


APPLICATION FOR EARTH STATION SPECIAL TEMPORARY AUTHORITY

APPLICANT INFORMATION Enter a description of this application to identify it on the main menu:
Request for STA to Cover Presidential Election and Hurricane Recovery

I. Applicant

Name:	Overon America	Phone Number:	305-777-1900
DBA Name:		Fax Number:	
Street:	7291 NW 74th St.	E-Mail:	arian.delavega@imaginaus.com
City:	Miami	State:	FL
Country:	USA	Zipcode:	33166
Attention:	Arian De La Vega		



GRANTED
International Bureau

File # SES-STA-20121102-00987
 Call Sign _____ Grant Date 11/05/2012
 (or other identifier) _____
 Term Dates
 From 11/05/2012 To: 11/10/2012
 Approved: Arian De La Vega

Overon America
SES-STA-20121102-00987
Special Temporary Authority

Overon America ("Overon") is granted Special Temporary Authority, from November 5, 2012, to November 10 2012. to operate its Advent Mantis 2.4m transportable earth station, in Washington DC emitting a signal within the 18M0G7W emission designator on center frequency 6157 MHz at maximum input power density of -11.5 dBW/4kHz and EIRP not to exceed 30.6 dBW/4kHz to Intelsat 805 satellite, S2402 at 304.5° E.L.(55.5° W.L.) from which it has received permission from the space station operator to access, under the following conditions.

1. Overon shall not cause harmful interference to, and shall not claim protection from, interference caused to it by any other lawfully operating station and it shall cease transmission(s) immediately upon notice of such interference.
2. Any action taken or expense incurred as a result of operations pursuant to this special temporary authority is solely at Overon risk.
3. Overon shall take all reasonable and customary measures to ensure that the mobile earth station does not create a potential for harmful non-ionizing radiation to persons who may be in the vicinity of the earth station when it is in operation. The earth station operator shall be responsible for assuring that individuals do not stray into the regions around the earth station where there is a potential for exceeding the maximum permissible exposure limits.
4. Overon shall comply with Section 25.277(c) of the Commission's rules, 47 C.F.R. §25.277(c), regarding submission of Frequency Coordination Reports prior to commencing operations at any location. This is also granted subject to Section 25.277(d) and (e) of the Commission's rules, 47 C.F.R. §25.277(d) and (e). Failure to perform successful prior frequency coordination will result in the cancellation of your station license herein. Copies of all coordination notices shall be forwarded to the FCC Operations Center Office in Columbia, Maryland, by letter to, Ms. Marlene H. Dortch, Secretary, (Attn FCC Operations Center Office in Columbia, Maryland, Federal Communications Commission, 445 12th Street, S.W., Washington, D.C. 20554 and by Fax to FCC Operations Center Office in Columbia, Maryland (301) 206-2896.
5. This action is issued pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 C.F.R. § 0.261, and is effective immediately.



File # SES-STA-20121102-00987
Call Sign _____ Grant Date 11/05/2012
(or other identifier)
Term Dates
From 11/05/2012 To: 11/10/2012
Approved: Paul E. Hayes

2. Contact	
Name:	Tim Bransford
Company:	Bingham McCutchen LLP
Street:	2020 K Street, NW
City:	Washington
Country:	USA
Attention:	Tim Bransford
Phone Number:	202-373-6140
Fax Number:	202-373-6001
E-Mail:	timothy.bransford@bingham.com
State:	DC
Zipcode:	20006
Relationship:	Legal Counsel
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.)	
3. Reference File Number or Submission ID	
4a. Is a fee submitted with this application?	
<input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114).	
<input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee	
<input type="radio"/> Other (please explain):	
4b. Fee Classification CGX – Fixed Satellite Transmit/Receive Earth Station	
5. Type Request	
<input checked="" type="radio"/> Use Prior to Grant <input type="radio"/> Change Station Location <input type="radio"/> Other	
6. Requested Use Prior Date	
11/04/2012	

7. City Washington	8. Latitude (dd mm ss.s h) 38 54 1.5 N
9. State DC	10. Longitude (dd mm ss.s h) 77 2 12.6 W
11. Please supply any need attachments. Attachment 1: Exhibit A Attachment 2: Exhibit B Attachment 3: Exhibit C	
12. Description. (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.) <div style="border: 1px solid black; padding: 5px; margin: 5px 0;">Request for STA to communicate with Intelsat 805 for a period beginning November 4, 2012 and ending November 9, 2012. STA will enable broadcast uplink of Presidential Election and hurricane recovery.</div>	
13. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application"; for these purposes. <p style="text-align: right;">Yes <input checked="" type="radio"/> No <input type="radio"/></p>	
14. Name of Person Signing Arian De La Vega	15. Title of Person Signing Director, Operations
WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).	

FCC NOTICE REQUIRED BY THE PAPERWORK REDUCTION ACT

The public reporting for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information. If you have any comments on this burden estimate, or how we can improve the collection and reduce the burden it causes you, please write to the Federal Communications Commission, AMD-PERM, Paperwork Reduction Project (3060-0678), Washington, DC 20554. We will also accept your comments regarding the Paperwork Reduction Act aspects of this collection via the Internet if you send them to PRA@fcc.gov. PLEASE DO NOT SEND COMPLETED FORMS TO THIS ADDRESS.

Remember – You are not required to respond to a collection of information sponsored by the Federal government, and the government may not conduct or sponsor this collection, unless it displays a currently valid OMB control number or if we fail to provide you with this notice. This collection has been assigned an OMB control number of 3060-0678.

THE FOREGOING NOTICE IS REQUIRED BY THE PAPERWORK REDUCTION ACT OF 1995, PUBLIC LAW 104-13, OCTOBER 1, 1995, 44 U.S.C. SECTION 3507.

REQUEST FOR SPECIAL TEMPORARY AUTHORITY

Overon America (“Overon”), pursuant to Section 25.120 of the Commission’s Rules, 47 C.F.R. § 25.120, hereby requests Special Temporary Authority (“STA”) for short-term transmission of a non-common carrier fixed earth station operating in the conventional C-band. The proposed operation will be conducted using one antenna uplinking exclusively to the Intelsat 805 satellite at 304.5 degrees east longitude. STA authority is sought for a period of six (6) days beginning November 4, 2012, concluding November 9, 2012. Grant of this request will serve the public interest by ensuring that Overon is able to provide a continuous video uplink feed covering the Presidential Election and Hurricane Sandy recovery effort from a central location in Washington D.C. that will be distributed to North American and Latin American broadcasters and cable network providers for local distribution.

The transmit carrier Overon seeks to uplink will be within the conventional C-band. The carrier will be a simplex 18 MHz emission centered at 6157 MHz with $\frac{3}{4}$ forward error correction coding and quad phase RF modulation. The attached Comsearch frequency coordination and interference analysis report indicates that this carrier will not interfere with any other coordinated C-band services. Furthermore, the accompanying radiation hazard analysis demonstrates that the earth station can be operated safely within the guidelines established by the Office of Engineering and Technology.¹

Overon understands that operation of this earth station pursuant to STA will be on a sufferance-only basis without interference protection rights, that operation of the above-referenced carrier cannot create harmful interference into other spectrum users, and that the FCC may instruct Overon to discontinue communications without advanced notice at the Commission’s discretion.

¹ The proposed deployment will occur on a rooftop inaccessible to the general public and approximately 95’ above street level. Professional engineers will man the earth station, and will ensure that near field exposure to the antenna is restricted.

Radiation Hazard Report

Advent Mantis 240 C-Band Antenna System

The purpose of this report is to examine the potential human exposure to radio frequencies (RF) emitted in the form of electro magnetic (EM) radiation from an Advent Mantis 2.4m C-Band satellite antenna. The mathematical analysis performed below complies with the methods described in the Federal Communications Commission Office of Engineering and Technology Bulletin No. 65 (1985 rev. 1997) R&O 96-326.

Maximum Permissible Exposure

There are two separate levels of exposure limits. The first applies to persons in the general population who are in an uncontrolled environment. The second applies to trained personnel in a controlled environment.

According to 47 C.F.R. § 1.1310, the Maximum Permissible Exposure (MPE) limits for frequencies above 1.5GHz are as follows:

- General Population / Uncontrolled Exposure 1.0 mW/cm²
- Occupational / Controlled Exposure 5.0 mW/cm²

The purpose of this study is to determine the power flux density levels for the earth station under study as compared with the MPE limits. This comparison is done in each of the following regions:

1. Far-field region
2. Near-field region
3. Transition region
4. The region between the feed and the antenna surface
5. The main reflector region
6. The region between the antenna edge and the ground

Input Parameters

The values below are used in the calculations detailed in this report

Parameter	Value	Unit	Symbol
Antenna Diameter	2.4	m	<i>D</i>
Antenna Transmit Gain	42.1	dBi	<i>G</i>
Transmit Frequency	6200	MHz	<i>f</i>
Feed Flange Diameter	9.8	cm	<i>d</i>
Power Input to Antenna	260	W	<i>P</i>

Calculated Parameters

The following values are calculated from the input parameters from there corresponding formulas.

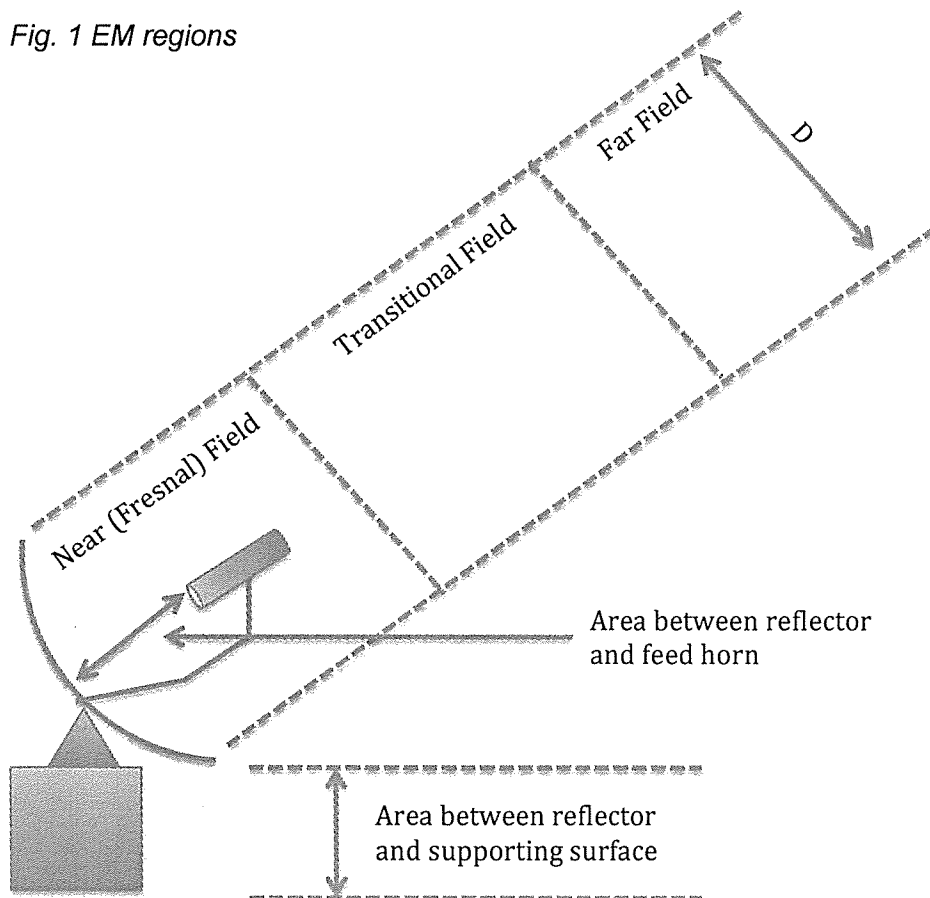
(All values rounded to two decimal places)

Parameter	Value	Unit	Symbol	Formula
Antenna Surface Area	4.52	m ²	A	$\pi D^2/4$
Feed Flange Surface Area	75.43	cm ²	a	$\pi d^2/4$
Antenna Efficiency	0.67		η	$G\lambda^2/(\pi^2 D^2)$
Gain Factor	16218.10		g	$10^{G/10}$
Wavelength	0.048	m	λ	$300/f$

Regions of EM fields, Characteristics and there Behavior

EM radiation emitting from a parabolic antenna has different behavioral and characteristics depending on the distance from the reflector surface. This distance from the reflector can be catagorised in three regions, Near (Fresnal) Field Region, Transitional Region and Far Field Region. Additional areas of interest are also the area between the feed horn and the reflector, the area between the supporting surface and the reflector, and the main reflector area.

Fig. 1 EM regions



Parabolic antennas with circular reflectors, such as the dish under analysis in this report, have the Near, Transitional and Far Field distances calculated with the formulas below

Parameter	Value	Unit	Formula
Near Field Distance	30	m	$R_{nf}=D^2/(4\lambda)$
Distance to Transitional Field	30	m	$R_t=R_{nf}$
Distance to Far Field	72	m	$R_{ff}=0.60D^2/\lambda$

The distance within the transition region is between the near and far fields. This allows for the following rule, $R_{nf} \leq R_t \leq R_{ff}$. However, the power density in the transition region cannot exceed the power density in the near field.

Power Flux Density Calculations

Power flux density is the rate of transfer the EM moves through space. Flux density is at it strongest through the entire length of the near field and is concentrated through a cylinder proportional to the surface diameter of the reflector (D). Within the transitional and far field, the power density decreases at an opposite rate. Power density with in the three regions is calculated below.

Parameter	Value	Unit	Symbol	Formula
Power Density in the Near Field	1.54	mW/cm ²	S_{nf}	$16\eta P/(\pi D^2)$
Power Density in the Trans. Field	1.54	mW/cm ²	S_t	$GPI/(4\pi R_{ff}^2)$
Power Density in the Far Field	0.79	mW/cm ²	S_{ff}	$S_{nf}R_{nf}/(R_t)$

The area between the feed horn and the reflector surface is confined within a conical shape, this is due to the aperture of the feed assembly. The Power density is defined below.

Parameter	Value	Unit	Symbol	Formula
Power Density at Feed Flange	1378.76	mW/cm ²	S_{fa}	$4P/a$

The above formula also applies when working out the power density at the reflector surface.

Parameter	Value	Unit	Symbol	Formula
Power Density at the Reflector	2.30	mW/cm ²	$S_{surface}$	$4P/A$

Assuming there is uniform spread across the reflector, the power density between the surface and reflector is shown below.

Parameter	Value	Unit	Symbol	Formula
Power Density Between the Surface and the Reflector	1.22	mW/cm ²	S_g	P/A

The table below shows the results of this report and if they meet the FCC limitations for EM exposure. It can be seen that only the area between the feed horn and the reflector exceeds the limitations set out by the FCC. This area is only accessed by experienced engineers who are trained to cease the transmission before accessing this area.

Area of exposure	mW/cm²	FCC Limitation (<5 mW/cm²)
Power Density in the Near Field	1.54	Within FCC Limitation
Power Density in the Trans. Field	1.54	Within FCC Limitation
Power Density in the Far Field	0.79	Within FCC Limitation
Power Density at Feed Flange	1378.76	Exceeds FCC Limitation
Power Density at the Reflector	2.30	Within FCC Limitation
Power Density Between the Surface and the Reflector	1.22	Within FCC Limitation

In conclusion to this report it can be seen that the antenna, with appropriate controls, and operation by a trained engineer, meet the guidelines set out in 47 C.F.R. § 1.1310.

Additional Information

Fig. 2 Advent Mantis 2.4m C-Band Antenna

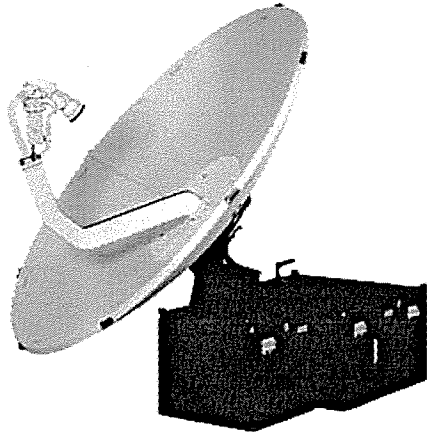


Fig. 3. Advent Mantis 2.4m C-Band Antenna off axis gain meets requirements for the following standards

ITU-R S.580-6
ITU-R S.465-5
INTELSAT IESS-601
EUTELSAT ESS-502
MIL STD 188-164A
STANAG 4484

19700 Janelia Farm Boulevard

Ashburn, VA 20147

(703) 726-5500

Fax (703) 726-5600



COMSEARCH®

<http://www.comsearch.com>

November 1, 2012

*** CLIENT COPY ***
*** PLEASE MAIL ***
*** TO CUSTOMER ***

Re: Overon America
Washington, DC
Temporary Transmit-Only Earth Station
Operation Dates: 11/04/2012 - 11/10/2012
Job Number: 121101COMSJC01

Dear Frequency Coordinator:

On behalf of Overon America, we are forwarding the attached coordination data for a temporary transmit-only earth station to be located at the site referenced above.

This earth station will transmit only on the satellite(s) and frequency or frequencies as described in the attached data. Please do not report cases involving 4 GHz facilities or problems involving non-active paths or frequencies outside the specified range.

If there are any questions concerning this coordination notice, please contact Comsearch.

Sincerely,

COMSEARCH

Jeffrey E. Cowles
Engineer III, Telecommunications
jcowles@comsearch.com

Enclosure(s)

COMSEARCH**Earth Station Data Sheet**

19700 Janelia Farm Boulevard, Ashburn, VA 20147
(703)726-5660 <http://www.comsearch.com>

Date: 11/01/2012
Job Number: 121101COMSJC01

Administrative Information

Status: TEMPORARY (Operation from 11/04/2012 to 11/10/2012)
Call Sign: TEMP11
Licensee Code: OVEAME
Licensee Name: Overon America

Site Information**WASHINGTON, DC**

Venue Name
Latitude (NAD 83): 38° 54' 1.5" N
Longitude (NAD 83): 77° 2' 12.6" W
Climate Zone: A
Rain Zone: 2
Ground Elevation (AMSL): 20.12 m / 66.0 ft

Link Information

Satellite Type: Geostationary
Mode: TO - Transmit-Only
Modulation: Digital
Satellite Arc: 55.5° W to 55.5° West Longitude
Azimuth Range: 147.9° to 147.9°
Corresponding Elevation Angles: 39.7° / 39.7°
Antenna Centerline (AGL): 28.96 m / 95.0 ft

Antenna Information**Transmit - FCC32**

Manufacturer: Advent
Model: Mantis 2.4 Meter
Gain / Diameter: 42.1 dBi / 2.4 m
3-dB / 15-dB Beamwidth: 1.34° / 2.50°

Max Available RF Power (dBW/4 kHz): -11.5
(dBW/MHz): 12.5

Maximum EIRP (dBW/4 kHz): 30.6
(dBW/MHz): 54.6
(dBW): 67.1

Interference Objectives: Long Term: -154.0 dBW/4 kHz 20%
Short Term: -131.0 dBW/4 kHz 0.0025%

Frequency Information**Transmit 6.1 GHz**

Emission / Frequency Range (MHz): 18M0G7W / 6157.0

Max Great Circle Coordination Distance: 144.7 km / 89.9 mi
Precipitation Scatter Contour Radius: 100.0 km / 62.1 mi

COMSEARCH**Earth Station Data Sheet**

19700 Janelia Farm Boulevard, Ashburn, VA 20147
 (703)726-5660 <http://www.comsearch.com>

Coordination Values		WASHINGTON, DC
Licensee Name		Overon America
Latitude (NAD 83)		38° 54' 1.5" N
Longitude (NAD 83)		77° 2' 12.6" W
Ground Elevation (AMSL)		20.12 m / 66.0 ft
Antenna Centerline (AGL)		28.96 m / 95.0 ft
Antenna Model		Advent Mantis 2.4 Meter
Antenna Mode		Transmit 6.1 GHz
Interference Objectives: Long Term		-154.0 dBW/4 kHz 20%
Short Term		-131.0 dBW/4 kHz 0.0025%
Max Available RF Power		-11.5 (dBW/4 kHz)

Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
0	0.29	130.86	-10.00	131.80
5	0.32	128.04	-10.00	129.43
10	0.26	124.93	-10.00	133.64
15	0.28	121.70	-10.00	133.34
20	0.48	118.39	-10.00	116.65
25	0.57	114.89	-10.00	112.34
30	0.50	111.23	-10.00	115.72
35	0.31	107.47	-10.00	130.56
40	0.00	103.65	-10.00	138.58
45	0.00	99.86	-10.00	138.58
50	0.00	96.04	-10.00	138.58
55	0.00	92.20	-10.00	138.58
60	0.00	88.35	-10.00	138.58
65	0.00	84.51	-10.00	138.58
70	0.00	80.68	-10.00	138.58
75	0.00	76.89	-10.00	138.58
80	0.00	73.14	-10.00	138.58
85	0.00	69.45	-10.00	138.58
90	0.00	65.83	-10.00	138.58
95	0.00	62.31	-10.00	138.58
100	0.00	58.92	-10.00	138.58
105	0.00	55.66	-10.00	138.58
110	0.00	52.59	-10.00	138.58
115	0.00	49.73	-10.00	138.58
120	0.23	46.96	-9.79	136.53
125	0.27	44.62	-9.24	134.83
130	0.27	42.68	-8.75	136.33
135	0.25	41.16	-8.36	139.05
140	0.00	40.34	-8.14	144.24
145	0.00	39.78	-7.99	144.72
150	0.00	39.74	-7.98	144.75
155	0.00	40.23	-8.11	144.33
160	0.00	41.22	-8.38	143.50
165	0.00	42.67	-8.75	142.33
170	0.00	44.55	-9.22	140.90
175	0.00	46.79	-9.75	139.30
180	0.00	49.35	-10.00	138.58
185	0.00	52.17	-10.00	138.58

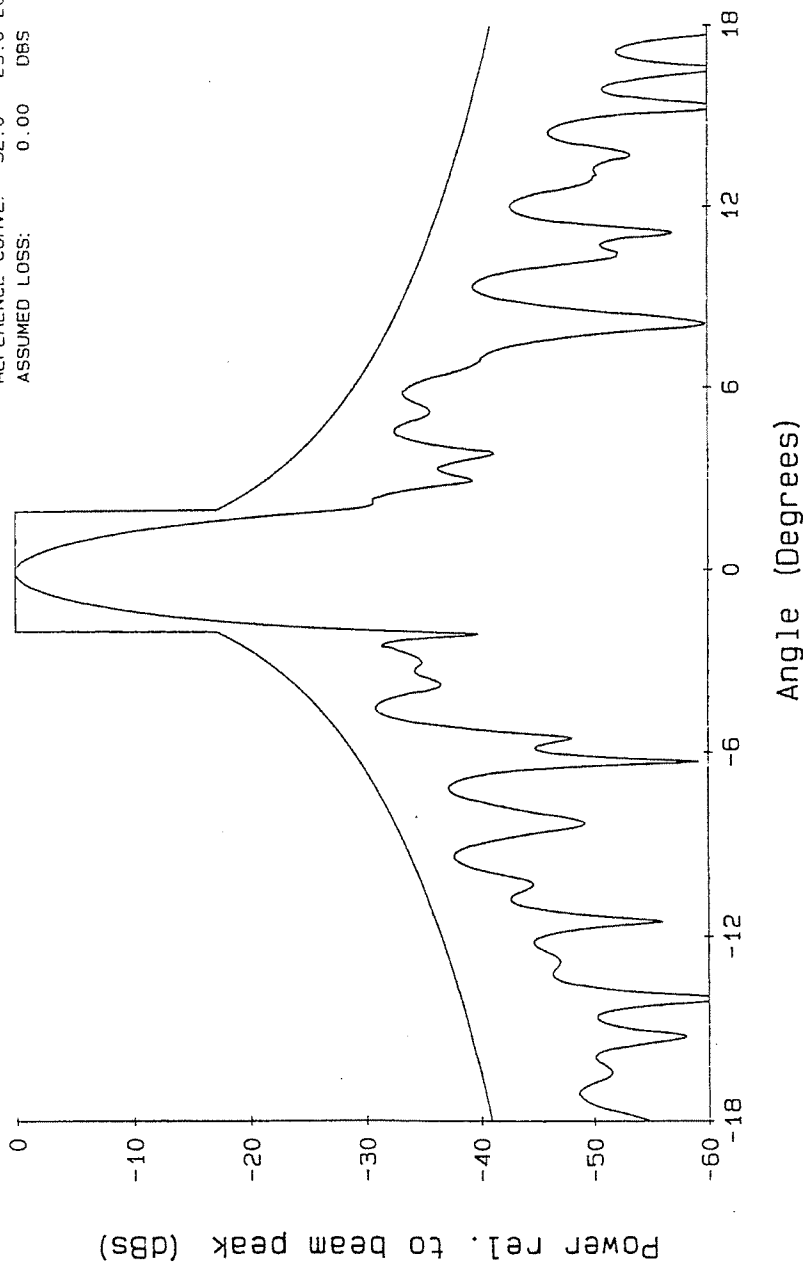
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Antenna Model	Advent Mantis 2.4 Meter
Antenna Mode	Transmit 6.1 GHz
Interference Objectives: Long Term	-154.0 dBW/4 kHz 20%
Short Term	-131.0 dBW/4 kHz 0.0025%
Max Available RF Power	-11.5 (dBW/4 kHz)

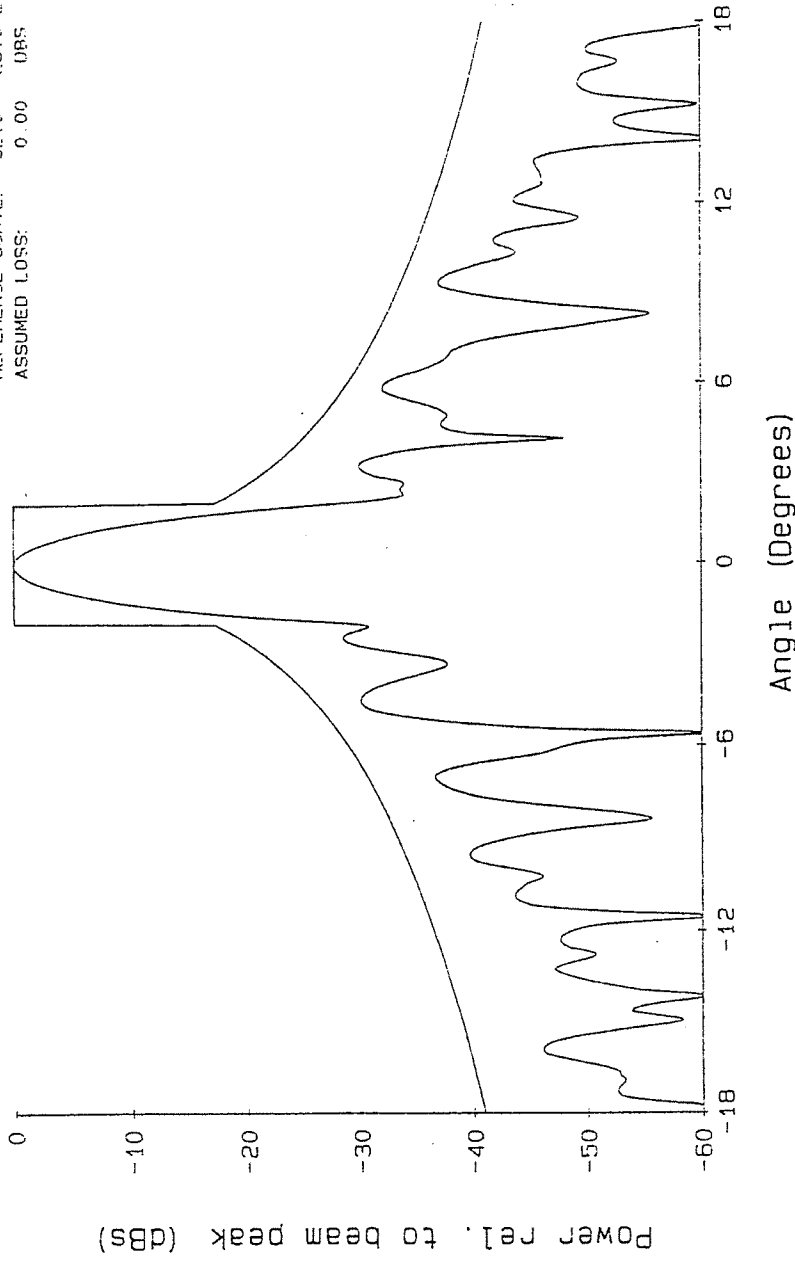
Azimuth (°)	Horizon Elevation (°)	Antenna Discrimination (°)	Transmit 6.1 GHz	
			Horizon Gain (dBi)	Coordination Distance (km)
190	0.00	55.21	-10.00	138.58
195	0.00	58.44	-10.00	138.58
200	0.00	61.82	-10.00	138.58
205	0.00	65.33	-10.00	138.58
210	0.00	68.93	-10.00	138.58
215	0.00	72.61	-10.00	138.58
220	0.00	76.35	-10.00	138.58
225	0.00	80.14	-10.00	138.58
230	0.00	83.96	-10.00	138.58
235	0.22	87.80	-10.00	137.07
240	0.29	91.66	-10.00	132.48
245	0.32	95.52	-10.00	130.10
250	0.33	99.36	-10.00	128.91
255	0.33	103.17	-10.00	129.09
260	0.40	106.96	-10.00	123.55
265	0.52	110.71	-10.00	114.43
270	0.57	114.38	-10.00	111.92
275	0.44	117.88	-10.00	119.82
280	0.36	121.26	-10.00	126.57
285	0.25	124.48	-10.00	134.36
290	0.33	127.62	-10.00	128.86
295	0.43	130.57	-10.00	121.10
300	0.58	133.31	-10.00	111.62
305	0.64	135.69	-10.00	108.73
310	0.73	137.74	-10.00	104.89
315	0.82	139.38	-10.00	100.62
320	0.81	140.45	-10.00	101.37
325	0.78	140.99	-10.00	102.66
330	0.61	140.86	-10.00	110.31
335	0.43	140.19	-10.00	121.20
340	0.46	139.22	-10.00	118.43
345	0.37	137.66	-10.00	125.53
350	0.44	135.82	-10.00	120.33
355	0.25	133.41	-10.00	133.82

FREQUENCY: 5.850 GHZ
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 41.5 DBS
 3 dB BEAMWIDTH: 1.52 DEG.
 POLARIZATION: LUDWIG 3 LH CIRCULAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.00 DBS



