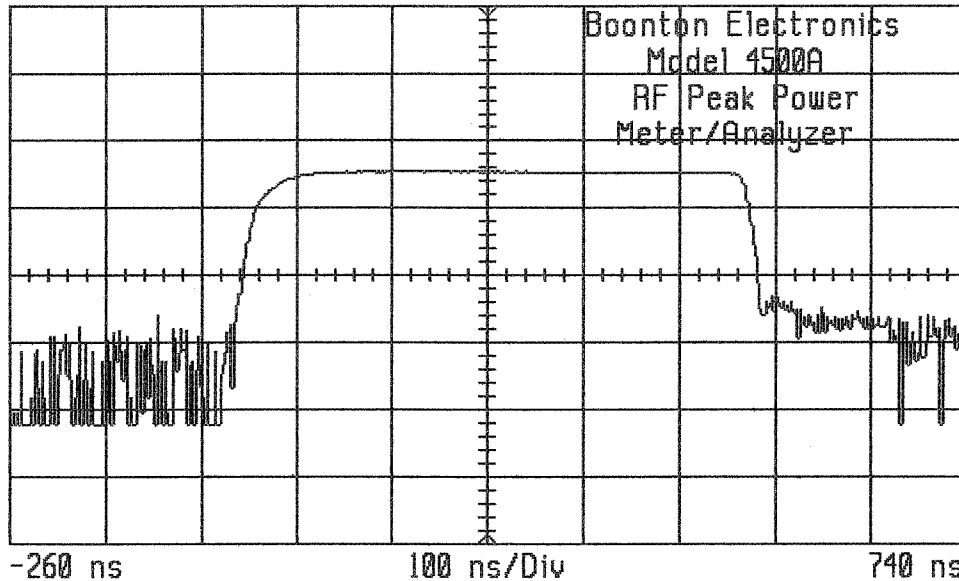


Boonton 4500A Pulse

Width	500.0 ns	Period	--- ns	OffTime	--- ns
Rise	59.8 ns	PRFfreq	--- kHz	Peak	54.55 dBm
Fall	17.4 ns	Duty C	--- %	Pulse	54.33 dBm

54.48 <sup>>MK1</sup> dBm      0.00 RATIO dB      54.48 <sup>MK2</sup> dBm



Mark >
Window
Bottom
Marker 1
240 ns
Delta Time
0 ns
Marker 2
240 ns
Set Vrt Cntr
CENTER
Extensions
MENU

Boonton 4500A Pulse

Measurement	Chan 1	Chan 2
Width	499.0 ns	---
Rise	60.0 ns	---
Fall	18.8 ns	---
Period	--- ns	---
PRFfreq	--- kHz	---
Duty C	--- %	---
OffTime	--- ns	---
Peak	54.56 dBm	---
Pulse	54.33 dBm	---
OverSh	0.05 dB	---
Avg	--- dBm	---
Top	54.51 dBm	---
Bot	32.60 dBm	---
Delay	---	---
EdgeDly	269.0 ns	---

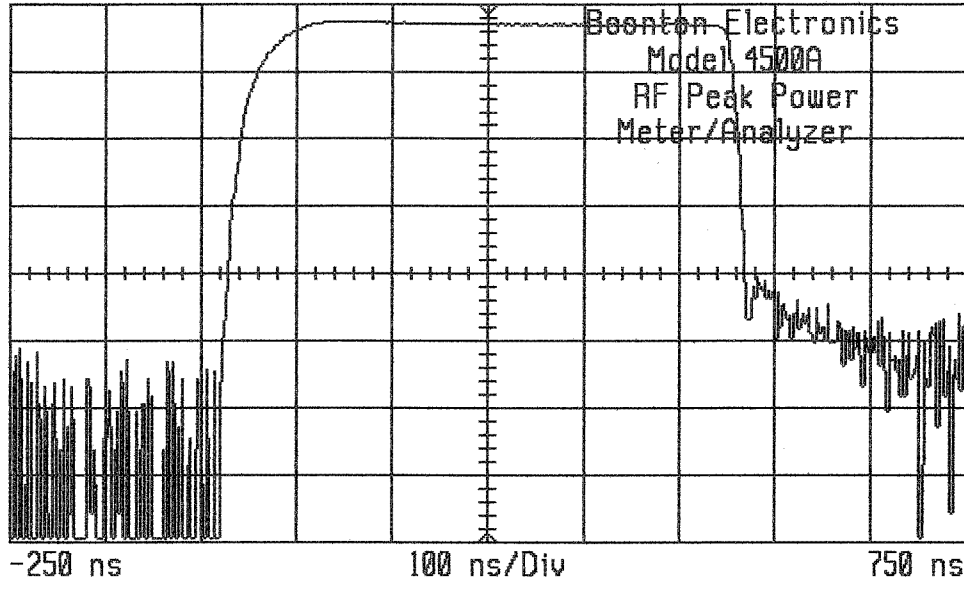
Mark >
Window
Bottom
Marker 1
240 ns
Delta Time
0 ns
Marker 2
240 ns
Set Vrt Cntr
CENTER
Extensions
MENU

