

ORIGINAL

NORMAN WEINHOUSE ASSOCIATES

TELECOMMUNICATION CONSULTANTS

5211 Jumilla Avenue • Woodland Hills, California 91364 • (818) 884-3105 • FAX (818) 884-9023

Received

July 30, 2001

SEP 13 2001

RECEIVED

Satellite and Radiocommunication Division
Satellite Engineering Branch

SEP 10 2001

Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th street S.W.
Washington, D.C. 20024 - 0000

FCC MAIL ROOM

Dear Secretary Salas,

We are hereby filing an application for a **Fixed** satellite earth station on behalf of the Congress, Arizona Elementary School .

FCC Form 159 is not included since the applicant is a governmental entity (public school) and is exempt from application fees.

Should you have any questions, please communicate with the undersigned.

Respectfully submitted,



Norman Weinhouse

Norman Weinhouse Associates

FEDERAL COMMUNICATIONS COMMISSION
APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS

Approval: _____
E010247 SES-LIC-20010910-01655
CONGRESS ELEMENTARY SCHOOL

APPLICANT INFORMATION

1. Legal Name of Applicant <i>CONGRESS ELEMENTARY SCHOOL</i>		2. Voice Telephone Number <i>(520) 427 3646</i>	
3. Other Name Used for Doing Business (if any)		4. Fax Telephone Number <i>(520) 427 9850</i>	
5. Mailing Street Address or P. O. Box <i>PO. BOX 68</i>		6. City <i>CONGRESS</i>	
ATTENTION: <i>DR. LEWIS</i>		7. State / Country (if not U.S.A.) <i>ARIZONA</i>	
9. Name of Contact Representative (if other than applicant) <i>NORMAN WEINHOUSE</i>		8. Zip Code <i>85332-0068</i>	
11. Firm or Company Name <i>NORMAN WEINHOUSE ASSOCIATES</i>		10. Voice Telephone Number <i>(818) 884 3105</i>	
13. Mailing Street Address or P. O. Box <i>5211 JUMILLA AVE.</i>		12. Fax Telephone Number <i>(818) 884 2981</i>	
ATTENTION: <i>NORMAN WEINHOUSE</i>		14. City <i>WOODLAND HILLS</i>	
		15. State / Country (if not U.S.A.) <i>CALIFORNIA</i>	
		16. Zip Code <i>91364</i>	

CLASSIFICATION OF FILING

17. Place an "X" in the box next to the classification that applies to this filing for both questions a. and b. Mark only one box for 17a and only one box for 17b.

<input checked="" type="checkbox"/> a1. Earth Station	<input checked="" type="checkbox"/> b1. Application for License of New Station	<input type="checkbox"/> b6. Transfer of Control of License or Registration
<input type="checkbox"/> a2. Space Station	<input type="checkbox"/> b2. Application for Registration of New Domestic Receive-Only Station	<input type="checkbox"/> b7. Notification of Minor Modification
<input type="checkbox"/>	<input type="checkbox"/> b3. Amendment to a Pending Application	<input type="checkbox"/> b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite
<input type="checkbox"/>	<input type="checkbox"/> b4. Modification of License or Registration	<input type="checkbox"/> b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
<input type="checkbox"/>	<input type="checkbox"/> b5. Assignment of License or Registration	<input type="checkbox"/> b10. Other (Please Specify):

18. If this filing is in reference to an existing station, enter:
Call sign of station: *N/A*

19. If this filing is an amendment to a pending application enter:
(a) Date pending application was filed: *N/A*
(b) File number of pending application:

TYPE OF SERVICE

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s). Place an "X" in the box(es) next to all that apply.

- a. Fixed Satellite
- b. Mobile Satellite
- c. Radiodetermination Satellite
- d. Earth Exploration Satellite
- e. Direct to Home Fixed Satellite
- f. Digital Audio Radio Service
- g. Other (please specify) _____

21. STATUS: Place an "X" in the box next to the applicable status. Mark only one box.

- a. Common Carrier
- b. Non-Common Carrier

22. If earth station applicant, place an "X" in the box(es) next to all that apply.

- a. Using U.S. licensed satellites
- b. Using Non-U.S. licensed satellites

23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 214 filings. Mark only one box. Are these facilities:

a. Connected to the Public Switched Network

b. Not connected to the Public Switched Network

N/A

24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s).

- a. C-Band (4/6 GHz)
- b. Ku-Band (12/14 GHz)
- c. Other (Please specify) _____

TYPE OF STATION

25. CLASS OF STATION: Place an "X" in the box next to the class of station that applies. Mark only one box.

- a. Fixed Earth Station
- b. Temporary-Fixed Earth Station
- c. 12/14 GHz VSAT Network
- d. Mobile Earth Station
- e. Space Station
- f. Other (Specify) _____

If space station applicant, go to Question 27.

26. TYPE OF EARTH STATION FACILITY: Mark only one box.

- a. Transmit/Receive
- b. Transmit-Only
- c. Receive-Only

PURPOSE OF MODIFICATION OR AMENDMENT

27. The purpose of this proposed modification or amendment is to: Place an "X" in the box(es) next to all that apply.

- a -- authorization to add new emission designator and related service
- b -- authorization to change emission designator and related service
- c -- authorization to increase EIRP and EIRP density
- d -- authorization to replace antenna
- e -- authorization to add antenna
- f -- authorization to relocate fixed station
- g -- authorization to change assigned frequency(ies)
- h -- authorization to add Points of Communication (satellites & countries)
- i -- authorization to change Points of Communication (satellites & countries)
- j -- authorization for facilities for which environmental assessment and radiation hazard reporting is required
- k -- Other (Please Specify) _____

N/A

ENVIRONMENTAL POLICY

28. Would a Commission grant of any proposal in this application or amendment have a significant environmental impact as defined by 47 CFR 1.1307? If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. §§ 1.1308 and 1.1311, as an exhibit to this application.

- YES
- NO

A Radiation Hazard Study must accompany all applications as an exhibit for new transmitting facilities, major modifications, or major amendments. Refer to OET Bulletin 65. **SEE EXHIBIT 1**

ALIEN OWNERSHIP

29. Is the applicant a foreign government or the representative of any foreign government?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
30. Is the applicant an alien or the representative of an alien?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
31. Is the applicant a corporation organized under the laws of any foreign government?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit, the identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote.		

BASIC QUALIFICATIONS

35. Does the applicant request any waivers or exemptions from any of the Commission's Rules? If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
36. Has the applicant or any party to this application had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
37. Has the applicant, or any party to this application, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceeding two items? If Yes, attach as an exhibit, an explanation of the circumstances.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, addresses, and citizenship of those stockholders owning of record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.		
41. By checking Yes, the undersigned certifies, that neither the 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(d) for the meaning of "party to the application" for these purposes.	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. § 25.137, as appropriate. If no, proceed to question 43.	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?		N/A

43. Description. (Summarize the nature of the application and the services to be provided).

THE PROPOSED EARTH STATION IS TO BE USED FOR HIGH-SPEED ACCESS TO THE INTERNET. THE SCHOOL IS IN A REMOTE AREA AND TERRESTRIAL CONNECTION FOR HIGH-SPEED ACCESS IS COST PROHIBITIVE, A TIMEY GRANT OF LICENSE WILL SERVE THIS HISTORICALLY UNDERSERVED SEGMENT OF THE PUBLIC WELK,

Exhibit No.	Identify all exhibits that are attached to this application.
A	RADIATION HAZARD STUDY
B	ANTENNA RADIATION PATTERNS
C	FREQUENCY COORDINATION REPORT

CERTIFICATION

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Place an "X" in the box next to applicable response.)

- a. Individual
- b. Unincorporated Association
- c. Partnership
- d. Corporation
- e. Governmental Entity
- f. Other (Please specify) _____

45. Typed Name of Person Signing

Colinbur N. Lewis

46. Title of Person Signing

Chief Financial Officer

47. Signature

Colinbur N. Lewis

48. Date

7/18/14

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).

FEDERAL COMMUNICATIONS COMMISSION
 SATELLITE EARTH STATION AUTHORIZATIONS
 FCC Form 312 - Schedule B: (Technical and Operational Description)

If VSAT Network, provide the SITE-ID (Item B1b) of the station that B8-B13 are in response to (HUB, REMOTE1, etc.): _____

B8. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurements? IF NO, provide as an exhibit, a technical analysis showing compliance with two-degree spacing policy. YES NO
 SEE EXHIBIT B

B9. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements? YES NO
 NOT APPLICABLE

B10. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point. YES NO

Remote Control Point Location:

B10a. Street Address 9379 TECHNOLOGY DRIVE	B10c. Country	B10d. State / Country ARKANSAS	B10e. Zip Code 72756
B10b. City ROGERS			
B10f. Telephone Number (800) 833 3353		B10g. Call Sign of Control Station (if appropriate) E000675	

B11. Is frequency coordination required? If YES, attach a frequency coordination report as an exhibit. YES NO
 SEE EXHIBIT C

B12. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as an exhibit. YES NO

B13. FAA Notification - (See 47 CFR Part 17 and 47 CFR Part 25.113(c)) YES NO
 Where FAA notification is required, have you attached a copy of a completed FCC Form 854 NOT APPLICABLE and/or the FAA's study regarding the potential hazard of the structure to aviation?
 FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.

Exhibit A, Page 1 of 4

RADIATION HAZARD STUDY

SITE: Congress, Arizona

APPLICANT: Congress Elementary School

EXHIBIT A – Page 2 of 4

RADIATION HAZARD STUDY

REGION	RADIATION LEVEL mw/cm ²	HAZARD ASSESSMENT
Far Field, RF=164ters	0.0159	Complies with guidelines
Near Field, RN=68.5meters	0.0446	“ “ “
Transition Region, RT Rn<Rt<Rf	0.0446	“ “ “
Reflector Surface	0.0186	“ “ “
Between Antenna and Ground	0.00186	“ “ “
Between Main Reflector and Feed	167	Potential Hazard
<p>CONCLUSION:</p> <p>Based on the above analysis it is concluded that harmful levels of radiation will not exist in regions normally occupied by the public or the earth station’s operating personnel. The earth station will be marked with the standard radiation hazard warnings, on the antenna itself, warning personnel to avoid the area in front of the reflector when the transmitter is operational. To ensure compliance with the safety limits, the earth station transmitter will be turned off whenever maintenance and repair personnel are required to work in an area where the radiation level exceeds the level recommended by applicable guidelines. Additionally, the earth station is secured and access is controlled.</p>		

EXHIBIT A – PAGE 3 OF 4
SUPPORTING CALCULATIONS
REF: FCC BULLETIN #65

A. Far Field:

$$R_f = \frac{0.6D^2}{\lambda} = \frac{0.6 \times (3.7)^2}{0.05} = 164 \text{ meters}$$

$$S = \frac{PG}{4\pi R^2} = \frac{2 \times 2.6910^4}{4\pi(164)^2} = 0.159 \text{ W / m}^2$$

$$S = 0.0159 \text{ mW/cm}^2$$

B. Near Field

$$R_n = \frac{D^2}{4\lambda} = \frac{(3.7)^2}{(4) \times (0.05)} = 68.5 \text{ meters}$$

$$S = \frac{16 \text{ nP}}{\pi D^2} = \frac{(16)(.6)(2)}{\pi(3.7)^2} = 0.446 \text{ W / m}^2$$

$$S = 0.0446 \text{ W/cm}^2$$

Transition Region:

Since the transition extends between R_n and R_f the power density can never exceed the power density in the near field.

$$S = \frac{S(nf) \times R(nf)}{R}$$

D. Reflector Surface:

Assuming an even distribution of energy over the surface of the dish:

$$S = \frac{P}{\pi r^2} = \frac{2 \times 10^3}{\pi (185)^2} = 0.0186 \text{ mW} / \text{cm}^2$$

EXHIBIT A - PAGE 4 OF 4

E. Between Antenna and Ground:

Nearest point is more than 1 diameter removed from the center of the main beam.

$$S = \frac{S(\text{reflector surface})}{100} = 0.00186 \text{ mW} / \text{cm}^2$$

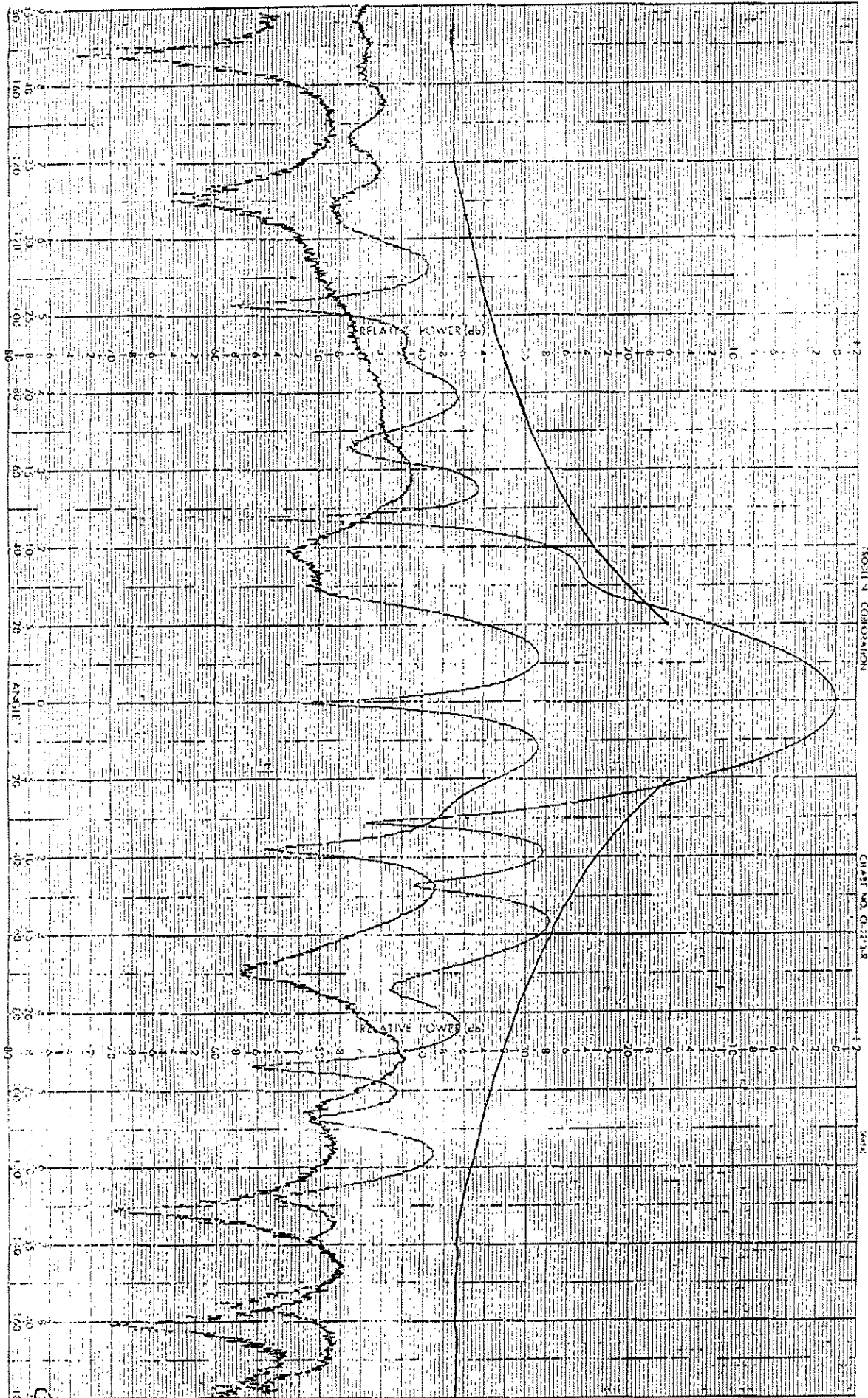
F. Between Main Reflector and Feed:

The diameter of the feed aperture is 7.62 cm. The highest density will be at the aperture.

$$S = \frac{P}{\pi r^2} = \frac{2 \times 10^3}{\pi (3.81)^2} = 167 \text{ mW} / \text{cm}^2$$

EXHIBIT B

**ANTENNA RADIATION PATTERN FOR
PRODELIN MODEL # 1374 - 470**

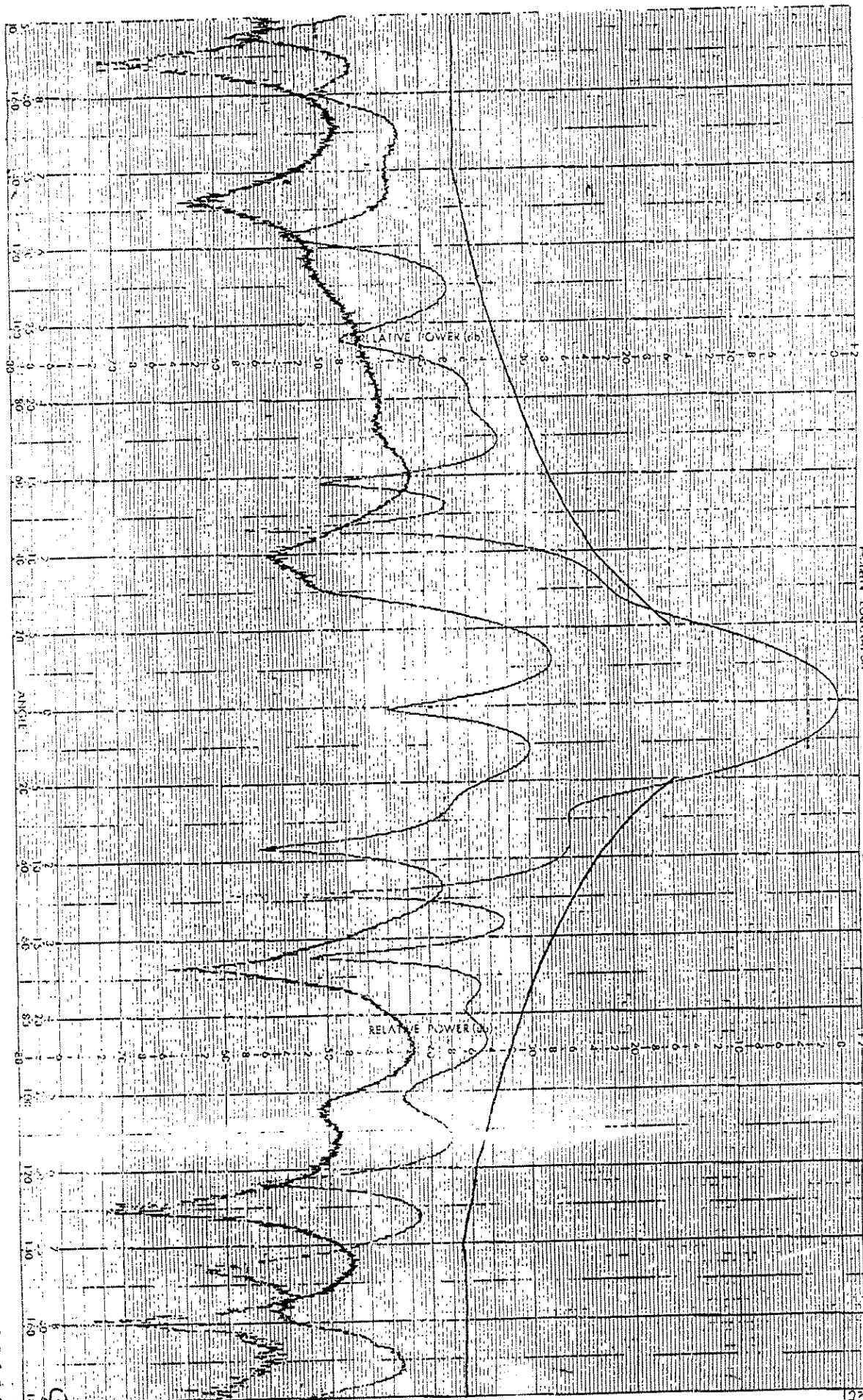


PROJECT 3.7m W/C-BAND RX/TX FEED
REMARKS

ENGR DBL

DATE 05 JUN 92

1. 4256Hz H-PLANE ± 90 M-POL & X-POL



PAPER: CORCORAN

CHART NO. 61-2138

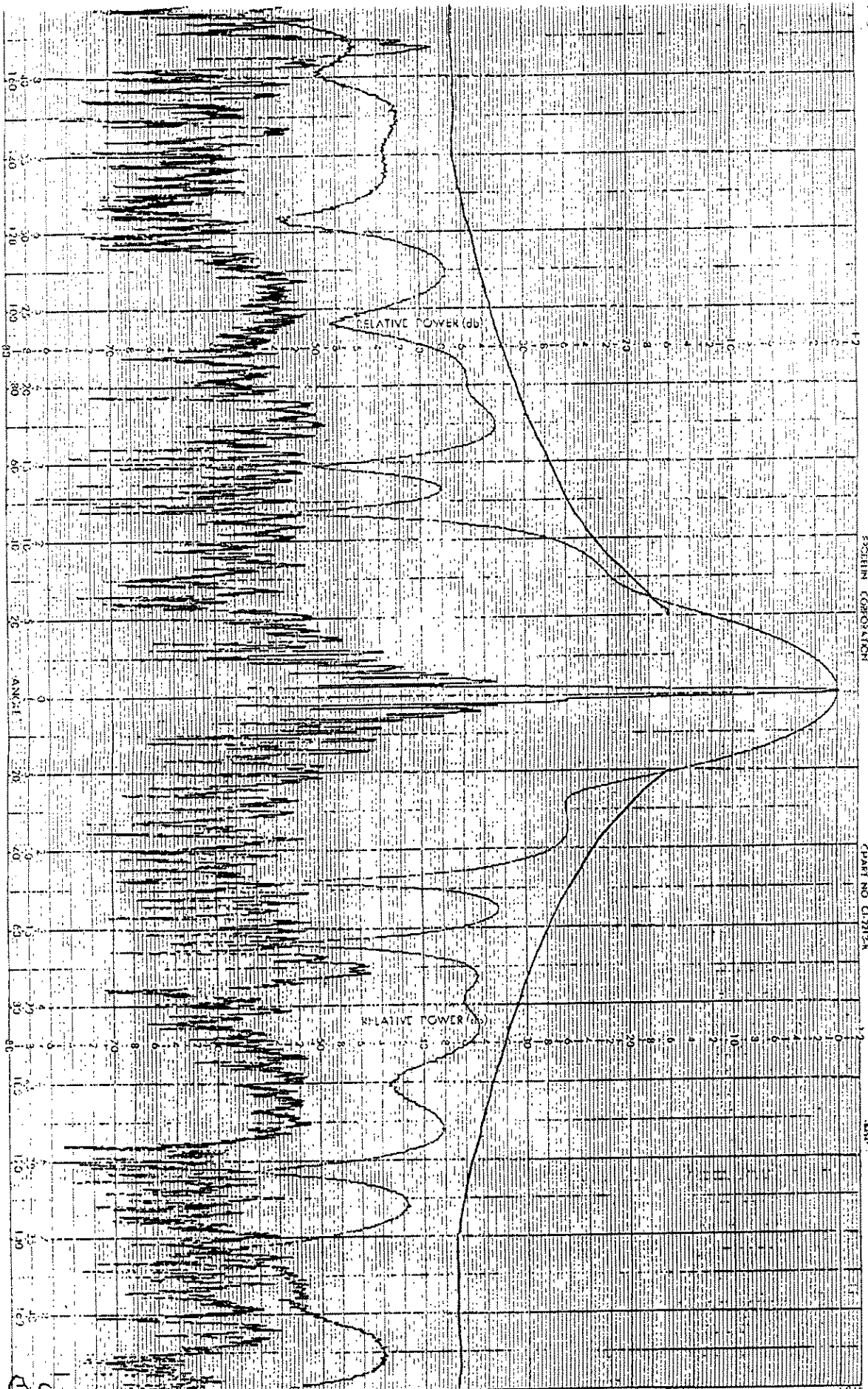
701

PROJECT 3.7M W/C-BAND RX/TX FEED
REMARKS

ENCR DBL

DATE 65 JUN 92

1.425GHz E-Plane ±9° M-Pol & Y-Pol



ESCHELM CORPORATION

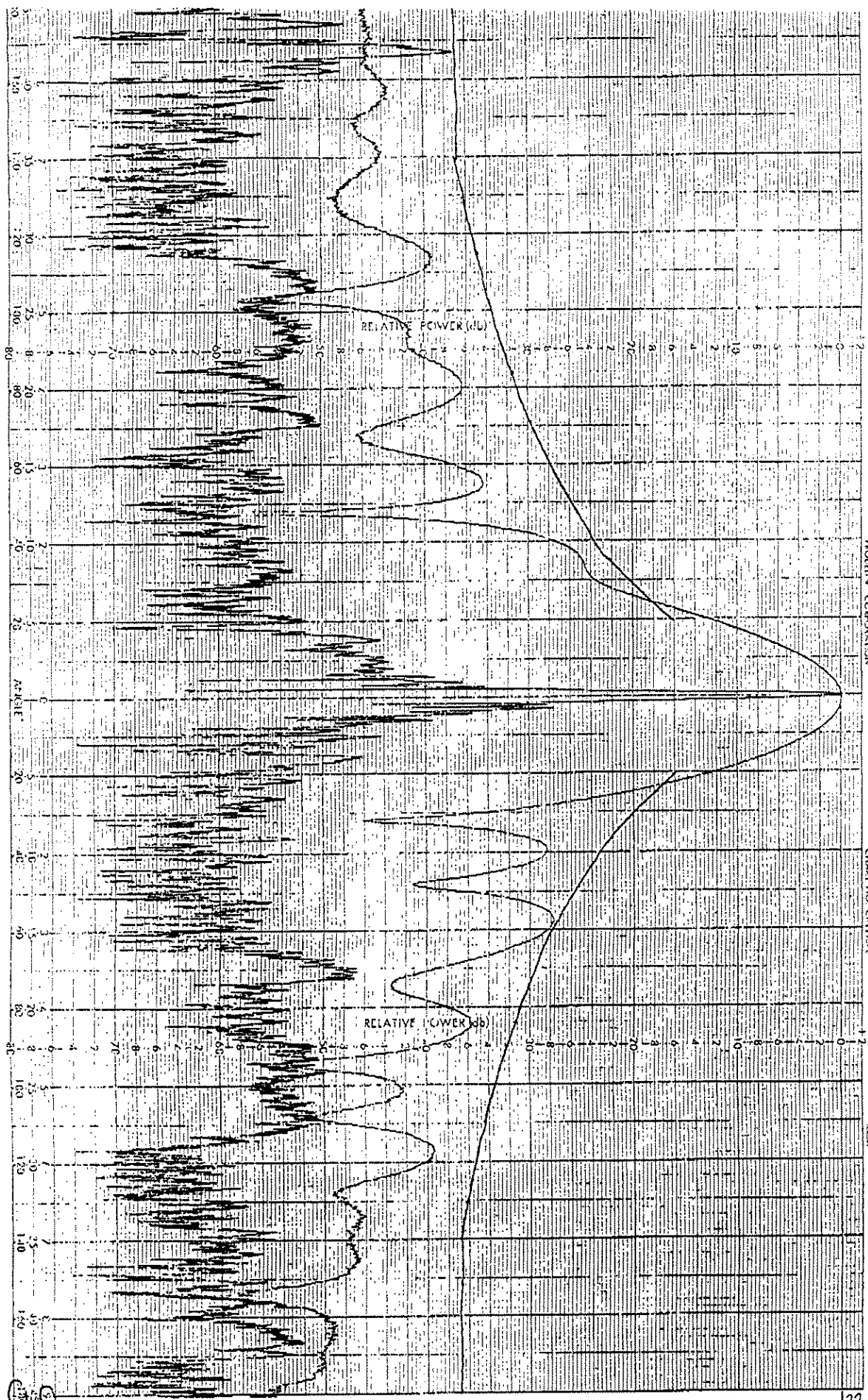
CHART NO. 012713A

PROJECT 3.7m W/C-BAND RX/TX FEED
REMARKS

ENGR DBL

DATE 25 JUN 92