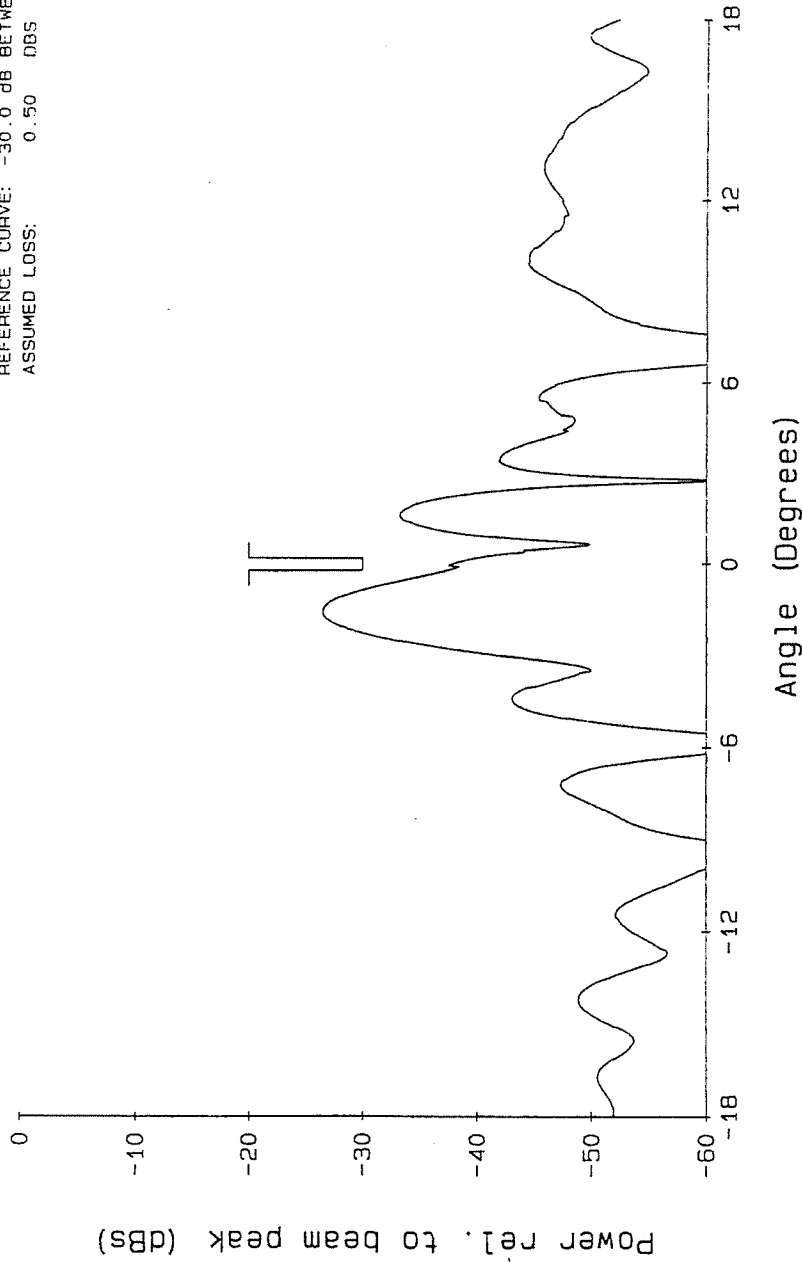
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.850 GHz
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 41.5 DBS
3 dB BEAMWIDTH: 1.52 DEG.
POLARIZATION: LUDWIG 3 LH CIRCULAR
EULER ANGLES: 0.00 0.00 0.00 NEG.
POL REF ANGLS: 0.00 0.00 0.00 NEG.
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.00 DBS



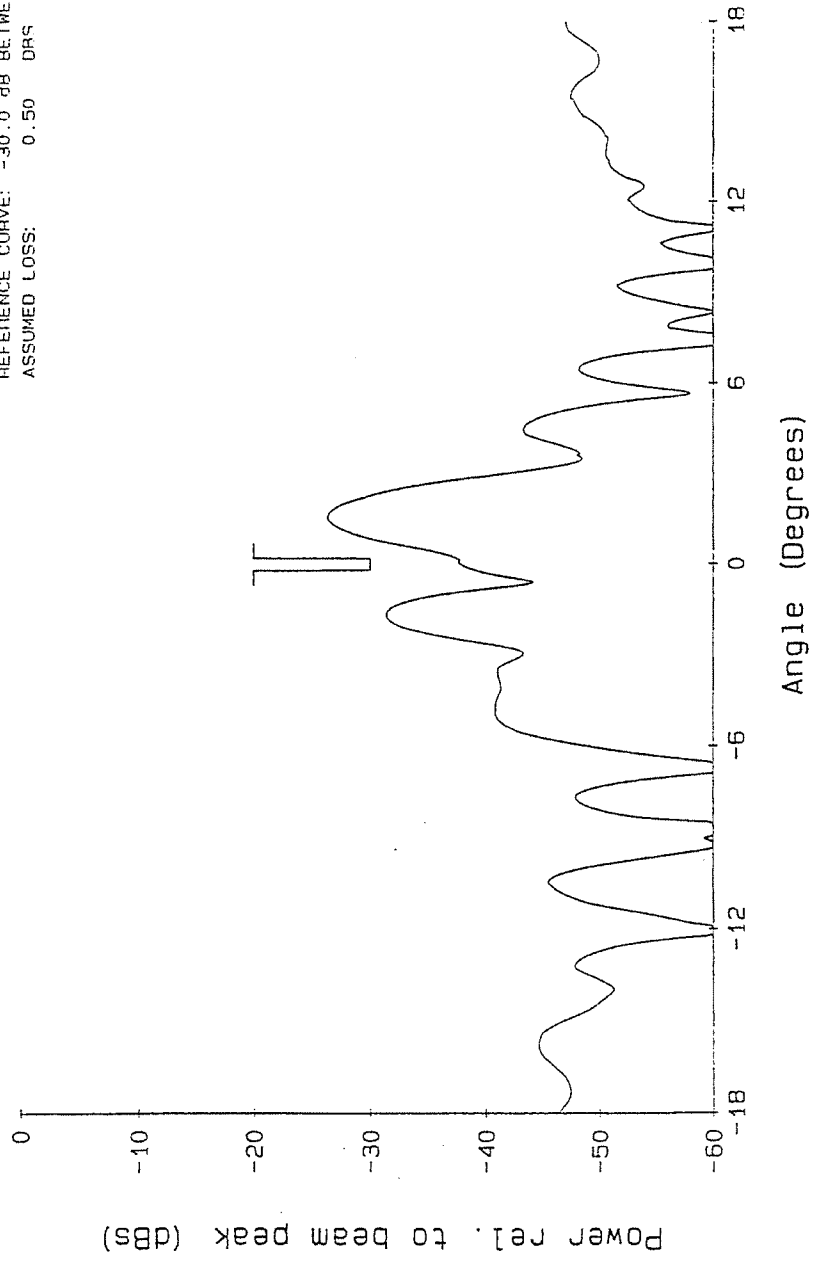
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.850 GHz
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 15.0 DBS
 3 DB BEAMWIDTH: 1.31 DEG.
 POLARIZATION: LUDWIG 3 RH CIRCULAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -30.0 dB BETWEEN -0.2 dB POINTS
 ASSUMED LOSS: 0.50 DBS



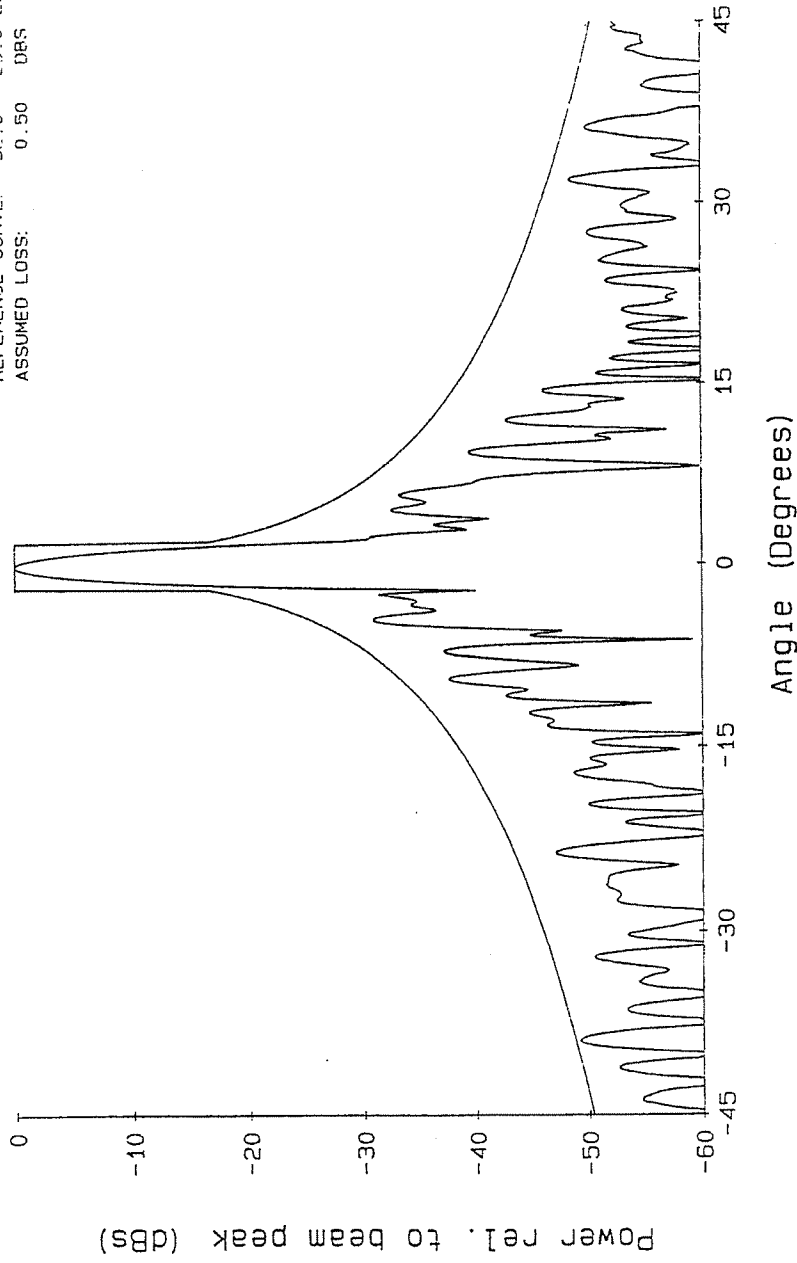
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.850 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 15.2 DBS
 3 DB BEAMWIDTH: 1.27 DEG.
 POLARIZATION: LUDWIG 3 RH CIRCULAR
 EULER ANGLS: 0.00 0.00 0.00 DEG.
 POL REF ANGLS: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -30.0 dB BETWEEN -0.2 dB POINTS
 ASSUMED LOSS: 0.50 DBS



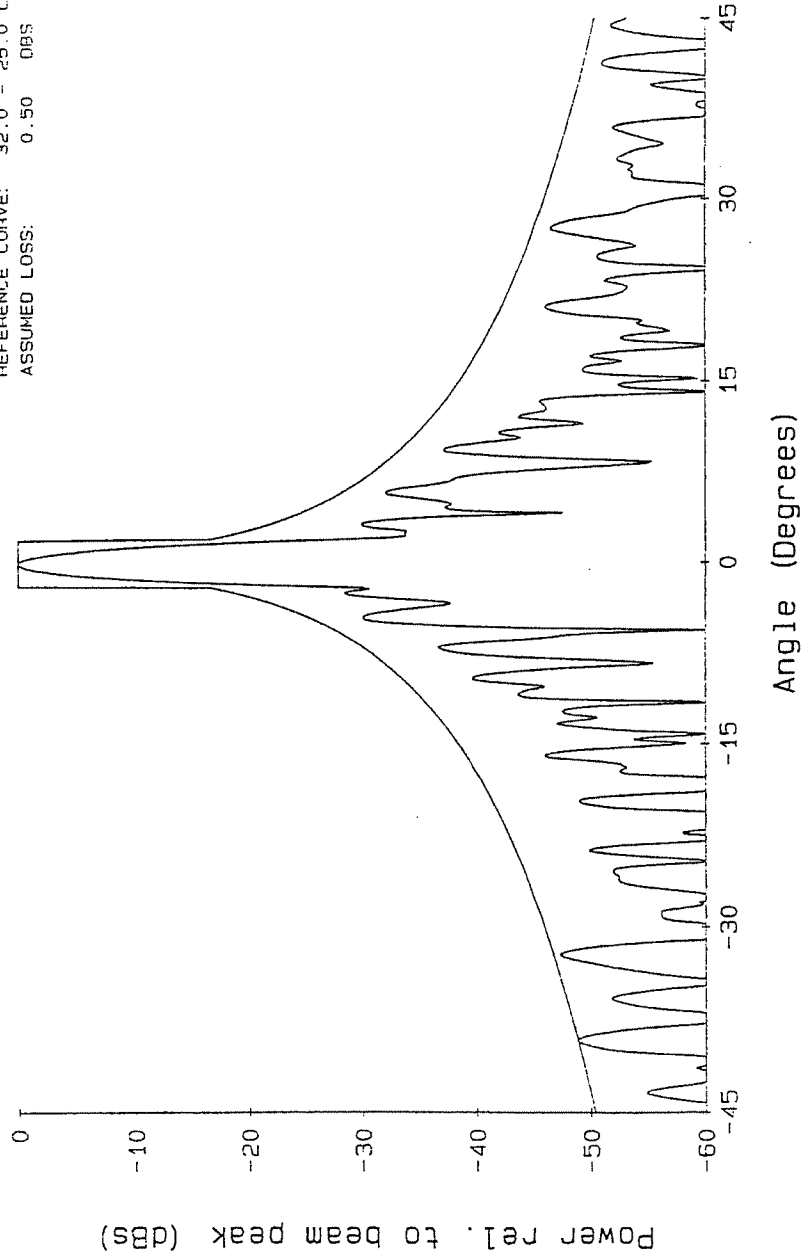
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.850 GHz
ANGLE OF CUT: 0.00 DEG.
DIRECTIVE GAIN: 41.5 DBS
3 DB BEAMWIDTH: 1.52 DEG.
POLARIZATION: LUDWIG 3 LH CIRCULAR
EULER ANGLES: 0.00 0.00 0.00 DEG
POL REF ANGLES: 0.00 0.00 0.00 DEG
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.50 DBS



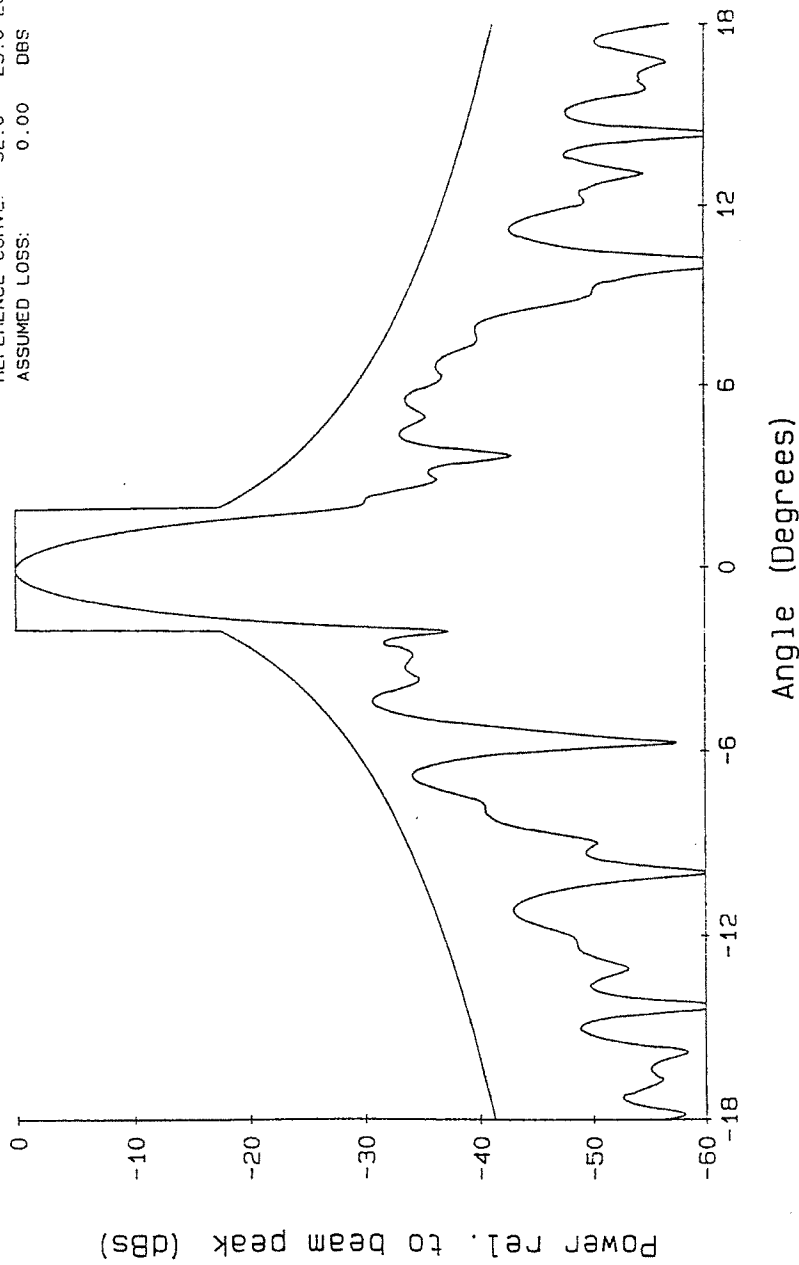
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.850 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 41.5 DBS
 3 dB BEAMWIDTH: 1.52 DEG.
 POLARIZATION: LUDWIG 3 LH CIRCULAR
 EULER ANGLES: 0.00 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



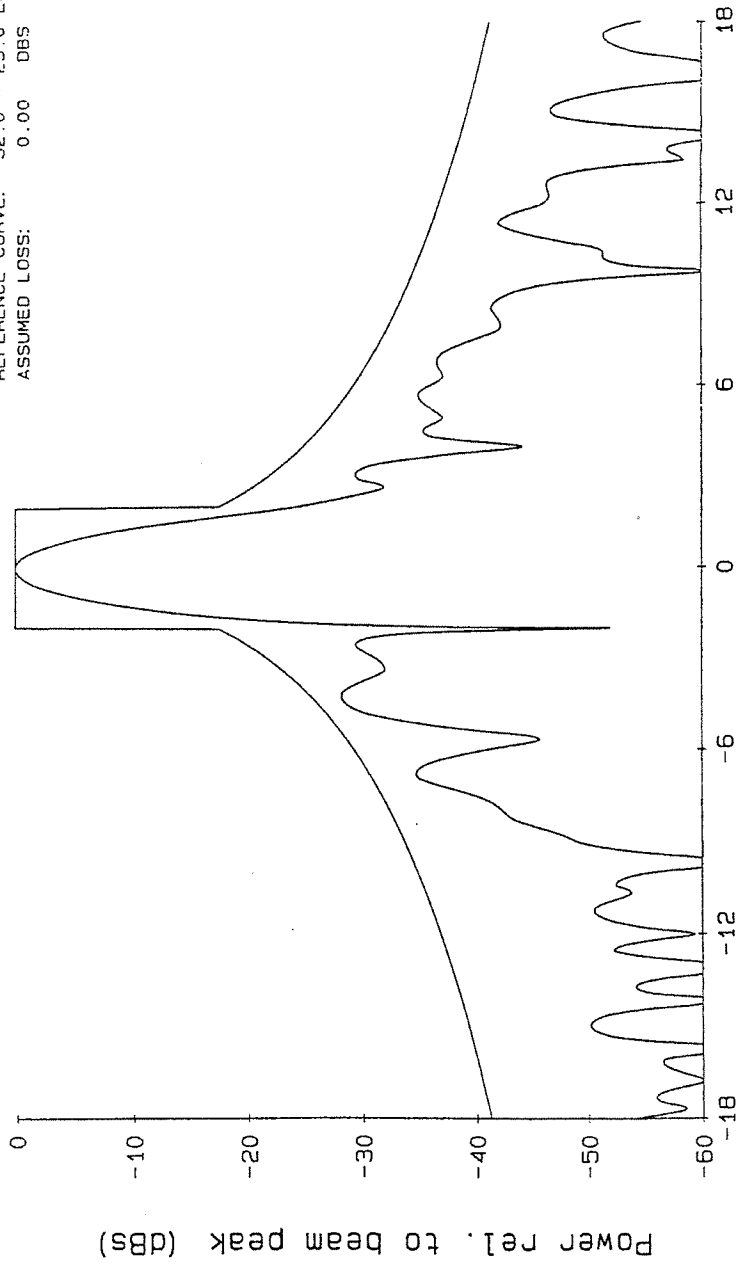
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.152 GHz
ANGLE OF CUT: 0.00 DEG.
DIRECTIVE GAIN: 41.9 DBS
3 dB BEAMWIDTH: 1.46 DEG.
POLARIZATION: LUDWIG 3 LH CIRCULAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.00 DBS



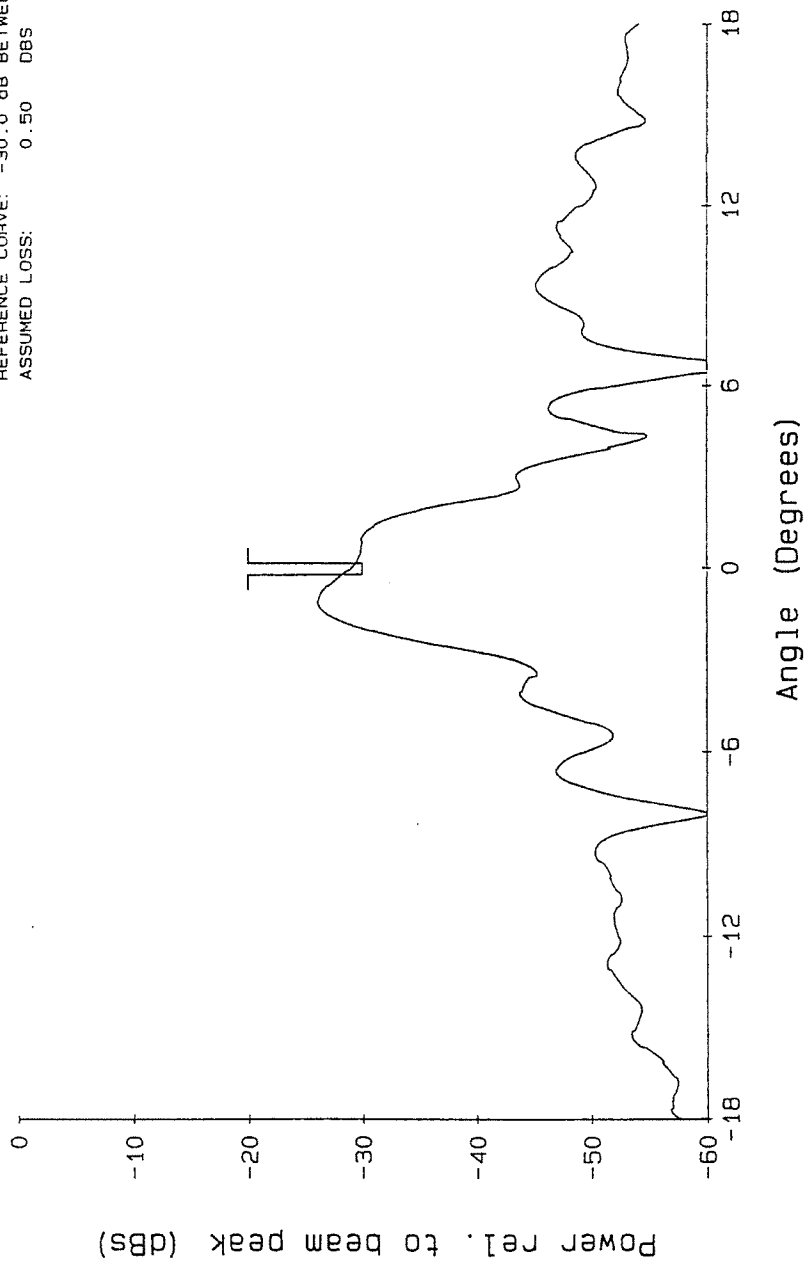
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.152 GHz
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 41.9 DBS
3 dB BEAMWIDTH: 1.49 DEG.
POLARIZATION: LUDWIG 3 LH CIRCULAR
EULER ANGLES: 0.00 0.00 0.00 DFG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: 32.0 -- 25.0 LOG THETA
ASSUMED LOSS: 0.00 DBS



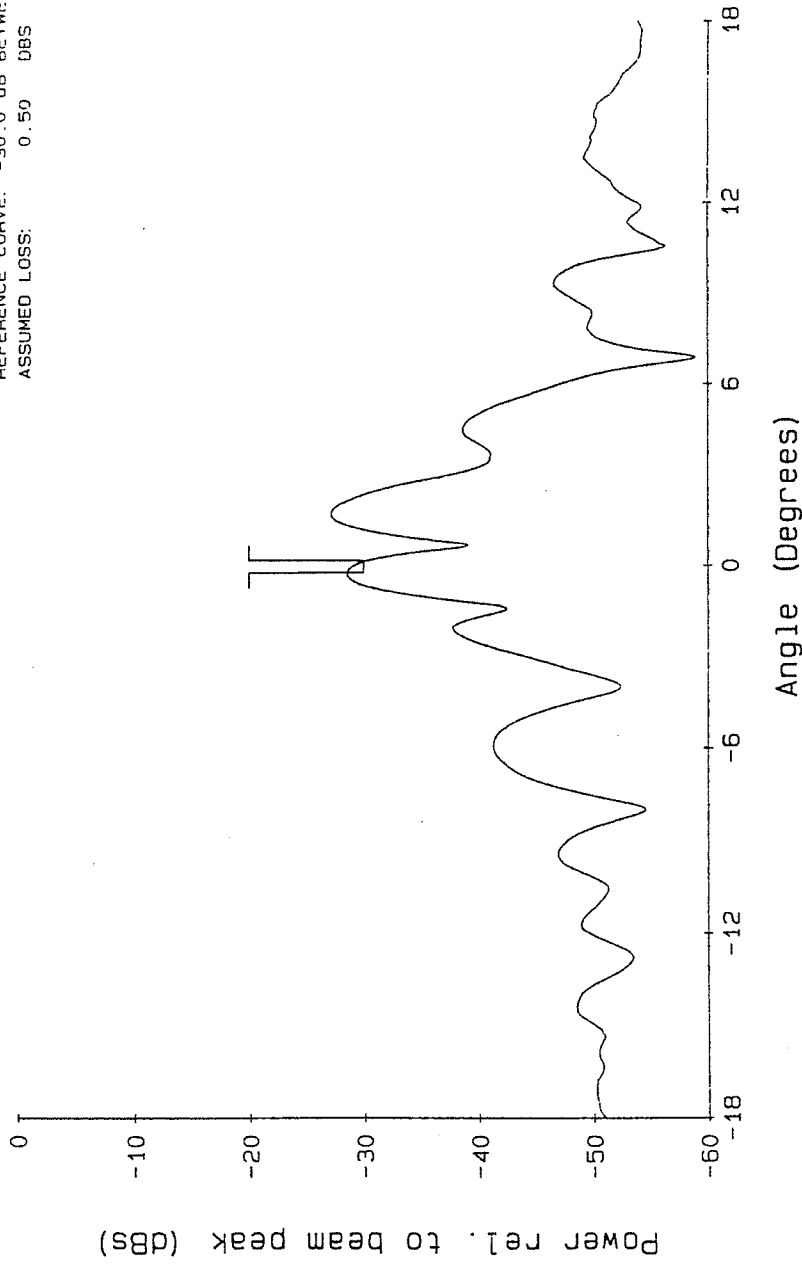
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.152 GHz
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 15.8 DBS
 3 DB BEAMWIDTH: 1.88 DEG.
 POLARIZATION: LUDWIG 3 RH CIRCULAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -30.0 dB BETWEEN -0.2 dB POINTS
 ASSUMED LOSS: 0.50 DBS



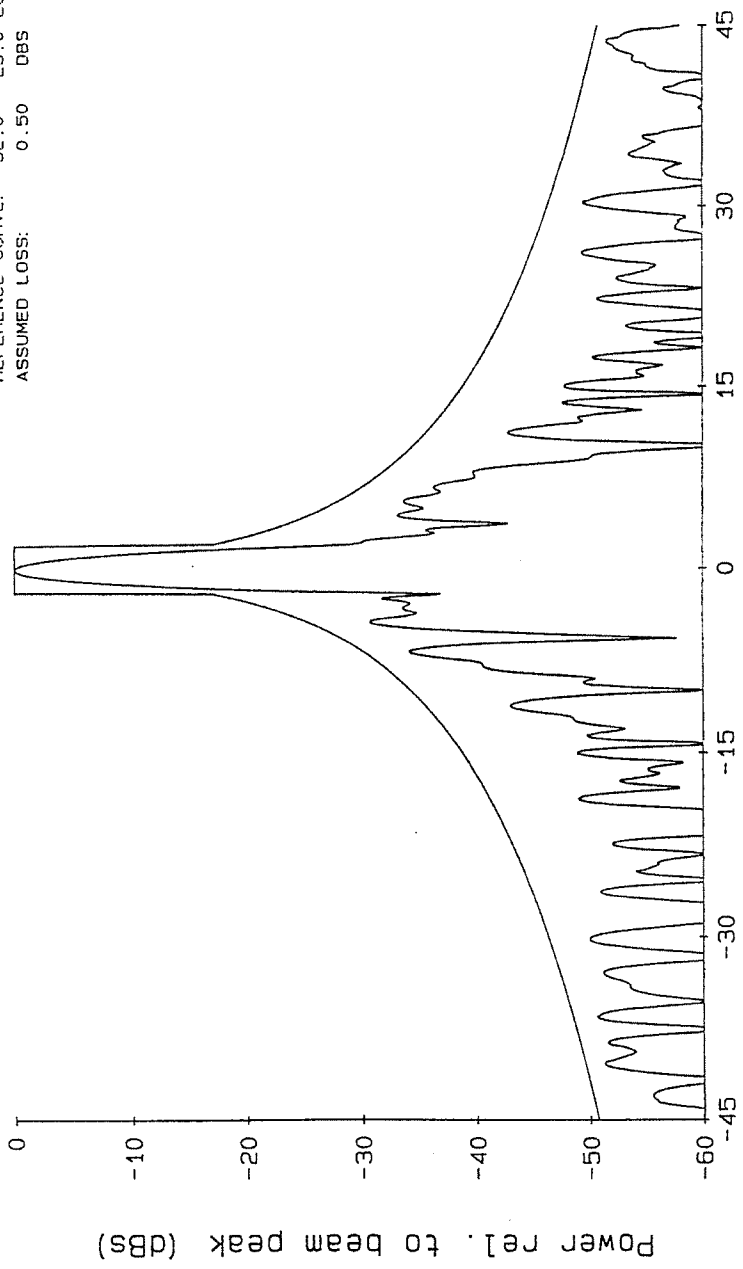
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.152 GHz
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 14.7 DBS
3 dB BEAMWIDTH: 1.18 DEG.
POLARIZATION: LUDWIG 3 RH CIRCULAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: -30.0 dB BETWEEN -0.2 dB POINTS
ASSUMED LOSS: 0.50 DBS