Plot 27 5.4GHz

Boonton 4500A Pulse

Width	493.6 ns	Period	--- ns	OffTime	--- ns
Rise	58.8 ns	PRFfreq	--- kHz	Peak	55.29 dBm
Fall	15.4 ns	Duty C	--- %	Pulse	54.97 dBm

55.04 <sup>>MK1</sup> dBm      0.00 RATIO dB      55.04 MK2 dBm



Chan 1 >	Select
	CH 1
	Channel
	Off On
	Vert Scale
	5 dB/Div
	Vert Center
	36.54 dBm
	Calibration
	MENU
	Extensions
	MENU

Boonton 4500A Pulse

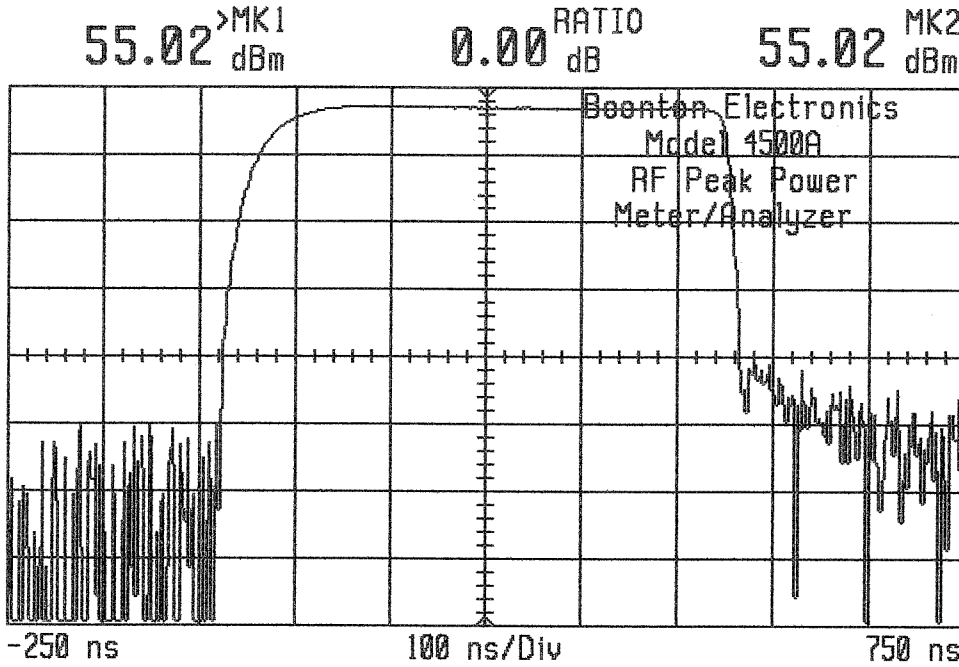
Measurement	Chan 1	Chan 2
Width	493.2 ns	---
Rise	59.4 ns	---
Fall	15.8 ns	---
Period	--- ns	---
PRFfreq	--- kHz	---
Duty C	--- %	---
OffTime	--- ns	---
Peak	55.30 dBm	---
Pulse	54.98 dBm	---
OverSh	0.26 dB	---
Avg	--- dBm	---
Top	55.04 dBm	---
Bot	33.25 dBm	---
Delay	---	---
EdgeDly	262.2 ns	---

Chan 1 >	Select
	CH 1
	Channel
	Off On
	Vert Scale
	5 dB/Div
	Vert Center
	36.54 dBm
	Calibration
	MENU
	Extensions
	MENU

Plot 28 5550 MHz

Boonton 4500A Pulse

Width	487.4 ns	Period	--- ns	OffTime	--- ns
Rise	73.4 ns	PRFfreq	--- kHz	Peak	55.17 dBm
Fall	17.0 ns	Duty C	--- %	Pulse	54.90 dBm



Mark >	Window
	Bottom
	Marker 1
	250 ns
	Delta Time
	0 ns
	Marker 2
	250 ns
	Set Vrt Cntr
	CENTER
	Extensions
	MENU

Boonton 4500A Pulse

Measurement	Chan 1	Chan 2
Width	486.6 ns	---
Rise	73.4 ns	---
Fall	17.8 ns	---
Period	--- ns	---
PRFfreq	--- kHz	---
Duty C	--- %	---
OffTime	--- ns	---
Peak	55.16 dBm	---
Pulse	54.90 dBm	---
OverSh	0.14 dB	---
Avg	--- dBm	---
Top	55.02 dBm	---
Bot	33.23 dBm	---
Delay	---	---
EdgeDly	265.0 ns	---

