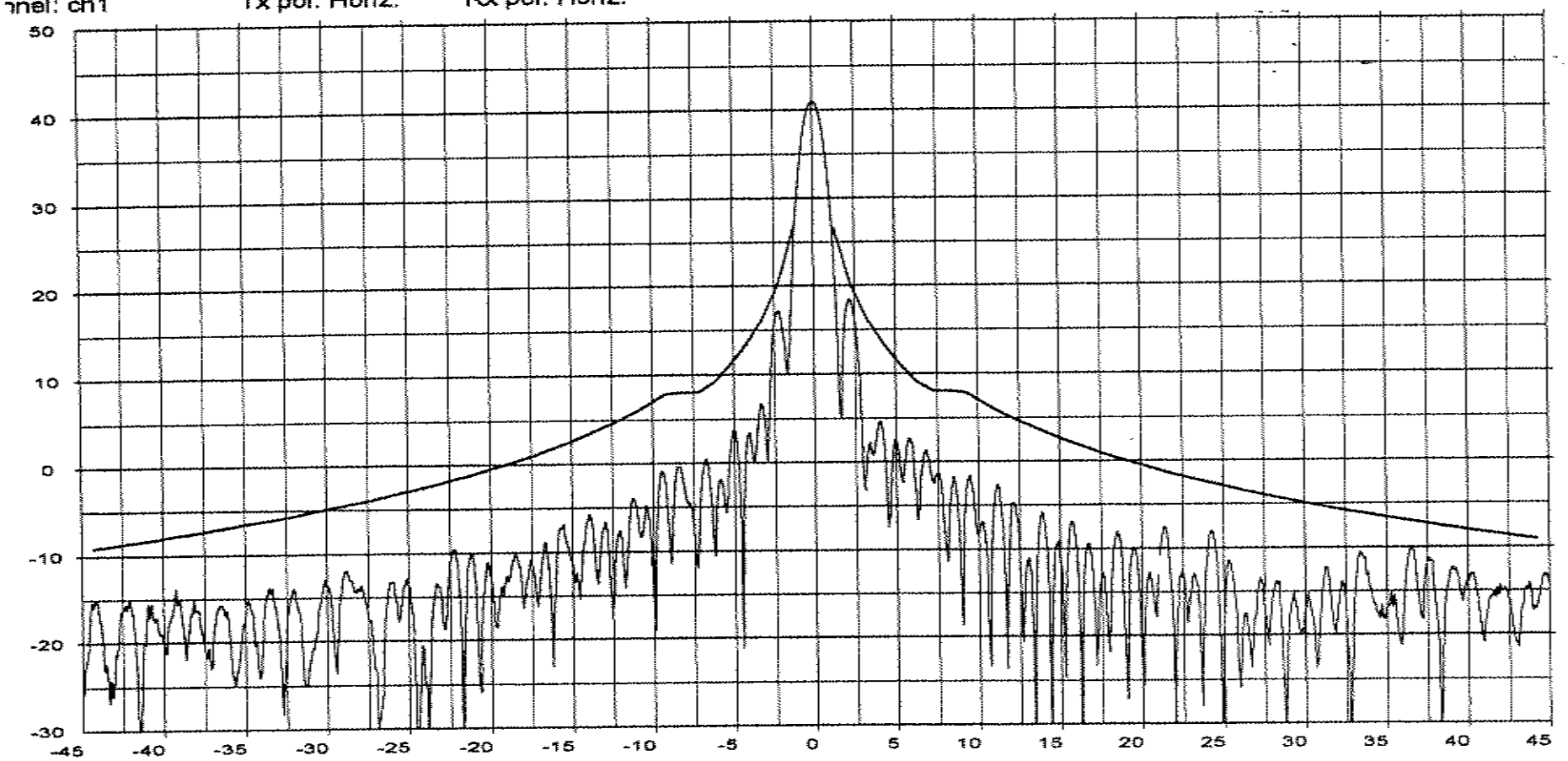
See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 14.500 GHz

rator: B.Good.
no.:
nnel: ch1

Tx pol: Horiz. Rx pol: Horiz.