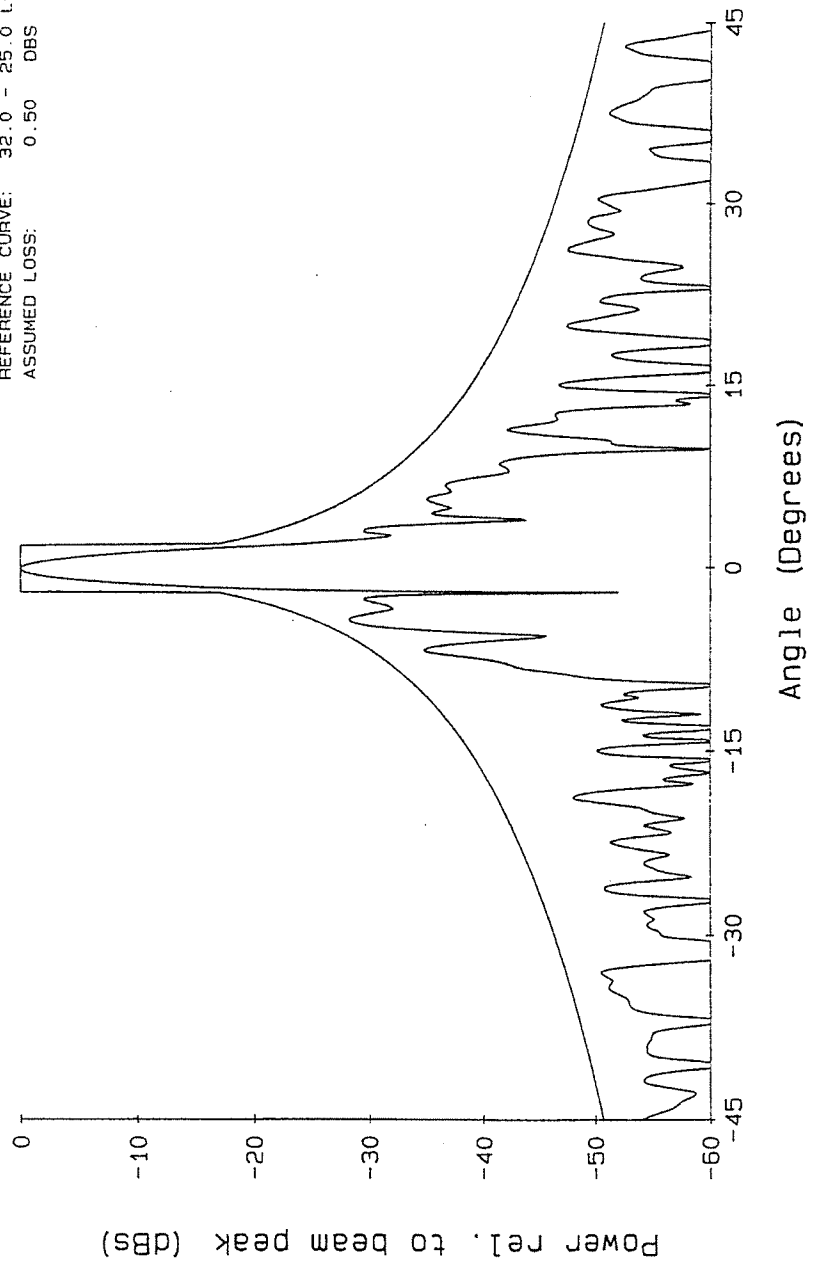
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.152 GHZ
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 41.9 DBS
 3 DB BEAMWIDTH: 1.46 DEG.
 POLARIZATION: LUDWIG 3 LH CIRCULAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



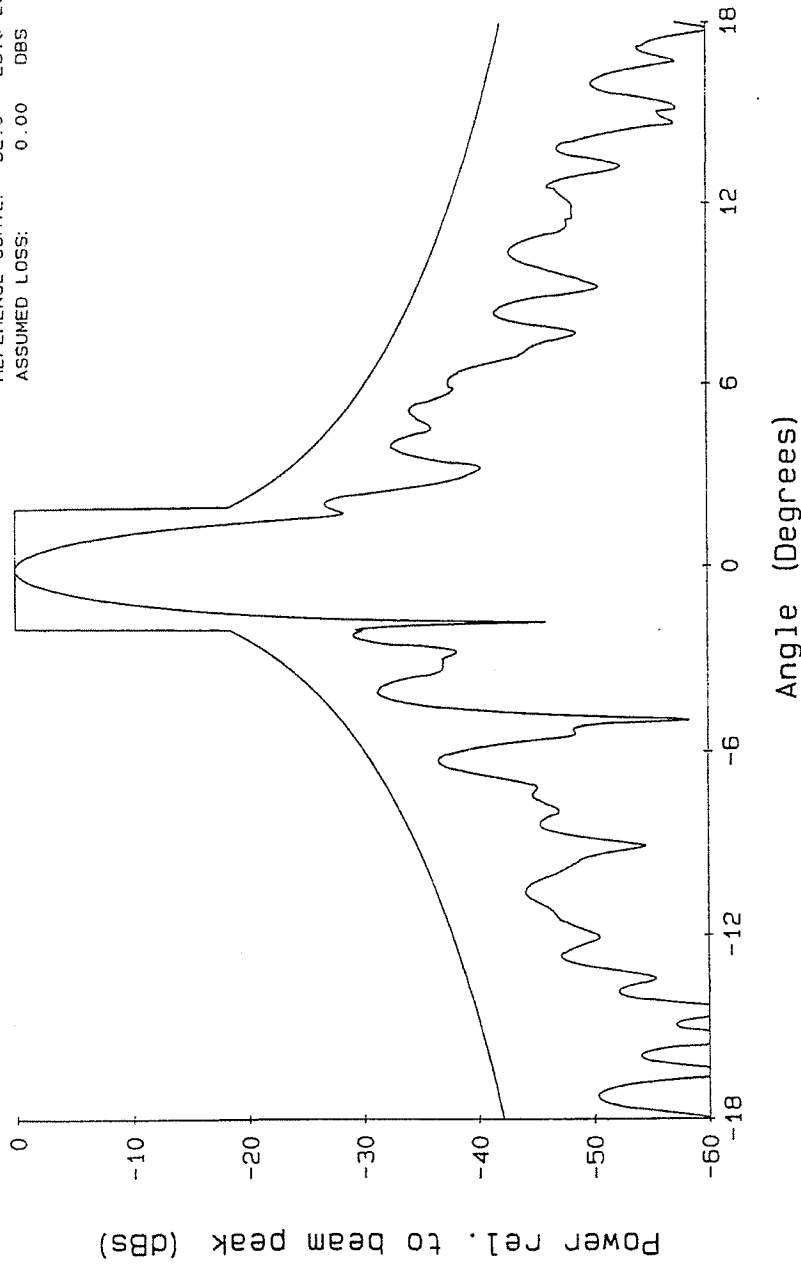
Angle (Degrees)
 CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.152 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 41.9 DBS
 3 DB BEAMWIDTH: 1.49 DEGS.
 POLARIZATION: LUDWIG 3 LH CIRCULAR
 EULER ANGLES: 0.00 0.00 0.00 DEG
 POL REF ANGLES: 0.00 0.00 0.00 DF5.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



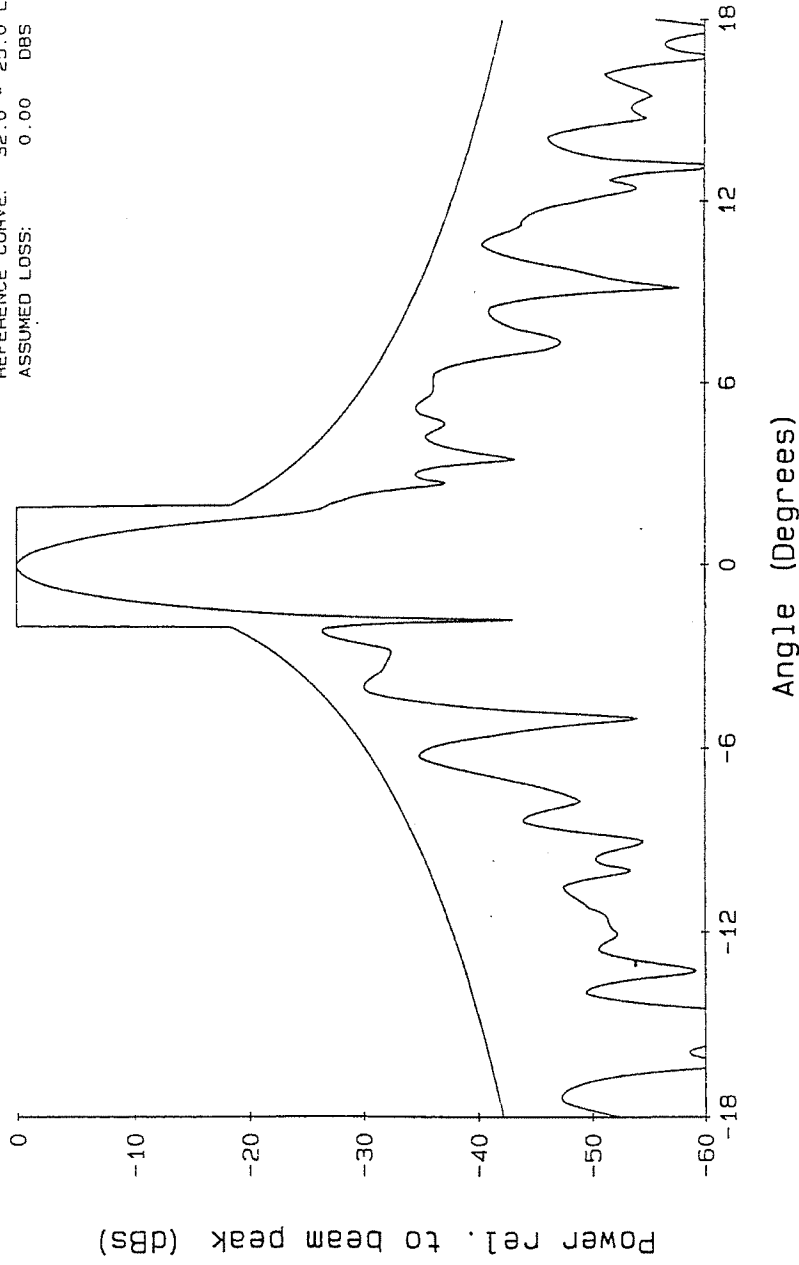
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHz
ANGLE OF CUT: 0.00 DEG
DIRECTIVE GAIN: 42.8 DBS
3 DB BEAMWIDTH: 1.33 DEG
POLARIZATION: LUDWIG 3 LH CIRCULAR
EULER ANGLES: 0.00 0.00 0.00 DFG
POL REF ANGLES: 0.00 0.00 0.00 DEG
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.00 DBS



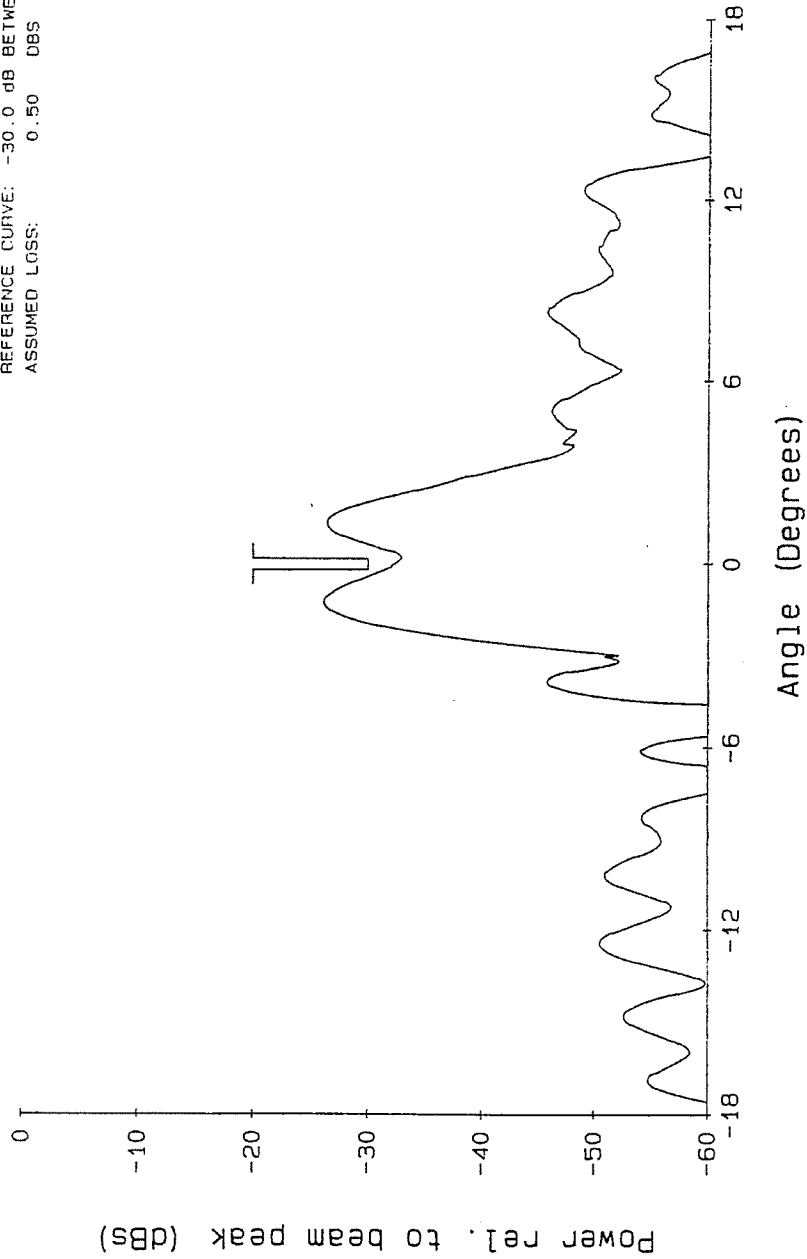
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 42.8 DBS
 3 DB BEAMWIDTH: 1.35 DEG.
 POLARIZATION: LUDWIG 3 LH CIRCULAR
 EULER ANGLES: 0.00 0.00 0.00 DFG.
 POL REF ANGLES: 0.00 0.00 0.00 DFG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.00 DBS



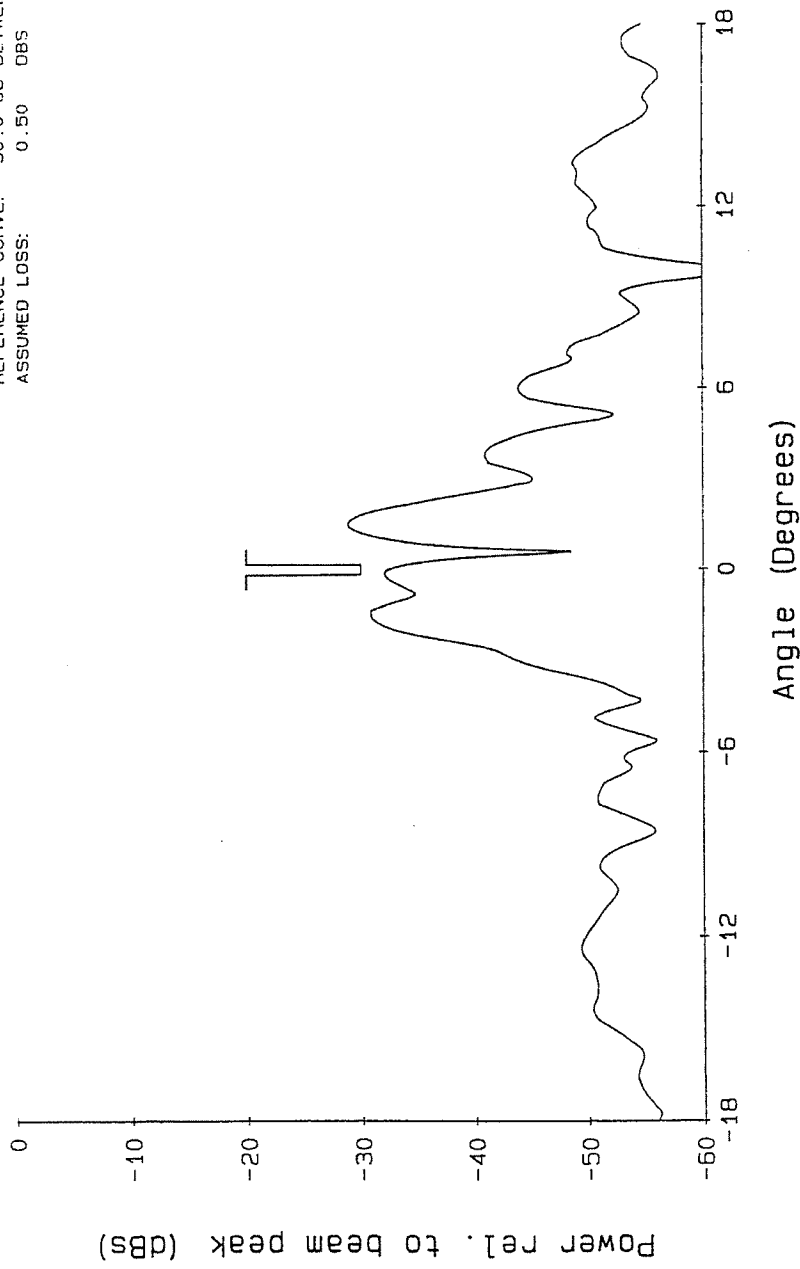
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHZ
ANGLE OF CUT: 0.00 DEG.
DIRECTIVE GAIN: 16.6 DBS
3 dB BEAMWIDTH: 1.35 DEG.
POLARIZATION: LUDWIG 3 RH CIRCULAR
EULER ANGLES: 0.00 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 0.00 DEG.
REFERENCE CURVE: -30.0 dB BETWEEN -0.2 dB POINTS
ASSUMED LOSS: 0.50 DBS



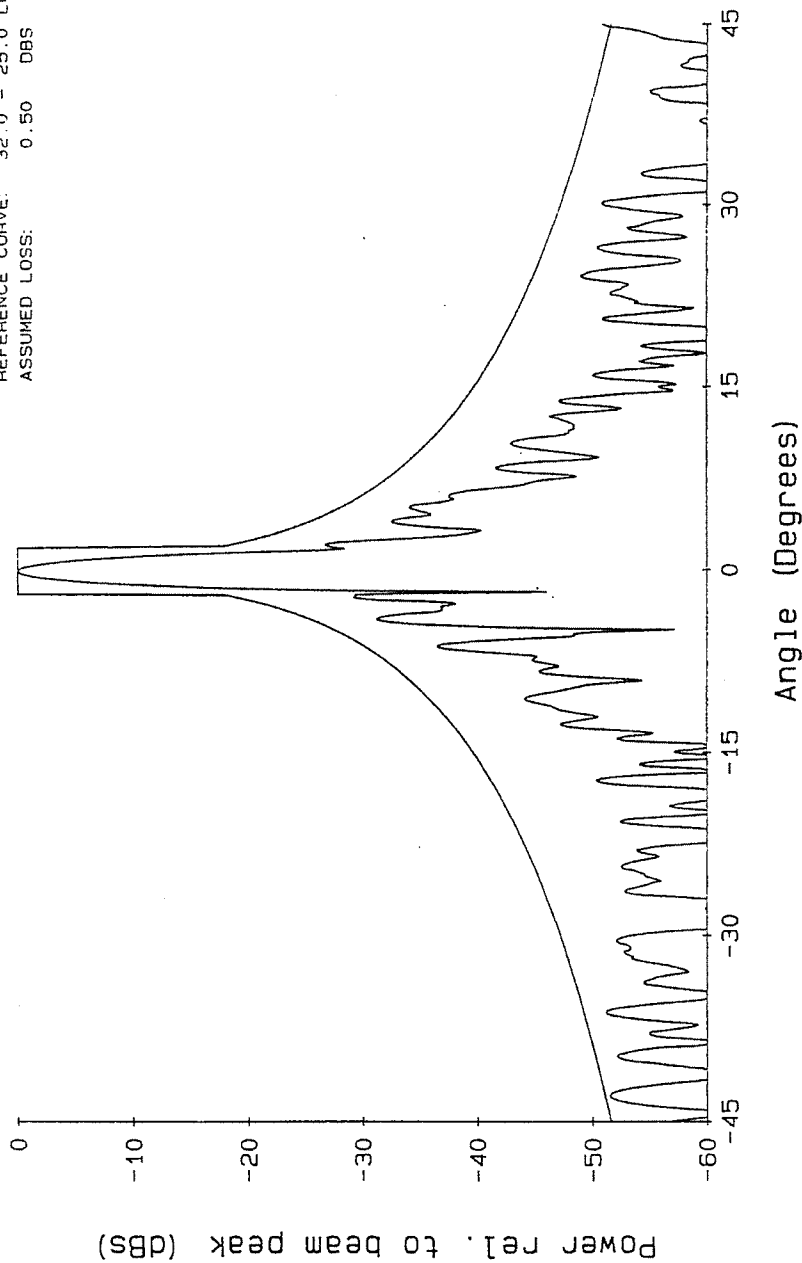
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHz
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 13.8 DBS
3 dB BEAMWIDTH: 0.97 DEG.
POLARIZATION: LUDWIG 3 RH CIRCULAR
EULER ANGLES: 0.00 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 0.00 DEG.
REFERENCE CURVE: -30.0 dB BETWEEN -0.2 dB POINTS
ASSUMED LOSS: 0.50 DBS



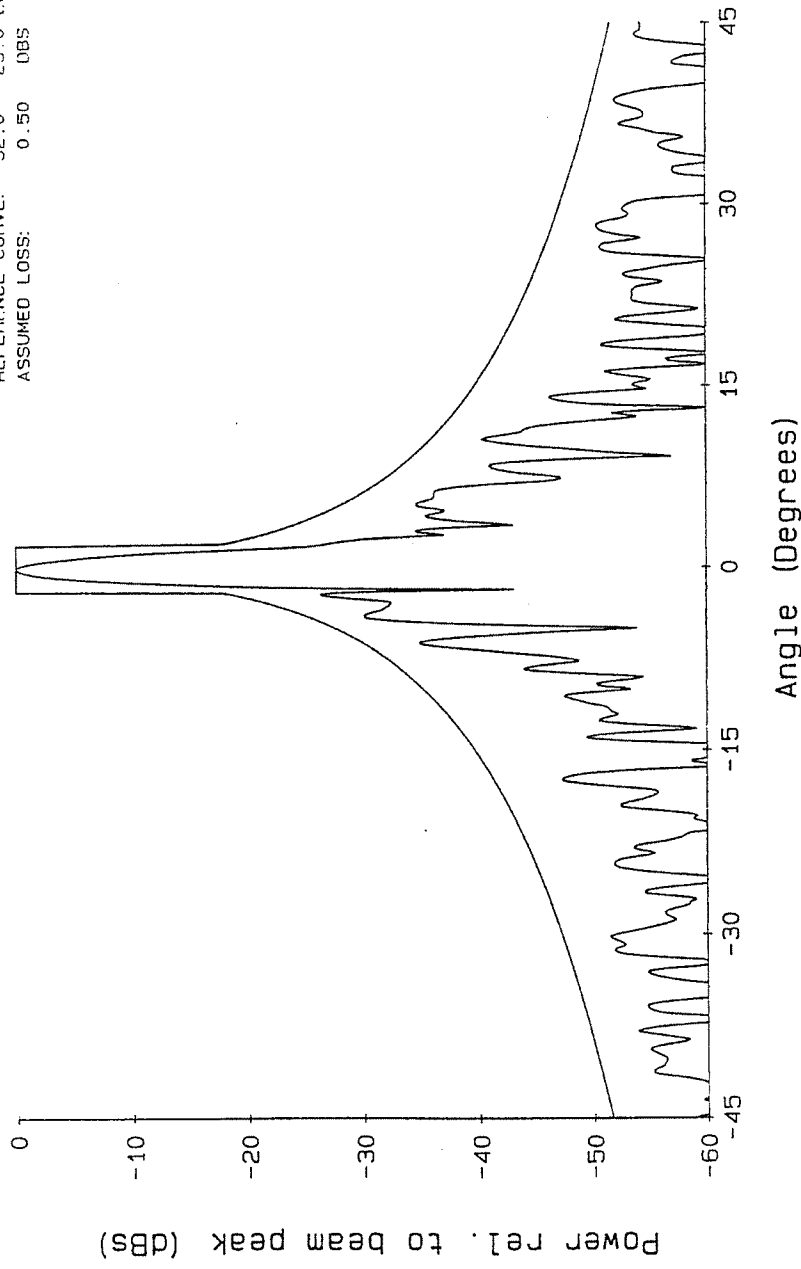
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHz
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 42.8 DBS
 3 DB BEAMWIDTH: 1.33 DEG.
 POLARIZATION: LUDWIG 3 LH CIRCULAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



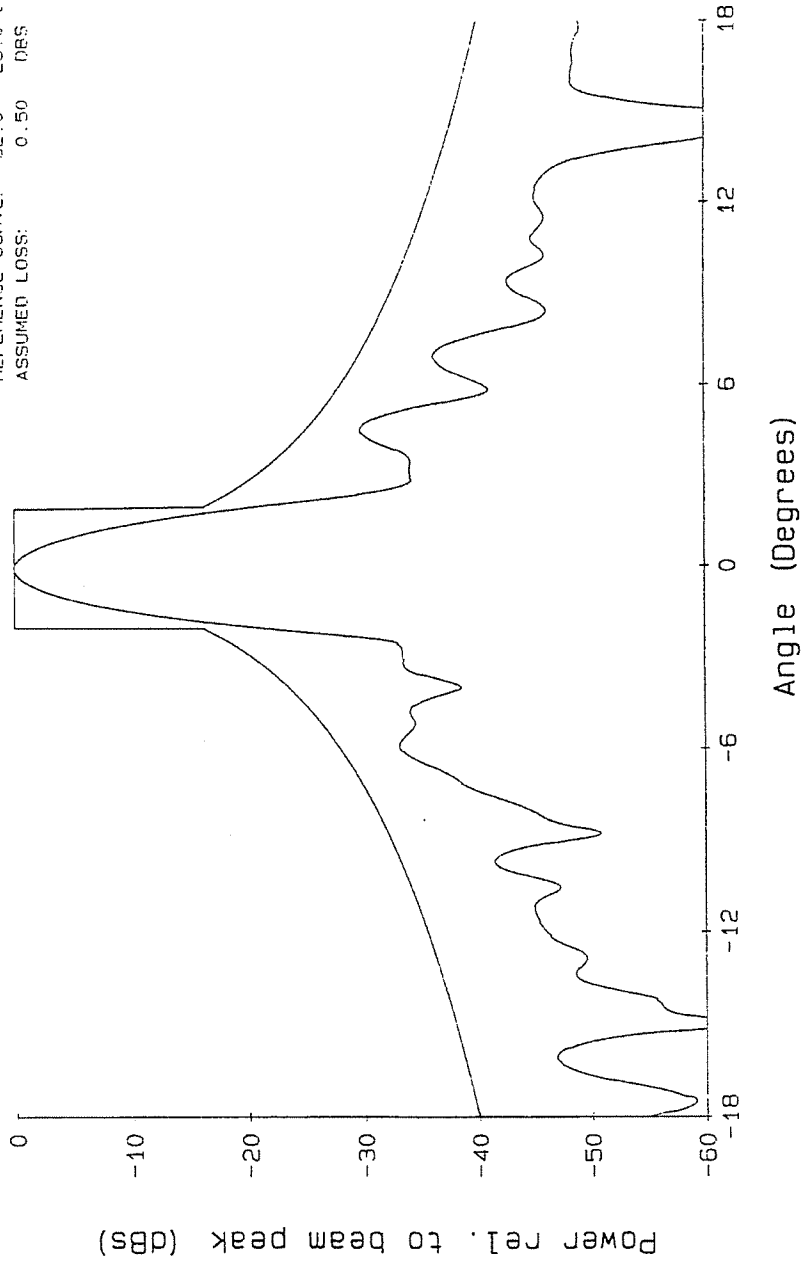
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 42.8 DBS
 3 dB BEAMWIDTH: 1.35 DEG.
 POLARIZATION: LUDWIG 3 LH CIRCULAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