6.425 GHz E-PLANE $\pm 19^\circ \pm 180^\circ$ Co-Pol



PROJECT 37m W/C-BAND RX/TX FEED

ENGR DBL

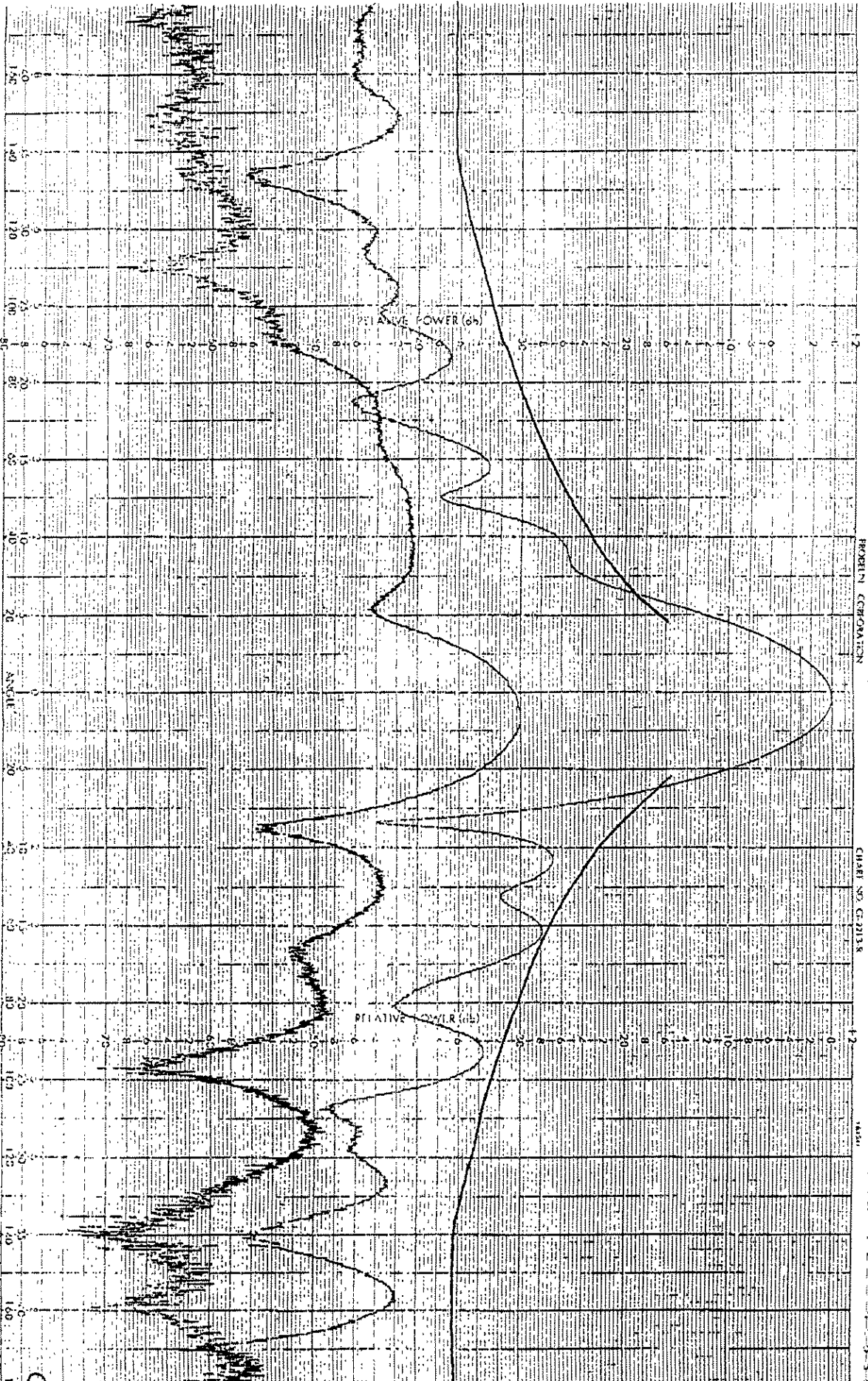
DATE 05 JUN 92

REMARKS Co. 425 GHz H-PLANE $\pm 90^\circ$ & $\pm 180^\circ$ CO-POL

MORNING COMPOSITION

CHART NO. C-2713-8

MAY

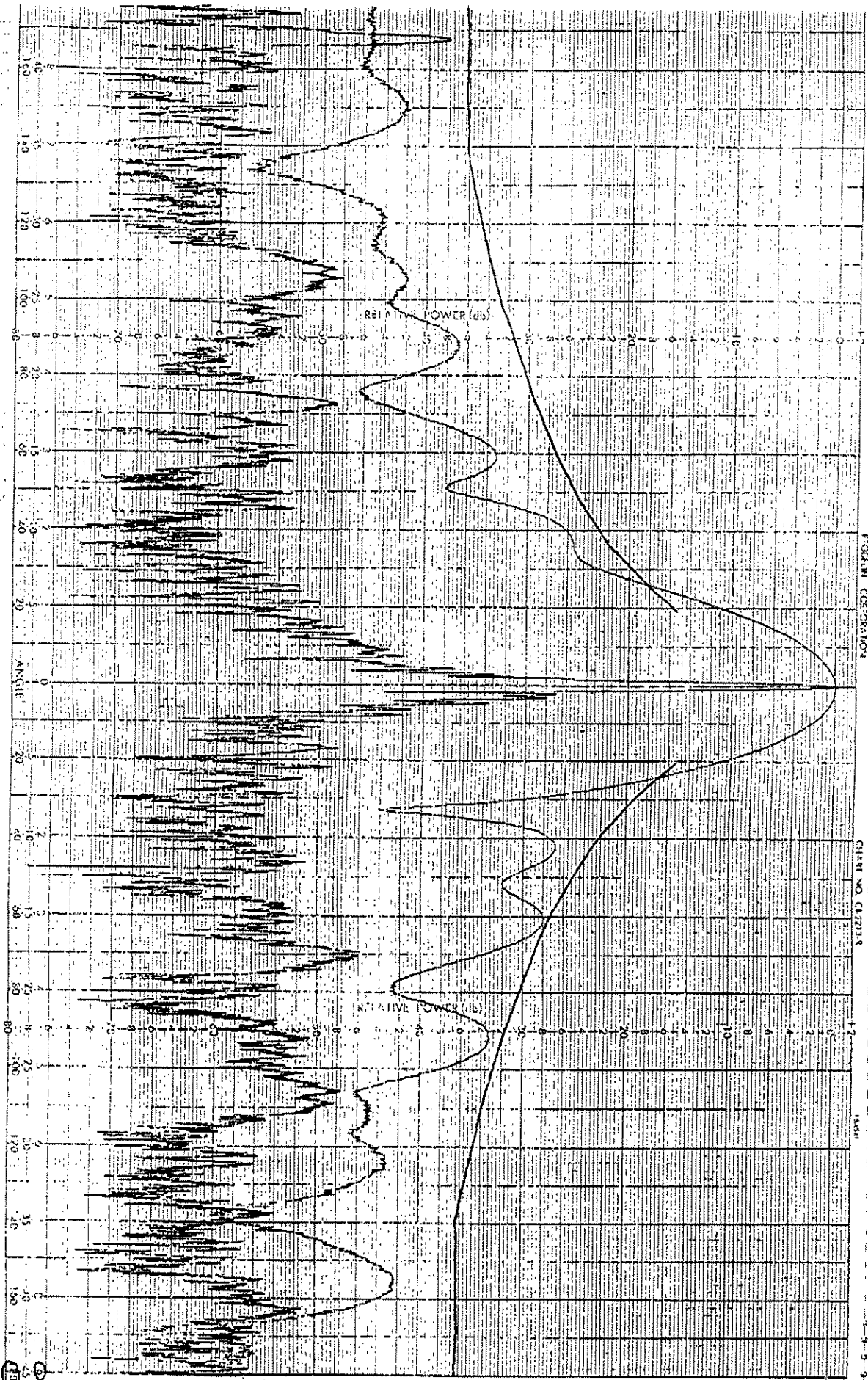


PROJECT 3.7m W/C-BAND RX/TX FEED
 REMARKS

ENGR DBL

DATE 05 JUN 92

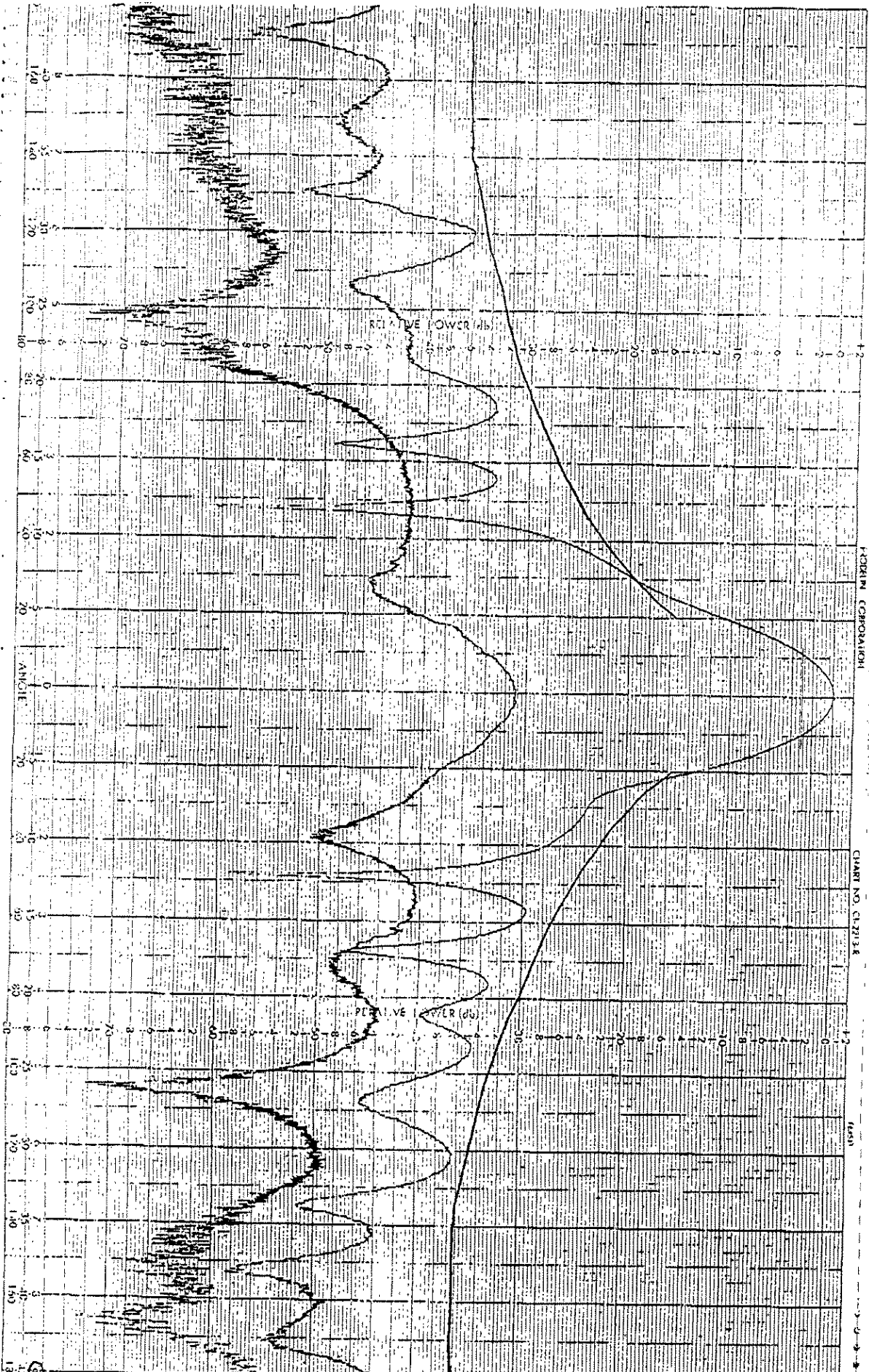
5.925 GHz H-PLANE ± 9° CO-POL R-X-Pol



PROJECT 3.7m WAVE-BAND ROTARY FEED ENGR DBL DATE 05 JUN 92

REMARKS

5.925 GHz H-PLANE $\pm 9^\circ$ $\pm 180^\circ$ CO-POL



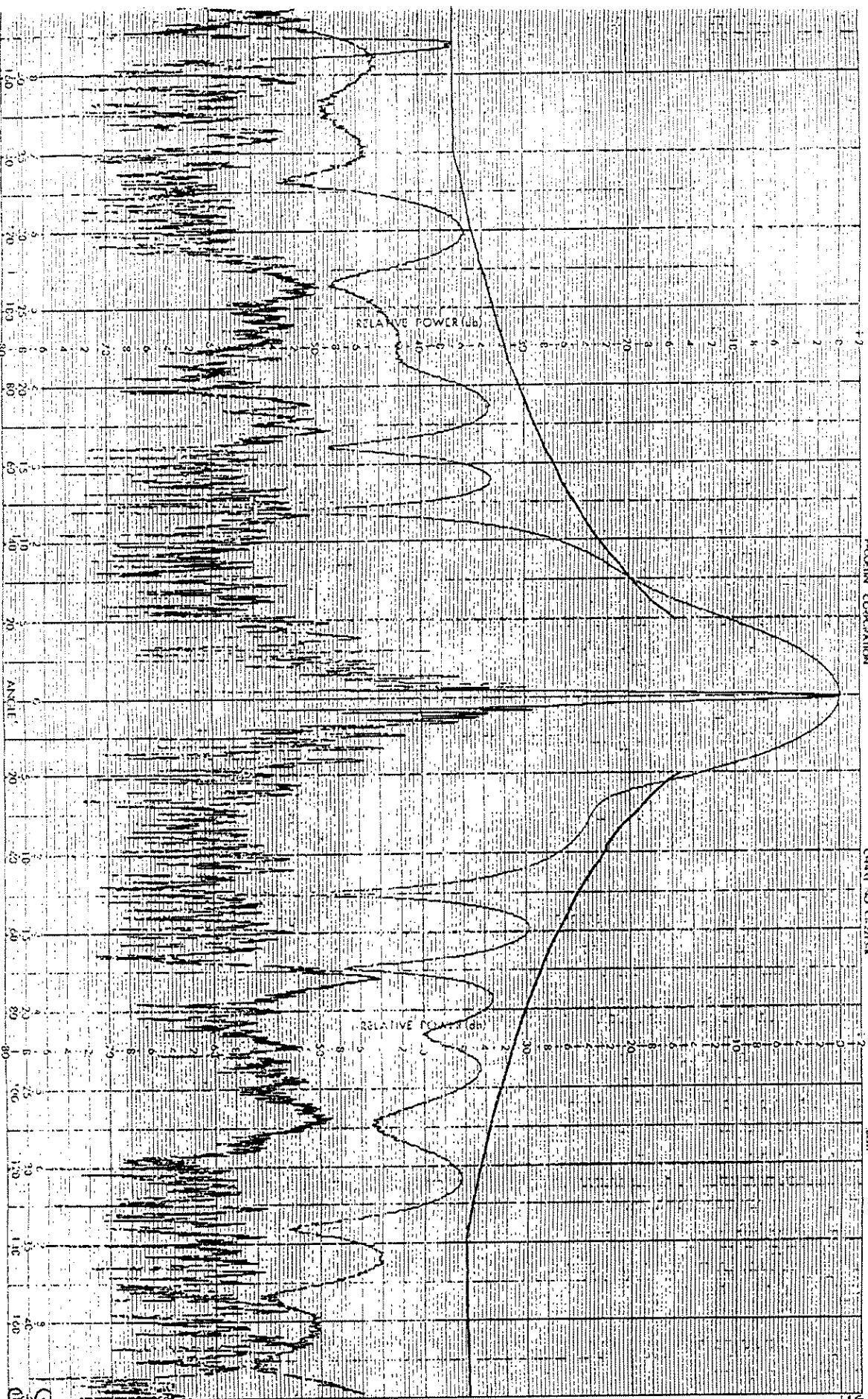
PROJECT 3.7m W/C BAND RX/TX FEED

ENGR DBL

DATE 05 JUN 92

REMARKS 5.925GHz E-PLANE ± 9° (n-Pol & x-Pol)