obe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
dBi~48 to 180 Deg

rlays	Cal. file	units	Beam Peak Deg	dB
521.DAT-ant_under_test———	079521.DAT	dBi	-0.01	40.95

Prodelin Corporation
Riverbend Test Range
Claremont NC

: See Legend

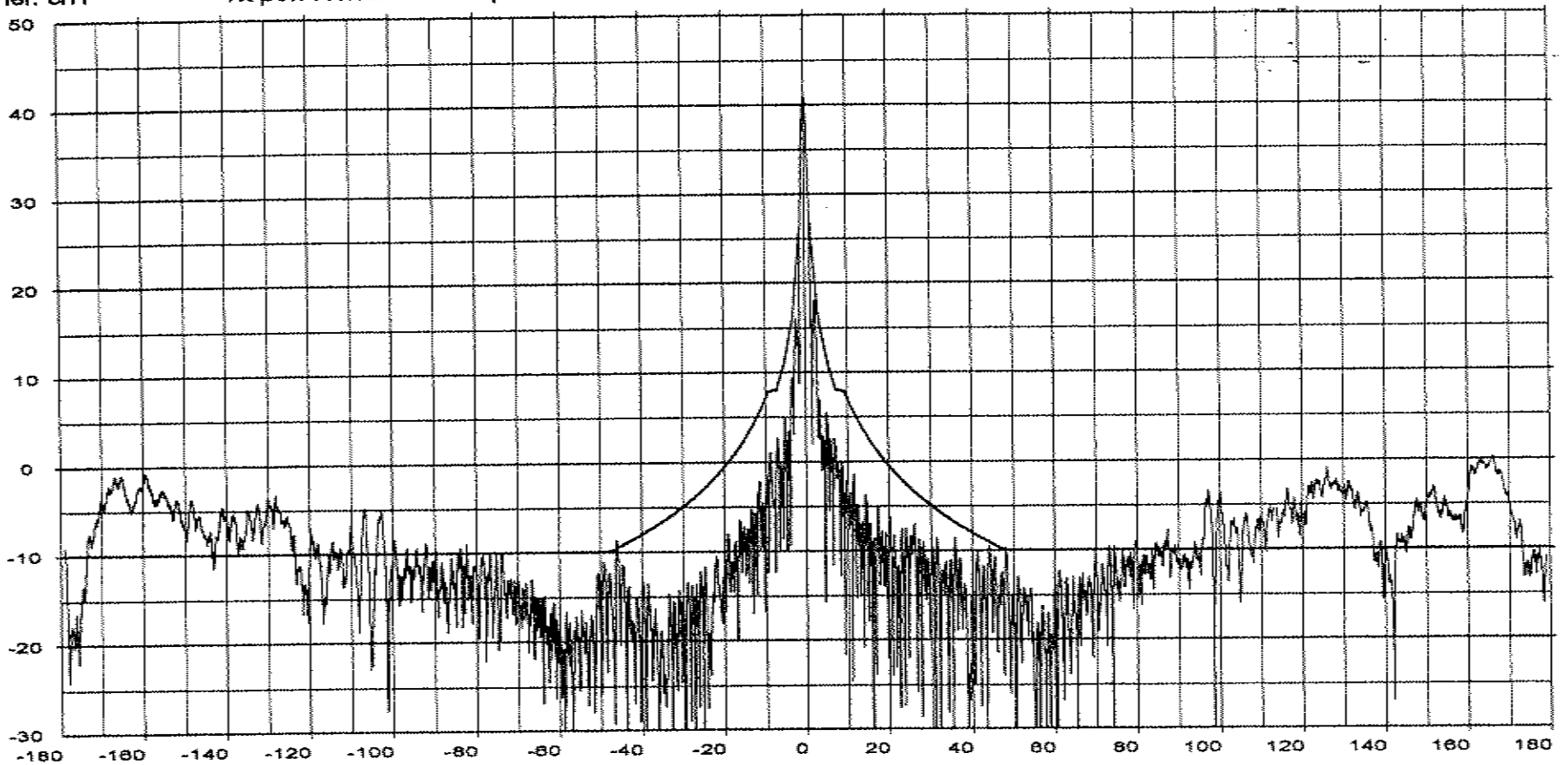
HNS 1.0M Rectangular Antenna System

Frequency : 14.000 GHz

ɪrator: B.Good.
. no.:
ınnel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



ılobe Envelope: 29−25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32−25Log(Theta)~9.2 to 48 Deg
) dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	dB
9521.DAT-ant_under_test——	079521.DAT	dBi	-0.03	40.97