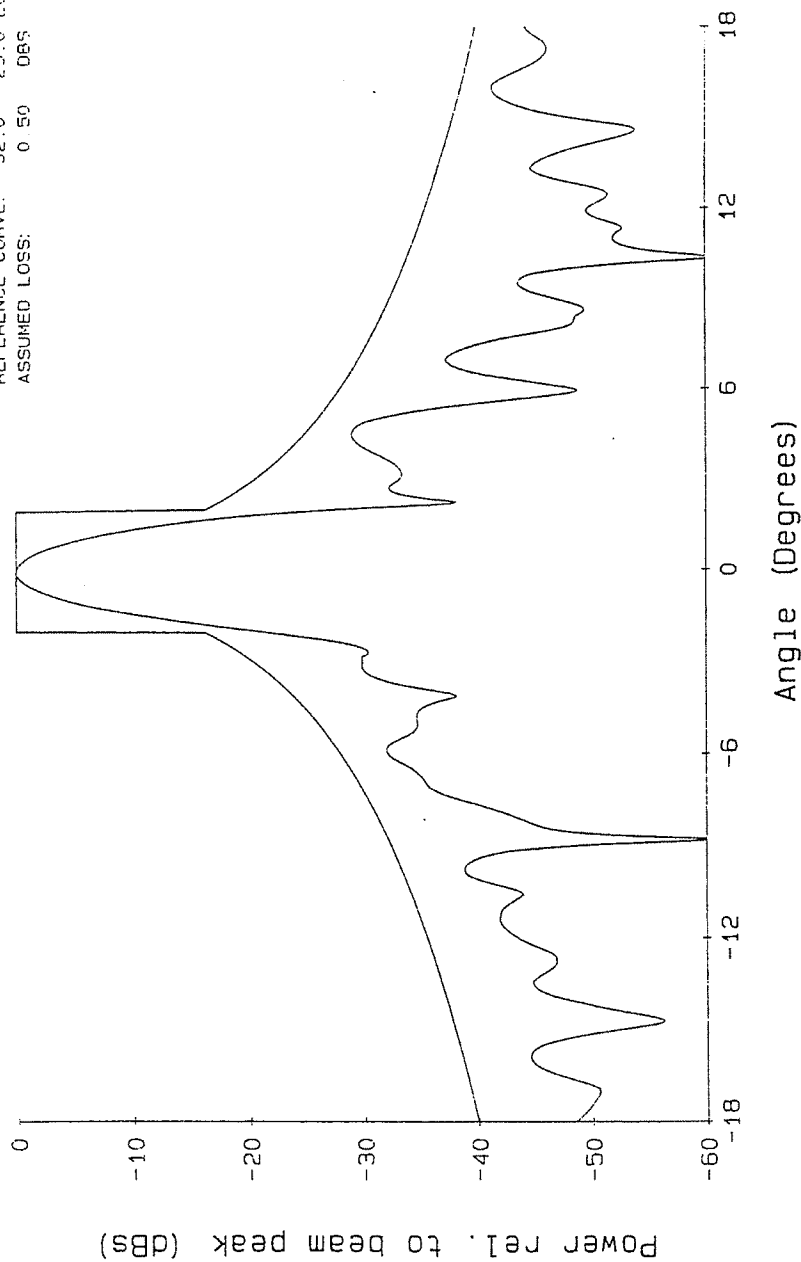
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.650 GHz
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 41.1 DBS
 3 DB BEAMWIDTH: 1.65 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



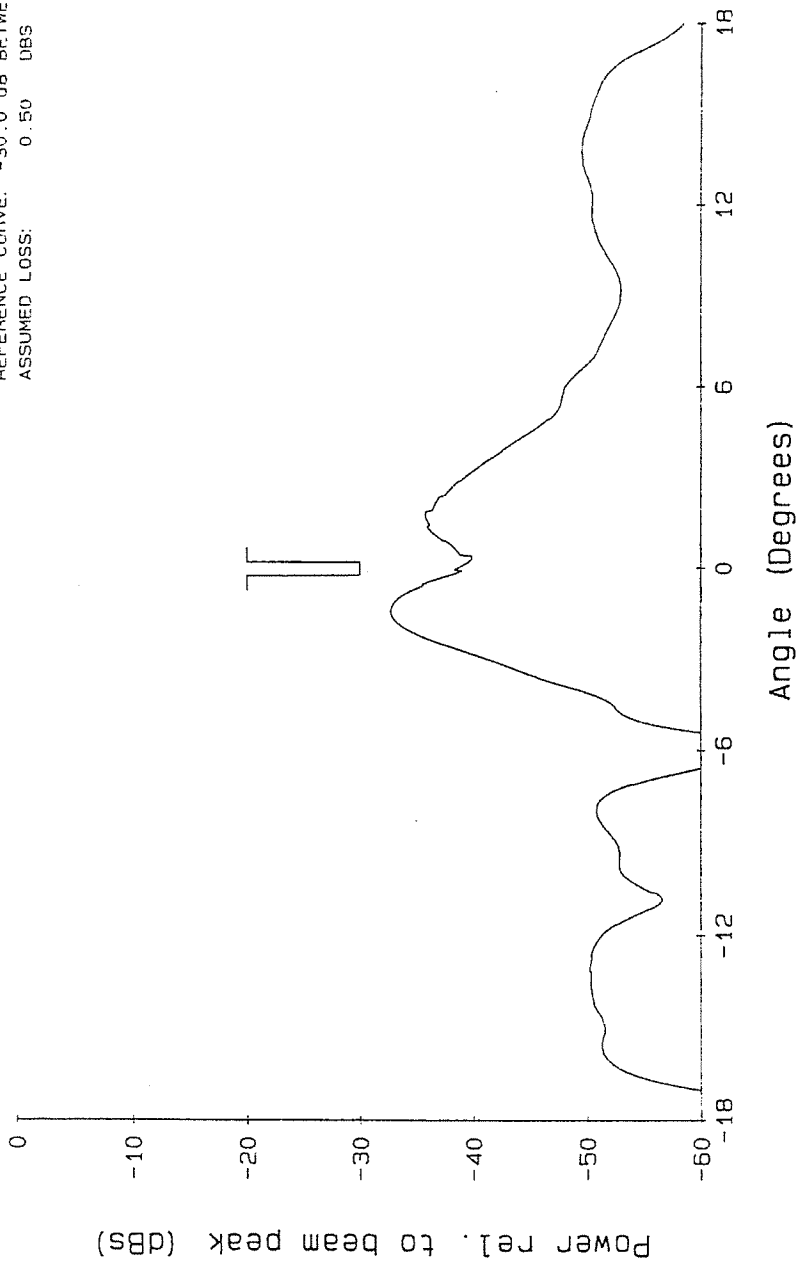
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.850 GHZ
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 41.1 DBS
3 DB BEAMWIDTH: 1.58 DEG.
POLARIZATION: LUDWIG 3 LINEAR COPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.50 DBS



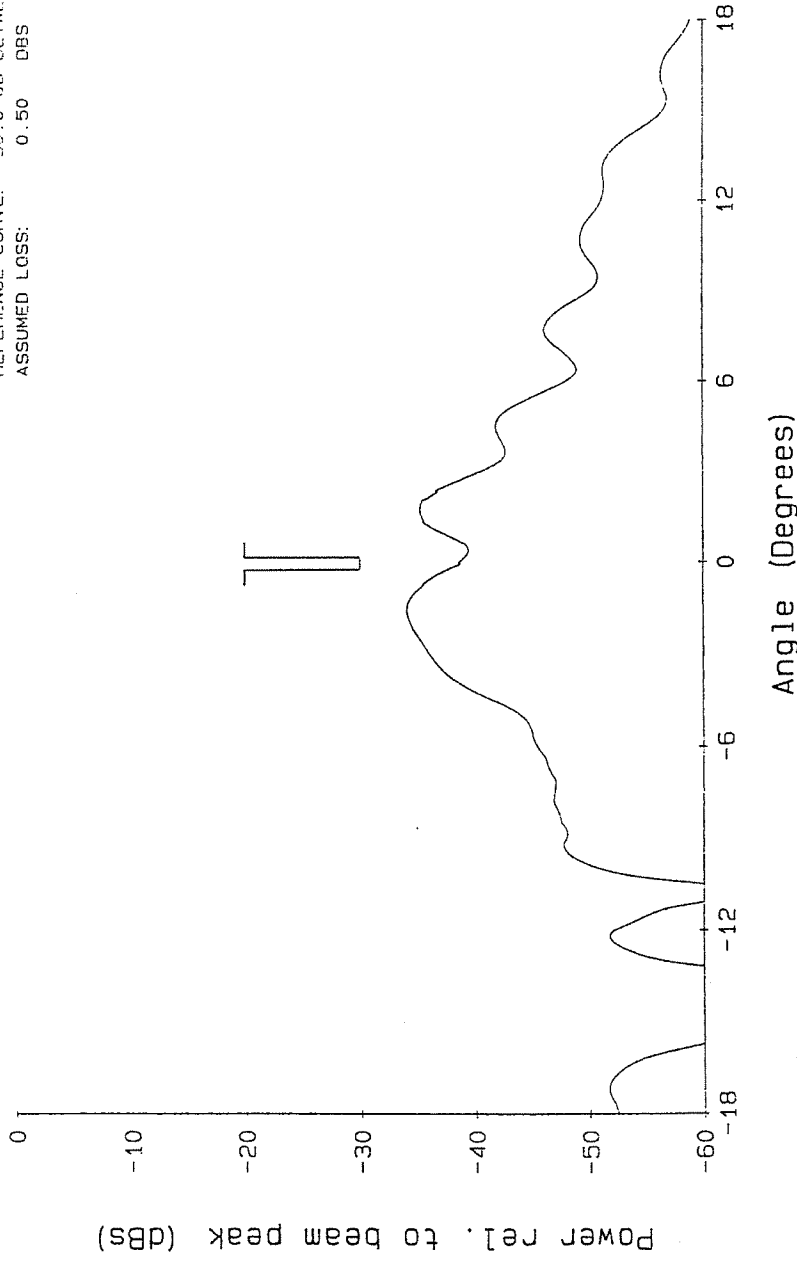
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.950 GHZ
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 8.3 DBS
 3 DB BEAMWIDTH: 1.81 DEG.
 POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DFG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -30.0 dB BETWEEN -0.2 dB POINTS
 ASSUMED LOSS: 0.50 DBS



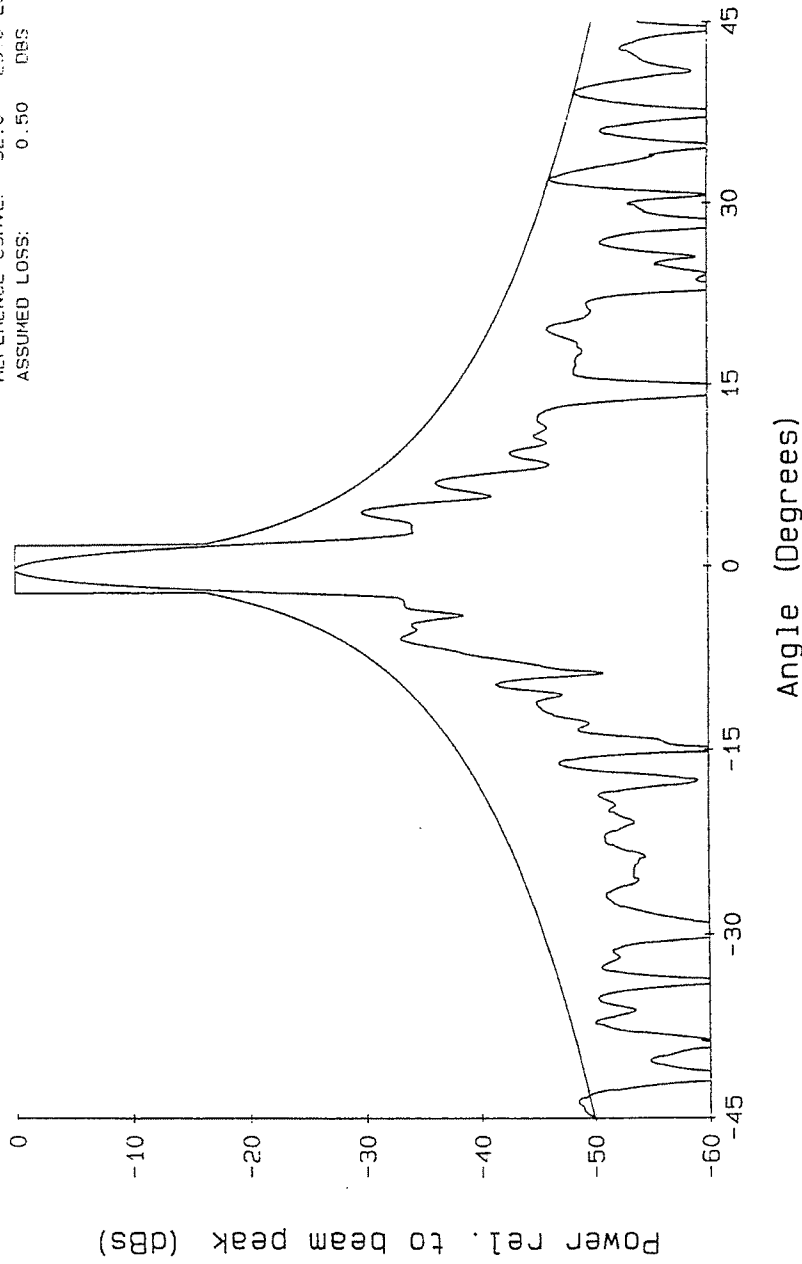
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.850 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 7.0 DBS
 3 DB BEAMWIDTH: 3.15 DEG.
 POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
 EULER ANGLES: 0.00 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -30.0 dB BETWEEN -0.2 dB POINTS
 ASSUMED LOSS: 0.50 DBS



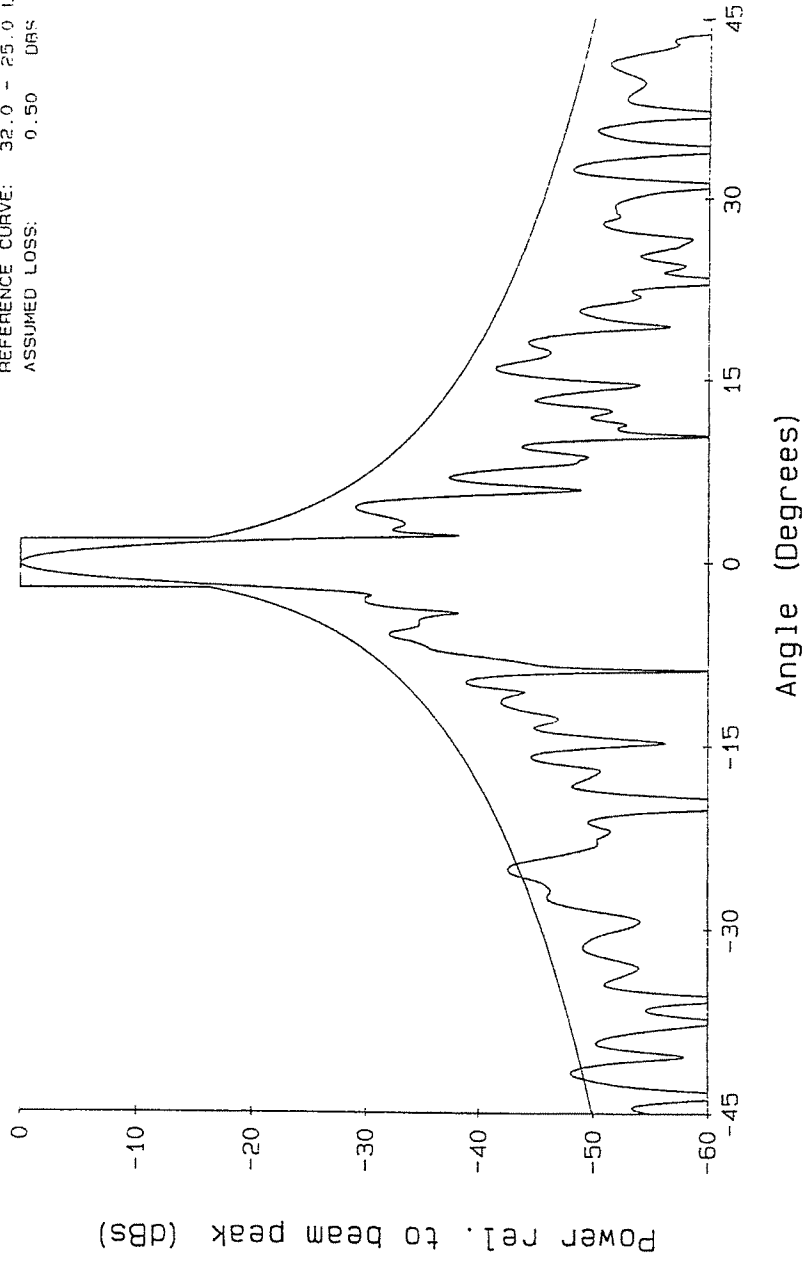
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.850 GHz
ANGLE OF CUT: 0.00 DEG.
DIRECTIVE GAIN: 41.1 DBS
3 DB BEAMWIDTH: 1.65 DEG
POLARIZATION: LUDWIG 3 LINEAR COPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: 32.0 - 25.0 LOG THEIA
ASSUMED LOSS: 0.50 DBS



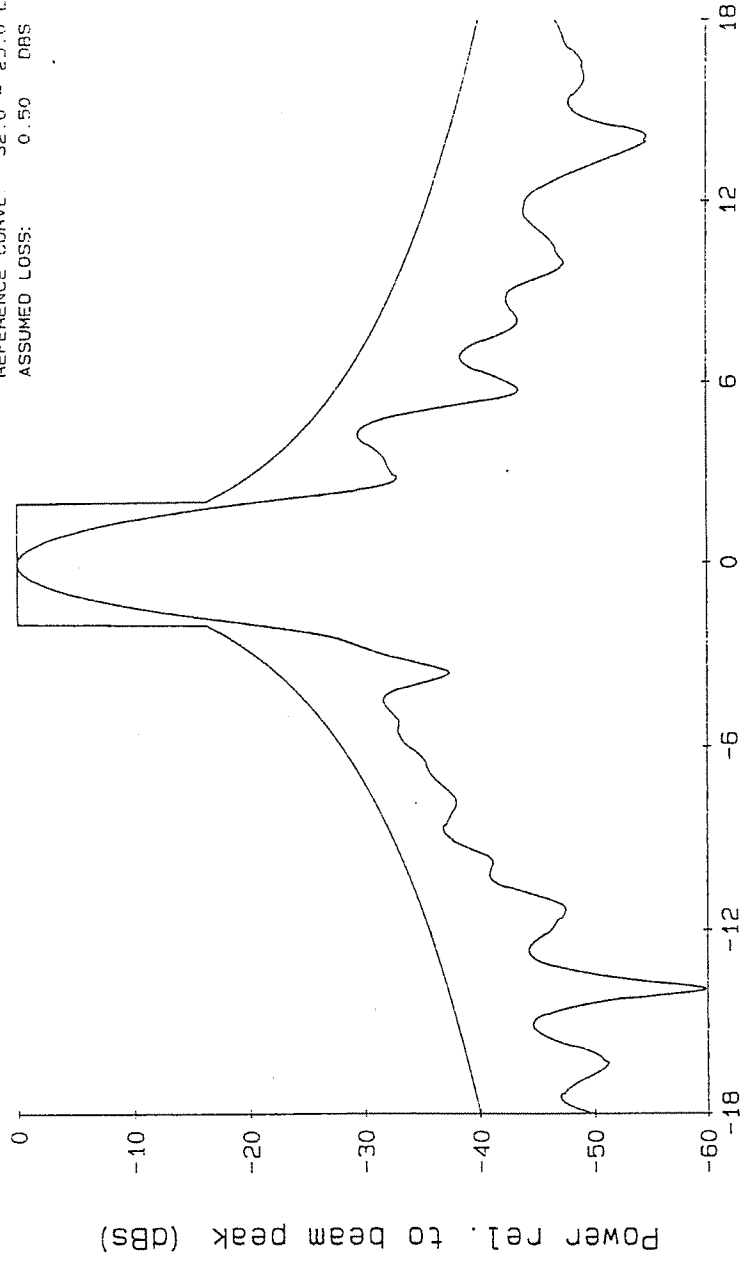
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.850 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 41.1 DBS
 3 DB BEAMWIDTH: 1.58 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DFG
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



CYLINDRICAL NEAR FIELD TEST FACILITY

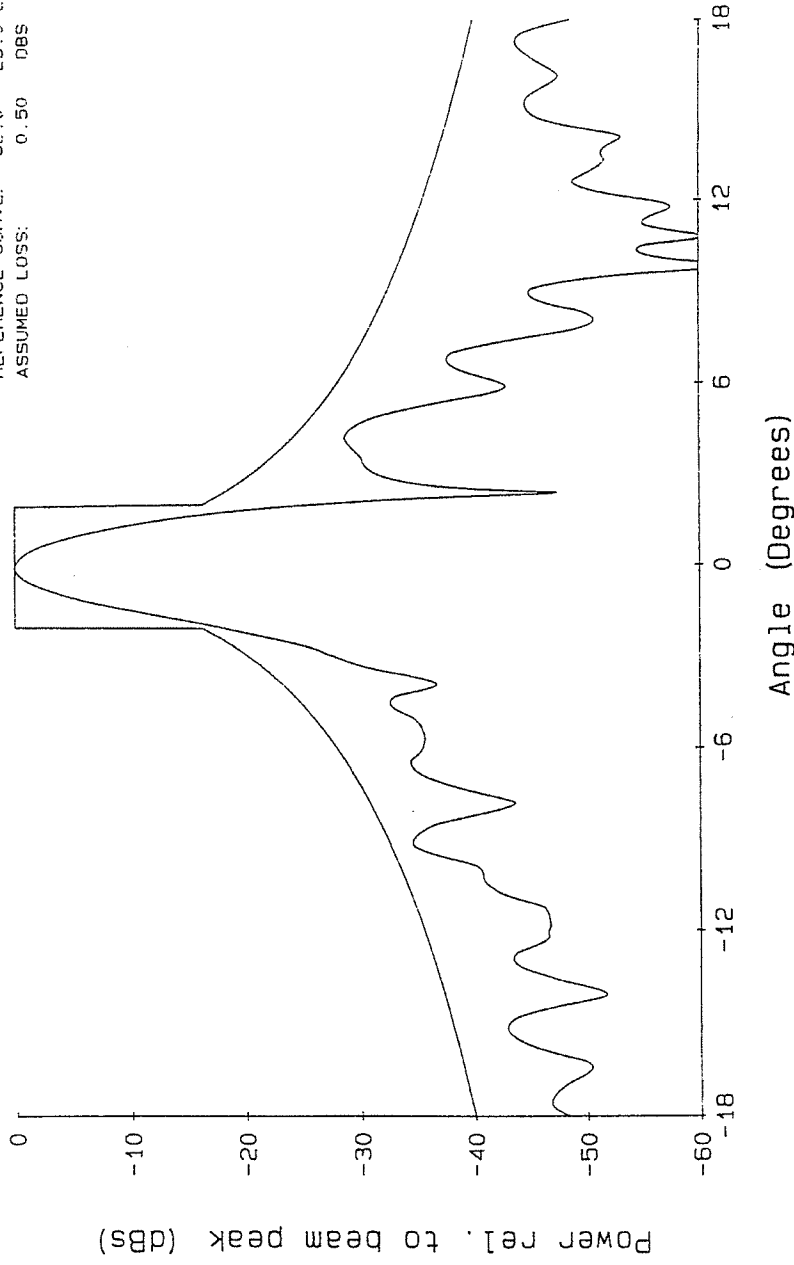
FREQUENCY: 6.152 GHz
ANGLE OF CUT: 0.00 DEG.
DIRECTIVE GAIN: 41.1 DBS
3 DB BEAMWIDTH: 1.62 DEG.
POLARIZATION: LUDWIG 3 LINEAR COPOLAR
EULER ANGLES: 0.00 0.00 0.00 DFG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: 32.0 -- 25.0 LOG THETA
ASSUMED LOSS: 0.50 DBS



Angle (Degrees)

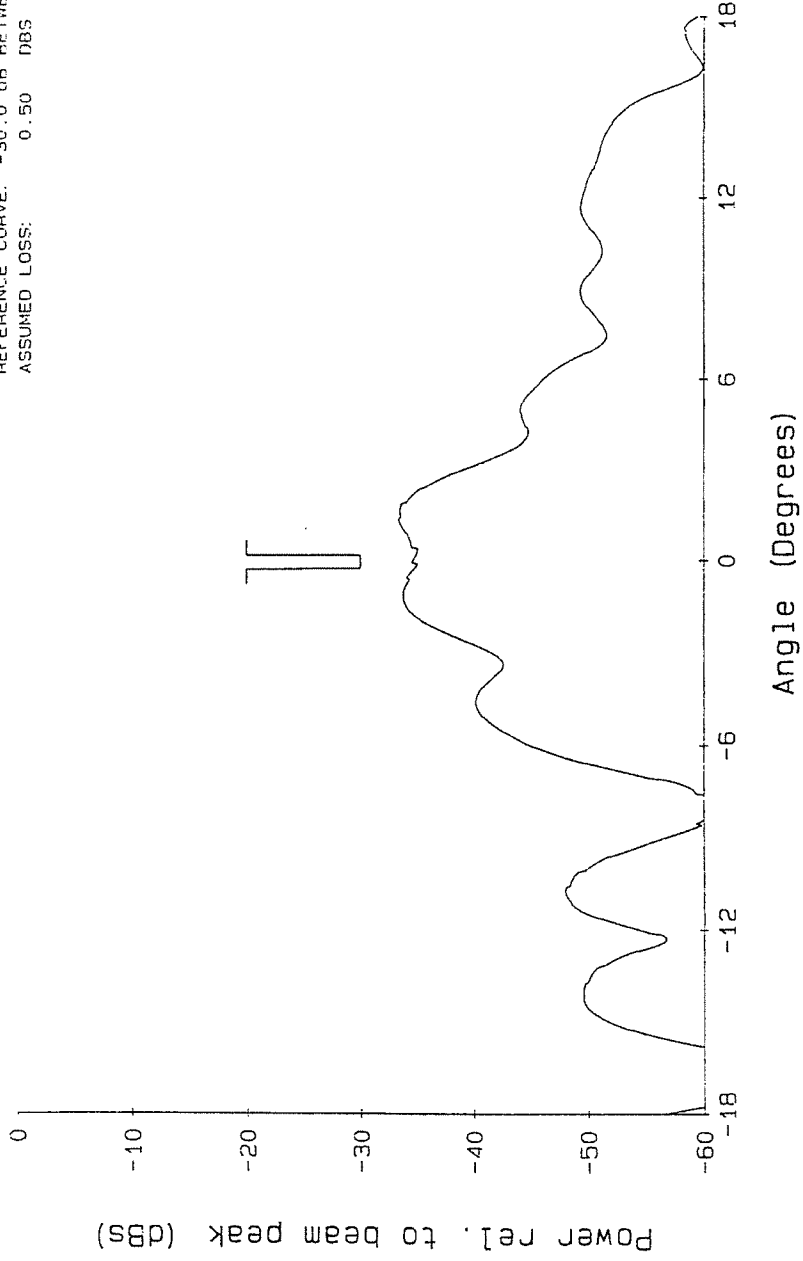
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 5.152 GHZ
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 41.1 DBS
3 dB BEAMWIDTH: 1.56 DEG.
POLARIZATION: LUDWIG 3 LINEAR COPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.50 DBS



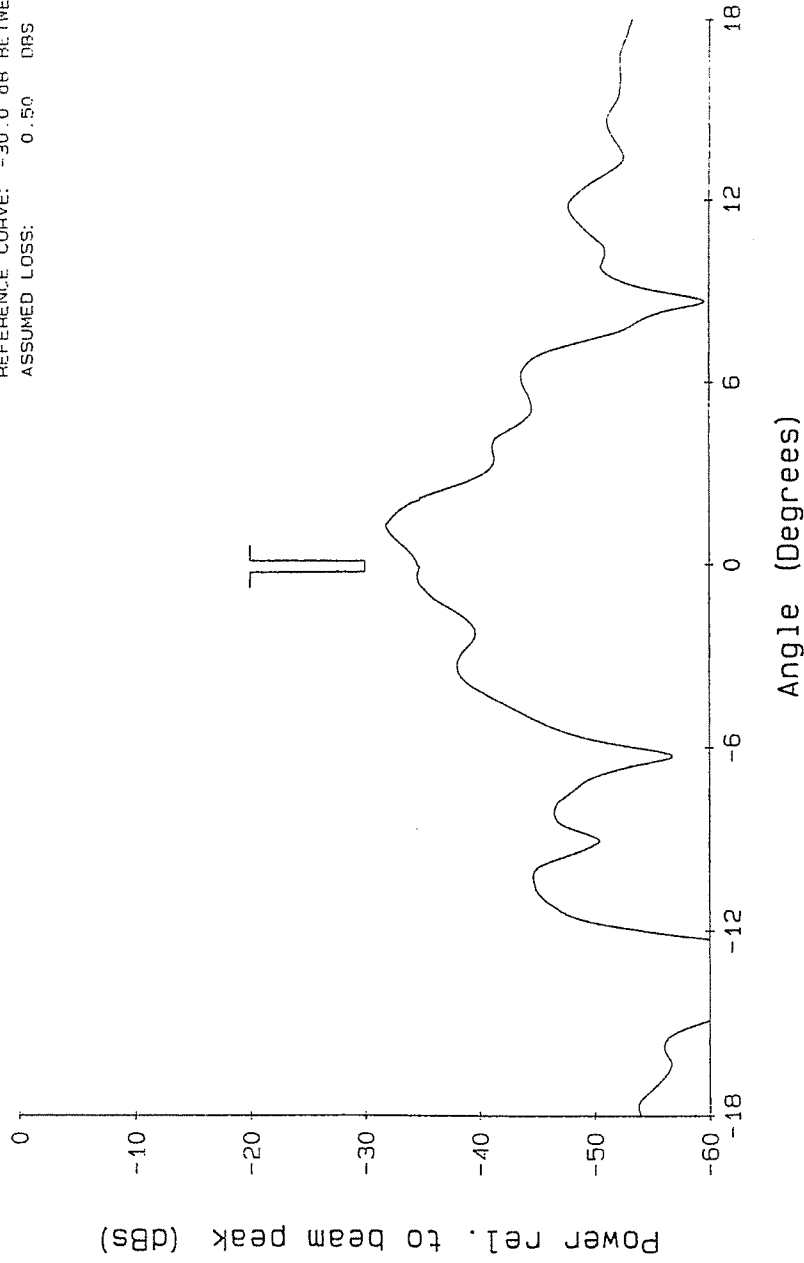
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.152 GHz
ANGLE OF CUT: 0.00 DEG.
DIRECTIVE GAIN: 7.7 DBS
3 dB BEAMWIDTH: 4.69 DEG.
POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: -30.0 dB BETWEEN -0.2 dB POINTS
ASSUMED LOSS: 0.50 DBS