15

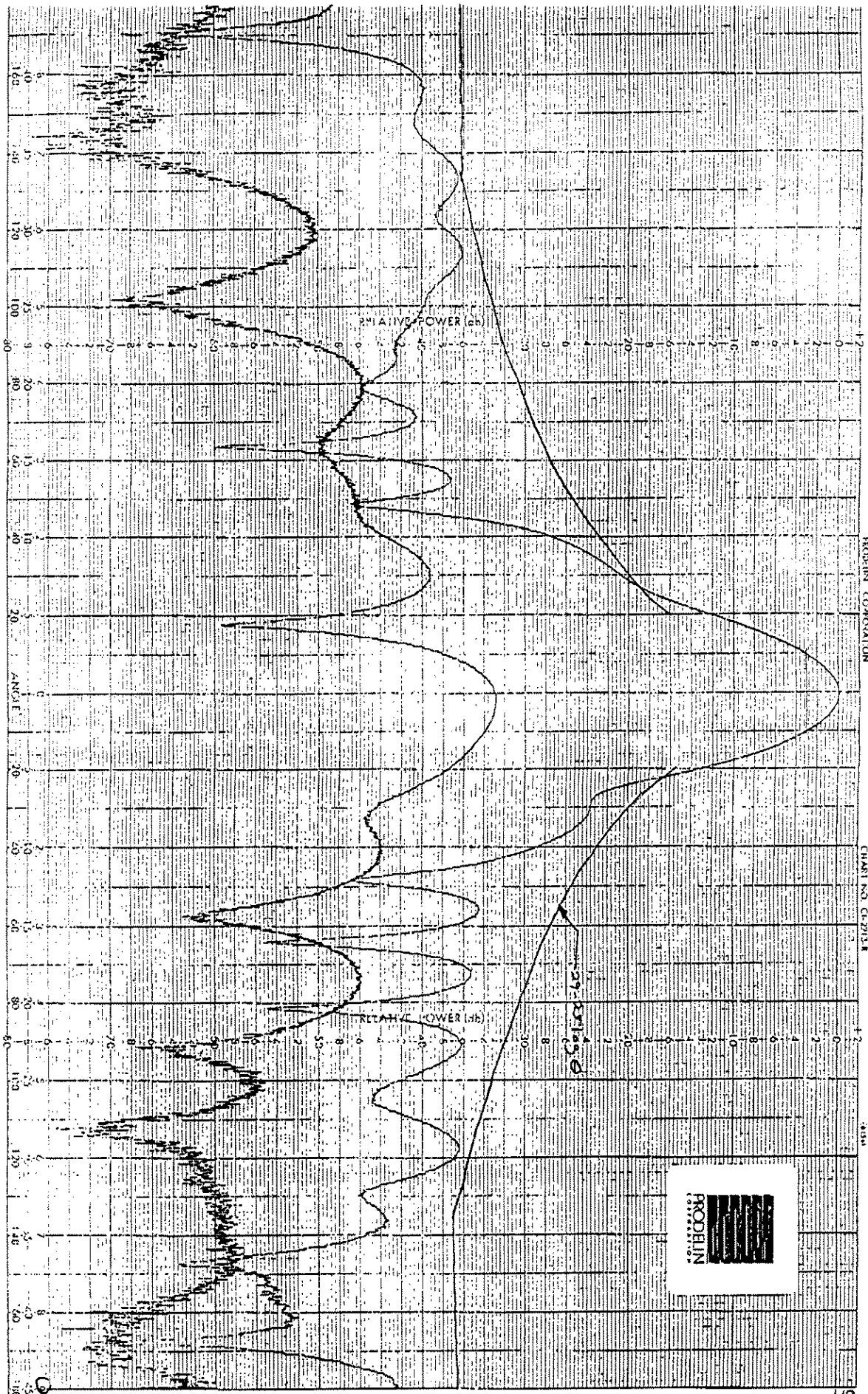


PROJECT 3.7m W/C-BAND RX/TX FEED
 REMARKS

ENGR DBL

DATE 05 JUN 92

5.925 GHz E-PLANE $\pm 90^\circ \pm 180^\circ$ CO-POL

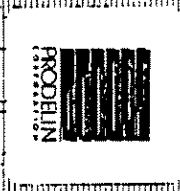


PROJECT 3.7m w/c-BAND RX/TX FEED
REMARKS

ENGR DBL

DATE 05 JUN 92

6.175 GHz E-PLANE ±9° CO-POL & X-POL

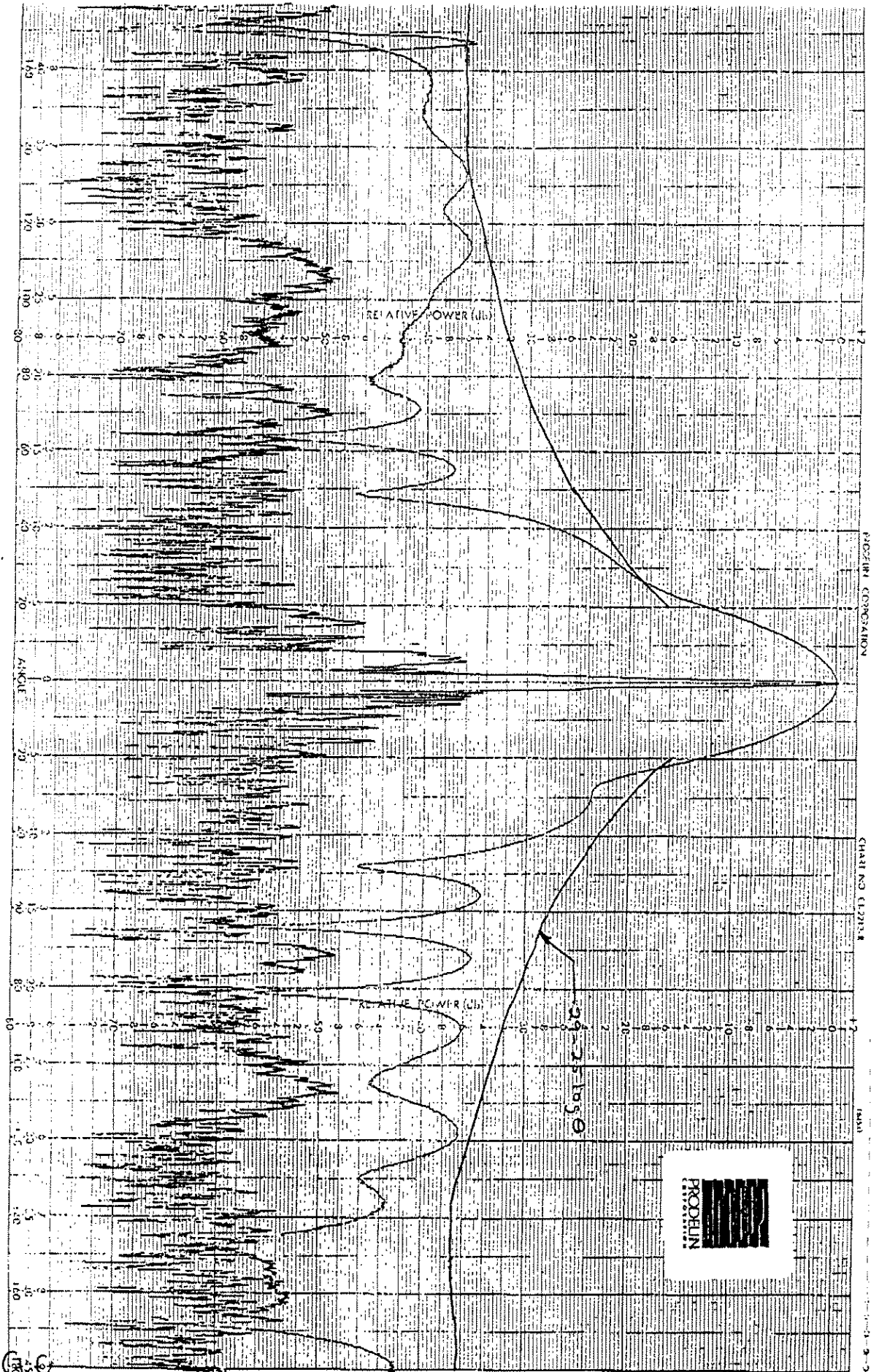


PROJECTIN CORPORATION

CHARLTON, CT 06115

1992

10



30

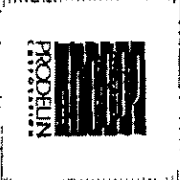
PROJECT REMARKS 3.7m w/C-BAND RX/TX FEED