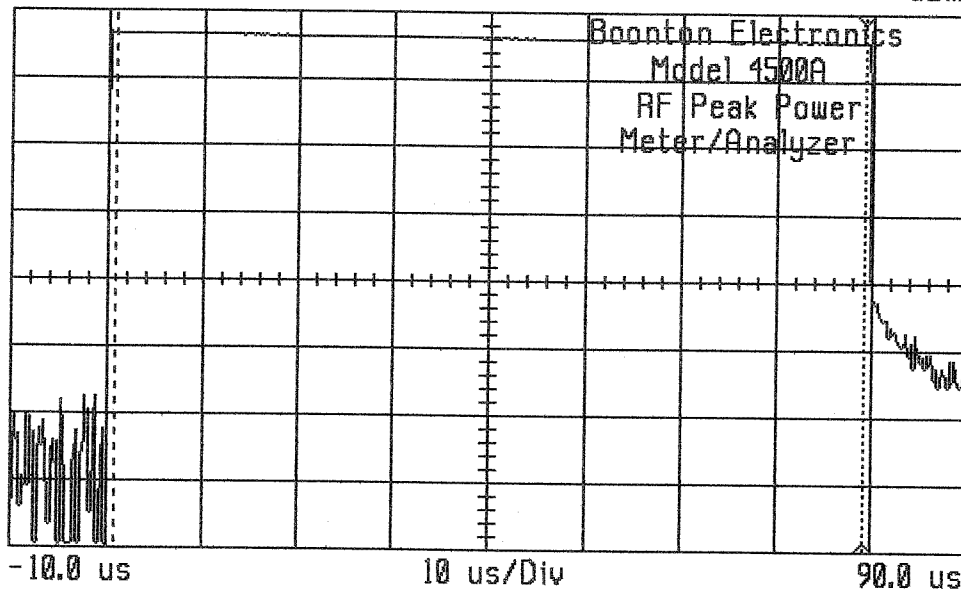
Mark >	Window
	Bottom
	Marker 1
	250 ns
	Delta Time
	0 ns
	Marker 2
	250 ns
	Set Vrt Cntr
	CENTER
	Extensions
	MENU

Plot 24 5700 MHz

Boonton 4500A Pulse

Width	79.92 us	Period	--- ns	OffTime	--- ns
Rise	0.00 us	PRFreq	--- kHz	Peak	54.92 dBm
Fall	0.00 us	Duty C	--- %	Pulse	54.63 dBm

54.85 MK1 dBm      0.42 RATIO dB      54.43 MK2 dBm



Mark >	Window
	Bottom
	Marker 1
	0.8 us
	Delta Time
	78.4 us
	Marker 2
	79.2 us
	Set Vrt Cntr
	CENTER
	Extensions
	MENU