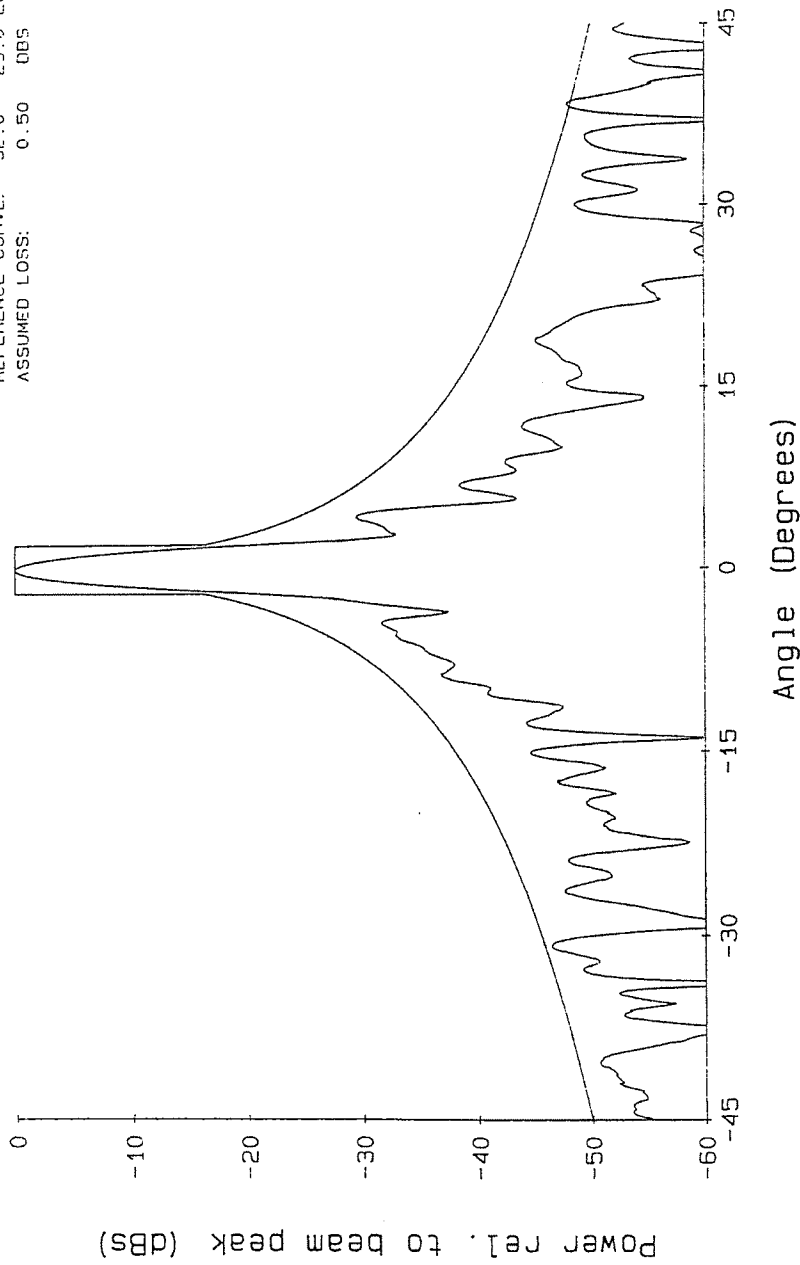
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.152 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 9.2 DBS
 3 DB BEAMWIDTH: 2.87 DEG.
 POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -30.0 dB RETWEEN -0.2 dB POINTS
 ASSUMED LOSS: 0.50 DBS



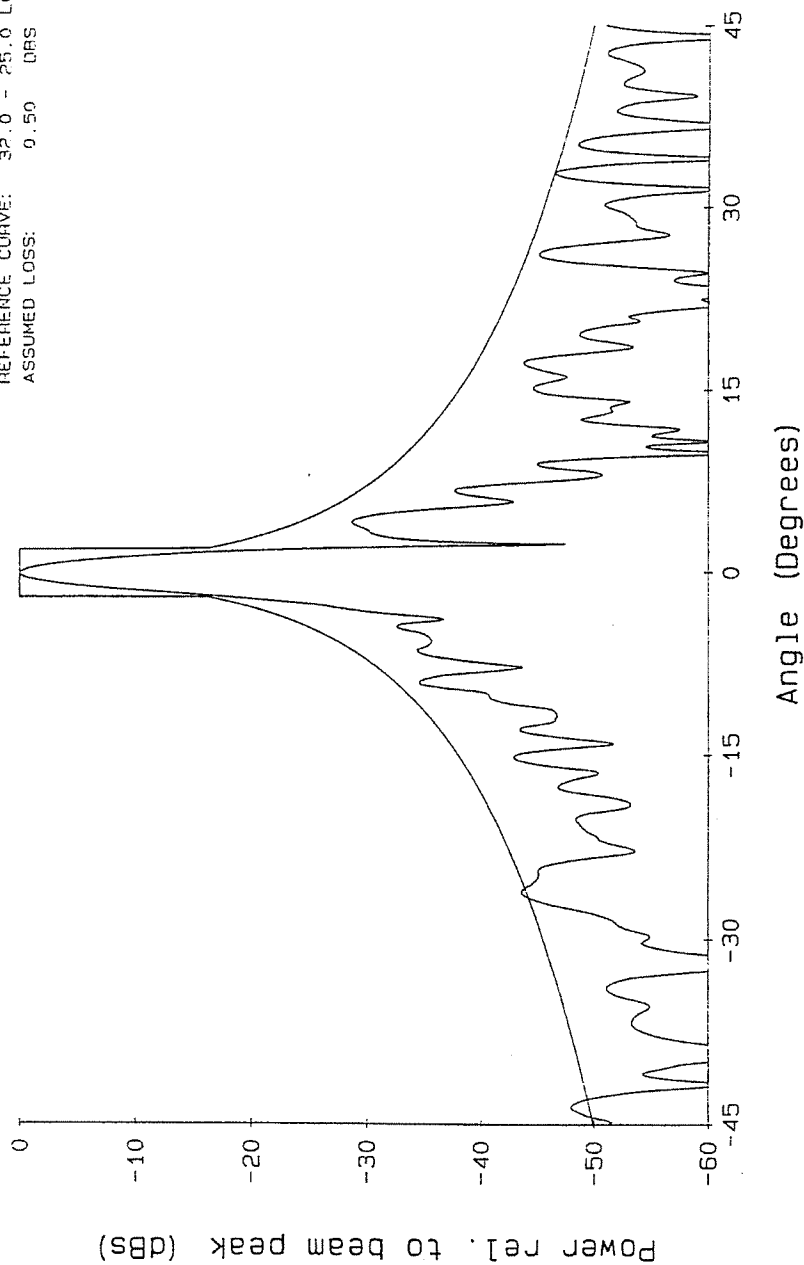
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.152 GHz
ANGLE OF CUT: 0.00 DEG.
DIRECTIVE GAIN: 41.1 DBS
3 DB BEAMWIDTH: 1.62 DEG.
POLARIZATION: LUDMIG 3 LINEAR COPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG
POL REF ANGLES: 0.00 0.00 0.00 DEG
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.50 DBS



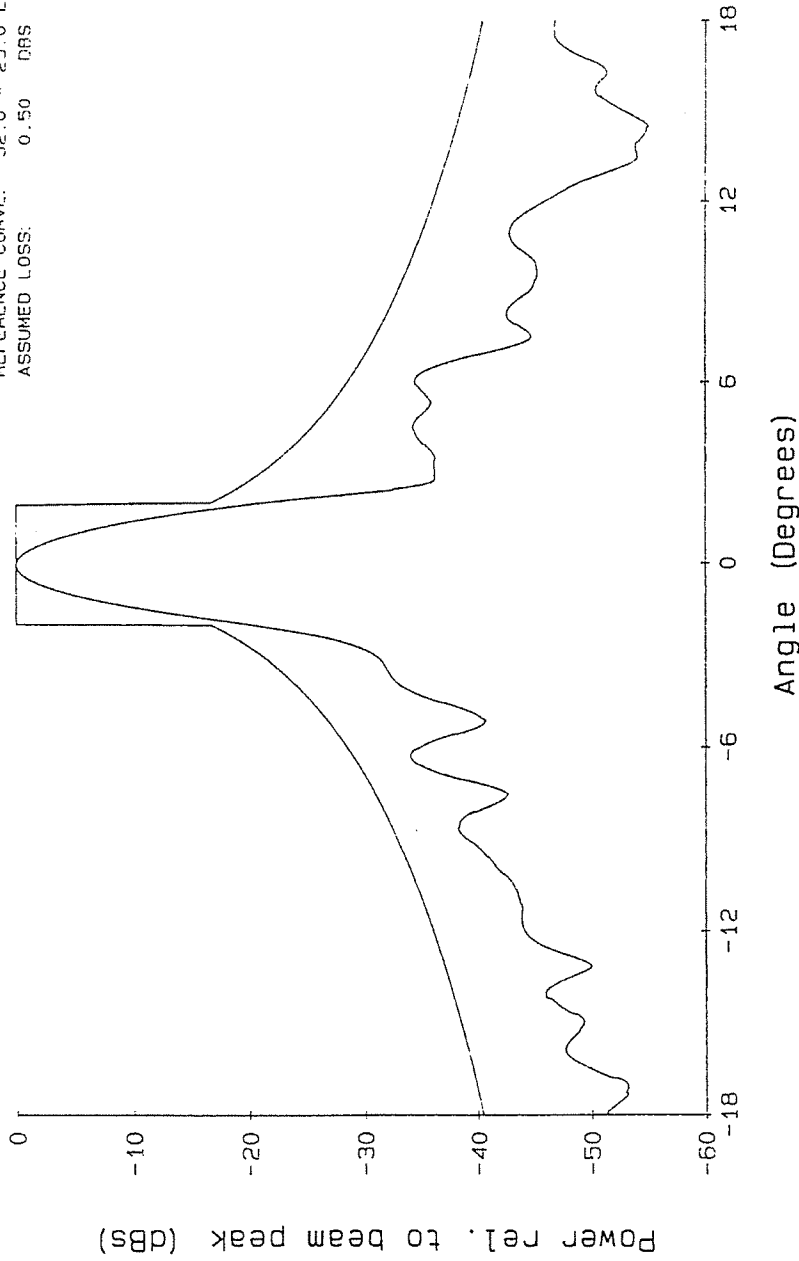
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.152 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 41.1 DBS
 3 DB BEAMWIDTH: 1.56 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



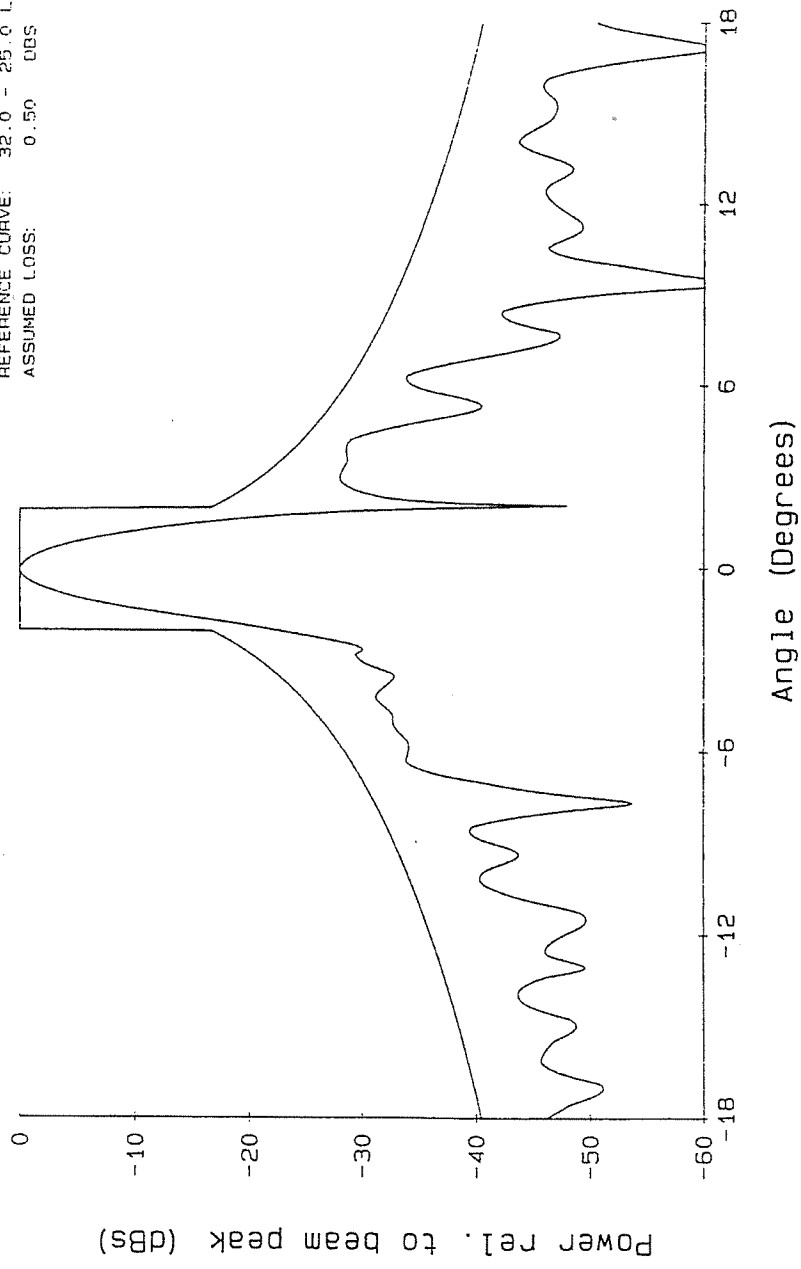
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHz
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 41.6 DBS
 3 DB BEAMWIDTH: 1.60 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG
 REFERENCE CURVE: 32.0 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



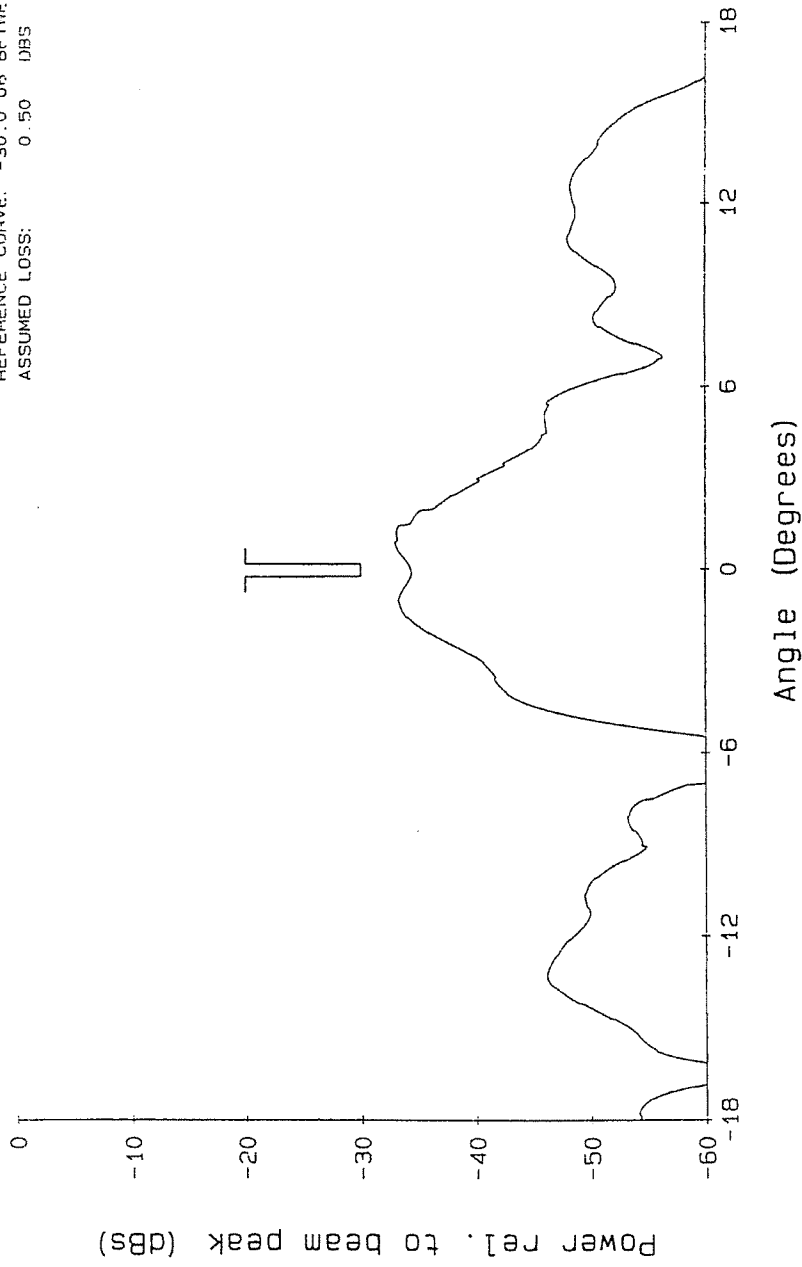
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHZ
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 41.6 DBS
3 DB BEAMWIDTH: 1.43 DEG.
POLARIZATION: LUDWIG 3 LINEAR COPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.50 DBS



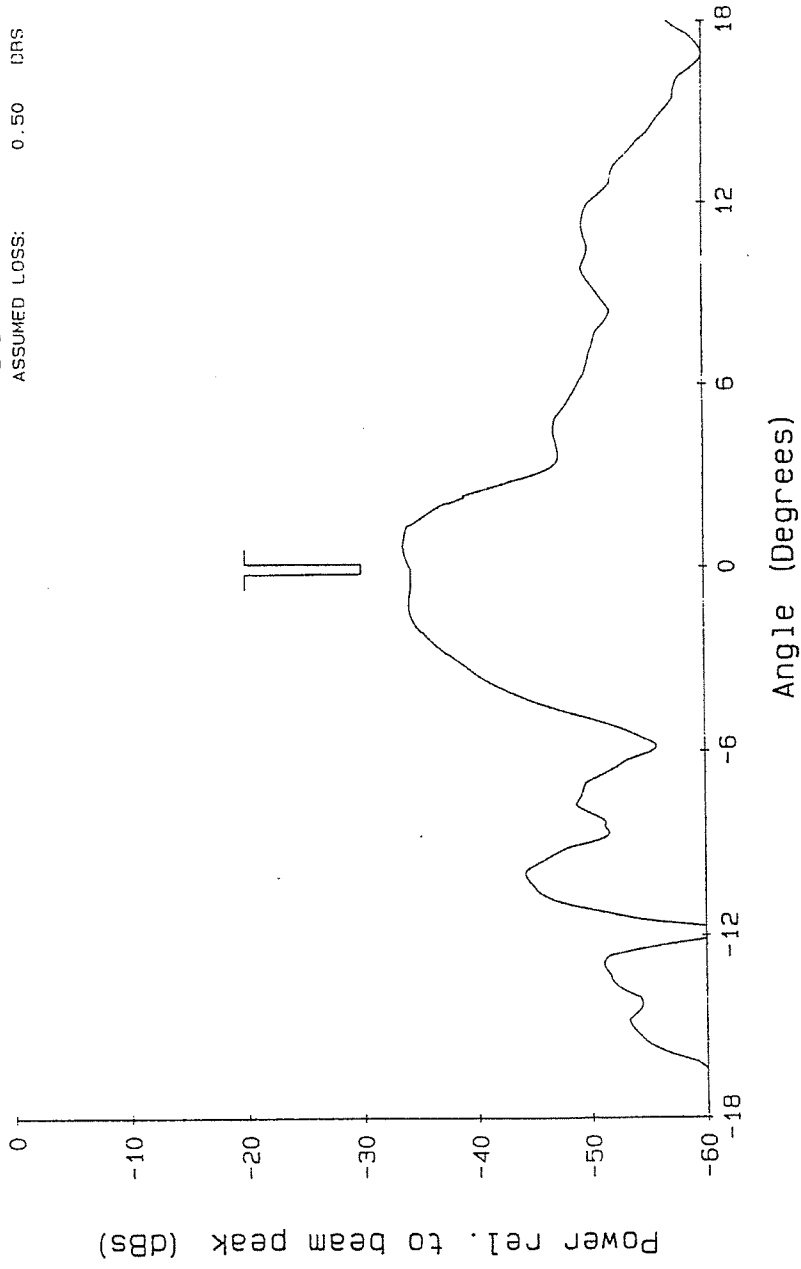
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHz
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 8.6 DBS
 3 dB BEAMWIDTH: 4.03 DEG.
 POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -30.0 dB BETWEEN -0.2 dB POINTS
 ASSUMED LOSS: 0.50 DBS



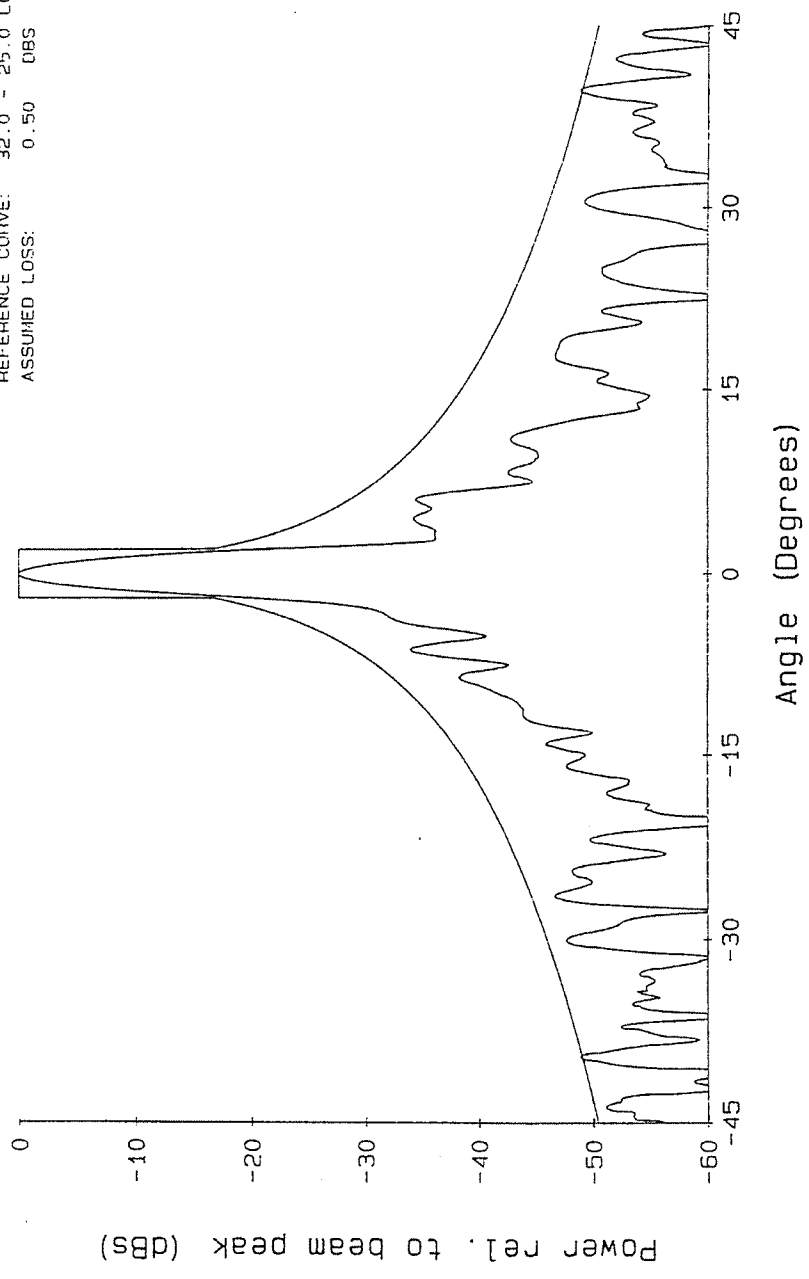
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 7.9 DBS
 3 DB BEAMWIDTH: 4.56 DEG.
 POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -30.0 DB BETWEEN -0.2 DB POINTS
 ASSUMED LOSS: 0.50 DBS



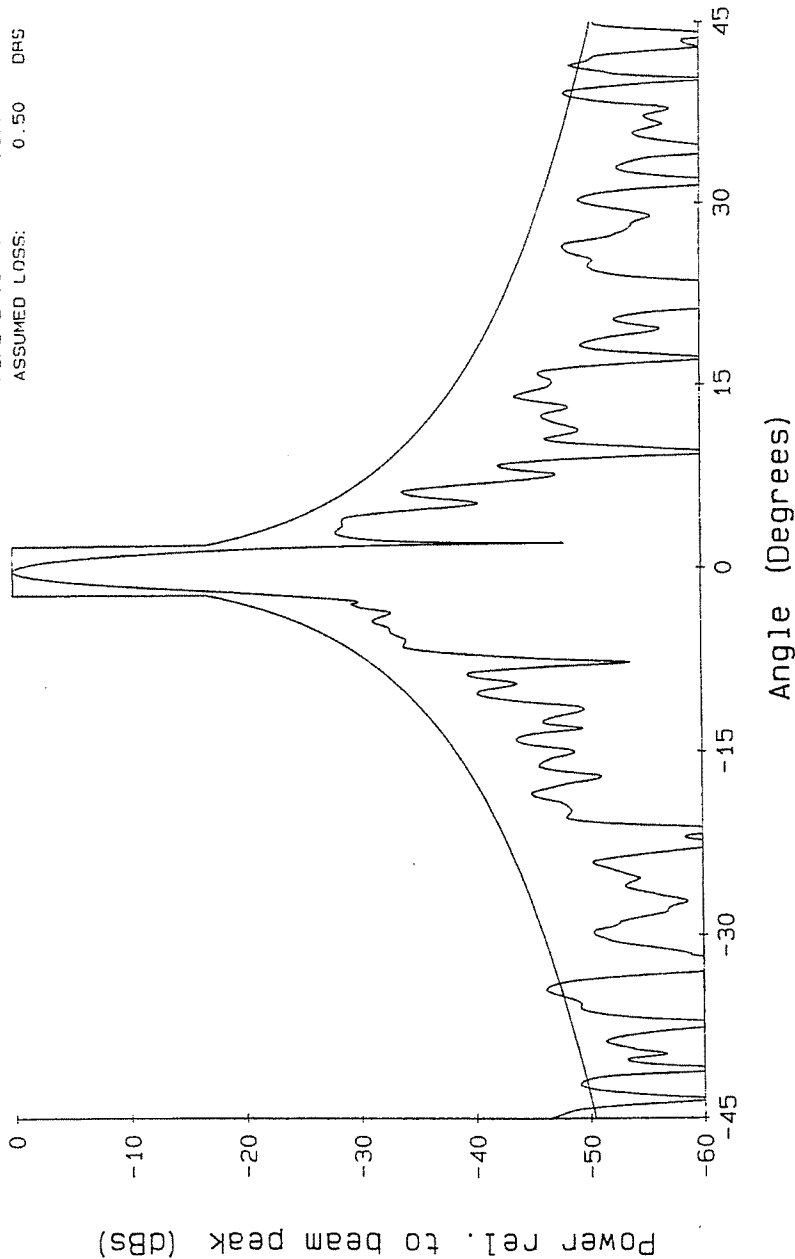
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHz
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 41.6 DBS
 3 DB BEAMWIDTH: 1.60 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG 11E1A
 ASSUMED LOSS: 0.50 DBS



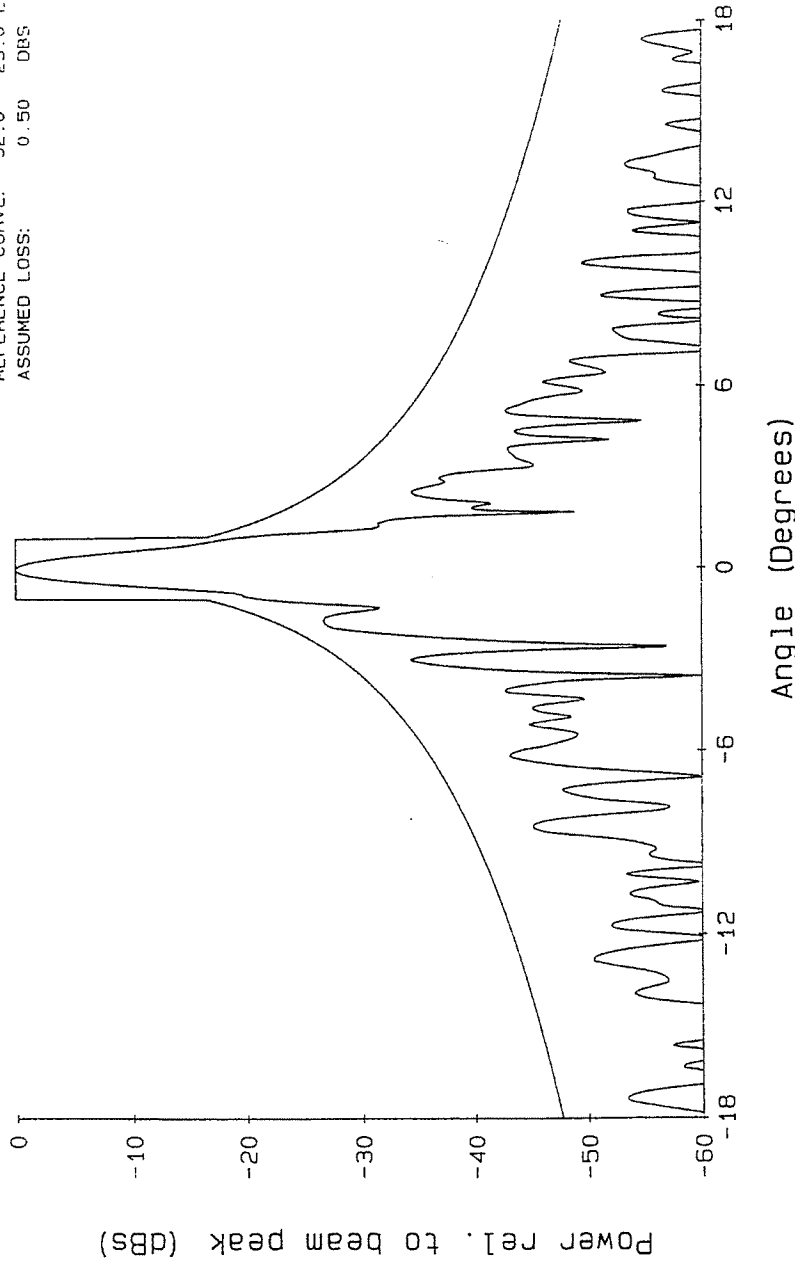
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 6.650 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 41.6 DBS
 3 DB BEAMWIDTH: 1.43 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPLANAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG
 REFERENCE CURVE: 32.0 - 25.0 LDR THETA
 ASSUMED LOSS: 0.50 DBS