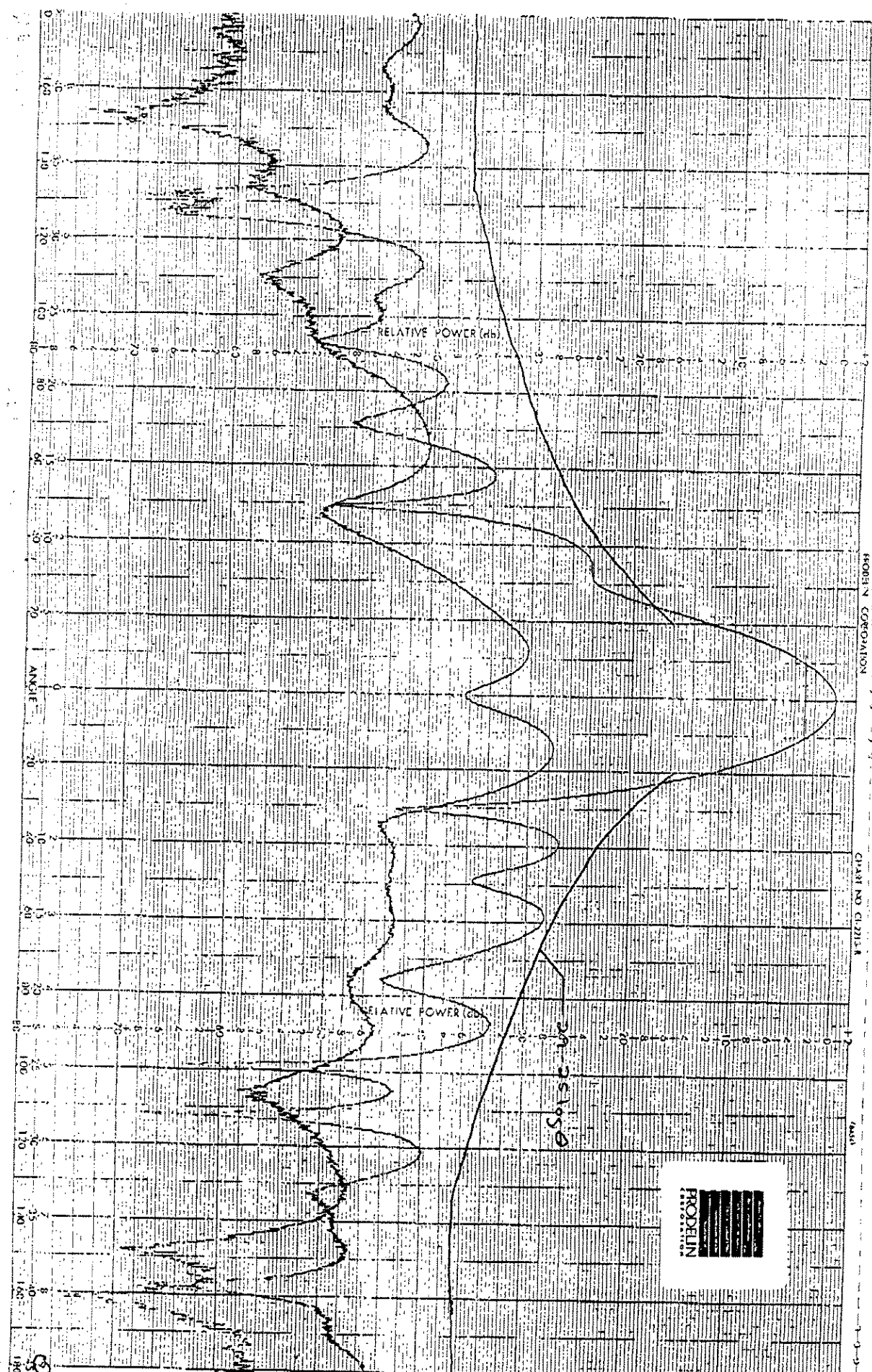
ENGR DBL

DATE 05 JUN 92

30

6.175GHz E-PLANE ±9° ±180° Co-Pol





HOBBS CORPORATION
 CHART NO. 02718

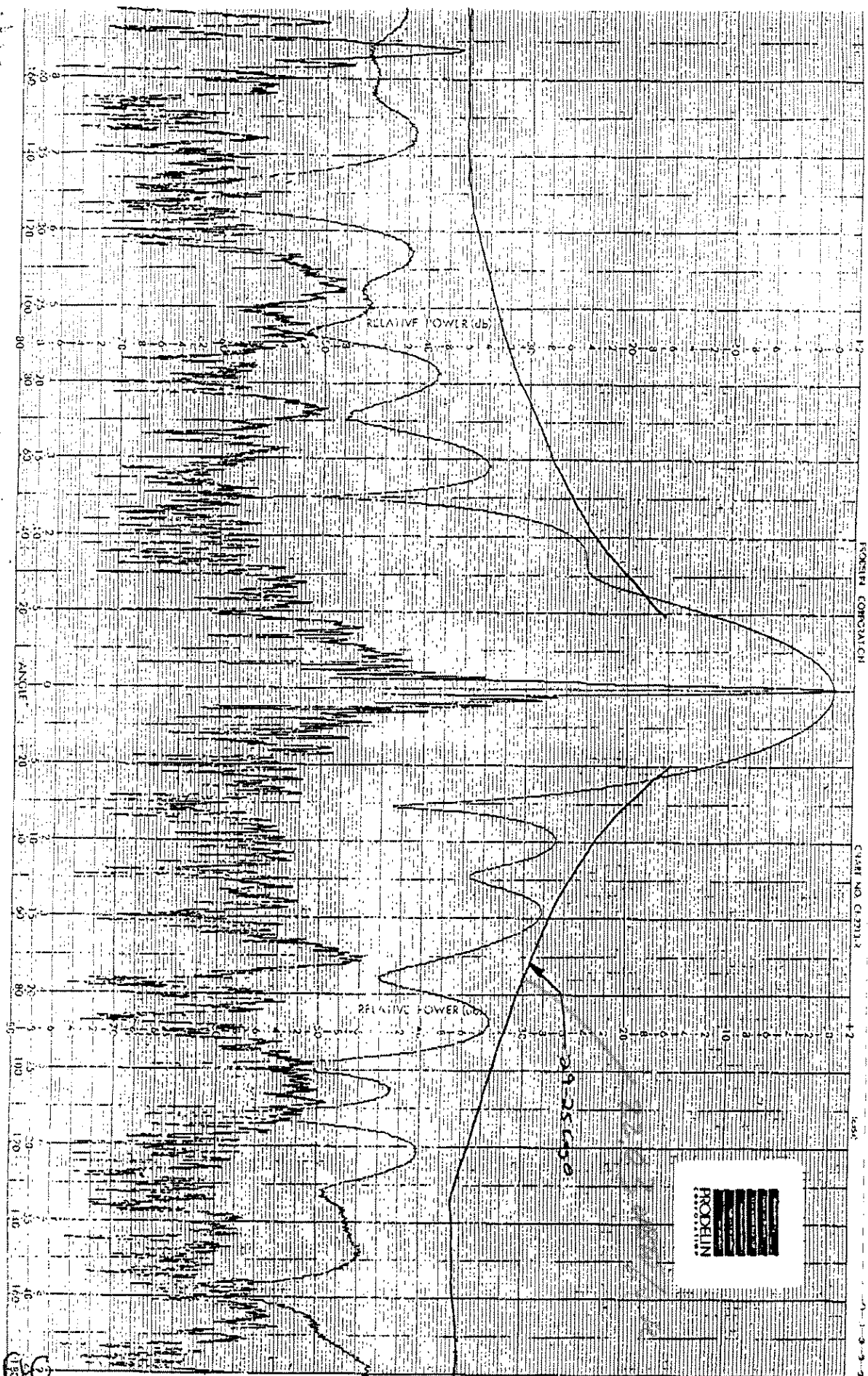
PROJECT 3.7m w/c-BANK RYH X-FLD

ENGR DBL

DATE 25 JUN 92

6.175GHz H-PLANE ± 9° CO-POL & X-POL



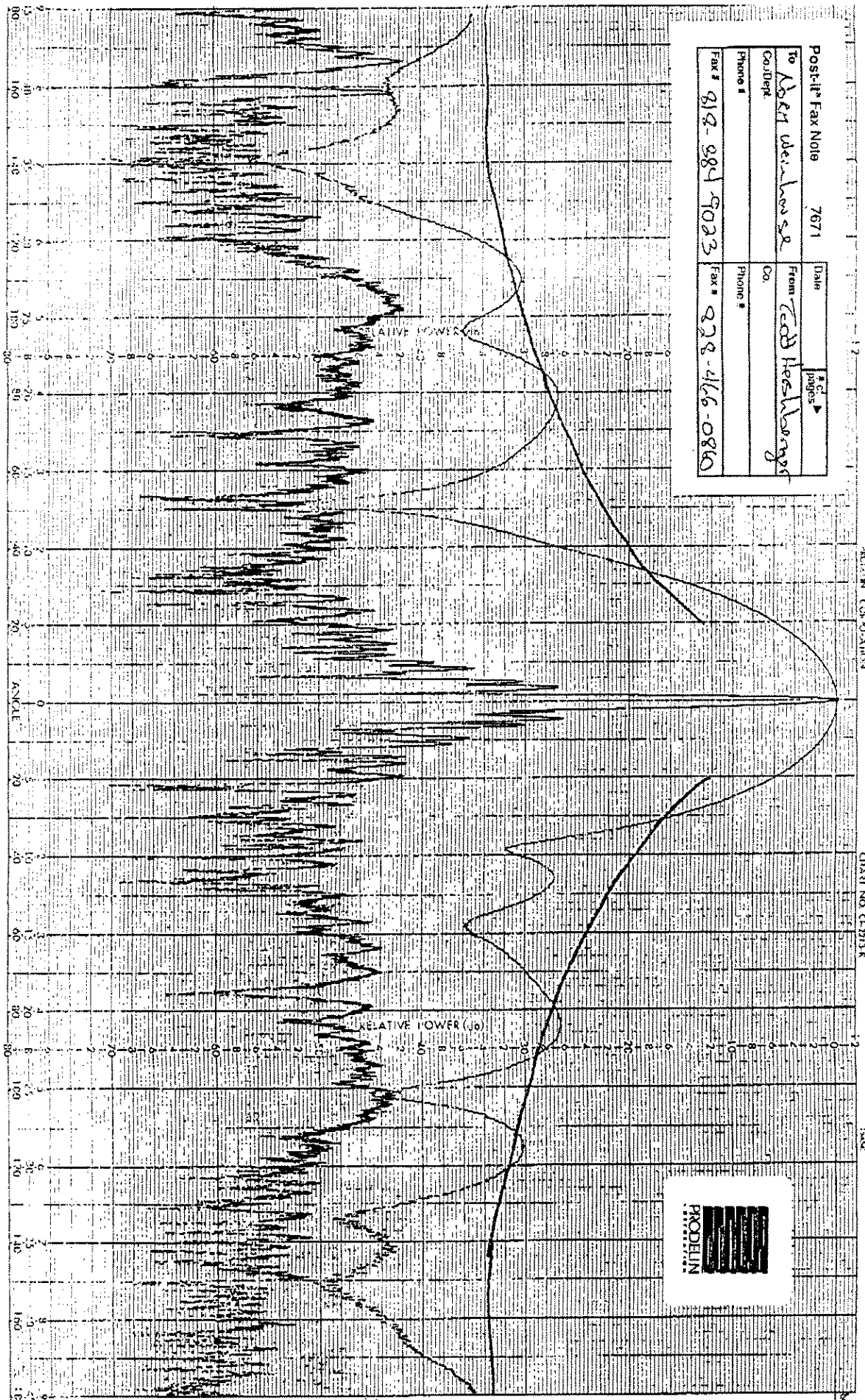


PROJECT REMARKS 3.7m W/C-BAND RX/TX FEED ENCR DBL DATE 05 JUN 92

6.175 GHz H-PLANE $\pm 9^\circ$ & $\pm 180^\circ$ CO-POL

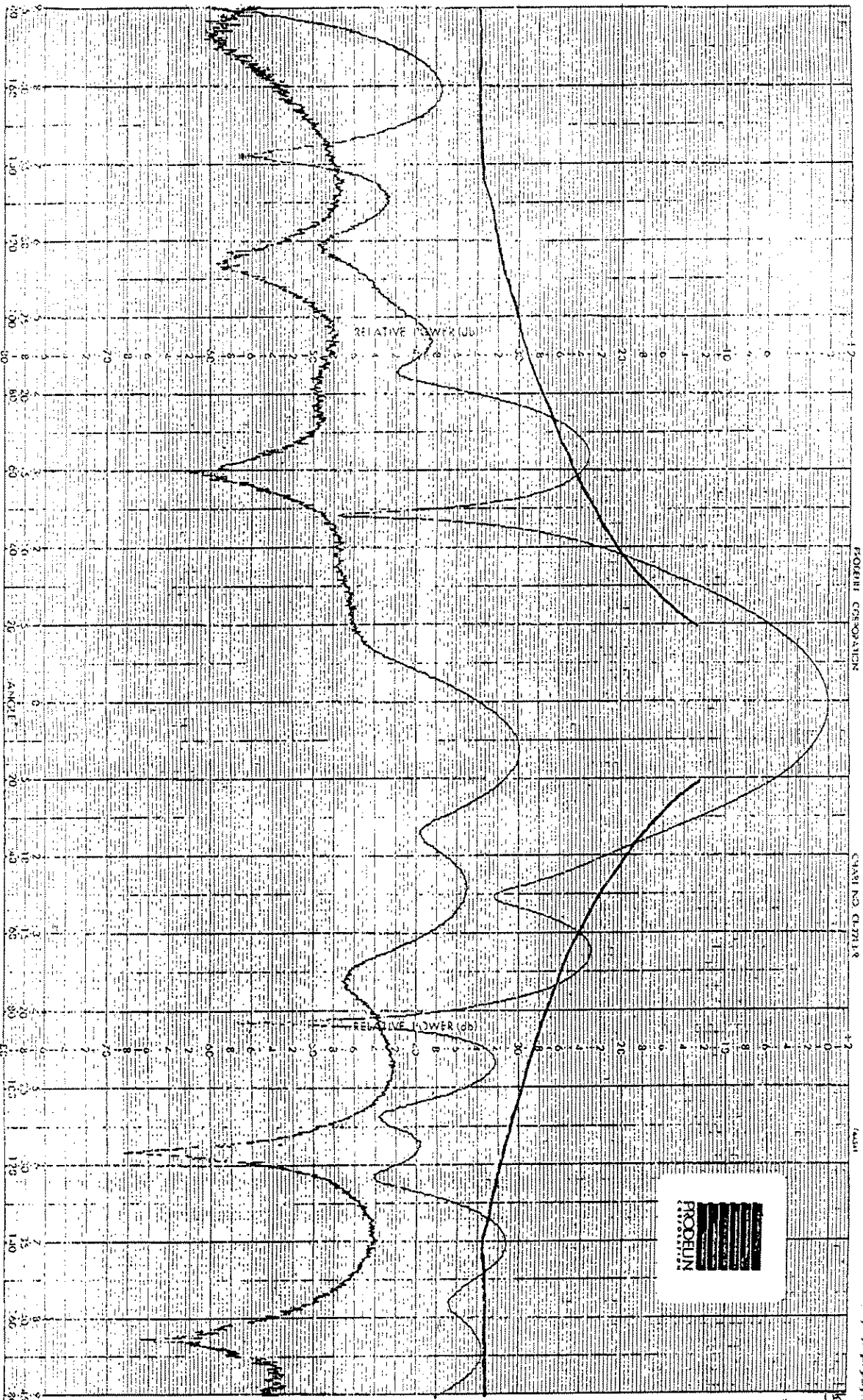


Post-It® Fax Note	7671	Date	# of pages
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Company		Co.	
Phone #		Phone #	
Fax #	919-984-9033	Fax #	919-466-0840



PROJECT 3.7m W/C-BAND RX/TX FLD... ENGR DBL DATE 08 JUN 92
 REMARKS

3.956MHz E-PLANE I 9.2 ± 180° 60-Pol



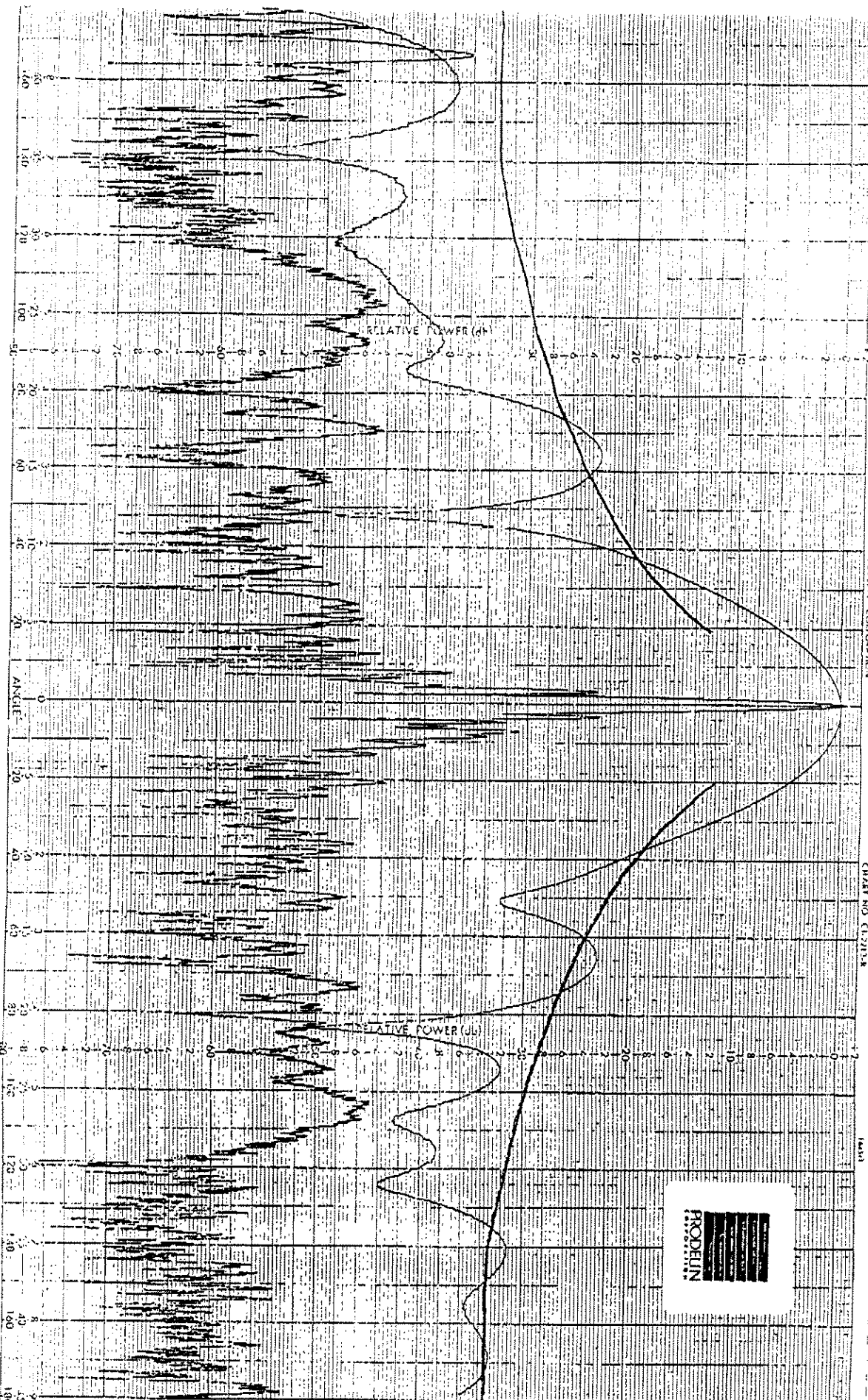
PROJECT 3.7M W/C-BAND RX/TX FIELD
 REMARKS

ENGR DBL

DATE 08 JUN 92

295011 11-01-92 + PA ON 01/01/92

PROOFLINE



PROJECT: N. CORRECTION

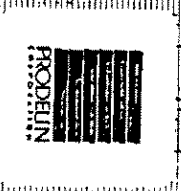
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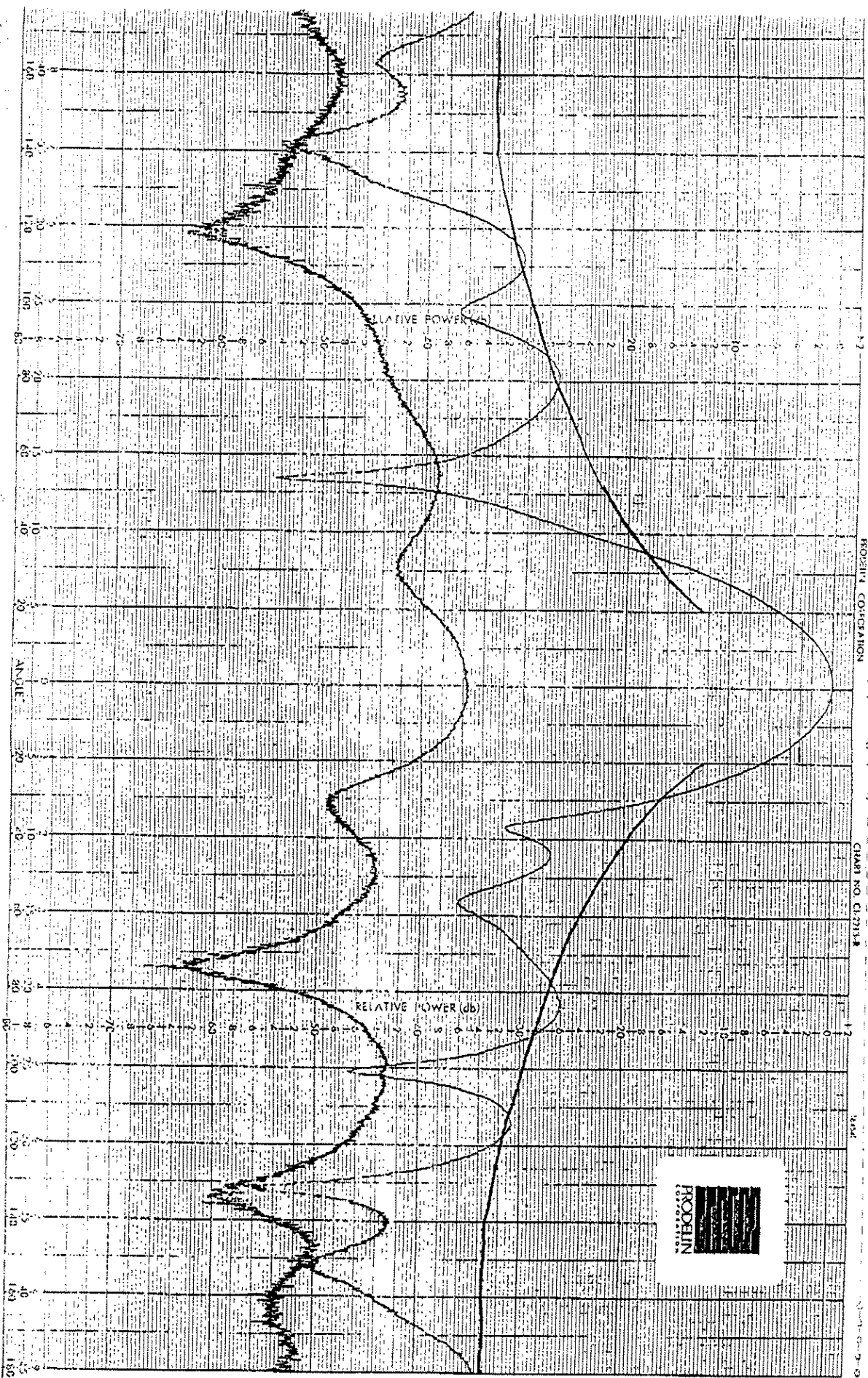
PROJECT 3.7m W/C-BAND RA/TX FEED