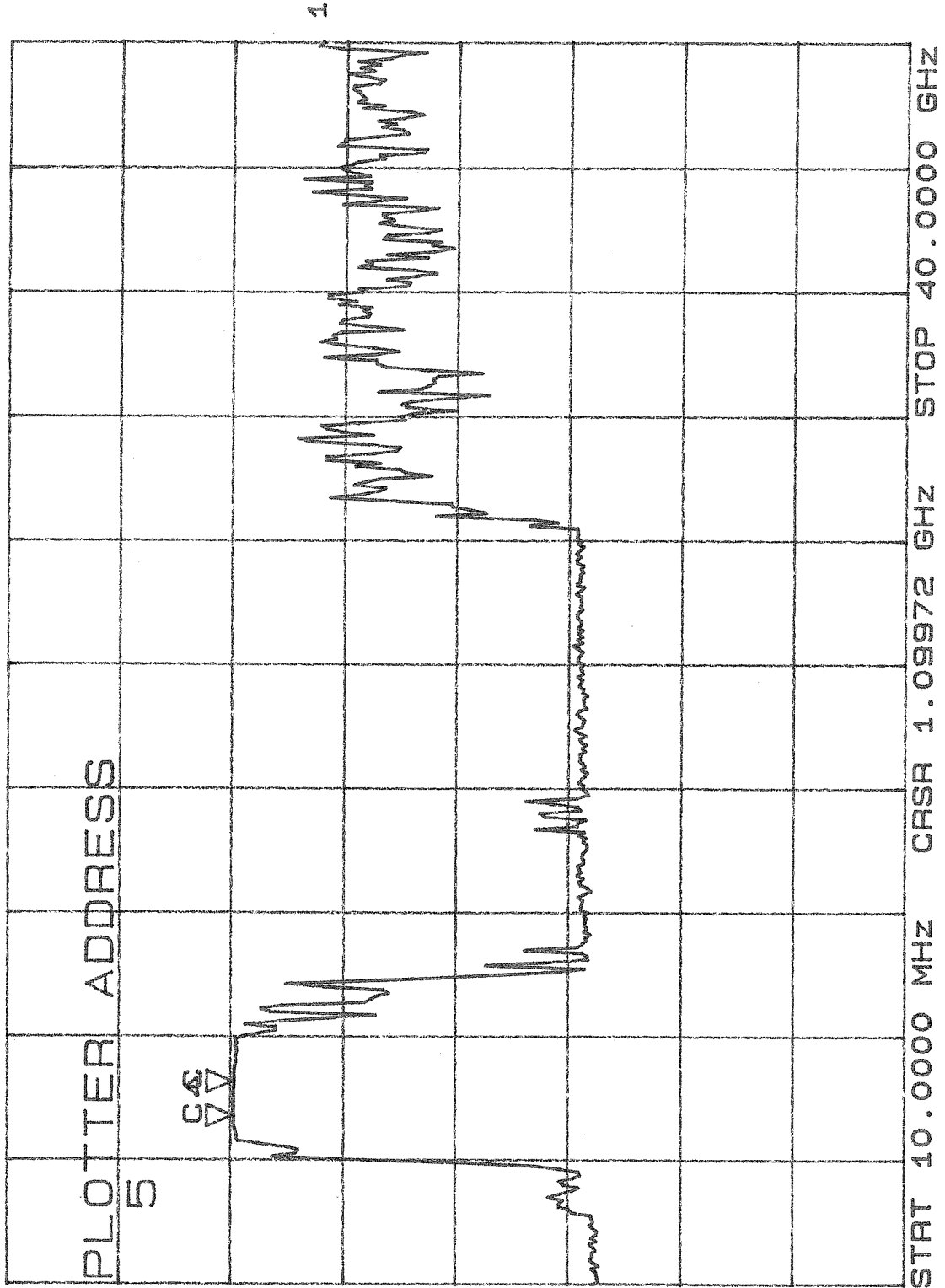
Boonton 4500A Pulse

Measurement	Chan 1	Chan 2
Width	79.90 us	---
Rise	0.00 us	---
Fall	0.00 us	---
Period	--- ns	---
PRFreq	--- kHz	---
Duty C	--- %	---
OffTime	--- ns	---
Peak	54.91 dBm	---
Pulse	54.63 dBm	---
OverSh	0.00 dB	---
Avg	--- dBm	---
Top	54.91 dBm	---
Bot	24.27 dBm	---
Delay	---	---
EdgeDly	9.98 us	---

Mark >	Window
	Bottom
	Marker 1
	0.8 us
	Delta Time
	78.4 us
	Marker 2
	79.2 us
	Set Vrt Cntr
	CENTER
	Extensions
	MENU

Plot 30 5550 MHz Drop

CH1: A -M A -0.03 dB  
20.0 dB/ REF -40.00 dB



Plot 31

51

Operator:  Date:  **Antenna 2.4m BARON**

B.W.=1.8  
S.L.=26.6  
Xp=32

Side lobes Database No. Ratio

No.	Ampli	Deg
1R	-26.59	5.10
2R	-28.22	8.10
3R	-32.56	10.50

Elevation [deg]

Amplitude (dB)

Phase

Amplitude (dB)