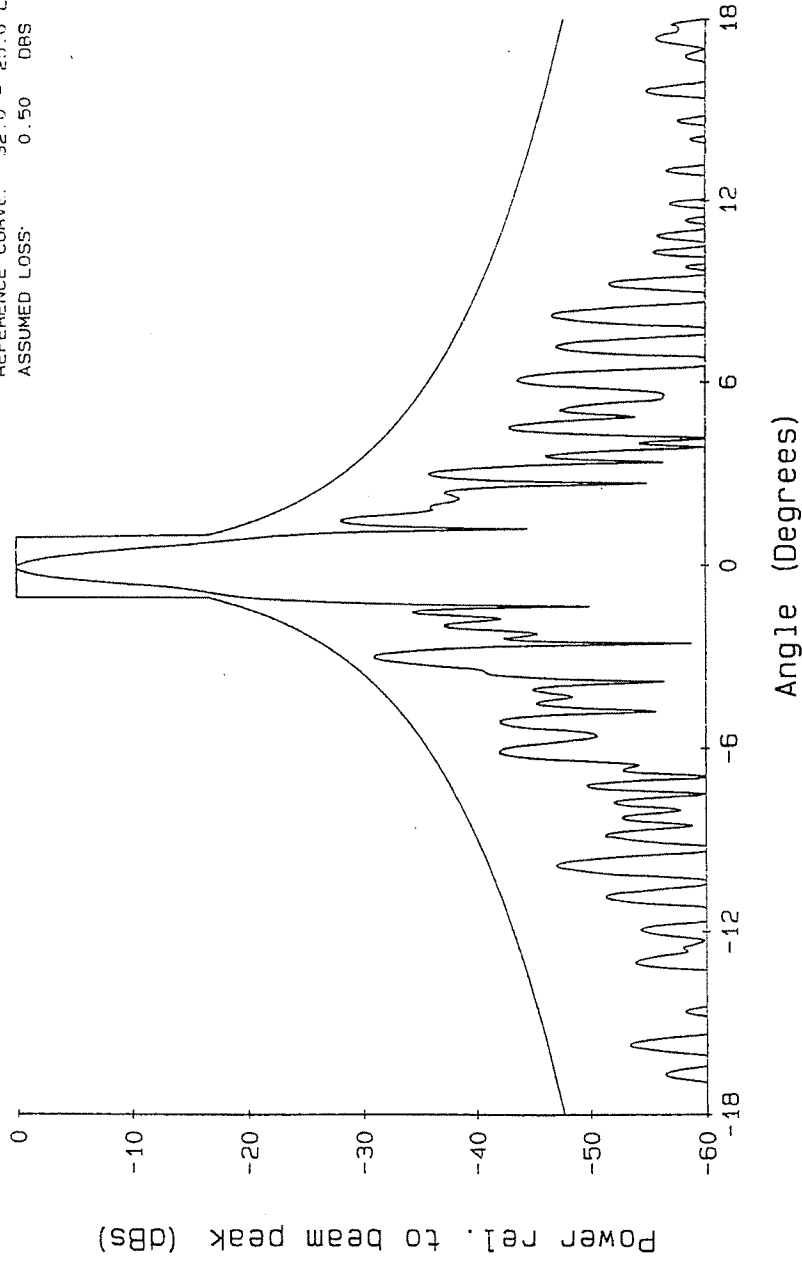
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 13.750 GHz
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 49.8 DBS
 3 DB BEAMWIDTH: 0.65 DEG
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



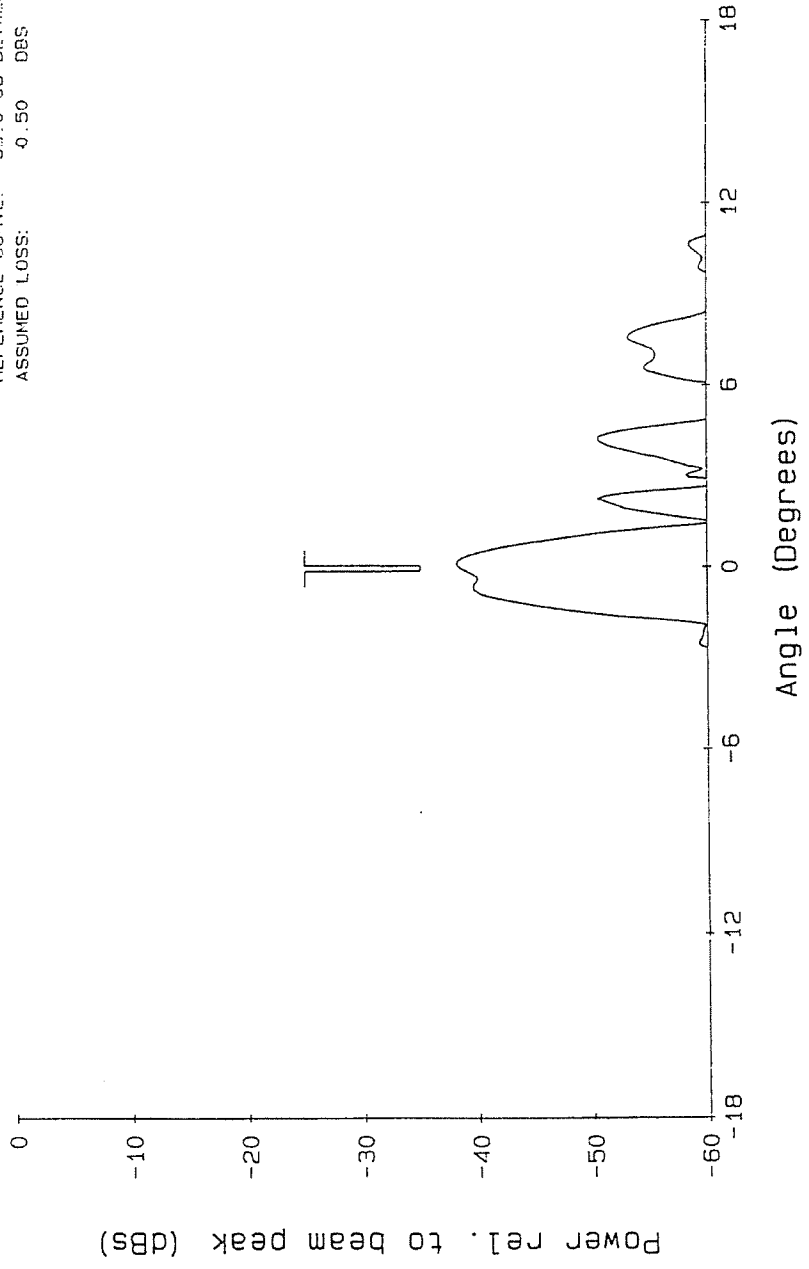
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 13.750 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 48.8 DBS
 3 DB BEAMWIDTH: 0.65 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



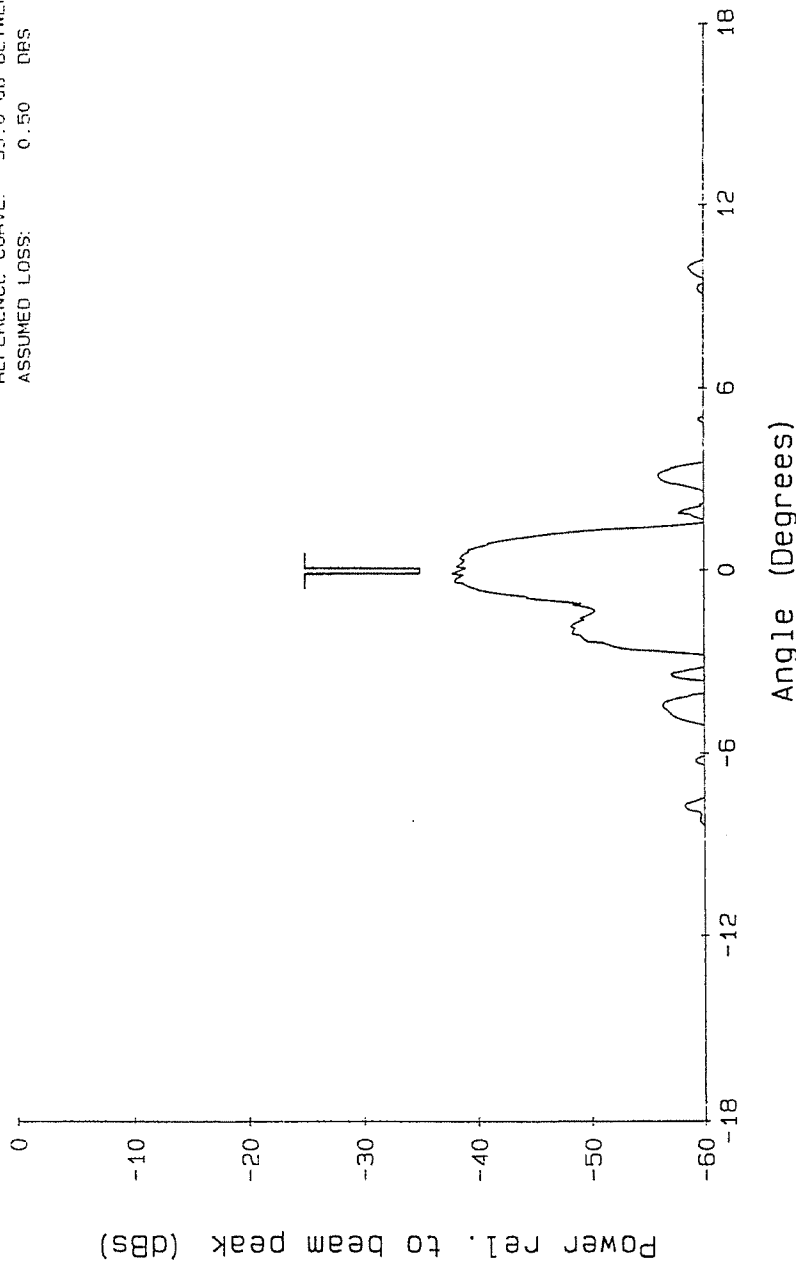
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 13.750 GHz
 ANGLE OF CUT: 0.00 DEG
 DIRECTIVE GAIN: 10.6 DBS
 3 DB BEAMWIDTH: 1.57 DEG.
 POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
 EULER ANGLES: 0.00 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -35.0 dB BETWEEN -0.2 dB POINTS
 ASSUMED LOSS: 0.50 DBS



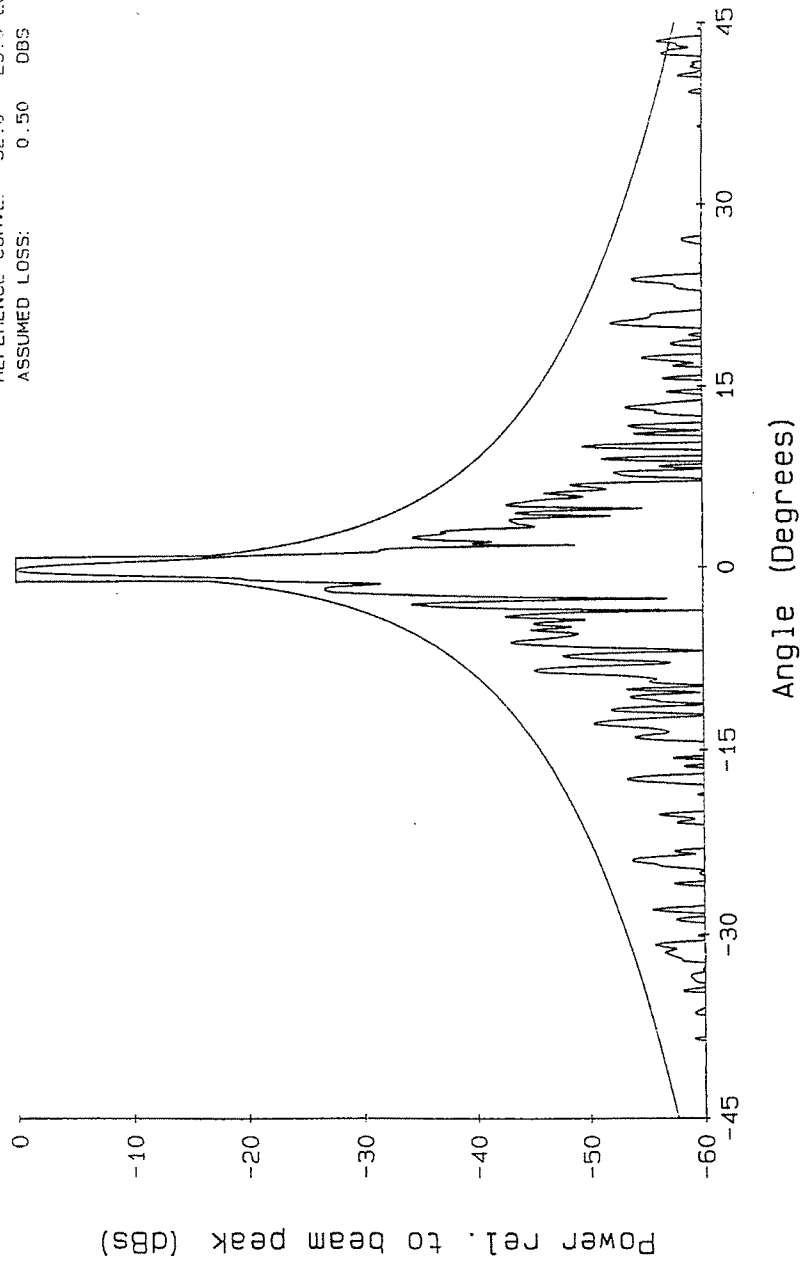
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 13.750 GHZ
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 10.9 DBS
3 dB BEAMWIDTH: 1.53 DEG.
POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG
REFERENCE CURVE: -35.0 dB BETWEEN --0.2 dB POINTS
ASSUMED LOSS: 0.50 DBS



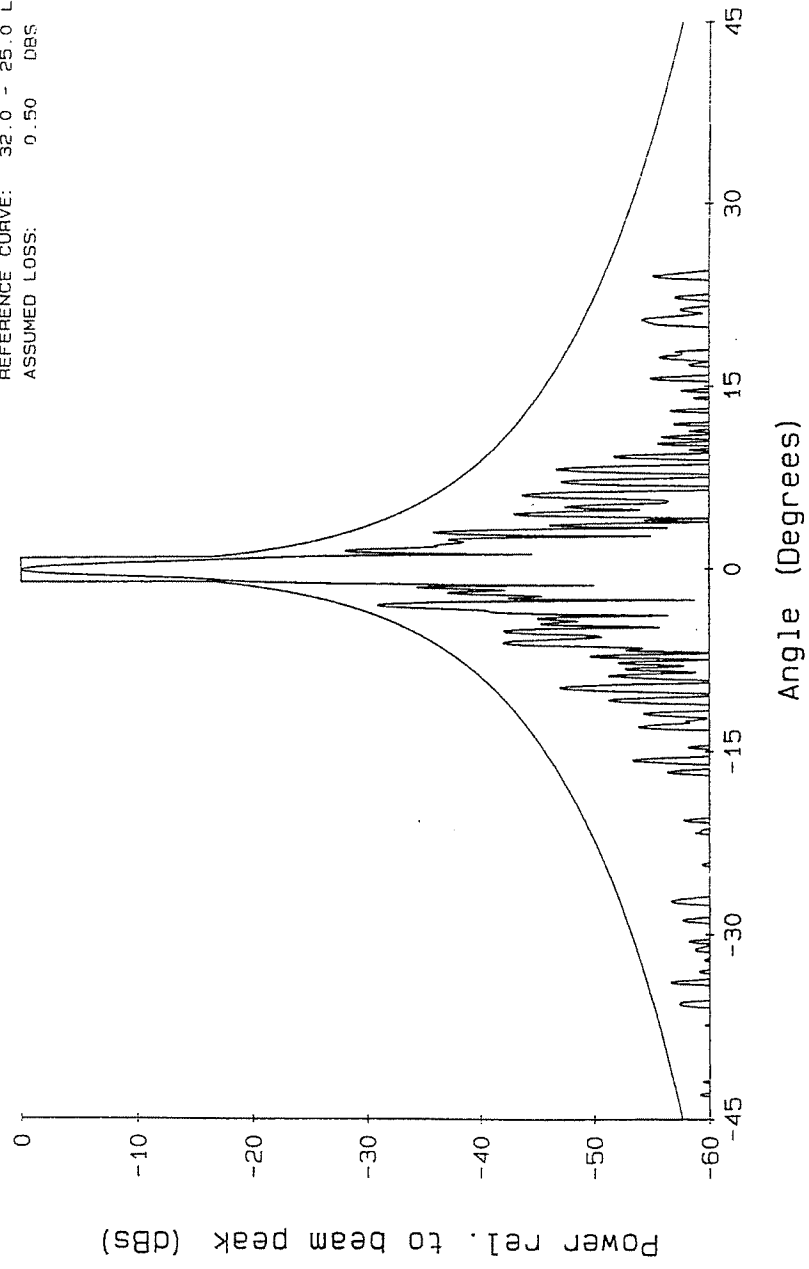
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 13.750 GHz
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 48.8 DBS
 3 DB BEAMWIDTH: 0.65 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



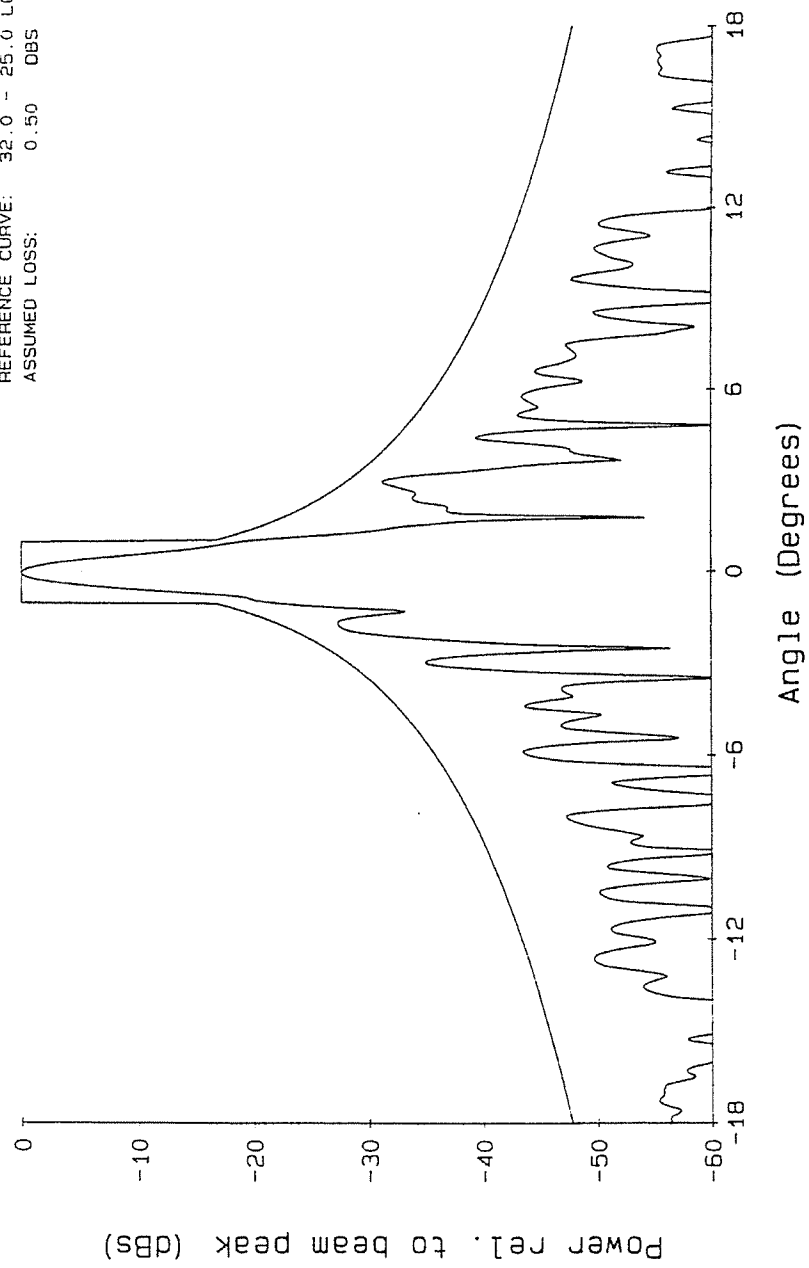
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 13.750 GHz
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 48.8 DBS
3 DB BEAMWIDTH: 0.65 DEG.
POLARIZATION: LUDWIG 3 LINEAR COPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.50 DBS



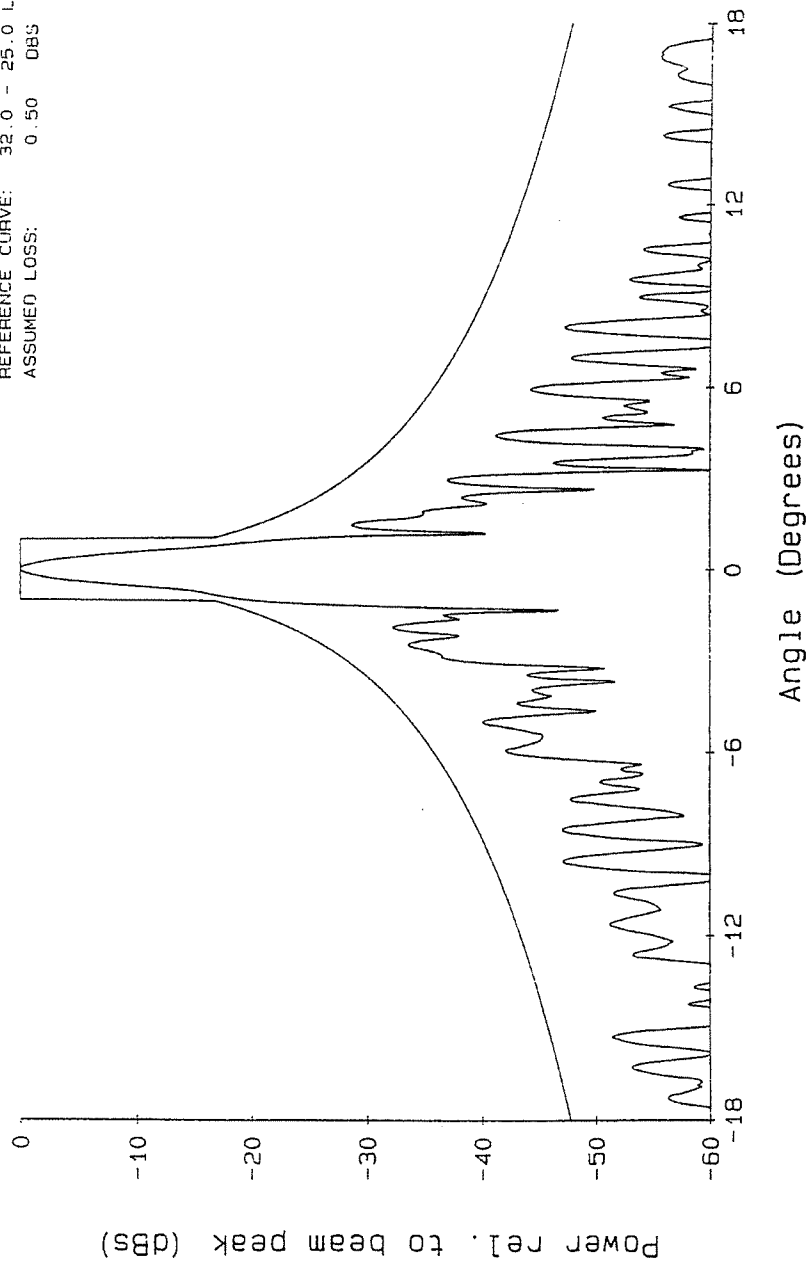
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.125 GHZ
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 48.9 DBS
 3 DB BEAMWIDTH: 0.65 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



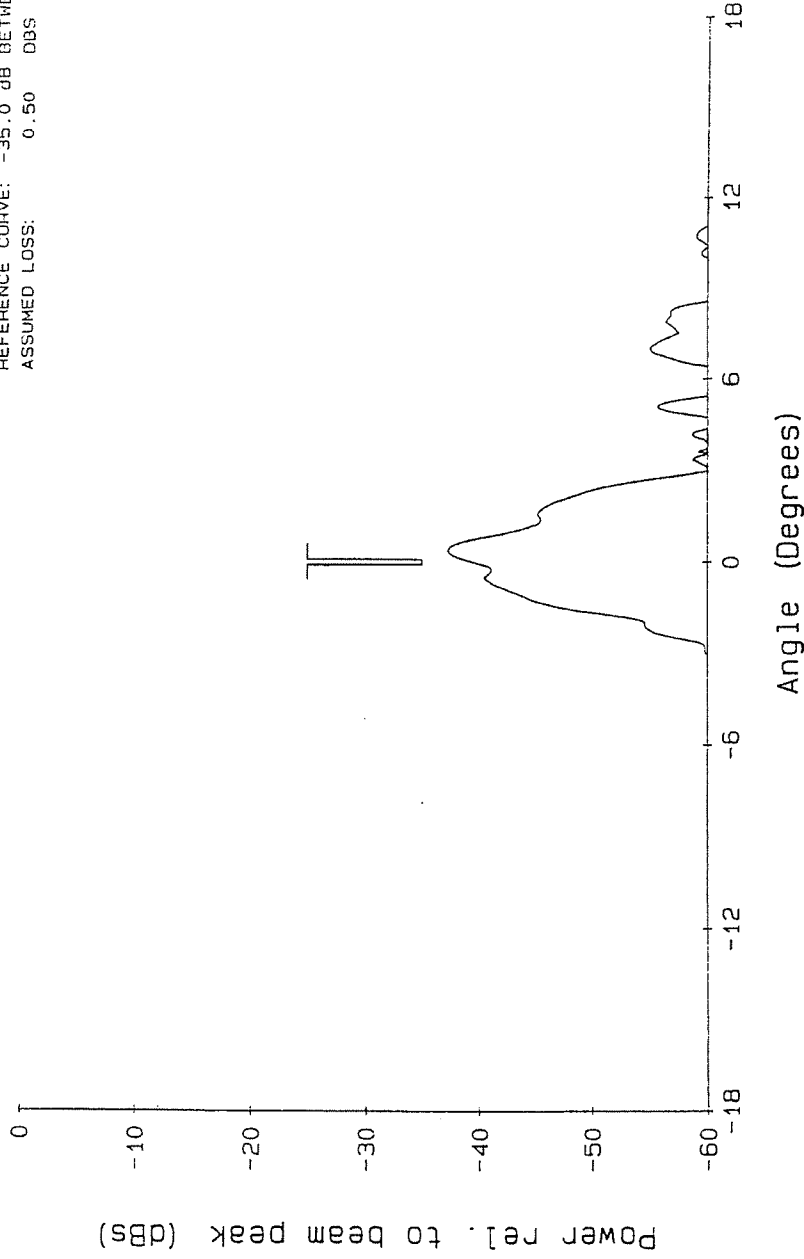
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.125 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 48.9 DBS
 3 DB BEAMWIDTH: 0.63 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPO: AR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



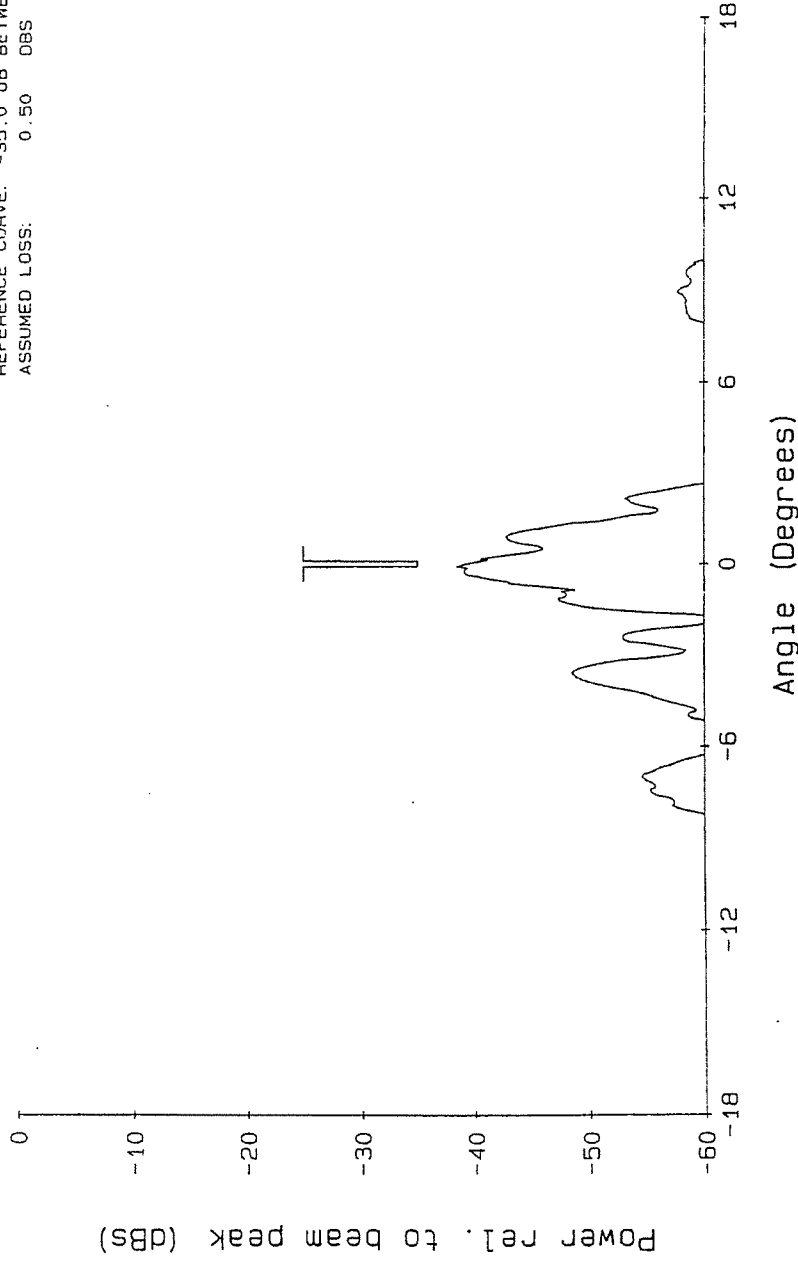
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.125 GHZ
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 11.5 DBS
 3 DB BEAMWIDTH: 0.89 DEG.
 POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -35.0 dB BETWEEN -0.2 dB POINTS
 ASSUMED LOSS: 0.50 DBS