ENGR DBL

DATE 08 JUN 90

REMARKS 3.95GHz H-PLANE ± 9° ± 180° CO-POL

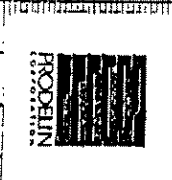




ROBEIN CORPORATION

CHART NO. 017114

MAX



PROJECT REMARKS 3.7m W/C-BAND RX-TX FEED ENGR DCL

DATE 98 JUN 92

3.956GHz E-PLANE ±90 Co-Pol & X-Pol

7



PROJECT 3.7m W/C-BAND RX/TX FEED

ENCR DBL

DATE 08 JUN 92

REMARKS

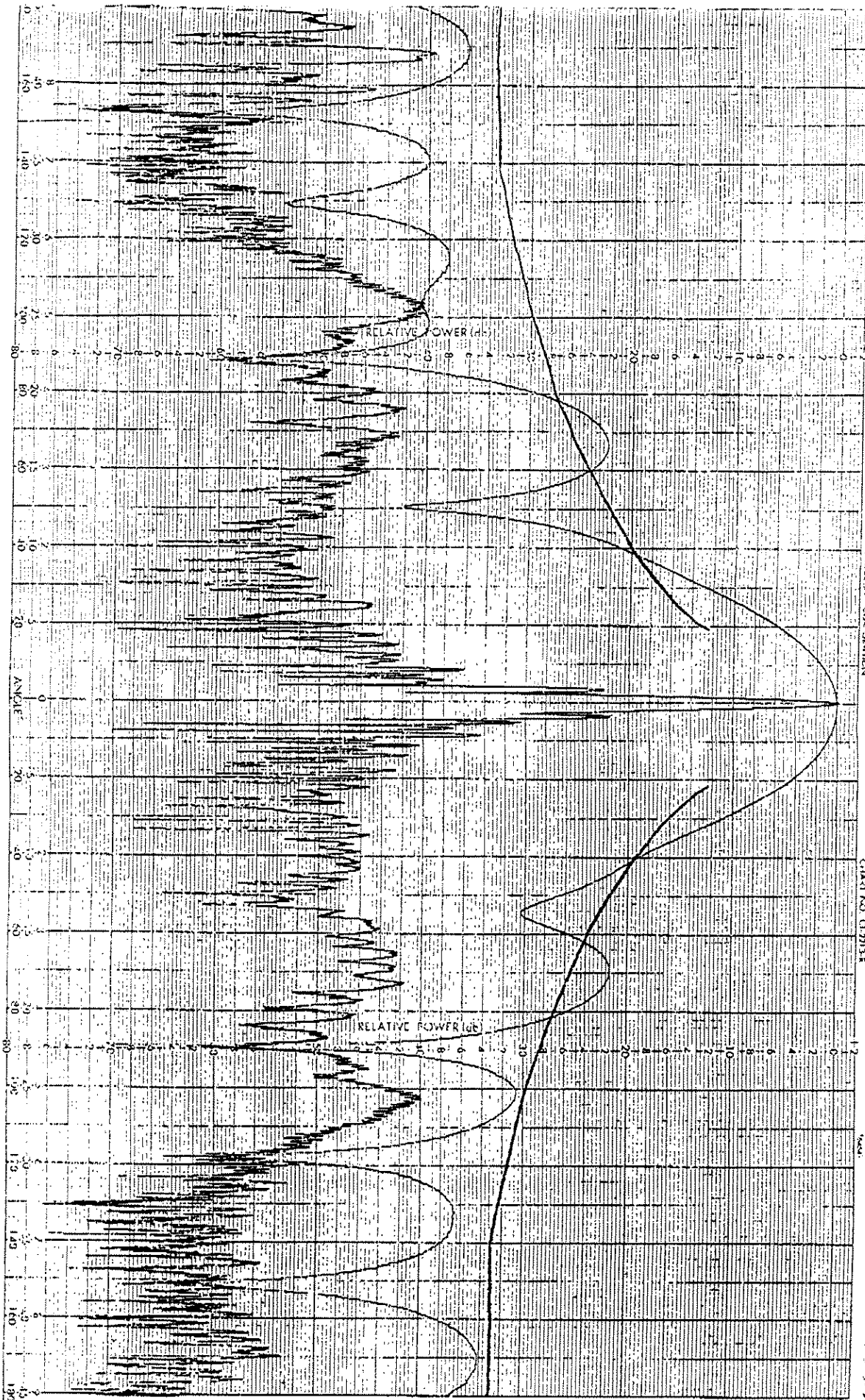
3.706Hz H-PLANE ± 90° CO-POL & X-POL

CHANT NO. 07711R

17

1844

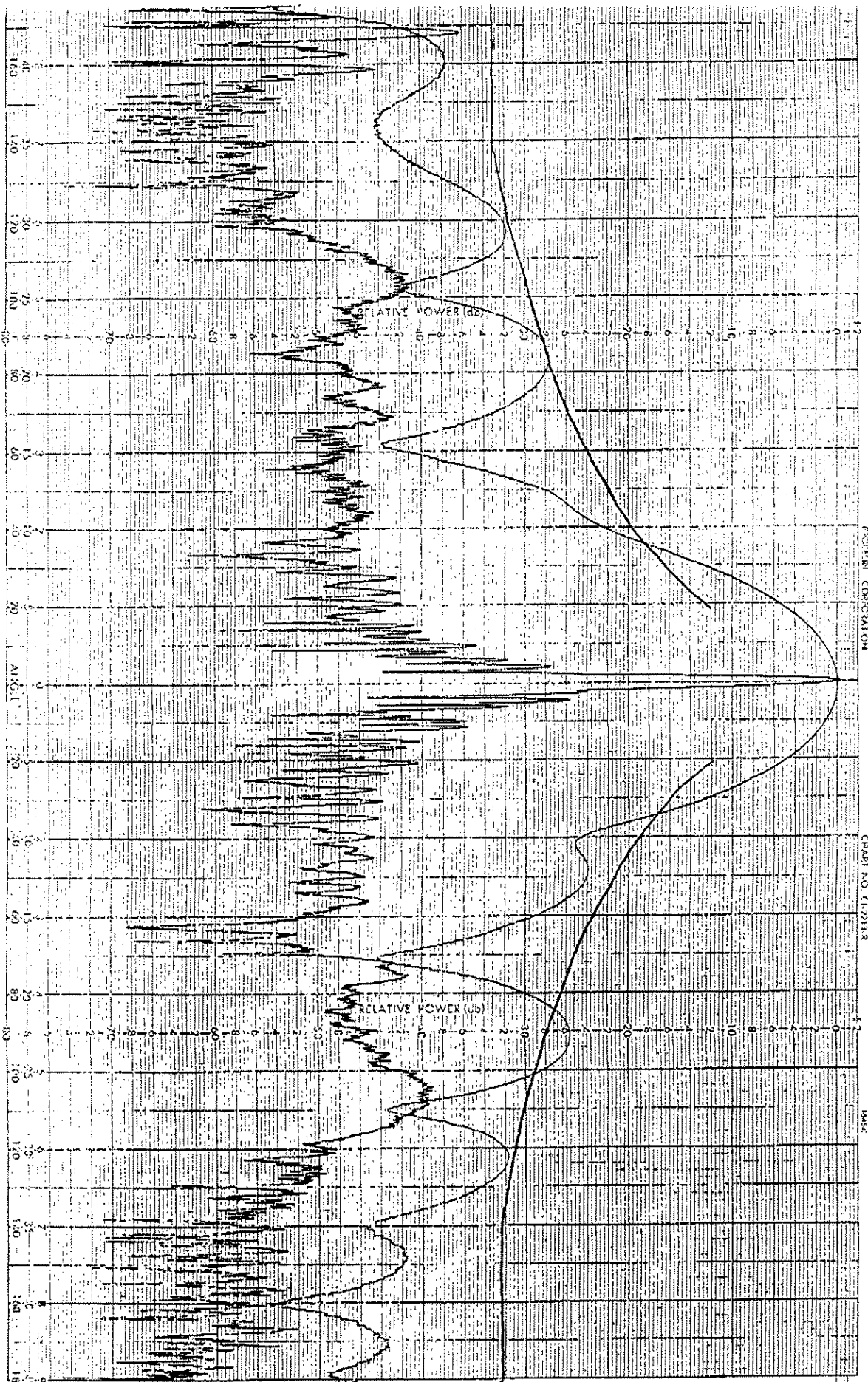
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PROJECT 3.7m W/E-BAND RX/TX FEED ENGR DBL DATE 08 JUN 92

REMARKS 3.70GHz H-PLANE 390° ± 1RA° CO-PA1

I



FORM NO. 1 (1/79) R

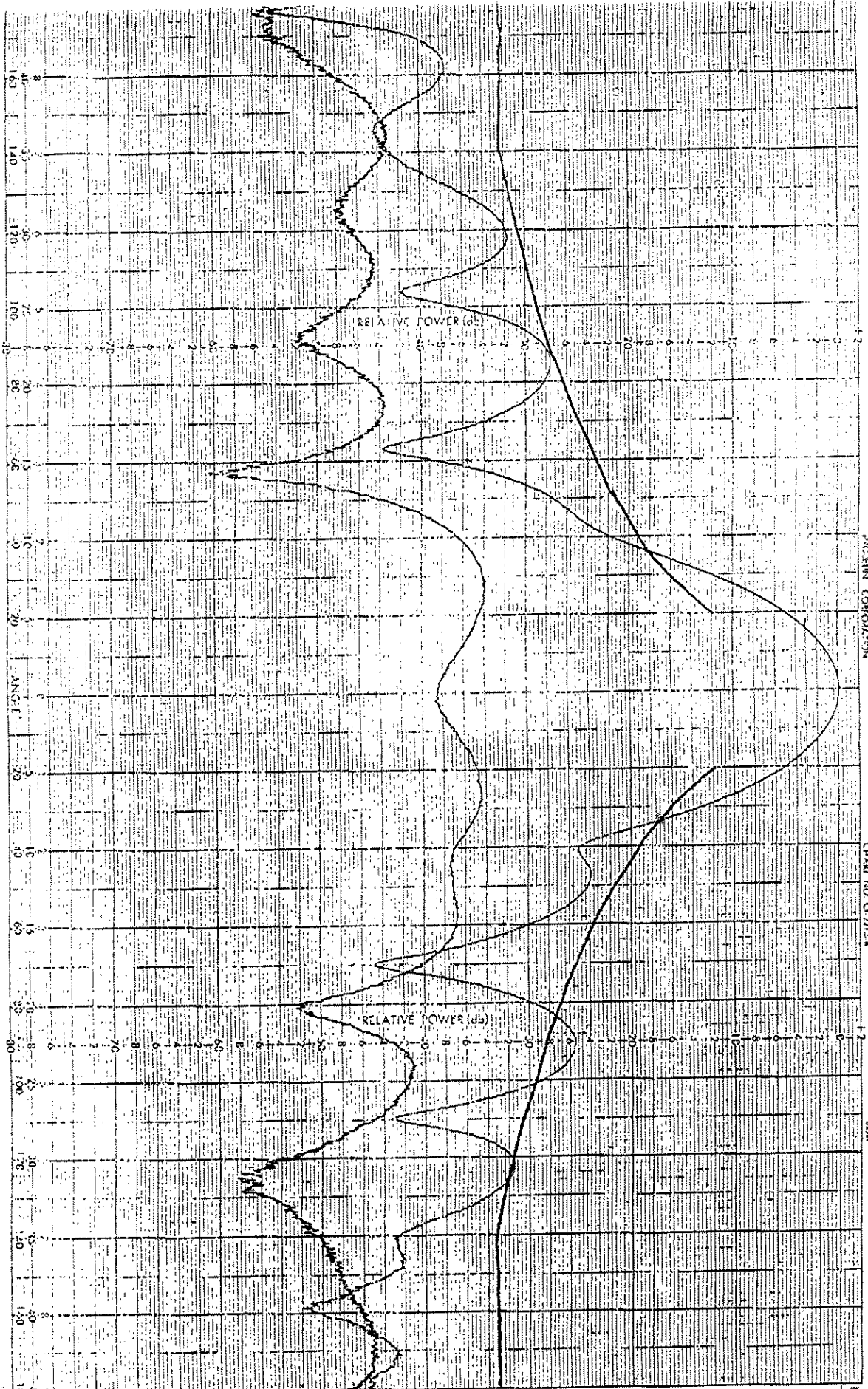
PROJECT 3.7m W/C-BAND RX/TX RECD

ENGR DBL

DATE 08 JUN 92

REMARKS

3.70GHz E-PLANE ±90° ±180° (O-Pol)