Phase

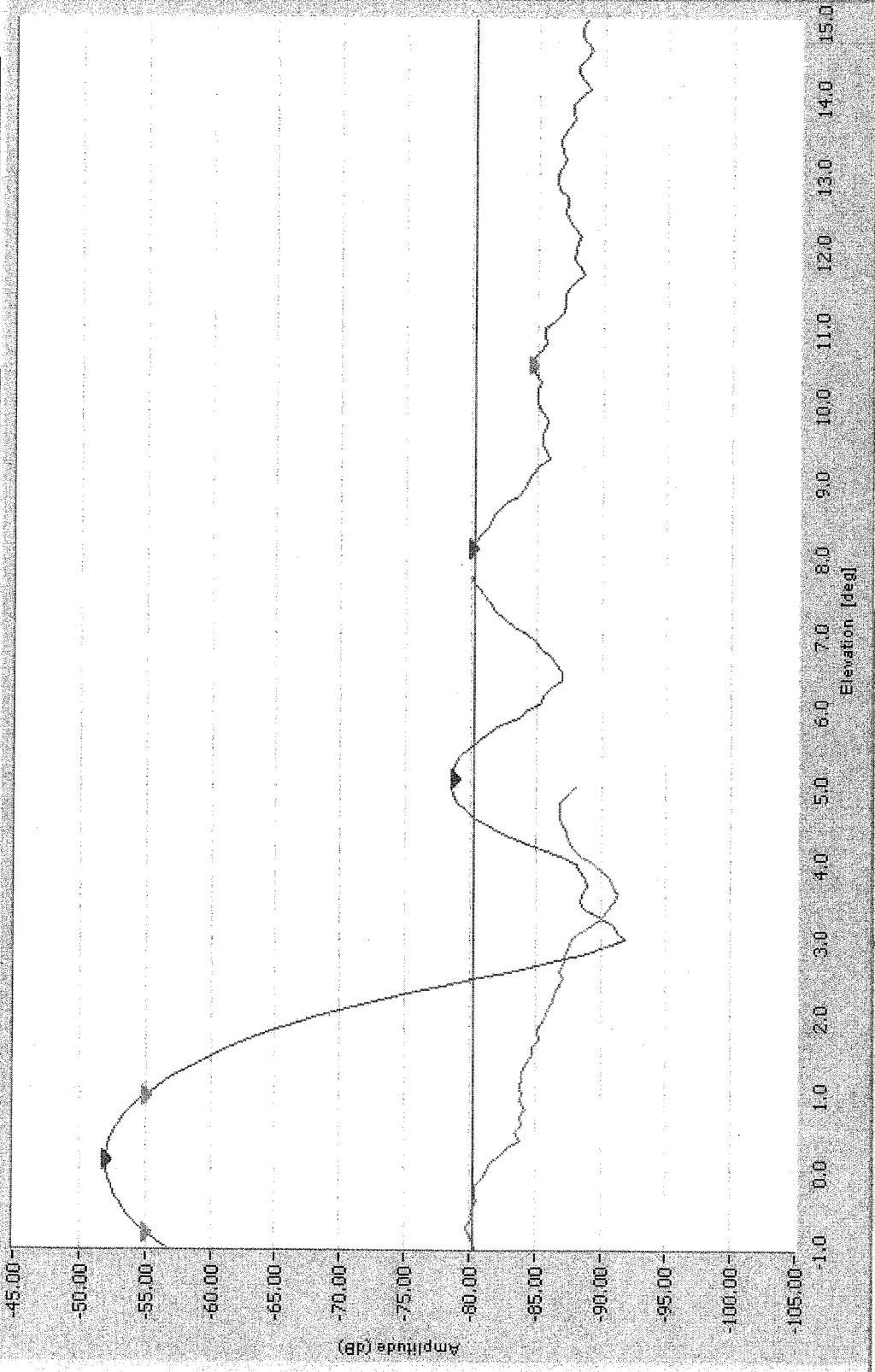
Not Aligned

Not Normalized

Phase unwrapped

Log Display

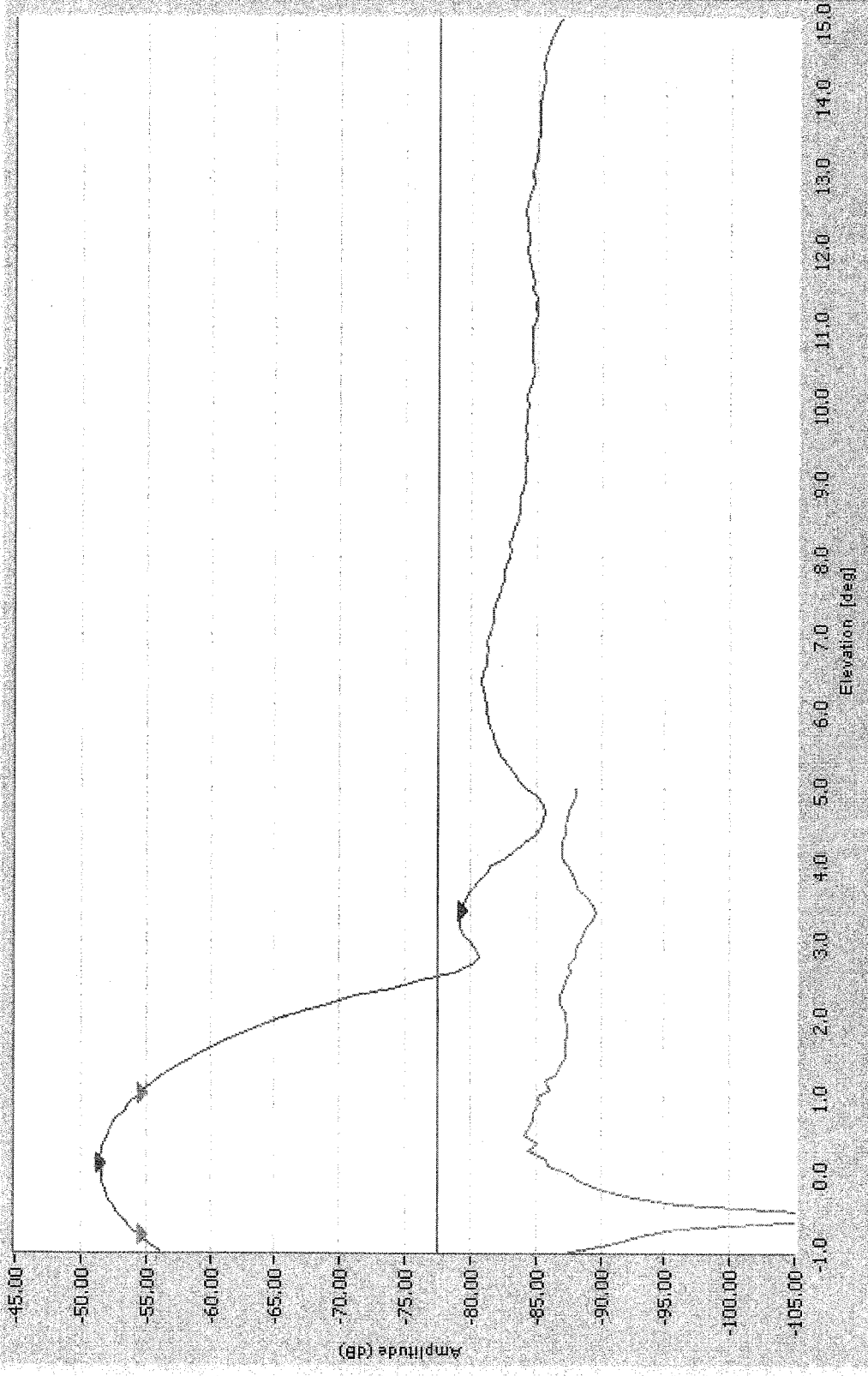
No Skirt



A	P	File Name	Ch.	Beam	Switch	Beam Peak [dB]		Beam Width [deg]		Null Depth [dB]		Gain [dBi]
						Value	[deg]	Value	dB	Value	[deg]	
		02_07_BARON_A1_test_Hp_BD.rff	CH1			-51.96	0.10	P	1.75	3.00	P	0.00
		02_07_BARON_A1_test_Xp_BD.rff	CH1			-76.84	-2.90	P	Inf	3.00	P	0.00