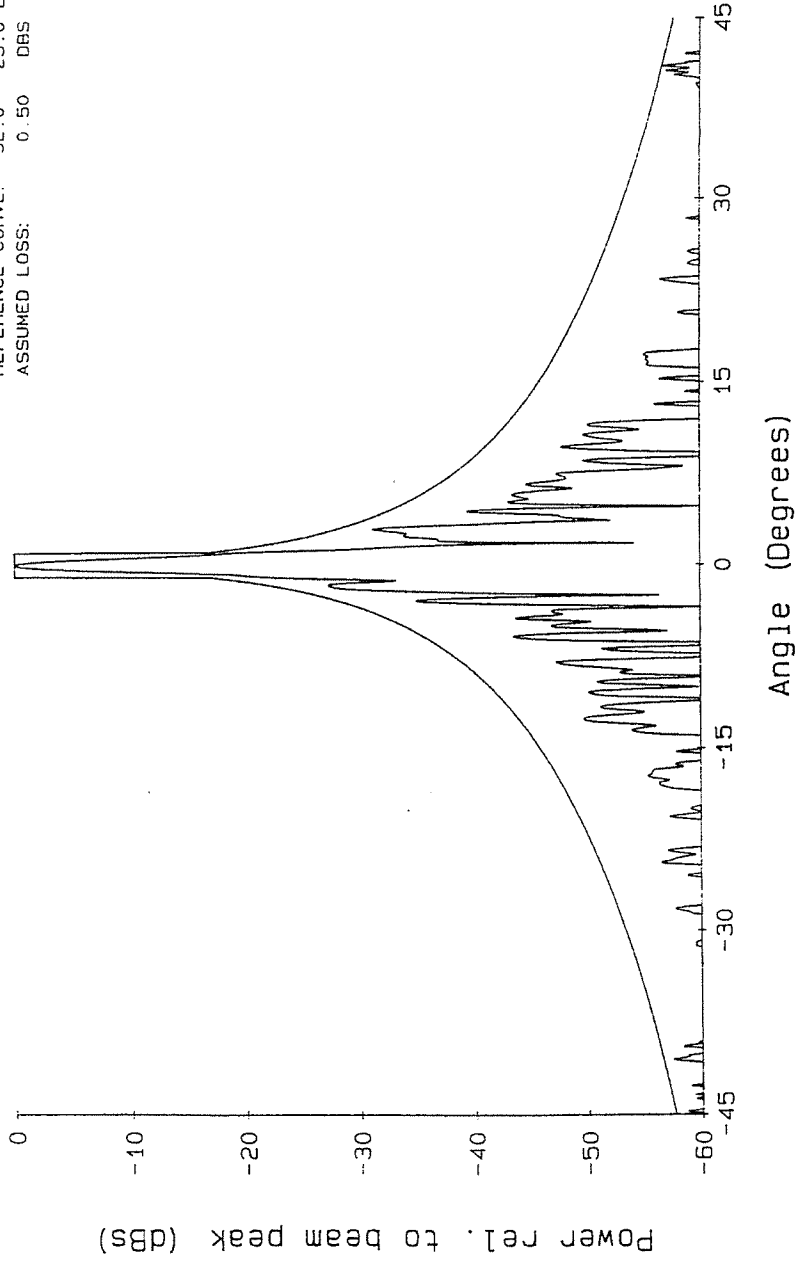
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.125 GHz
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 10.3 DBS
3 DB BEAMWIDTH: 0.74 DEG.
POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: -35.0 dB BETWEEN -0.2 dB POINTS
ASSUMED LOSS: 0.50 DBS



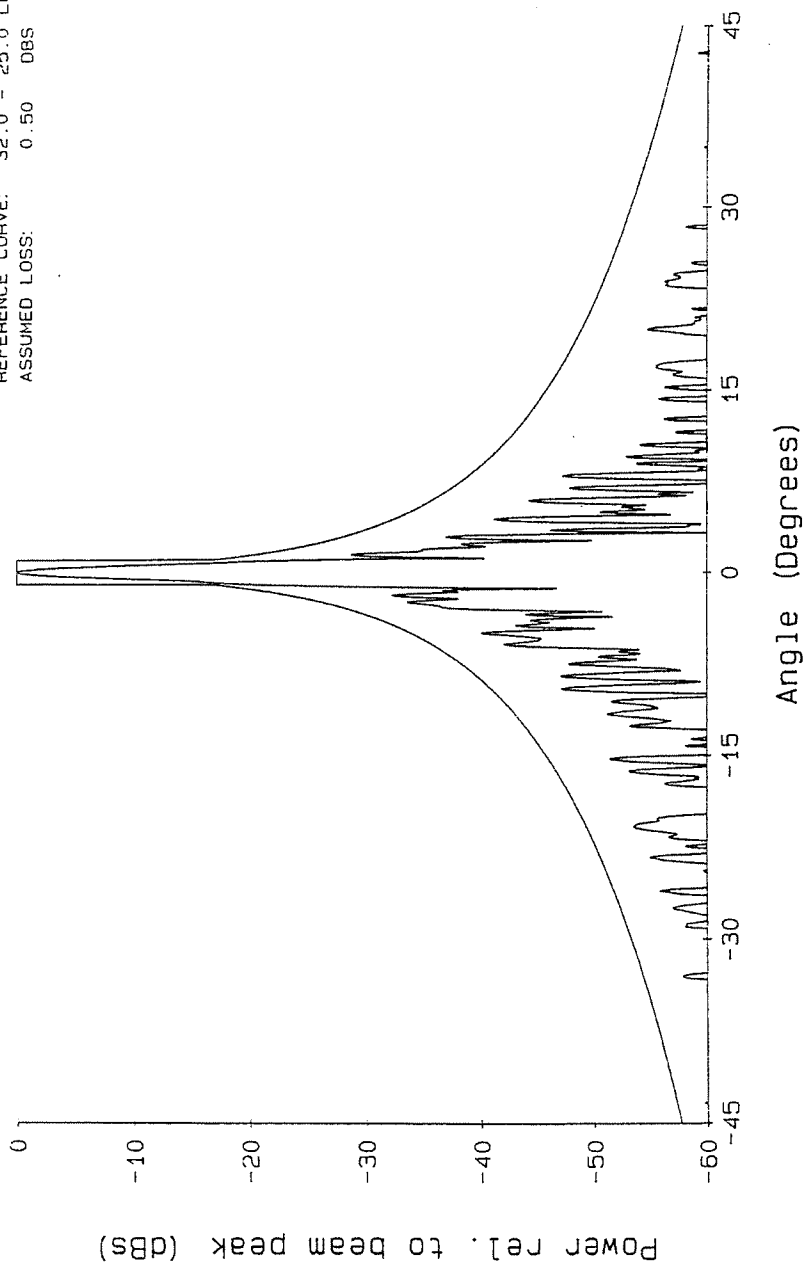
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.125 GHz
ANGLE OF CUT: 0.00 DEG
DIRECTIVE GAIN: 48.9 DBS
3 DB BEAMWIDTH: 0.65 DEG
POLARIZATION: LUDWIG 3 LINEAR COPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG
POL REF ANGLES: 0.00 0.00 0.00 DEG
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.50 DBS



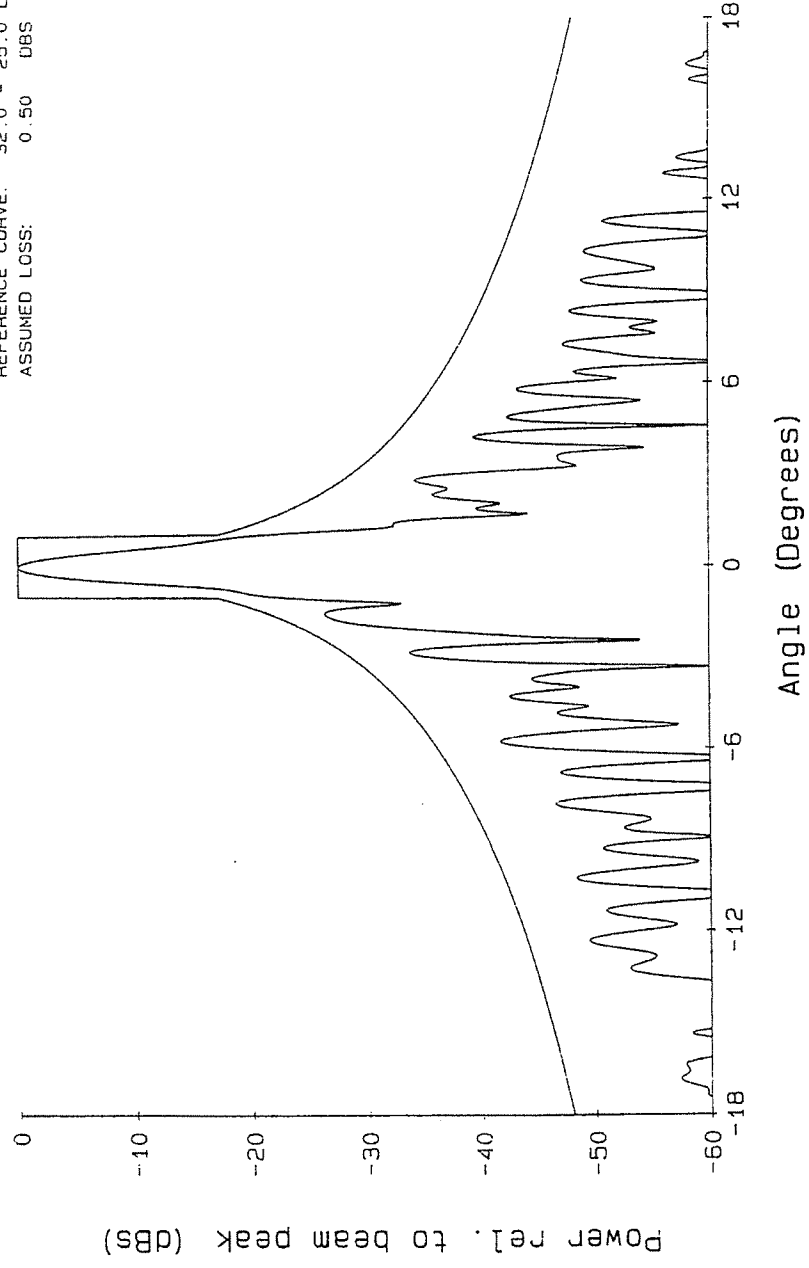
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.125 GHz
 ANGLE OF CUT: 90.00 DEG.
 DIRECTIVE GAIN: 48.9 DBS
 3 DB BEAMWIDTH: 0.63 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 PUL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



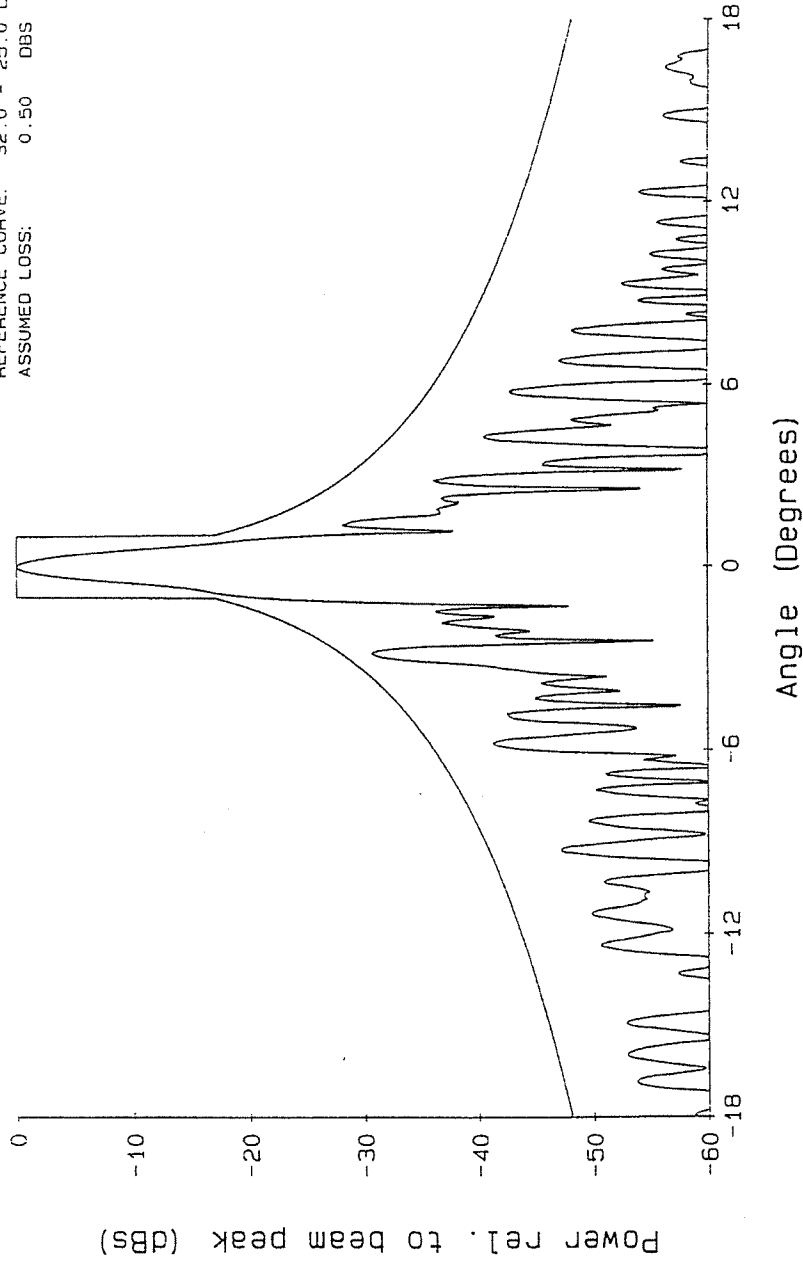
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.500 GHZ
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 49.2 DBS
 3 DB BEAMWIDTH: 0.61 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



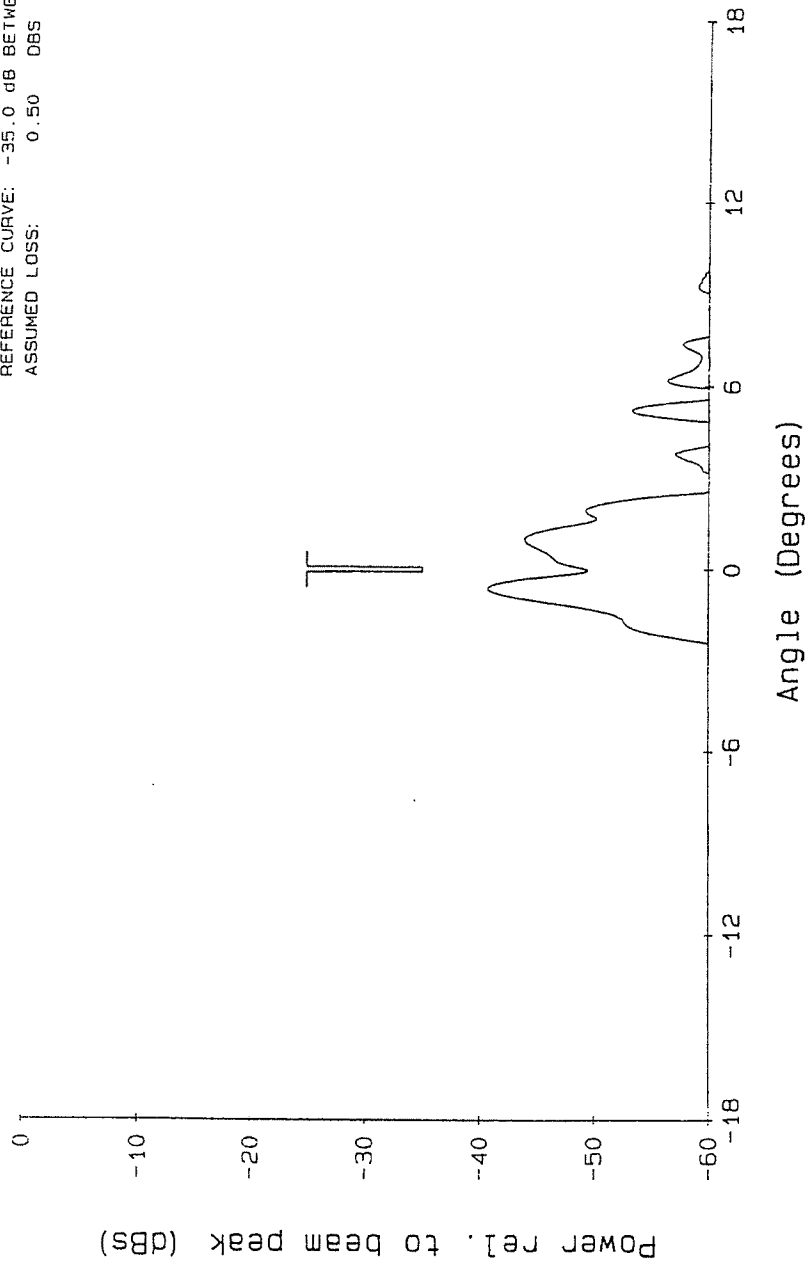
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.500 GHZ
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 49.2 DBS
3 DB BEAMWIDTH: 0.61 DEG.
POLARIZATION: LUDWIG 3 LINEAR COPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.50 DBS



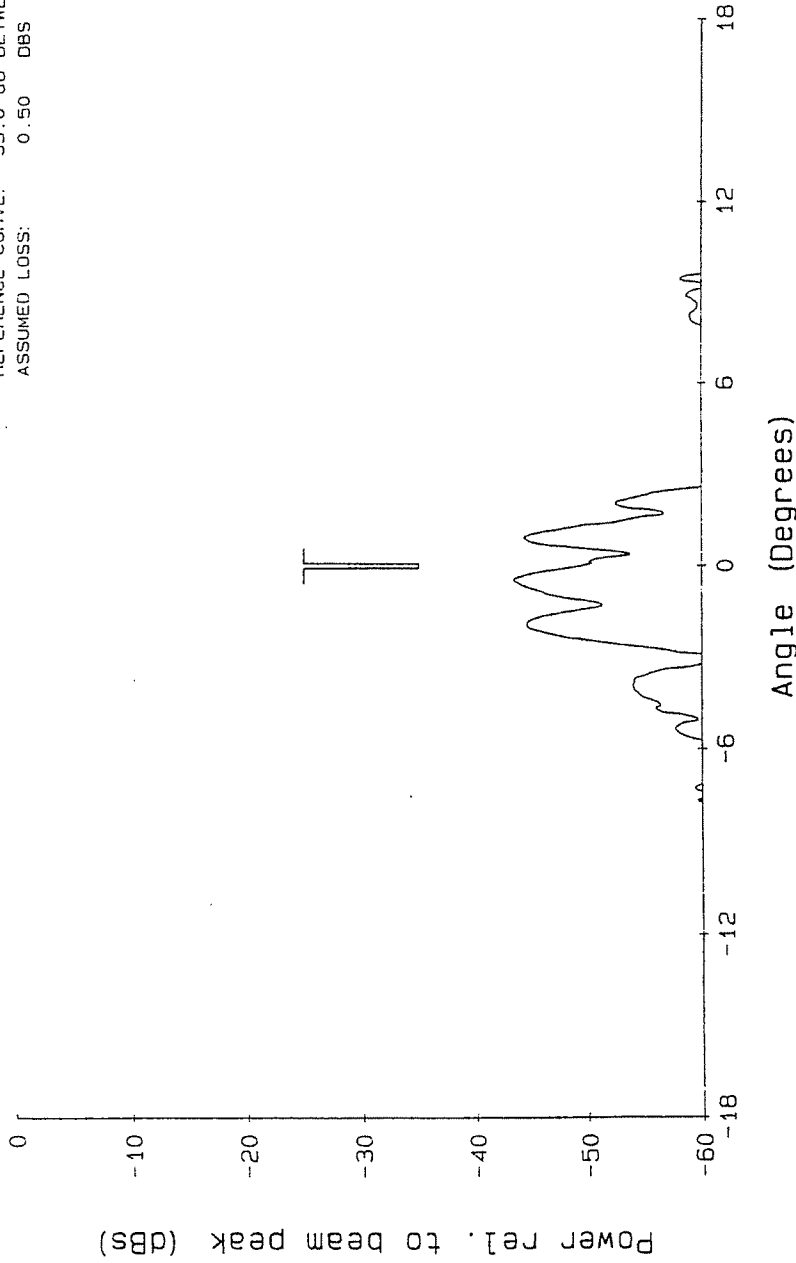
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.500 GHZ
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 8.4 DBS
 3 DB BEAMWIDTH: 0.64 DEG.
 POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: -35.0 dB BETWEEN -0.2 dB POINTS
 ASSUMED LOSS: 0.50 DBS



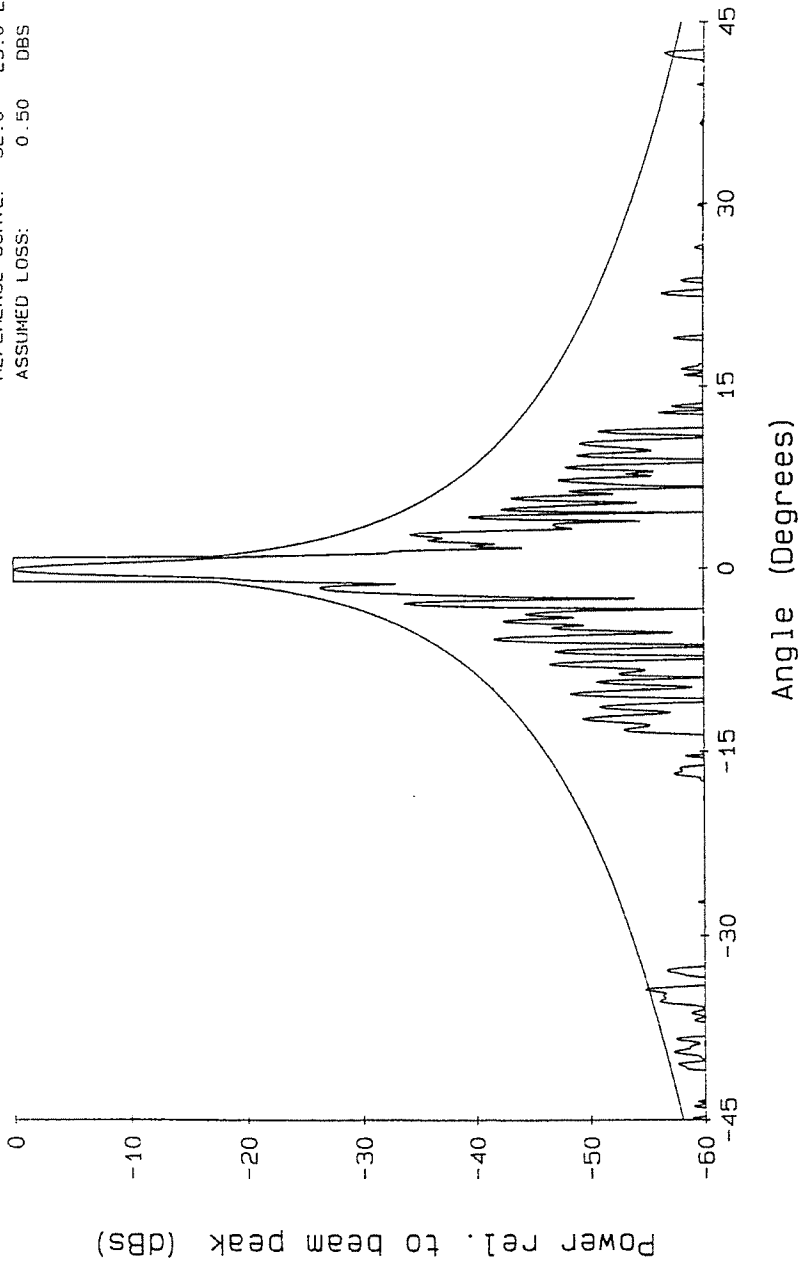
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.500 GHZ
ANGLE OF CUT: 90.00 DEG.
DIRECTIVE GAIN: 5.7 DBS
3 DB BEAMWIDTH: 0.76 DEG.
POLARIZATION: LUDWIG 3 LINEAR CROSSPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: -35.0 dB BETWEEN -0.2 dB POINTS
ASSUMED LOSS: 0.50 DBS



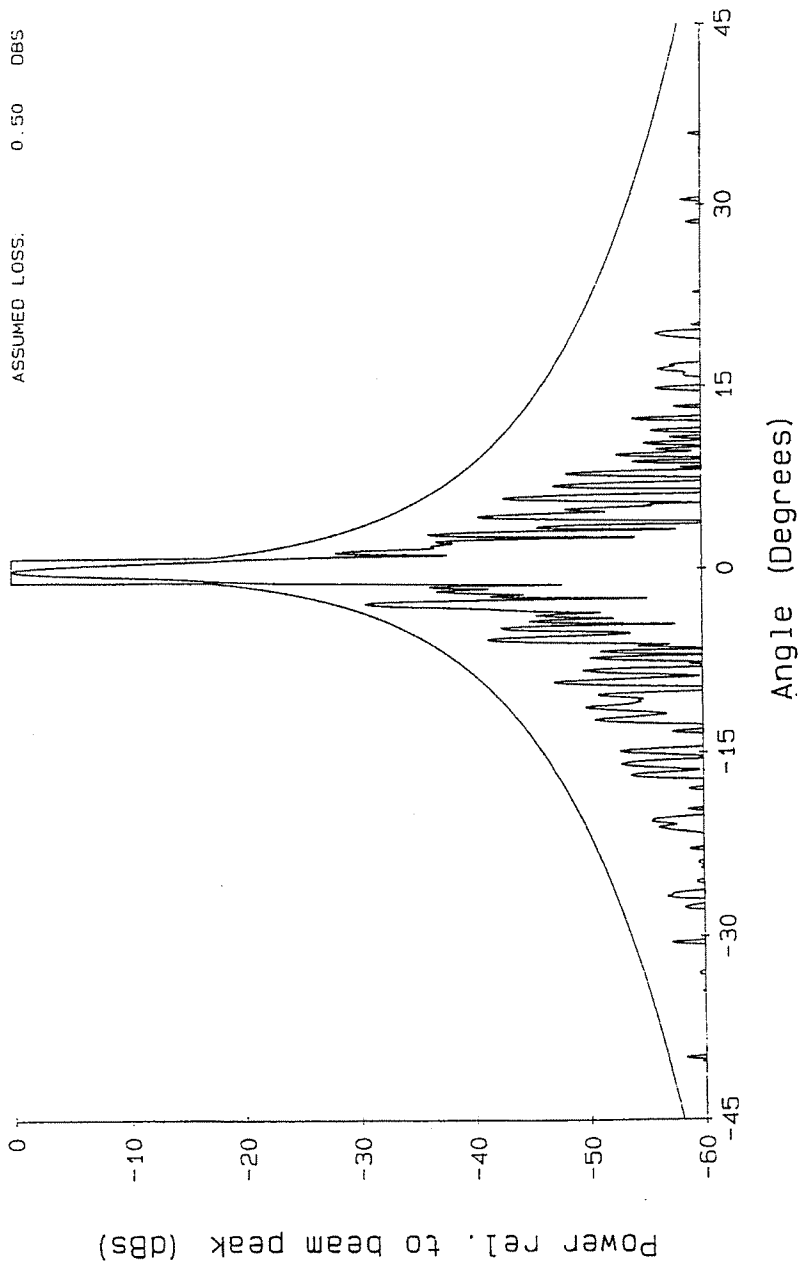
CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.500 GHZ
 ANGLE OF CUT: 0.00 DEG.
 DIRECTIVE GAIN: 49.2 DBS
 3 DB BEAMWIDTH: 0.61 DEG.
 POLARIZATION: LUDWIG 3 LINEAR COPOLAR
 EULER ANGLES: 0.00 0.00 0.00 DEG.
 POL REF ANGLES: 0.00 0.00 0.00 DEG.
 REFERENCE CURVE: 32.0 - 25.0 LOG THETA
 ASSUMED LOSS: 0.50 DBS



CYLINDRICAL NEAR FIELD TEST FACILITY

FREQUENCY: 14.500 GHZ
ANGLE OF CUT: 90.00 DEG
DIRECTIVE GAIN: 49.2 DBS
3 DB BEAMWIDTH: 0.61 DEG.
POLARIZATION: LUDWIG 3 LINEAR COPOLAR
EULER ANGLES: 0.00 0.00 0.00 DEG.
POL REF ANGLES: 0.00 0.00 0.00 DEG.
REFERENCE CURVE: 32.0 - 25.0 LOG THETA
ASSUMED LOSS: 0.50 DBS



CYLINDRICAL NEAR FIELD TEST FACILITY

<u>ANTENNA TYPE:-</u>	2.4M Mantis	<u>SERIAL NUMBER:-</u>	
<u>CONTRACT NUMBER:-</u>	SOH - 0001810	<u>DATE:-</u>	03-Mar-08
<u>GAIN / TEMPERATURE</u>	<u>BAND:-</u> Ku	<u>SATELLITE:-</u>	Eutelsat W3A

Reference a known Satellite and measure beacon power levels for the receive band of the LNB/LNX.