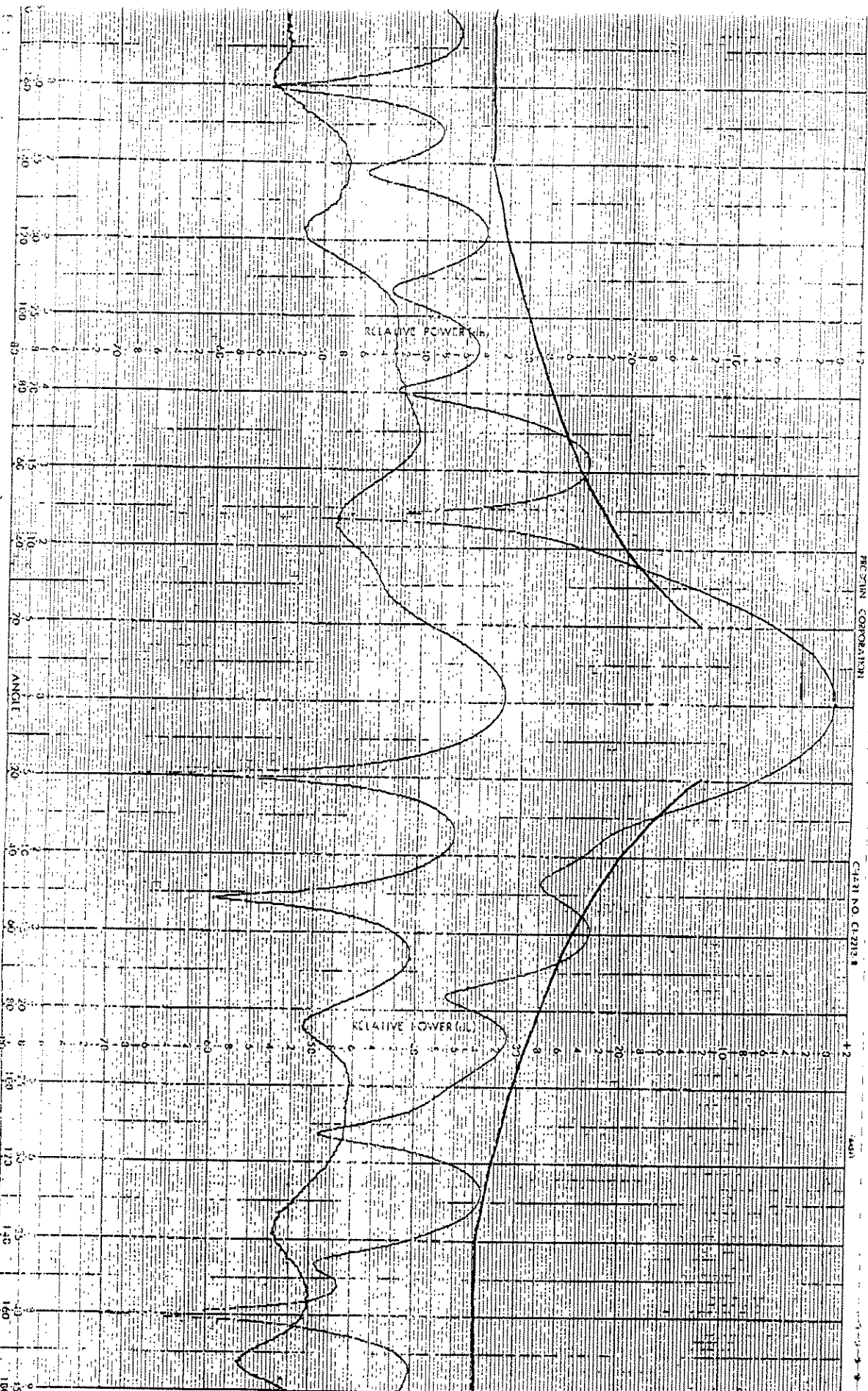
PROJECT 3.7m W/C-BAND RX/TX FEED

ENGR DBL

DATE 08 JUN 92

REMARKS

3.70GHz E-PLANE ±9° CO-POL & X-POL



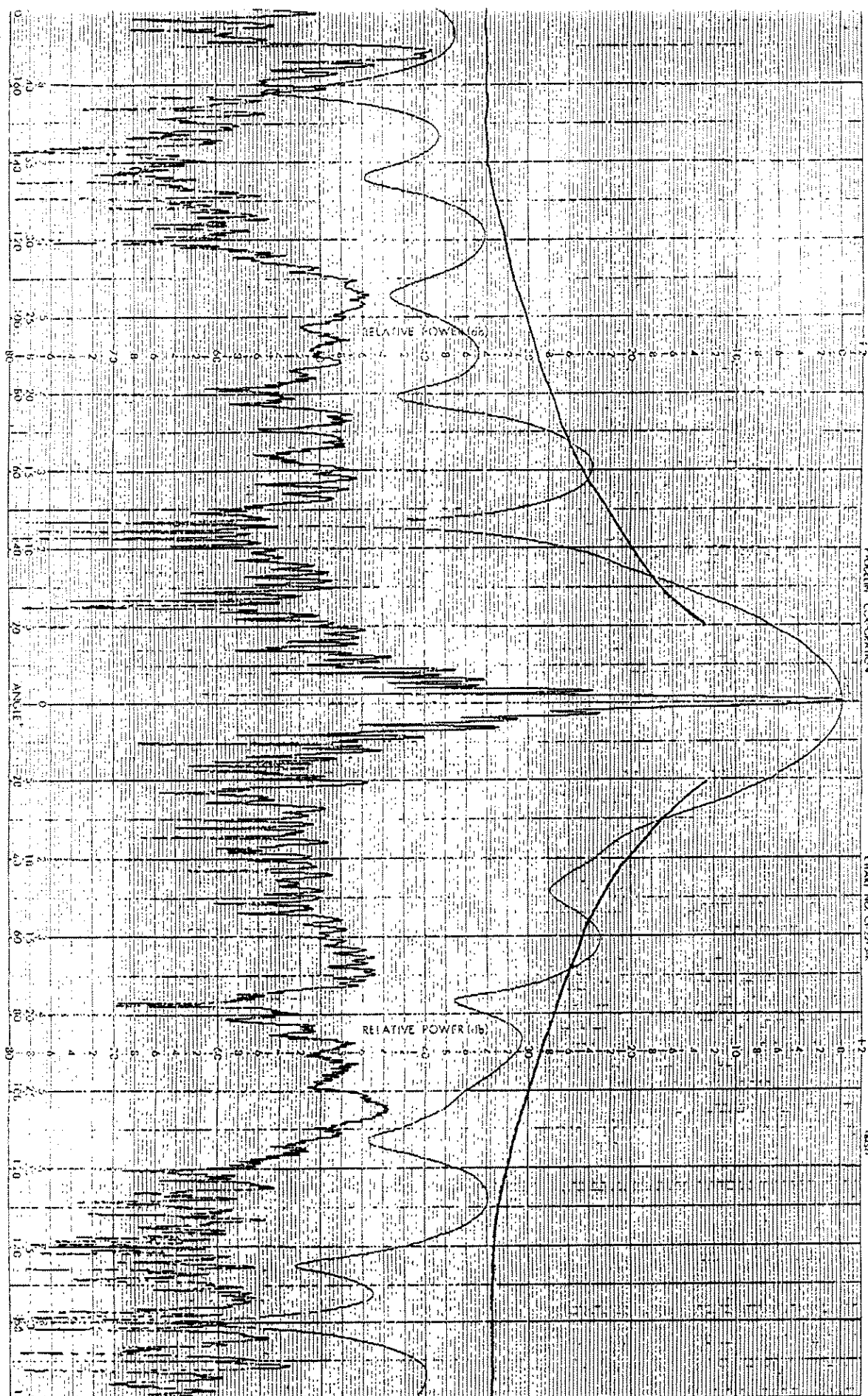
PROJECT 3.7m W/C-BAND R/H FEED

ENCR DBL

DATE 05 JUN 92

9

REMARKS
4.20GHz H-Plane $\pm 9^\circ$ Co-Pol & X-Pol

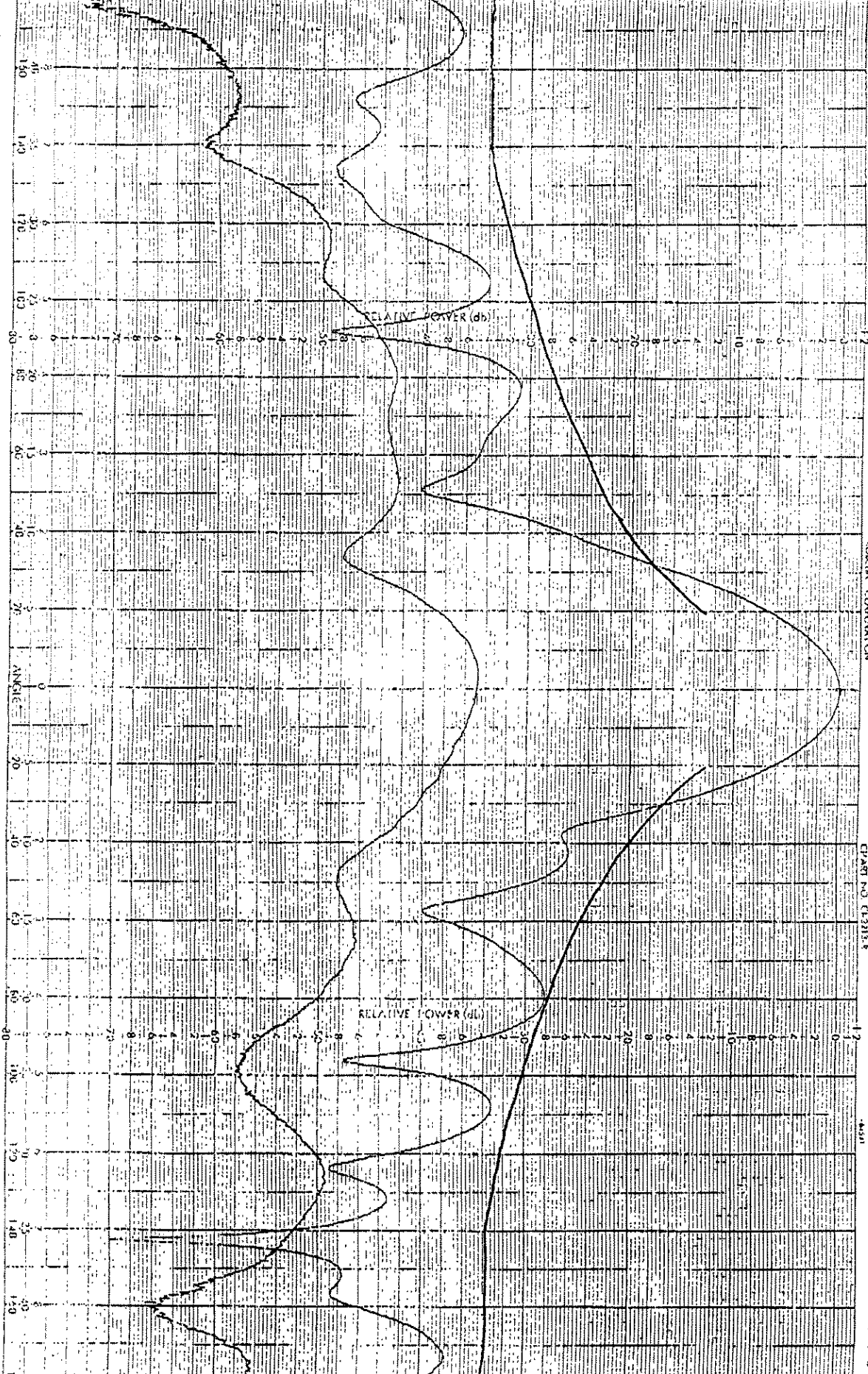


PROJECT 3.7m W/C-BAND RX/TX FEED
 REMARKS

ENGR DBL

DATE 05 JUN 92

4.20GHz H-PLANE $\pm 9^\circ \pm 180^\circ$ CO-POL



PROJECT INFORMATION

DATE AND TIME

UNIT

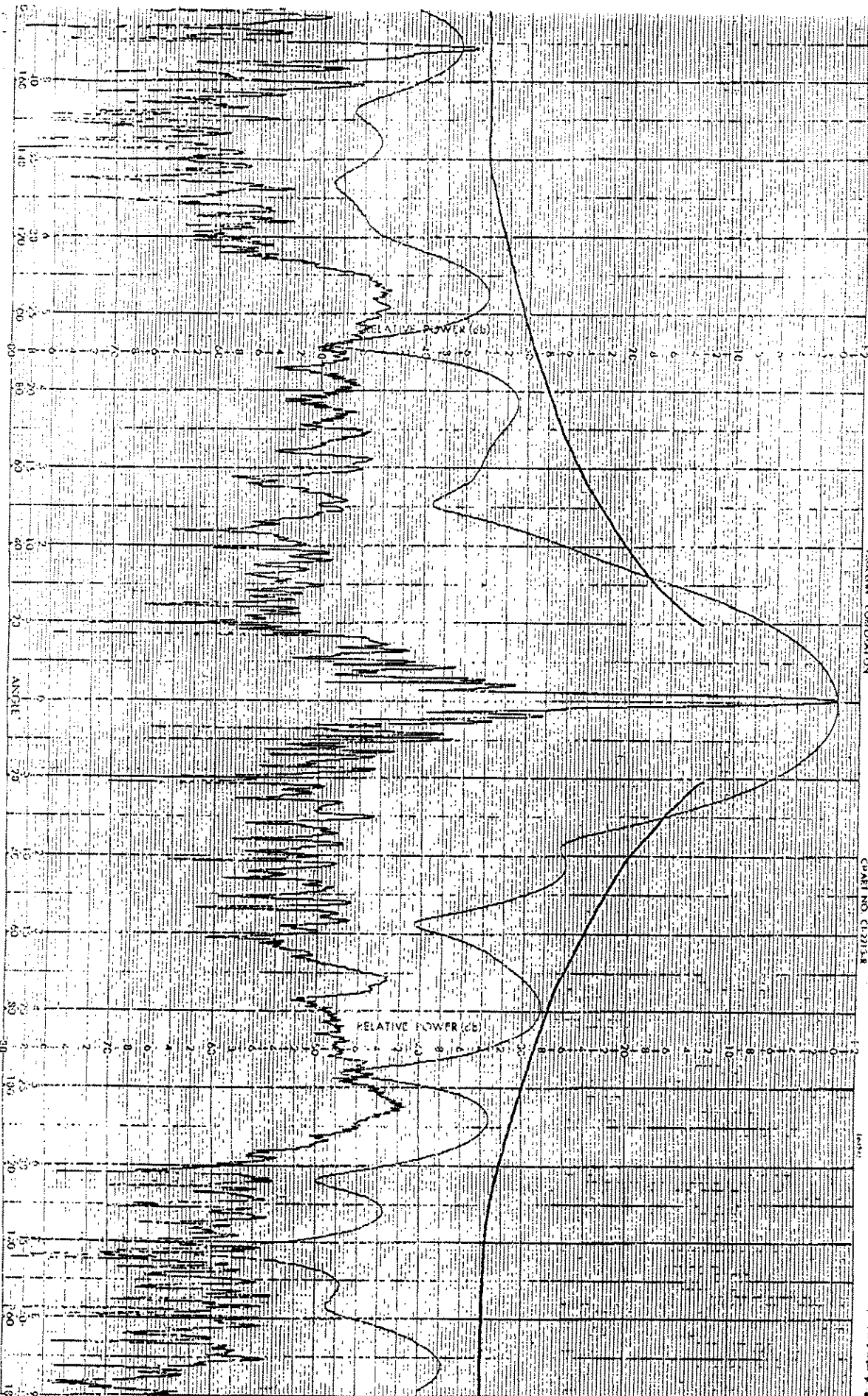
PROJECT 3.7m W/C-BAND RX/TX FICD

ENGR DBL

DATE 05 JUN 92

REMARKS H.20GHz E-PLANE=90 CO-POL & X-POL.

11



FORM NO. 100-100-100

CARD NO. 112114

PROJECT 3.7m V/C-BAND RX/TX FEED

ENGR DBL

DATE 05 JUN 92

REMARKS 4.20GHz E-PLANE 19° ± 180° CO-FED

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Exhibit C

FREQUENCY COORDINATION REPORT

FREQUENCY COORDINATION AND INTERFERENCE
ANALYSIS REPORT

PREPARED FOR
CONGRESS ELEMENTARY SCHOOL
CONGRESS, AZ
SATELLITE EARTH STATION

PREPARED BY
COMSEARCH
19700 Janelia Farm Blvd.
Ashburn, Virginia 20147
August 22, 2001

TABLE OF CONTENTS

1. CONCLUSIONS
2. SUMMARY OF RESULTS
3. SUPPLEMENTAL SHOWING, RE: PART 25.203(C)
4. EARTH STATION COORDINATION DATA
5. CERTIFICATION

1. CONCLUSIONS

AN INTERFERENCE STUDY CONSIDERING ALL EXISTING, PROPOSED AND PRIOR COORDINATED MICROWAVE FACILITIES WITHIN THE COORDINATION CONTOURS OF THE PROPOSED EARTH STATION DEMONSTRATES THAT THIS SITE WILL OPERATE SATISFACTORILY WITH THE COMMON CARRIER MICROWAVE ENVIRONMENT. FURTHER, THERE WILL BE NO RESTRICTIONS OF ITS OPERATION DUE TO INTERFERENCE CONSIDERATIONS.

2. SUMMARY OF RESULTS

A NUMBER OF GREAT CIRCLE INTERFERENCE CASES WERE IDENTIFIED DURING THE INTERFERENCE STUDY OF THE PROPOSED EARTH STATION. EACH OF THE CASES WHICH EXCEEDED THE INTERFERENCE OBJECTIVE ON A LINE-OF-SIGHT BASIS WAS PROFILED AND THE PROPAGATION LOSSES ESTIMATED USING NBS TN101 (REVISED) TECHNIQUES. THE LOSSES WERE FOUND TO BE SUFFICIENT TO REDUCE THE SIGNAL LEVELS TO ACCEPTABLE MAGNITUDES IN EVERY CASE.

THE FOLLOWING COMPANIES REPORTED POTENTIAL GREAT CIRCLE INTERFERENCE CONFLICTS WHICH DID NOT MEET THE OBJECTIVES ON A LINE-OF-SIGHT BASIS. WHEN OVER-THE-HORIZON LOSSES ARE CONSIDERED ON THE INTERFERING PATHS, SUFFICIENT BLOCKAGE EXISTS TO NEGATE HARMFUL INTERFERENCE FROM OCCURRING WITH THE PROPOSED TRANSMIT AND RECEIVE EARTH STATION.