Prodelin Corporation
Riverbend Test Range
Claremont NC

See Legend

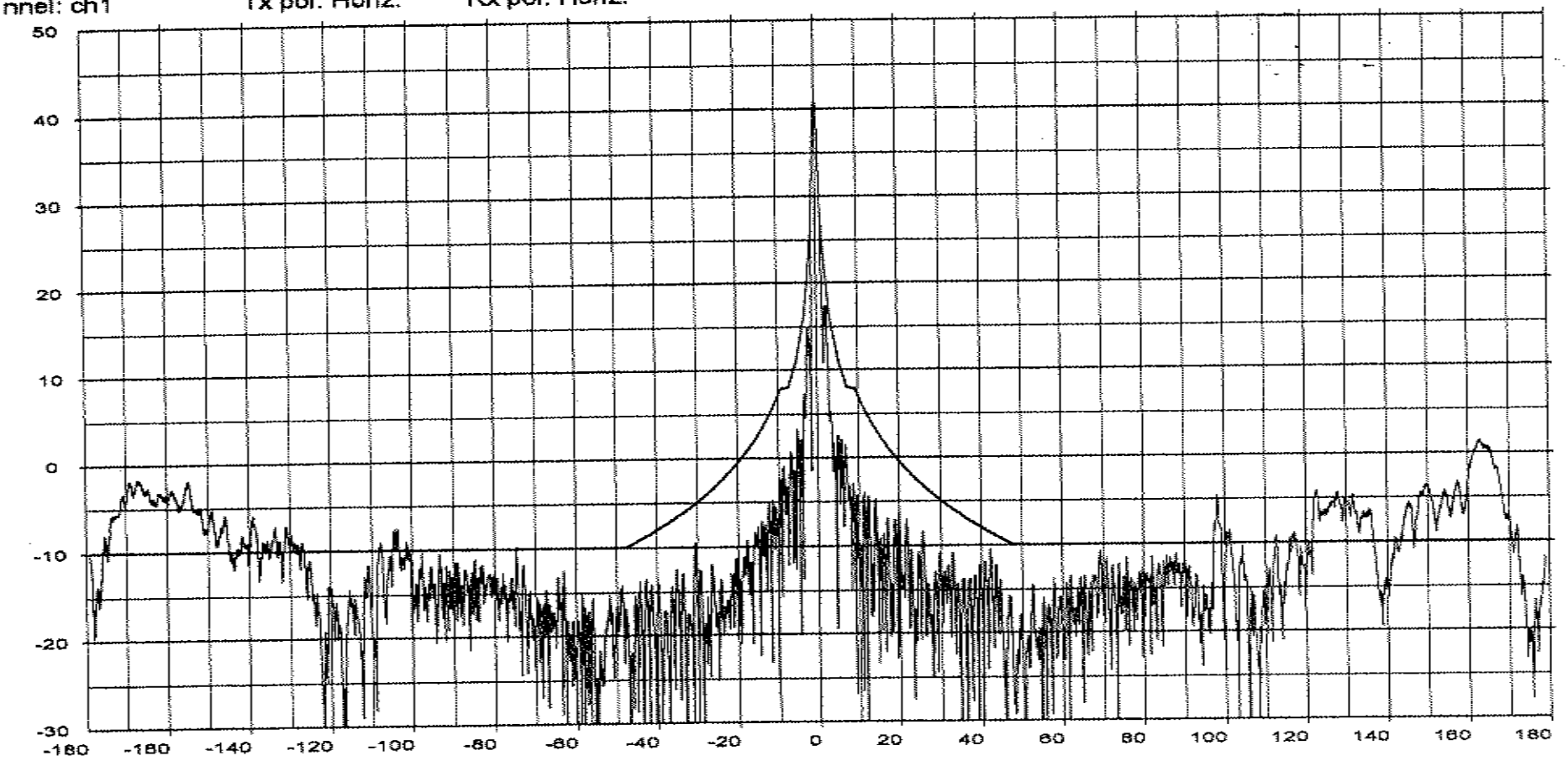
HNS 1.0M Rectangular Antenna System

Frequency : 14.250 GHz

rator: B.Good.
no.:
nnel: ch1

Tx pol: Horiz.

Rx pol: Horiz.



lobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