Gain / Temperature = Carrier to Noise - Satellite EIRP + Free Space Loss - Boltzmanns Constant
+ Atmospheric Attenuation

$$G / T = C / N - EIRP + FSL - K + AL$$

Low Band G / T

Given that the following factors for Low Band are correct

C / N = 63.36 dB/Hz
 EIRP = 13
 FSL = 205.14
 K = 228.6
 AL = 0.3

then

Gain / Temperature = 27.2 dB/K

WEATHER CONDITIONS : - clear

High Band G / T

Given that the following factors for High Band are correct

C / N = 62 dB/Hz
 EIRP = 13
 FSL = 206.09
 K = 228.6
 AL = 0.3

then

Gain / Temperature = 26.79 dB/K

WEATHER CONDITIONS : - clear

ATTEN 10DB
RL -35.9DBM

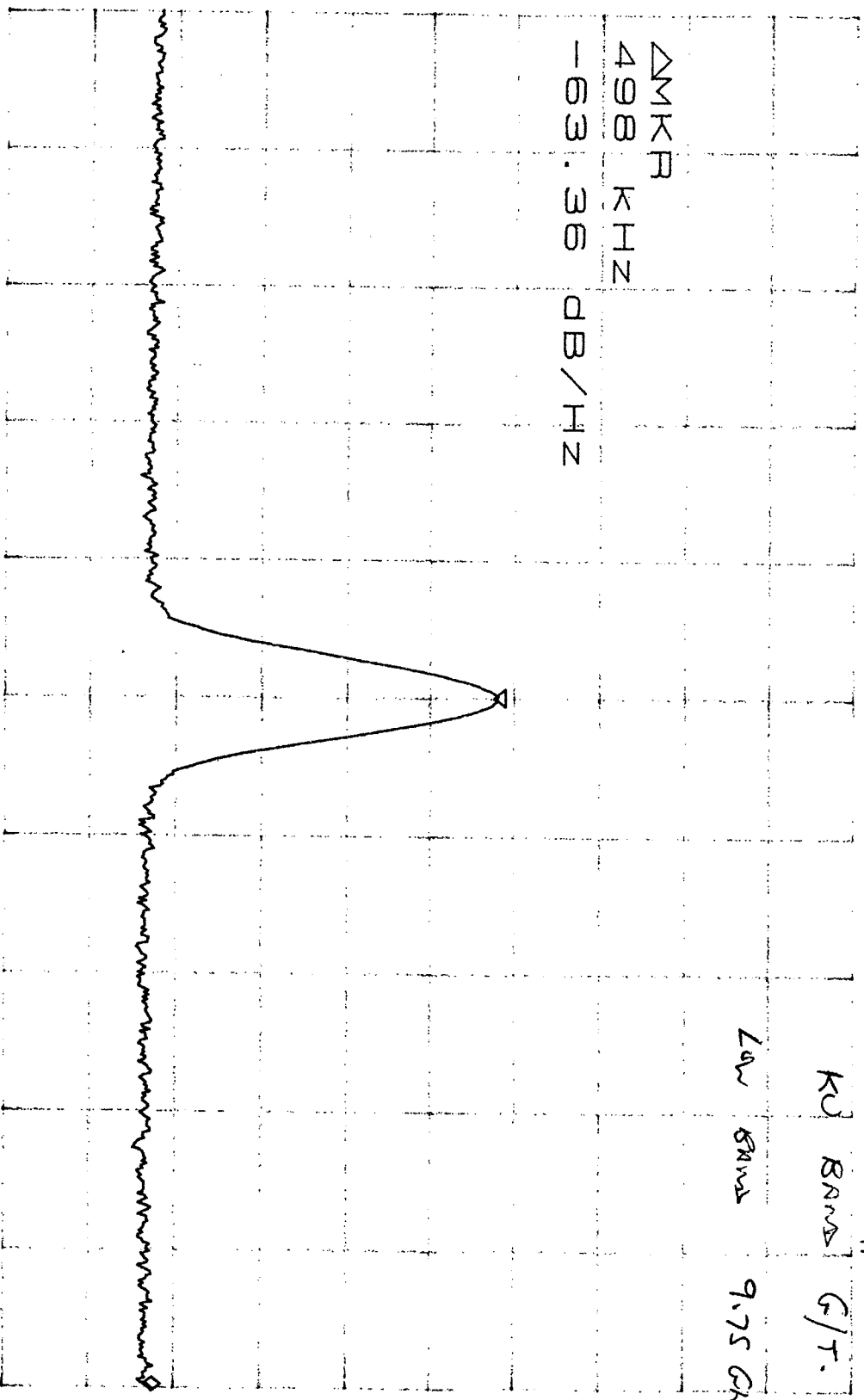
5DB/

Δ MKR -63.36DB/HZ
498KHZ
504 1810

K0 BAND G/T.

LOW BAND 9.75 GHz L.O.

Δ MKR
400 KHZ
D -63.36 DB/HZ



CENTER 1.450015GHZ
*RBW 30KHZ *VBW 30HZ
SPAN 1.000MHZ
SWP 2.80sec

ATTEN 10DB
RL -35.9DBM

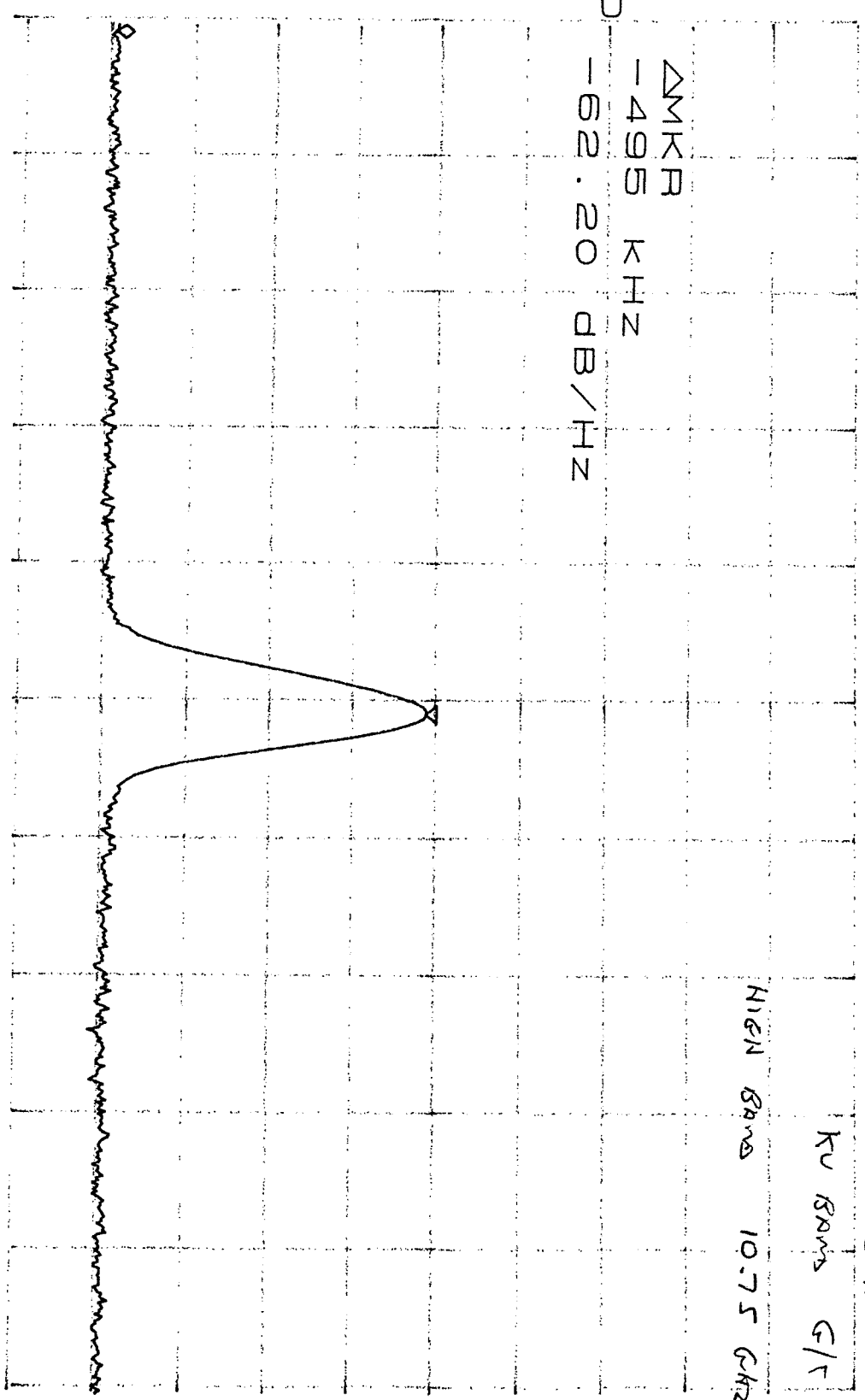
5DB

Δ MKR -62.20DB/HZ
-495KHZ
S/N 1810

KV BANDS G/T

HIGH BAND 10.75 GHz L.O.

Δ MKR
-495 KHZ
-62.20 DB/HZ



CENTER 1.750508GHZ
*RBW 30KHZ *VBW 30HZ
SPAN 1.000MHZ
SWP 2.80sec

CONTRACT NUMBER SOH 1810 **SATELLITE** Intelsat10 02

Antenna type: 2.4 Mantis **Date:** 03/03/2008

GAIN / TEMPERATURE **C Band**

Reference a known Satellite and measure beacon power levels for the receive band of the LNB/LNX.

Gain / Temperature = Carrier to Noise - Satellite EIRP + Free Space Loss - Boltzmanns Constant
+ Atmospheric Attenuation (+ 3dB correction for circular feed).

$$G / T = C / N - EIRP + FSL - K + AL (+ 3dB)$$

Linear G / T

Given that the following factors are correct.

C / N = 56.35
EIRP = 6.5
FSL = 196.42
K = 228.6
AL = 0.2
FEED * 0 *Enter 0 for Linear feed, Enter 3 for circ feed.

then

$$\text{Gain / Temperature} = 17.87 \text{ dB/K}$$

RHCP G / T

Given that the following factors are correct.

C / N = 53.91
EIRP = 6.5
FSL = 196.42
K = 228.6
AL = 0.2
FEED ** 3 **Enter 0 for circ feed, Enter 3 for linear feed.

then

$$\text{Gain / Temperature} = 18.43 \text{ dB/K}$$

LHCP G / T

Given that the following factors are correct.

C / N = n/a
EIRP = 7
FSL = 196.09
K = 228.6
AL = 0.1
FEED ** **

then

$$\text{Gain / Temperature} = \text{\#VALUE! dB/K}$$

Weather: Clear

504 1810

LINER

*ATTEN 0DB

RL -58.0DBm

2DB/

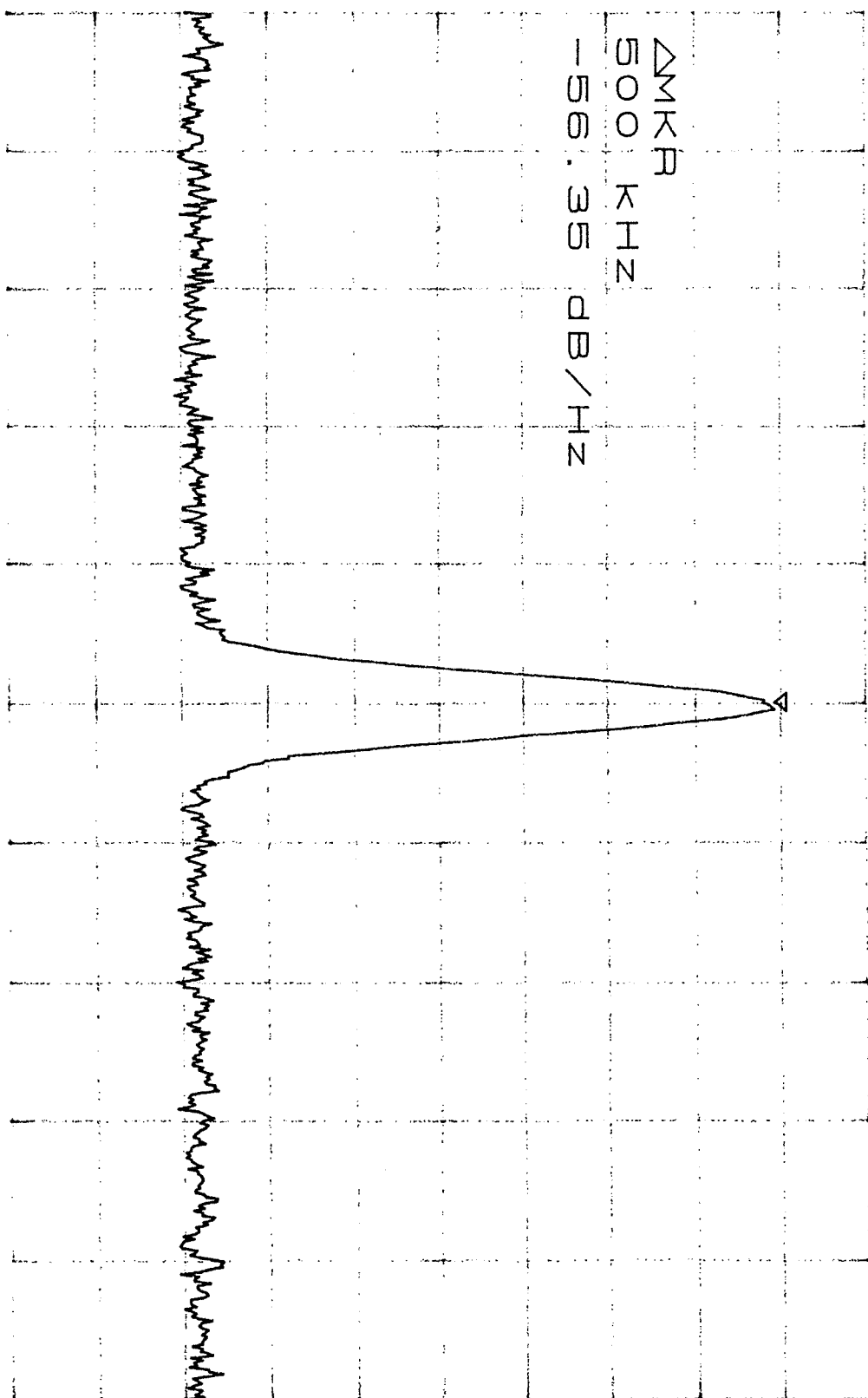
Δ MKR -56.35DB/HZ

500KHZ

C-BAND

G/T

Δ MKR
500 KHZ
D -56.35 DB/HZ



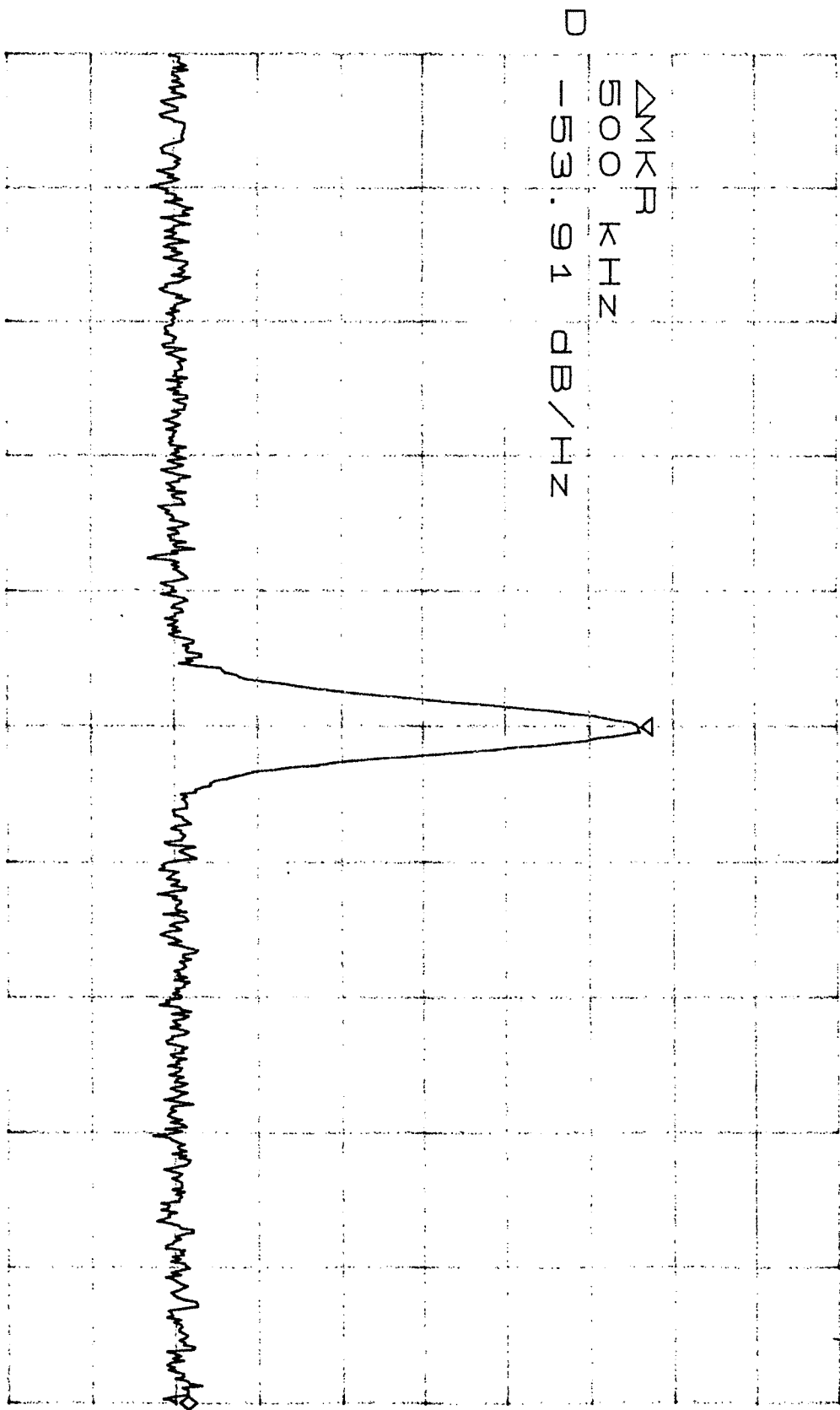
CENTER 1.20000GHZ
*RBW 30KHZ *VBW 30HZ

SPAN 1.000MHZ
SWP 2.80SEC

SOH 1810 CIRCULAR

ATTEN 10DB RL -58.0DBm 2DB/ ΔMKR -53.91DB/HZ

500KHZ C-BAND G/T.



CENTER 1.2000026GHZ SPAN 1.0000MHZ
*RBW 30KHZ *VBW 30HZ SWP 2.80SEC

CONTRACT NUMBER 504-1810

DATE 29-2-08

WORKS ORDER MFG 0014188

S/N

ANTENNA TYPE 2.4 MANTIS BAND KU

Using the Microwave Test Set (Marconi 6200B or euivalent set the Start/Stop frequencies to the correct limits, check contract details if necessary. Set the RF output to +10dBm and connect via a suitable length of rhopase to the input of a directional coupler. Connect a detector from port A or B of the analyser to the reflected port of the directional coupler. Calibrate the equipment by using Through Path Cal. Connect the coupler to the transmit waveguide and record the result.

Result - 18.63

Specification - 14.0 dB

Test Equipment

Microwave Analyser S/N 4098 Cal. Due NOV 08

Detector S/N 4117 Cal. Due NOV 08

Directional Coupler Plant No. 4534

Tested By K. Jinks

Microwave Test Set

10:39 1 Mar 2008

SON 1810

Marconi 6200B

KU BAND

RETURN LOSS

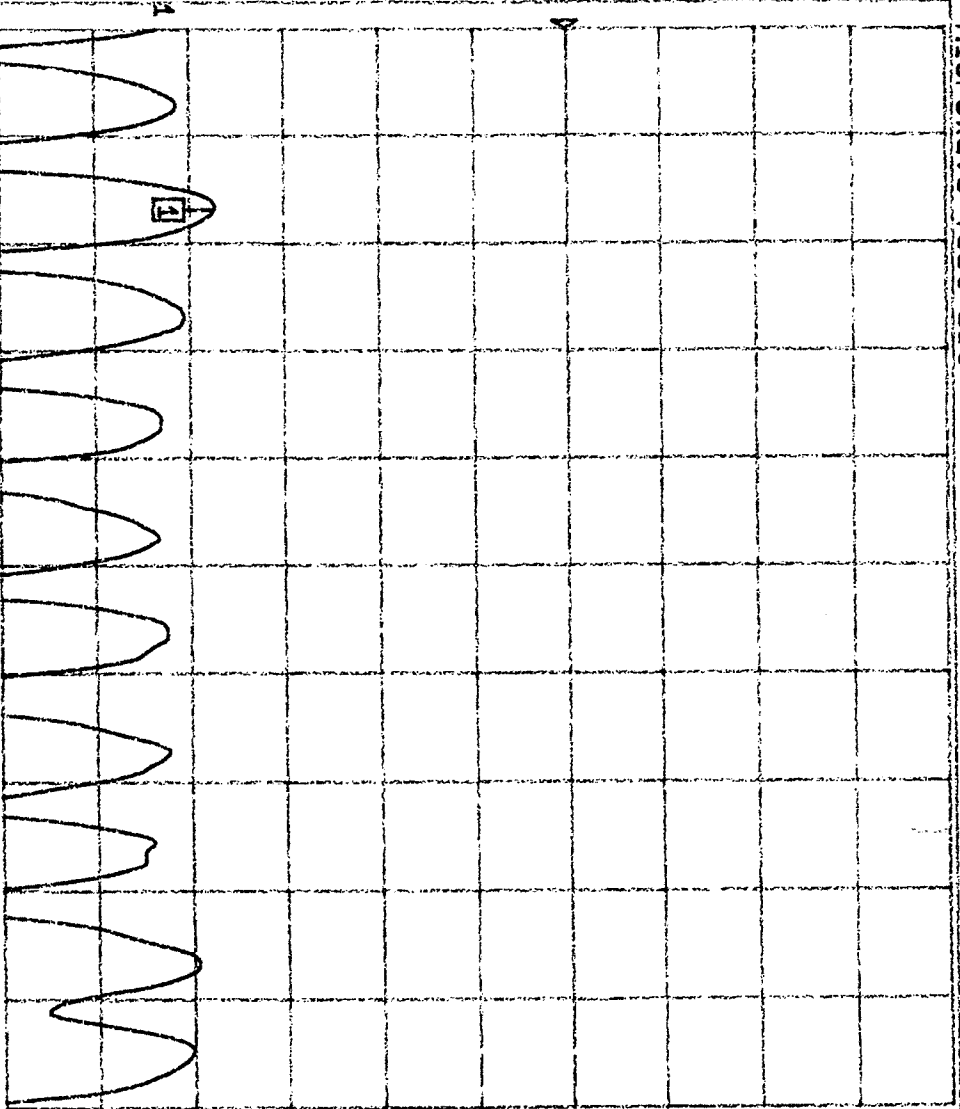
1: B PC1

dB

1 -18.63 dB

0.00 dB

5.00 dB/



Start 13.7500 GHz

1 13.8756 GHz

Stop 14.5000 GHz

MARKER POSITION

1: (dB)

MARKER POSITION

1: (dB)

1 13.8756 GHz

-18.63

CONTRACT NUMBER SOH-1810

DATE 29-2-08

WORKS ORDER MF90014188

S/N

ANTENNA TYPE 2.4 MANTIS

BAND C LINEAR

Using the Microwave Test Set (Marconi 6200B or euivalent set the Start/Stop frequencies to the correct limits, check contract details if necessary. Set the RF output to +10dBm and connect via a suitable length of rrophase to the input of a directional coupler. Connect a detector from port A or B of the analyser to the reflected port of the directional coupler. Calibrate the equipment by using Through Path Cal. Connect the coupler to the transmit waveguide and record the result.

Result - 15.34

Specification - 14.0 dB

Test Equipment

Microwave Analyser S/N 4098 Cal. Due NOV 08

Detector S/N 4117 Cal. Due NOV 08

Directional Coupler Plant No. 4451

Tested By K. Jinks

S01 1810 LINEAR

Microwave Test Set

11:05 1 Mar 2008

Marconi 6200B

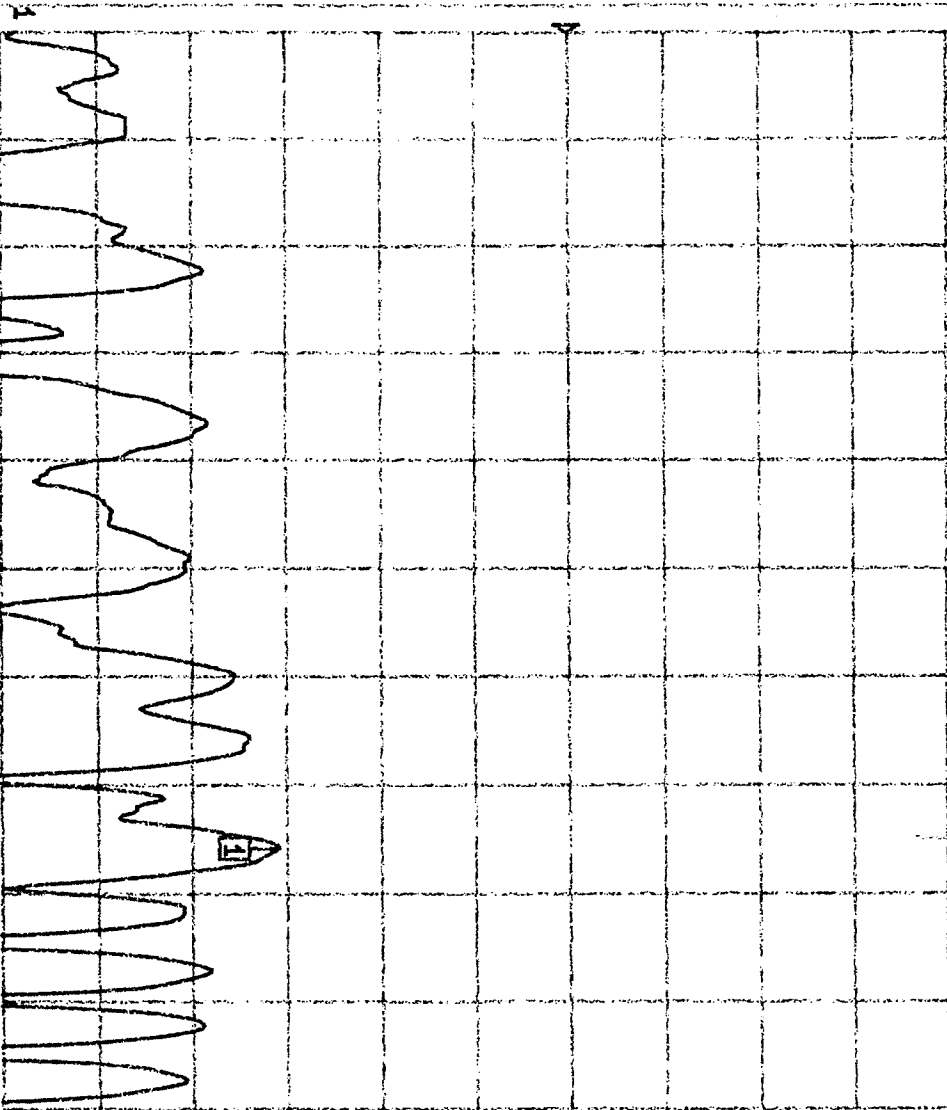
C-Band Return Loss

1: B PC1

dB

[-15.34 dB

0.00 dB 5.00 dB/



Start 5.8500 GHz

[1] 6.45600 GHz

Stop 6.6500 GHz

MARKER POSITION

1: (dB)

MARKER POSITION

1: (dB)

1 6.45600 GHz

-15.34

CONTRACT NUMBER S04 1810

DATE 29-2-08

WORKS ORDER MF90014188

S/N

ANTENNA TYPE 2.4 mm IS

BAND C CIRCULAR

Using the Microwave Test Set (Marconi 6200B or equivalent set the Start/Stop frequencies to the correct limits, check contract details if necessary. Set the RF output to +10dBm and connect via a suitable length of rhopase to the input of a directional coupler. Connect a detector from port A or B of the analyser to the reflected port of the directional coupler. Calibrate the equipment by using Through Path Cal. Connect the coupler to the transmit waveguide and record the result.

Result - 16.82

Specification - 14.0 dB

Test Equipment

Microwave Analyser S/N 4098 Cal. Due Nov 08

Detector S/N 4117 Cal. Due Nov 08

Directional Coupler Plant No. 4451

Tested By V. Jinks

SON 1810 CIRCULAR

Microwave Test Set

10:57 1 Mar 2008

Marconi 6200B

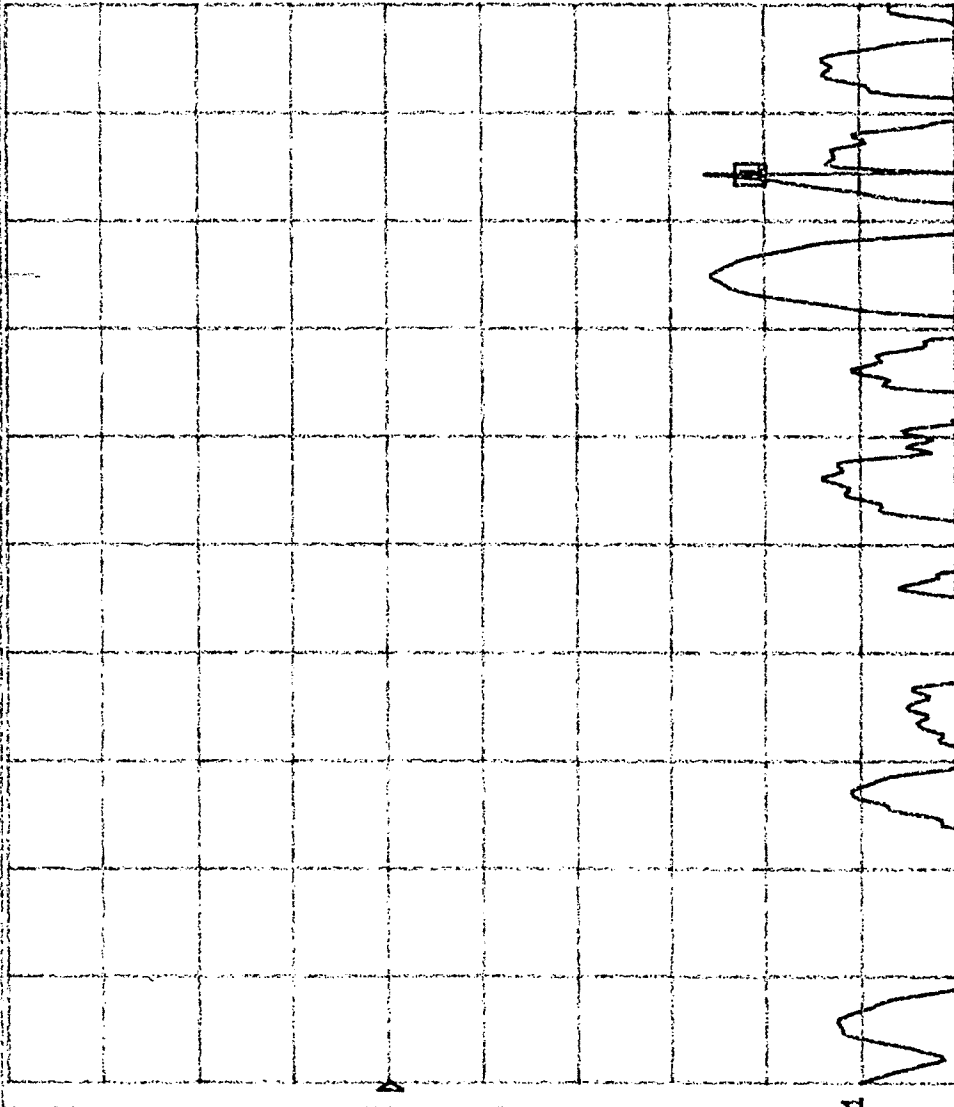
C-BAND RETURN LOSS

1: B PC1

dB

1 -16.82 dB

0.00 dB 5.00 dB/



Start 5.8500 GHz Stop 6.6500 GHz

1 6.5240 GHz MARKER POSITION

1: (dB)

1 6.5240 GHz

-16.82

1: (dB)