Plot 32

Operator:  Date:  **Antenna 2.4m BARON**



B.W.=1.8  
S.L.=27.7  
X.P.=34

Side lobes Database As Ratio

No.	Ampli	Deg
1R	-27.70	3.40

Elevation [deg]   
 Amplitude [dB]   
 Phase

- Amplitude (dB)
- Phase
- Not Aligned
- Not Normalized
- Phase wrapped
- Log Display
- No Skirt

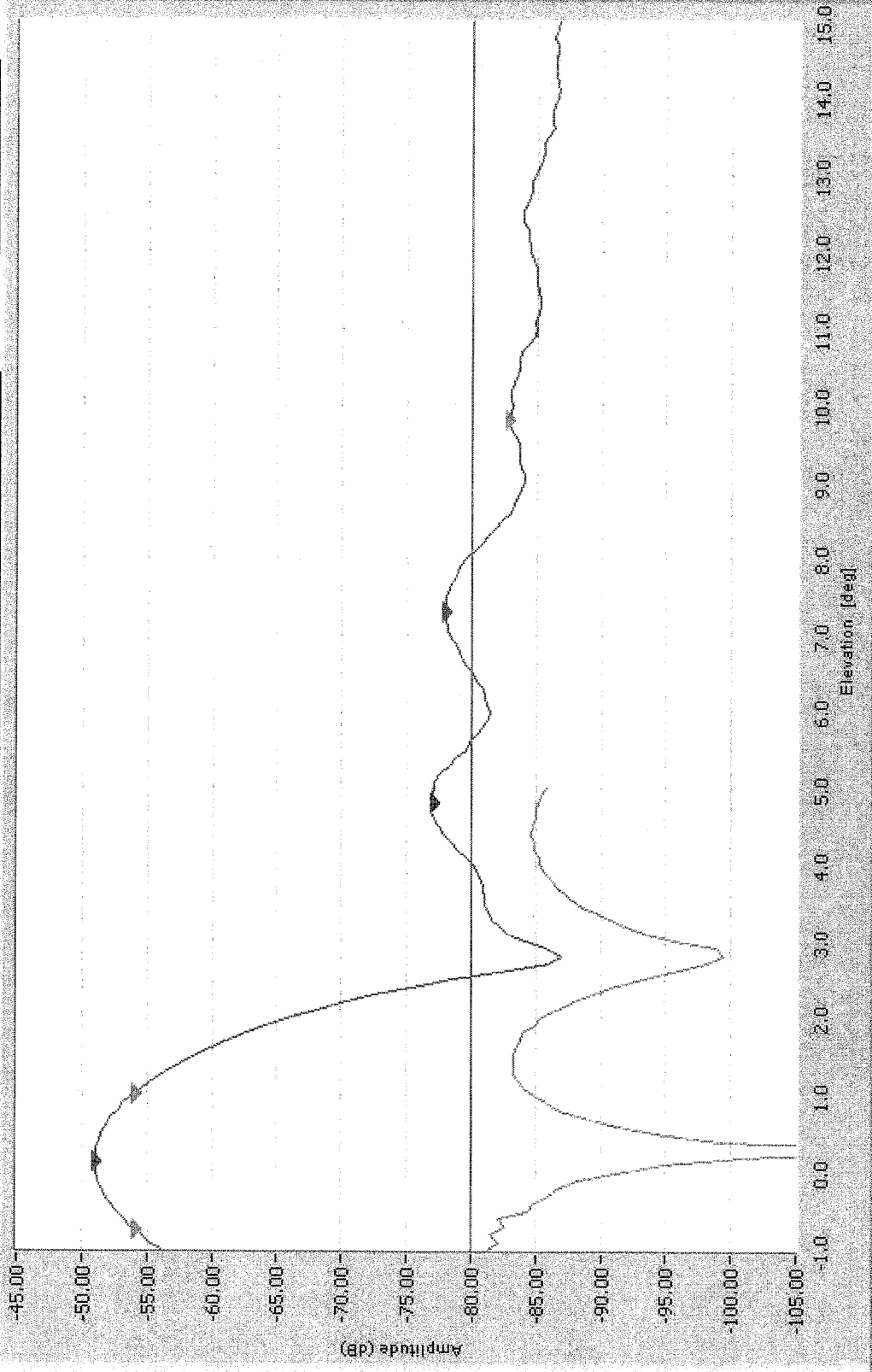
A.P	File Name	Ch.	Beam	Switch	Beam Peak [dB]	Beam Width [deg]	Null Depth [dB]	Dir	Gain
					Value [deg]	Value	Value [deg]	dB	dB
	02_07_BARON_A1_test_Hp_BD.rff	CH1			-51.46 0.70 P	1.80 3.00 P		0.00	0.00
	02_07_BARON_A1_test_Xp_BD.rff	CH1			-76.79 -2.50 P	Inf 3.00 P		0.00	0.00

Plot 33

Operator: O.N.