I dBi~48 to 180 Deg

arrays	Cal. file	units	Beam Peak Deg	dB
9521.DAT-ant_under_test———	079521.DAT	dBi	-0.02	40.84

Prodelin Corporation
Riverbend Test Range
Cl[illegible]mont NC

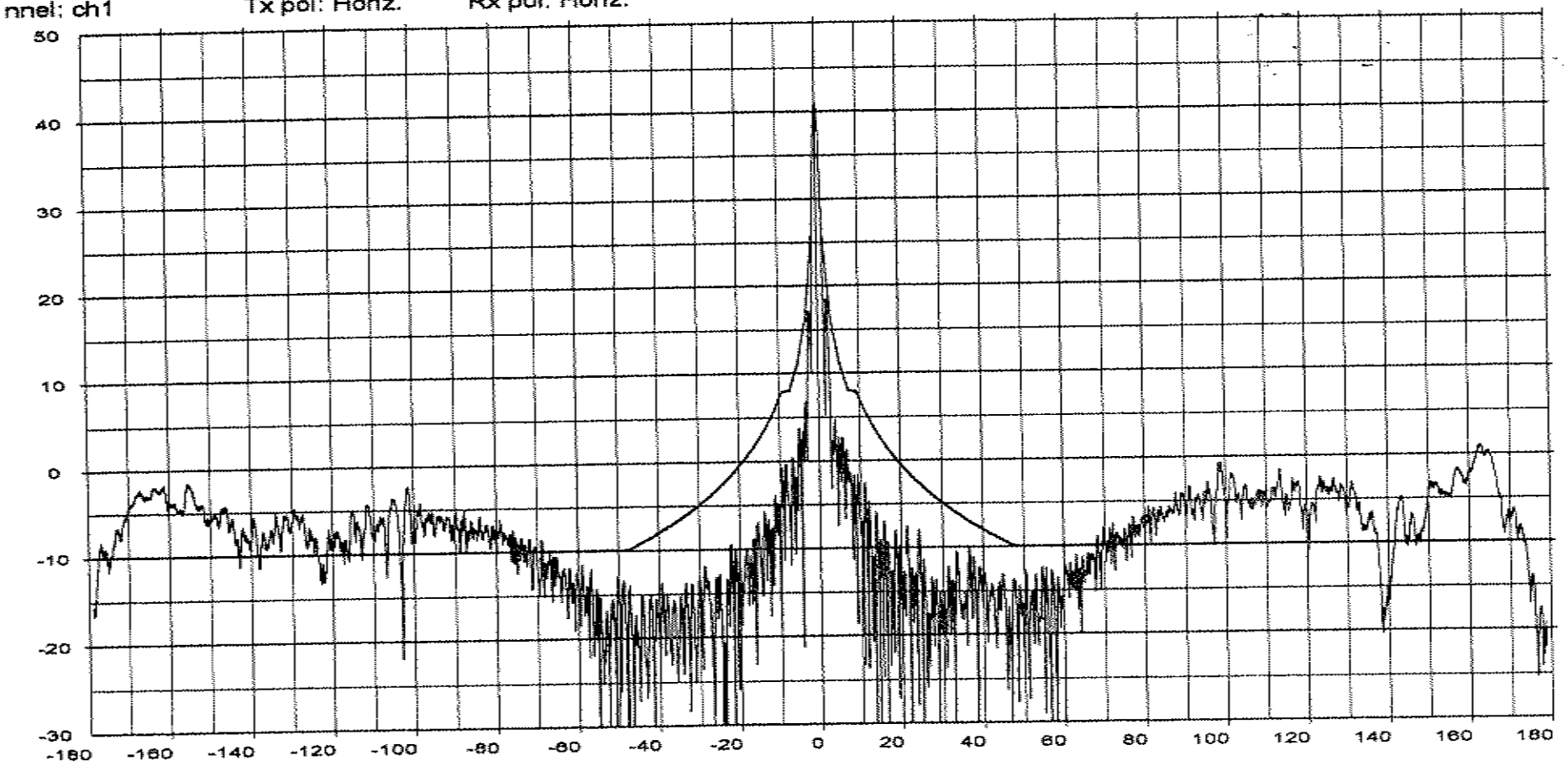
See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 14.500 GHz

rator: B.Good.
no.:
nnel: ch1

Tx pol: Horiz. Rx pol: Horiz.



lobe Envelope: 29-25Log(Theta)~1.0 to 7 Deg
dBi~7 to 9.2 Deg | 32-25Log(Theta)~9.2 to 48 Deg
) dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	dB
9521.DAT-ant_under_test———	079521.DAT	dBi	-0.01	40.95

Prodelin Corporation
Riverbend Test Range
Cla mont NC

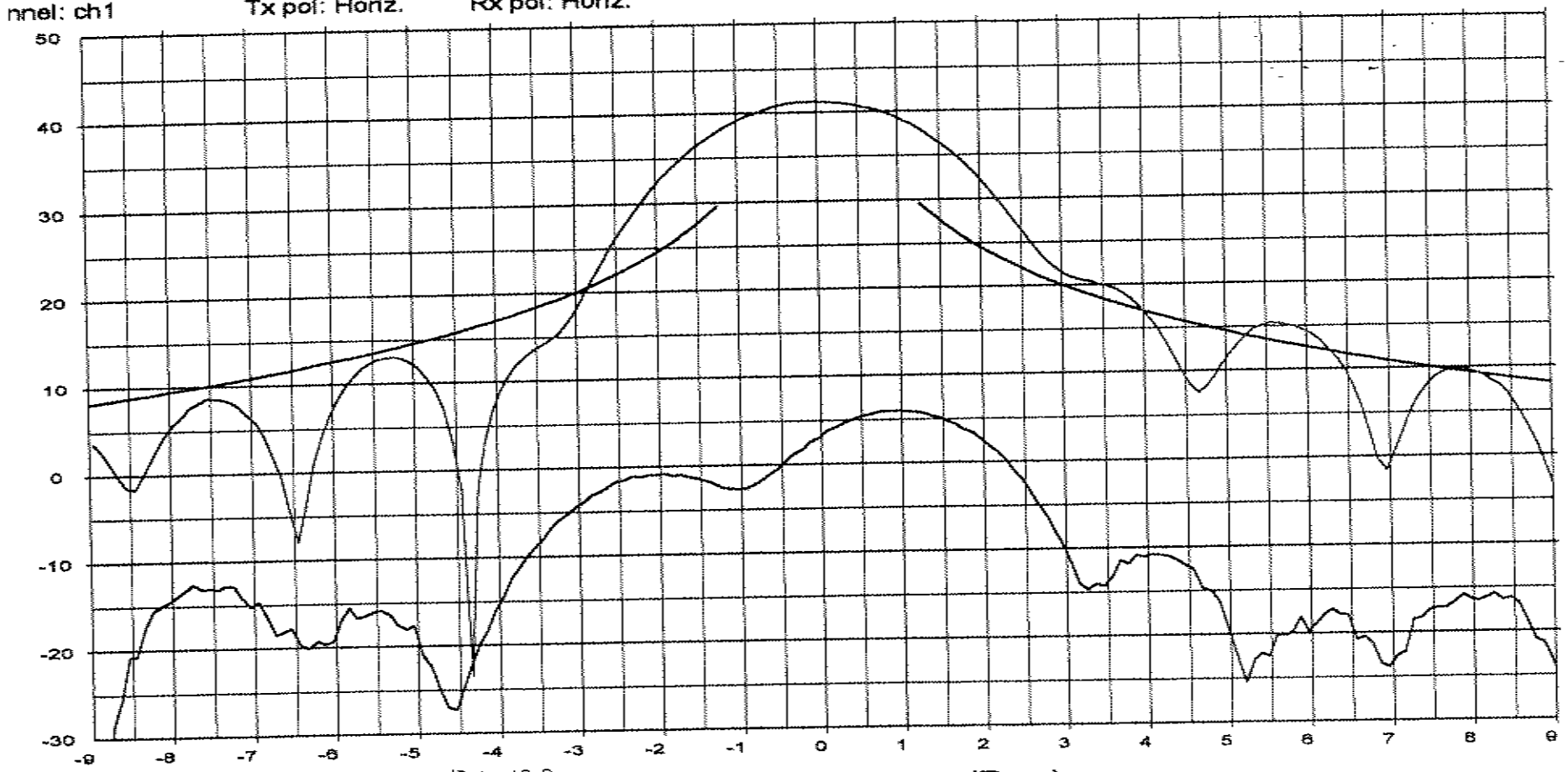
See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 14.000 GHz

rator: B.Good.
no.:
nnel: ch1

Tx pol: Horiz. Rx pol: Horiz.



lobe Envelope: 32-25Log(Theta)~100Lamda/D to 48 Deg
dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
9523.DAT-ant_under_test———	079523.DAT	dBi	0.01	41.17
9532.DAT-ant_under_test———	079532.DAT	dBi	0.93	5.87