# Antenna 2.4m BARON

Date 07/02/2006 11:02



B.W=1.7  
S.L=25.8  
Xp=40

No.	Ampl	Deg
1R	-25.77	4.80
2R	-27.01	7.30
3R	-31.84	9.80

Elevation [deg]    
 Amplitude (dB)    
 Phase

- Amplitude (dB)
- Phase
- Not Aligned
- Not Normalized
- Phase wrapped
- Log Display
- No Skirt

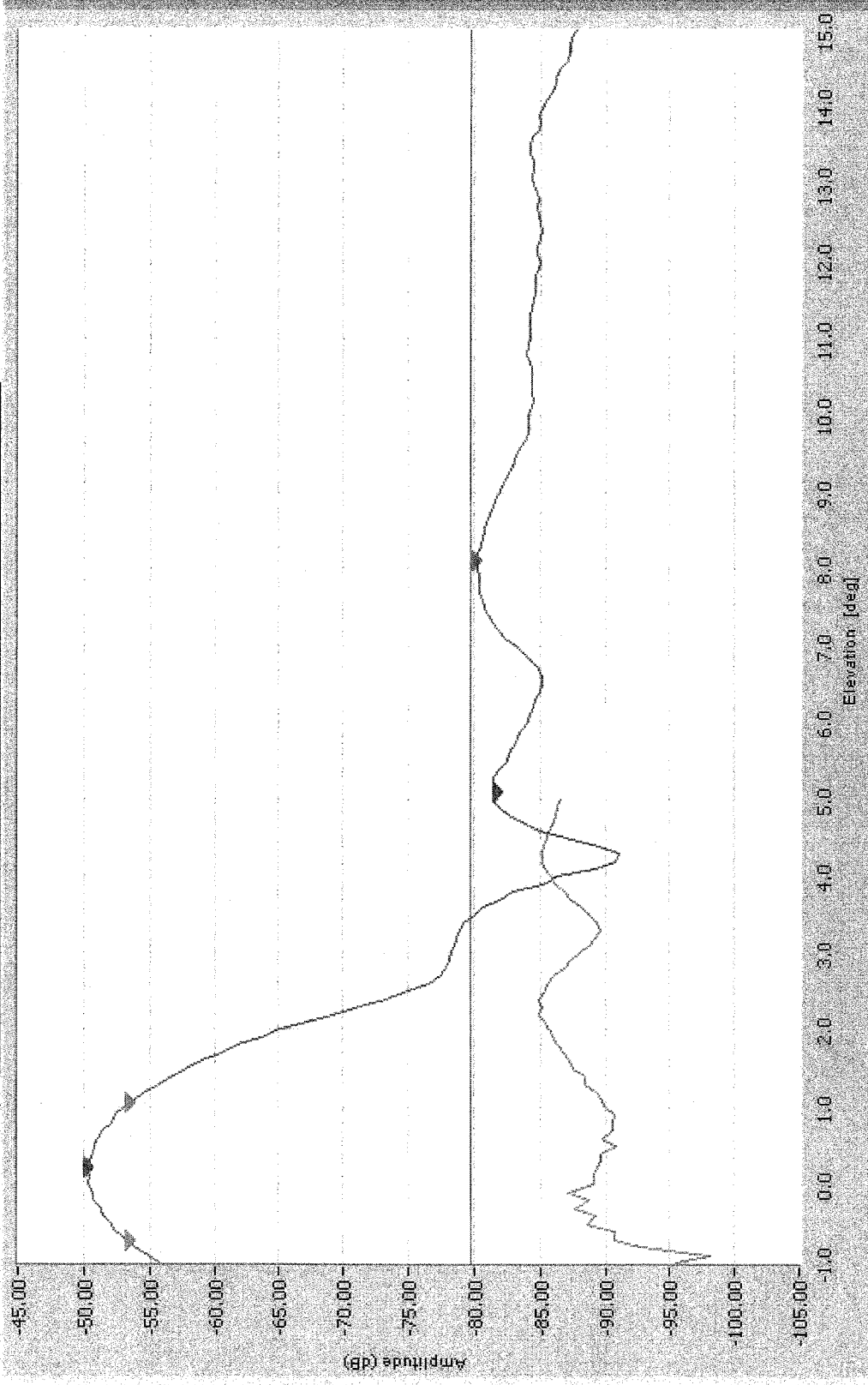
A/P	File Name	Ch.	Beam	Switch	Beam Peak [dB]	Beam Width [deg]	Null Depth [dB]	Dir	Gain
					Value [deg]	Value	Value [deg]	dB	dB
	02_07_BARON_AI_test_hp_00.rff	CHI			-51.02	1.74	3.00	0.00	0.00
	02_07_BARON_AI_test_xp_00.rff	CHI			-78.78	Inf	3.00	0.00	0.00

Plot 34  
2



Operator: m.k. Date: 07/02/2006 11:02

# Antenna 2.4m BARON



B.W.=1.8  
S.L.=29.5  
Xp=38.2

No.	Ampl	Deg
1R	-31.12	5.10
2R	-29.51	8.10

Elevation [deg]

Amplitude [dB]

Phase

- Amplitude (dB)
- Phase
- Not Aligned
- Not Normalized
- Phase wrapped
- Log Display
- No Skirt

AP	File Name	Freq. [GHz]	Ch.	Beam	Switch	Beam Peak [dB]	Beam Width [deg]	Null Depth [dB]	Dir	Gain
						Value	Value	Value	dB	dB
	02_07_BARON_AI_test_Hp_BD.rff	5.700 G	CHI			-50.33	1.75	3.00	0.00	0.00
	02_07_BARON_AI_test_Xp_BD.rff	5.700 G	CHI			-79.70	Inf	3.00	0.00	0.00