Prodelin Corporation
Riverbend Test Range
Clermont NC

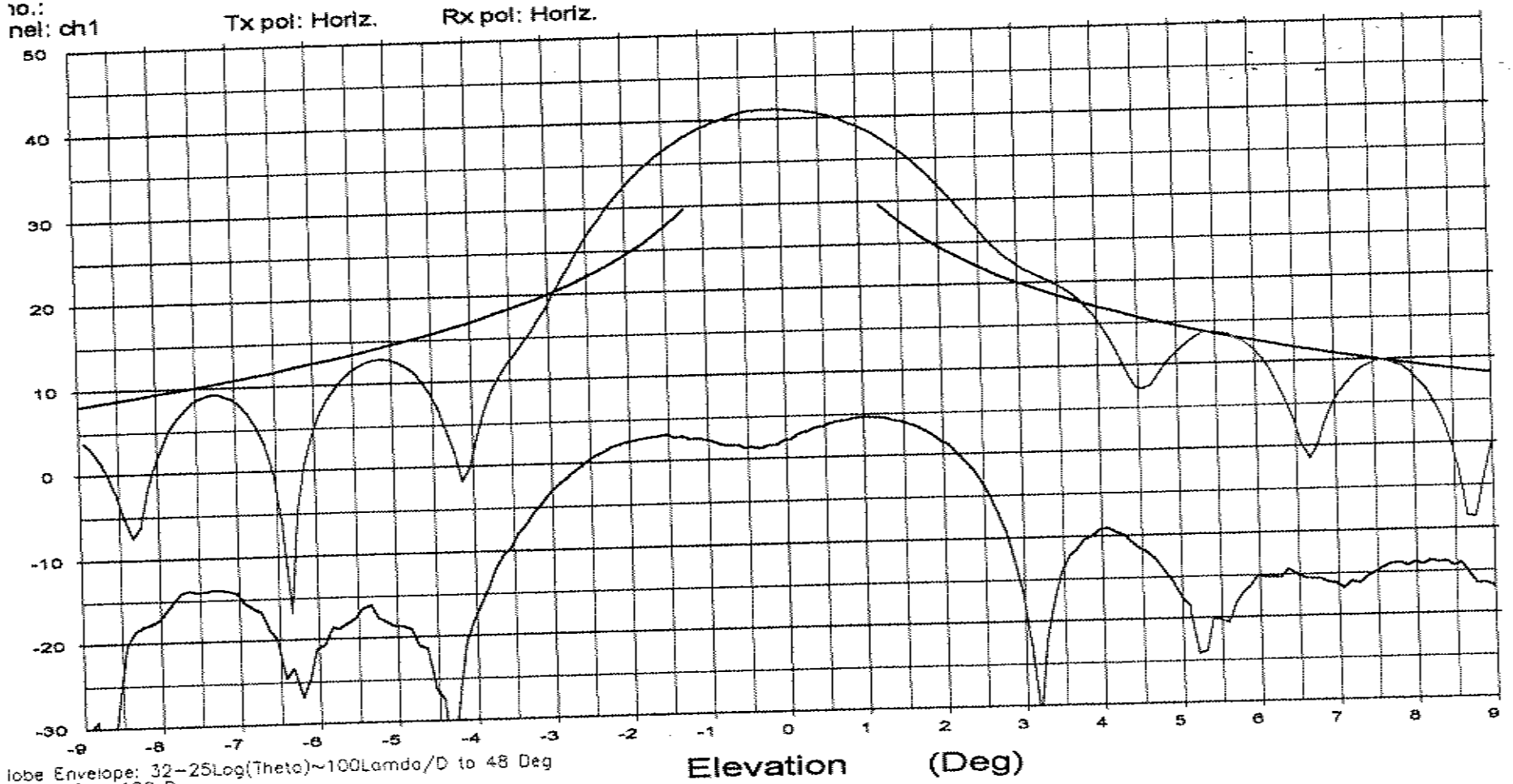
See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 14.250 GHz

ator: B.Good.
no.:
nel: ch1

Tx pol: Horiz. Rx pol: Horiz.



lobe Envelope: 32-25Log(Theta)~100Lamda/D to 48 Deg
dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	Beam Peak dB
523.DAT-ant_under_test———	079523.DAT	dBi	-0.02	41.13
532.DAT-ant_under_test———	079532.DAT	dBi	0.92	4.57