Plot 35

Tx Average Power (dBm)

Transmission Loss (dB)

Power @ Antenna

45 dBm

0.5 dB

44.5 dBm

OET 65, Supplement B (Edition 97-01)

Pulsed Radar Calculations

Antenna Gain

Start Range

Plot Every

40 dBi

1 yards

1 Yards

Controlled Access - 6 minute average exposure

Uncontrolled Access - 30 minute average exposure

RADAR #

Peak ERP

Rad Hazard Minimum Distance

PULSAR - STD

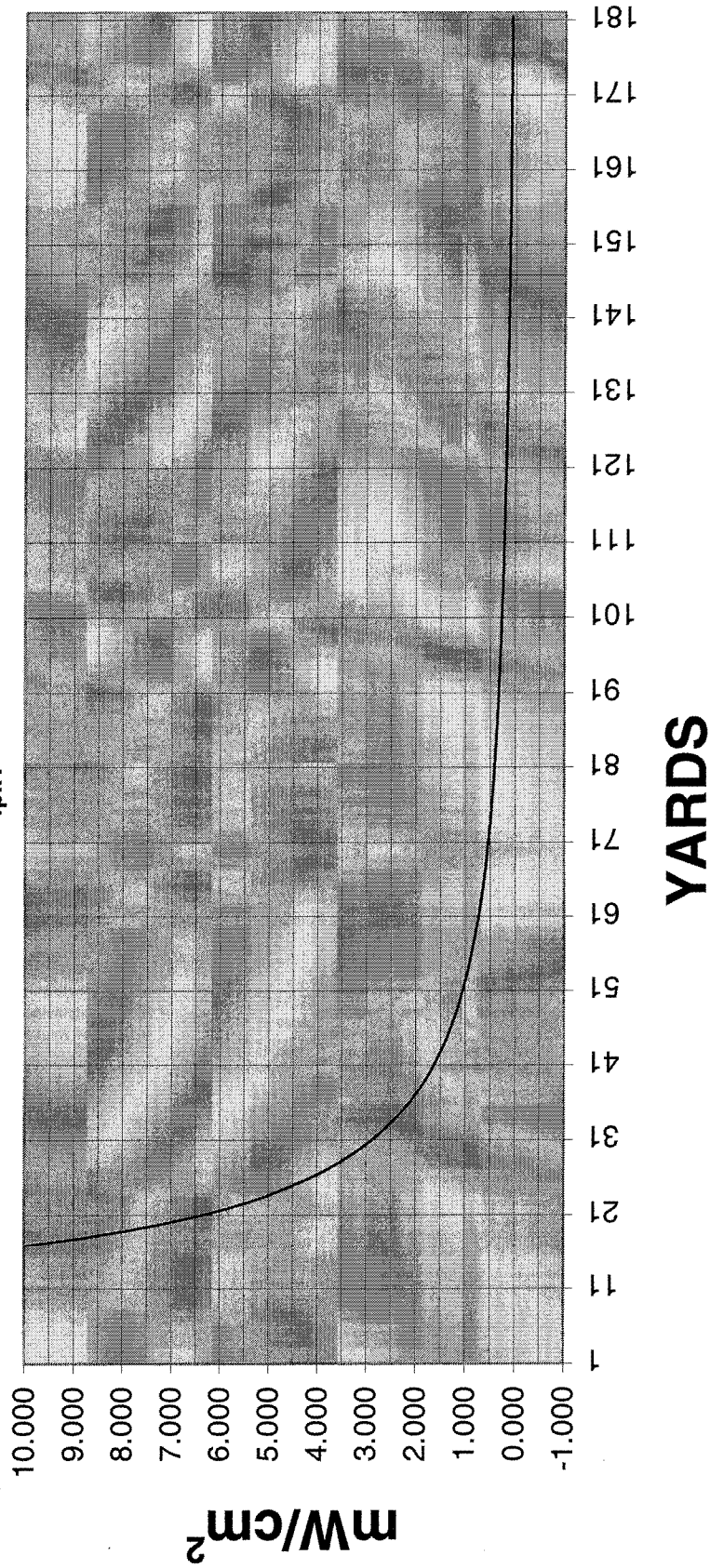
0.28 Gigawatts

69.5 feet

155.4 feet

# PULSAR (std) RF Power Density

$$\frac{P_t G_t}{4\pi R^2}$$



Tx Average Power (dBm)	57	dBm	Antenna Gain	40	dB	RADAR #	PULSAR-5
Transmission Loss (dB)	0.5	dB	Start Range	1	yards	Peak ERP	4.47 Gigawatts
Power @ Antenna	56.5	dBm	Plot Every	1	Yards	Rad Hazard Minimum Distance	276.7 feet
OET 65, Supplement B (Edition 97-01)		Controlled Access - 6 minute average exposure		5mW/cm <sup>2</sup>		618.8 feet	
Pulsed Radar Calculations		Uncontrolled Access - 30 minute average exposure		1mW/cm <sup>2</sup>			

# PULSAR - 5 RF Power Density

$$\frac{P_t G_t}{4\pi R^2}$$