Prodelin Corporation
Riverbend Test Range
Claremont NC

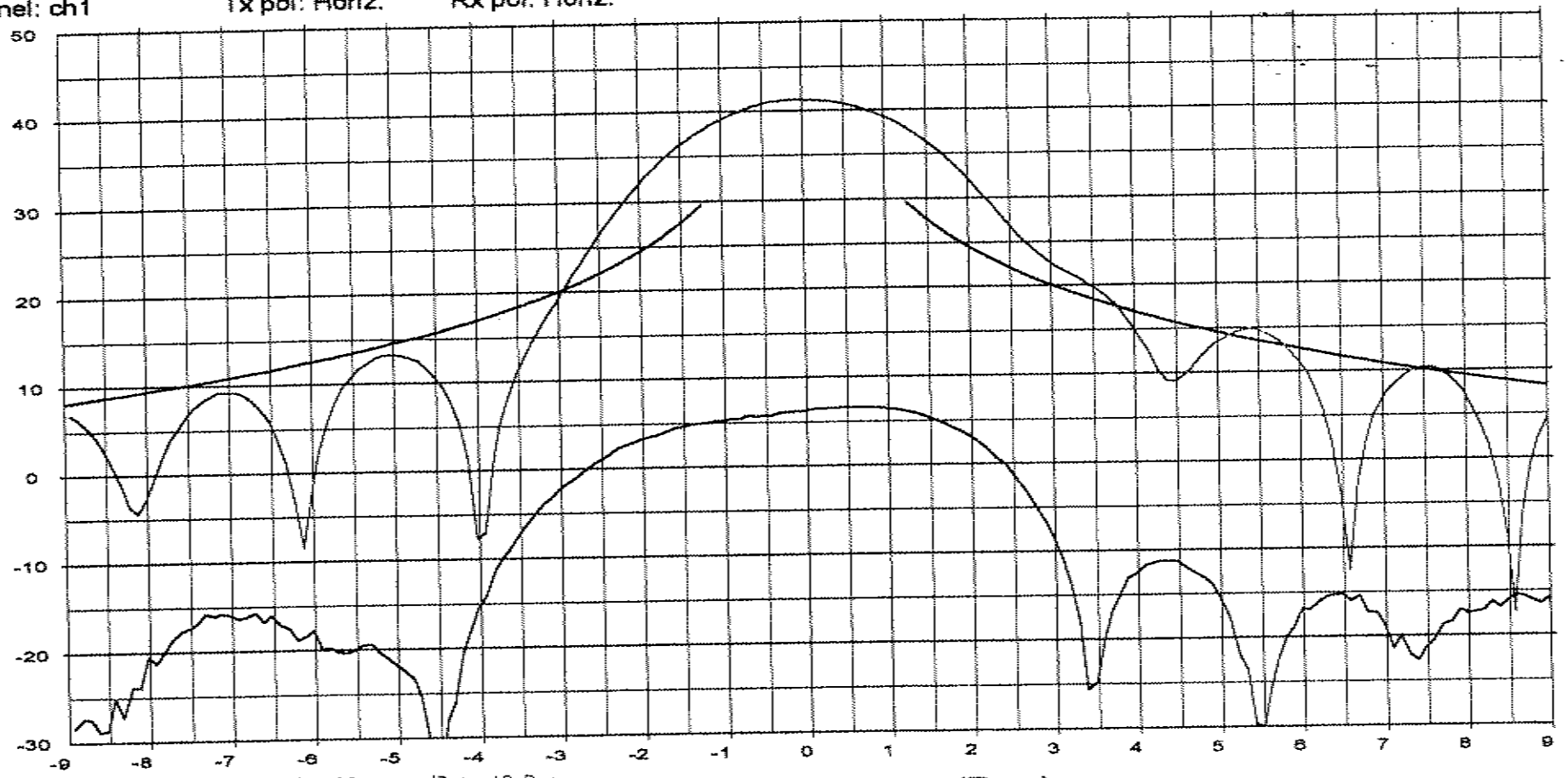
See Legend

HNS 1.0M Rectangular Antenna System

Frequency : 14.500 GHz

rator: B.Good.
no.:
nnel: ch1

Tx pol: Horiz. Rx pol: Horiz.



iobe Envelope: 32-25Log(Theta)~100Lamda/D to 48 Deg
) dBi~48 to 180 Deg

erlays	Cal. file	units	Beam Peak Deg	dB
9523.DAT-ant_under_test———	079523.DAT	dBi	0.02	41.29
9532.DAT-ant_under_test———	079532.DAT	dBi	0.00	6.23

Prodelin Corporation
Riverbend Test Range
Cl mont NC