COMPANY

NO OTHER CARRIERS REPORTED POTENTIAL INTERFERENCE CASES.

3. SUPPLEMENTAL SHOWING
RE: PART 25.203(C)

PURSUANT TO PART 25.203(C) OF THE FCC RULES AND REGULATIONS,
THE SATELLITE EARTH STATION PROPOSED IN THIS APPLICATION
WAS COORDINATED BY COMSEARCH USING COMPUTER TECHNIQUES
AND IN ACCORDANCE WITH PART 25 OF THE FCC RULES AND
REGULATIONS.

COORDINATION DATA FOR THIS EARTH STATION WAS SENT TO THE
BELOW LISTED CARRIERS WITH A LETTER DATED JULY 16, 2001.

360(DEGREE) COMMUNICATIONS COMP OF NV LP
ARIZONA PUBLIC SERVICE COMPANY
AT&T WIRELESS SERVICES OF FL INC-Arizona
CITIZENS UTILITIES RURAL COMPANY
CNG COMMUNICATIONS, INC.
COPPER VALLEY TELEPHONE COMPANY
CORBAN COMMUNICATIONS INC.
CROWN CASTLE INT CORP DE PUERTO RICO
MARICOPA COUNTY RADIO & MICROWAVE DIV
MCI WORLDCOM NETWORK SERVICES INC
PHOENIX CITY ARIZONA
QWEST COMMUNICATIONS INTERNATIONAL INC.
SOUTH CENTRAL UTAH TELEPHONE COMPANY
SUN HEALTH CORPORATION
Table Top Telephone Company
VALLEY TELEPHONE COOPERATIVE , INC.
VELOCITEL, INC
VERIZON WIRELESS (VAW) LLC
VERIZON WIRELESS (VAW) LLC-Desert Mt Reg
YAVAPAI COLLEGE

4. EARTH STATION COORDINATION DATA

THIS SECTION PRESENTS THE DATA PERTINENT TO FREQUENCY
COORDINATION OF THE PROPOSED EARTH STATION WHICH WAS
CIRCULATED TO ALL COMMON CARRIERS WITHIN ITS COOR-
DINATION CONTOURS.

SATELLITE EARTH STATION
FREQUENCY COORDINATION DATA

Company	CONGRESS ELEMENTARY SCHOOL		
Owner code	CONGES		
Earth Station Name, State	CONGRESS, AZ		
Latitude (DMS) (NAD83)	34 10 24.0 N		
Longitude (DMS) (NAD83)	112 51 41.0 W		
Ground Elevation AMSL (Ft/m)	3110.13 /	947.92	
Antenna Centerline AGL (Ft/m)	8.99 /	2.74	
Receive Antenna Type:	FCC32	PRODELIN 1374	
4.0 GHz Gain (dBi) / Diameter (m)	40.9 /	3.7	
3 dB / 15 dB Half Beamwidth	0.75 /	1.50	
Transmit Antenna Type:	FCC32	PRODELIN 1374	
6.0 GHz Gain (dBi) / Diameter (m)	44.7 /	3.7	
3 dB / 15 dB Half Beamwidth	0.55 /	1.10	
Operating Mode	TRANSMIT AND RECEIVE		
Modulation	DIGITAL		
Receive / Receive Band (MHz)	8K00G7D	2M00G7D /	3700.0000 - 4200.0000
Transmit / Transmit Band (MHz)	8K00G7D	2M00G7D /	5925.0000 - 6425.0000
Max. Available RF Power (dBW)/4 kHz		-23.97	
(dBW)/MHz		0.03	
Max. EIRP		20.73	
(dBW)/4 kHz		44.73	
(dBW)/MHz			
Max permissible Interference Power			
4.0 GHz, 20% (dBW/1 MHz)		-156.0	
4.0 GHz, 0.0100% (dBW/1 MHz)		-146.0	
6.0 GHz, 20% (dBW/4 kHz)		-154.0	
6.0 GHz, 0.0025% (dBW/4 kHz)		-131.0	
Range of Satellite Arc (Geostationary)			
Degrees Longitude	60.0 W /	143.0 W	
Azimuth Range (Min/Max)	113.0 /	225.9	
Corresponding Elevation Angles	21.9 /	38.9	
Radio Climate	A		
Main Zone	5		
Max Great Circle Coordination Distance (Mi/Km)			
4.0 GHz	177.2 /	285.3	
6.0 GHz	66.5 /	107.0	
Recipitation Scatter Contour Radius (Mi/Km)			
4.0 GHz	244.7 /	393.8	
6.0 GHz	62.1 /	100.0	

Table of Earth Station Coordination Values

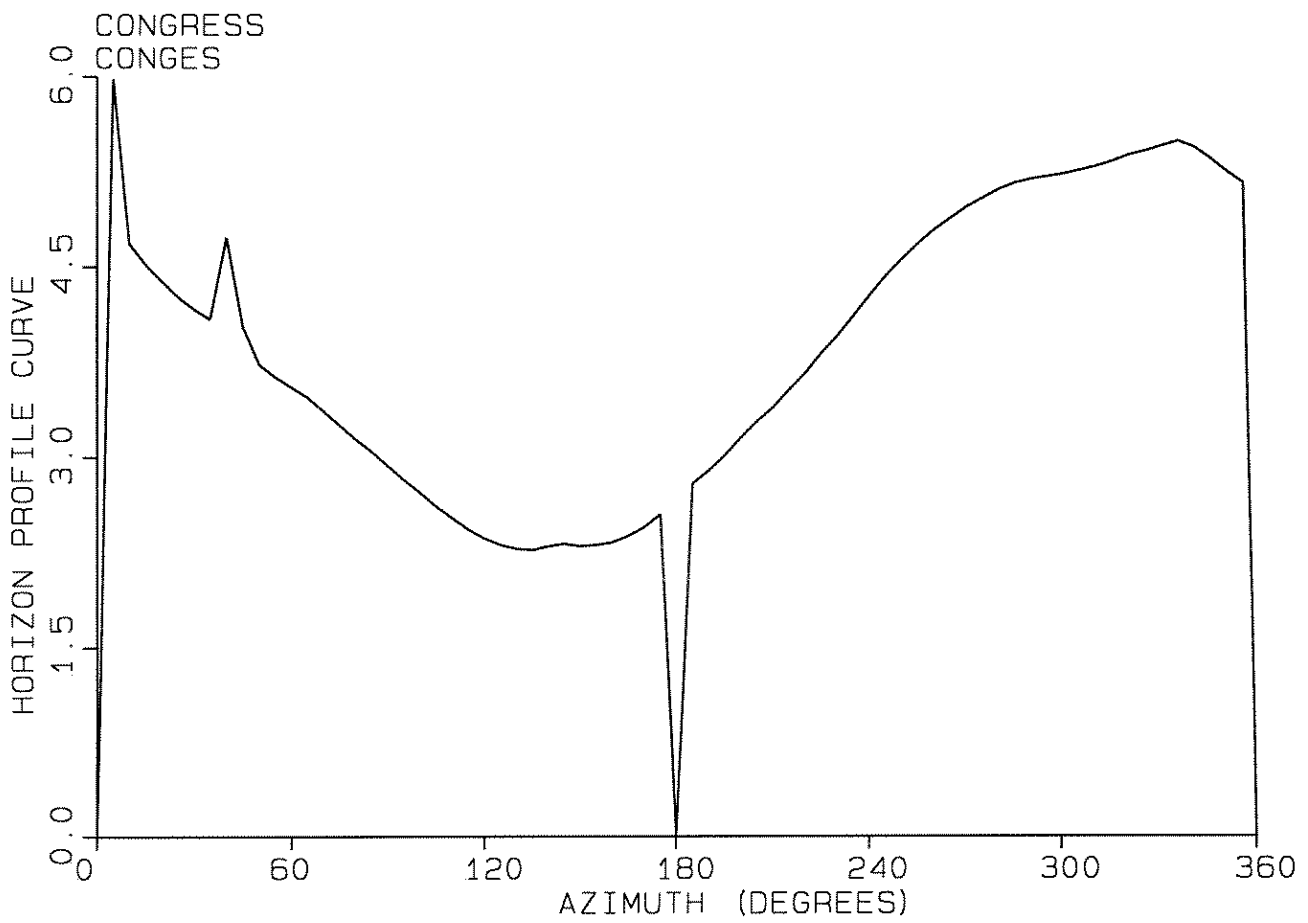
Earth Station Name CONGRESS AZ
 Owner CONGRESS ELEMENTARY SCHOOL
 Latitude (DMS) (NAD83) 34 10 24.0 N
 Longitude (DMS) (NAD83) 112 51 41.0 W
 Ground Elevation (Ft/m) 3110.13 / 947.92 AMSL
 Antenna Centerline (Ft/m) 8.99 / 2.74 AGL
 Antenna Model PRODELIN 1374
 Objectives: Receive -156.0 (dBW /1 MHz)
 Transmit -154.0 (dBW /4 kHz) TX Power -24.0 (dBW/4 kHz)

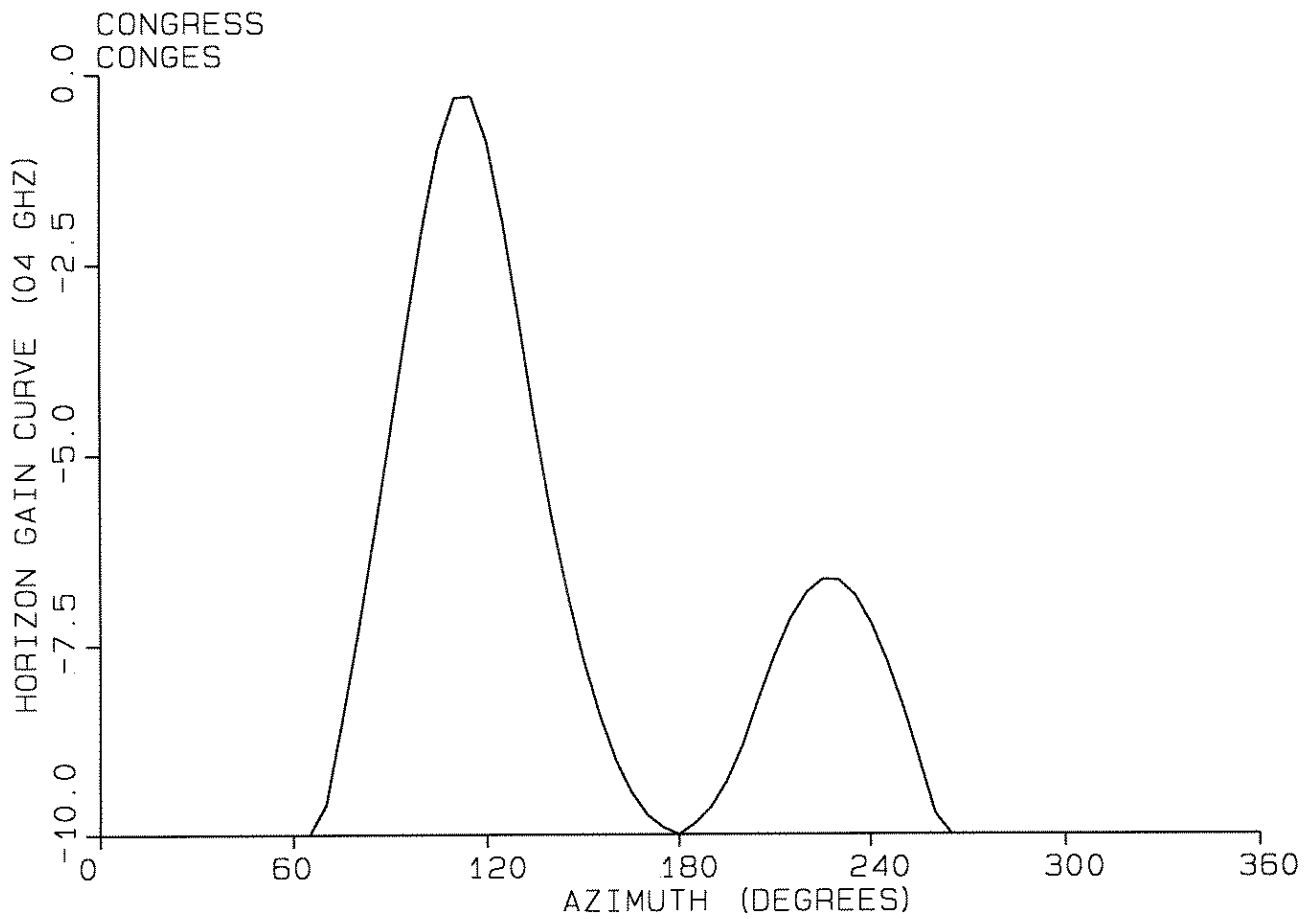
Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	Antenna Gain (dBi)	4.0 GHz Coordination Distance (Km)	Antenna Gain (dBi)	6.0 GHz Coordination Distance (Km)
0	0.00	111.30	-10.00	285.2	-10.00	107.0
5	5.98	107.33	-10.00	125.4	-10.00	100.0
10	4.68	102.45	-10.00	137.8	-10.00	100.0
15	4.52	97.68	-10.00	140.0	-10.00	100.0
20	4.39	92.91	-10.00	142.0	-10.00	100.0
25	4.27	88.14	-10.00	143.7	-10.00	100.0
30	4.17	83.38	-10.00	145.3	-10.00	100.0
35	4.09	78.63	-10.00	146.5	-10.00	100.0
40	4.73	73.82	-10.00	137.2	-10.00	100.0
45	4.03	69.16	-10.00	147.4	-10.00	100.0
50	3.73	64.49	-10.00	153.4	-10.00	100.0
55	3.63	59.83	-10.00	155.4	-10.00	100.0
60	3.55	55.21	-10.00	157.2	-10.00	100.0
65	3.47	50.64	-10.00	159.0	-10.00	100.0
70	3.36	46.14	-9.60	163.4	-9.60	100.0
75	3.25	41.74	-8.51	173.2	-8.51	100.0
80	3.14	37.47	-7.34	181.7	-7.34	100.0
85	3.04	33.37	-6.08	190.3	-6.08	100.0
90	2.93	29.52	-4.75	199.2	-4.75	100.0
95	2.82	26.03	-3.39	205.8	-3.39	100.0
100	2.72	23.06	-2.07	214.7	-2.07	100.0
105	2.61	20.84	-0.97	223.3	-0.97	100.0
110	2.52	19.61	-0.31	229.6	-0.31	100.0
115	2.43	19.57	-0.29	232.1	-0.29	100.0
120	2.36	20.70	-0.90	230.0	-0.90	100.0
125	2.31	22.83	-1.96	225.0	-1.96	100.0
130	2.28	25.71	-3.25	218.5	-3.25	100.0
135	2.27	29.11	-4.60	211.5	-4.60	100.0
140	2.30	32.52	-5.81	205.2	-5.81	100.0
145	2.32	35.74	-6.83	202.3	-6.83	100.0
150	2.30	38.72	-7.70	198.5	-7.70	100.0
155	2.31	41.38	-8.42	195.0	-8.42	100.0
160	2.33	43.65	-9.00	191.7	-9.00	100.0
165	2.38	45.45	-9.44	188.4	-9.44	100.0
170	2.45	46.74	-9.74	185.4	-9.74	100.0
175	2.55	47.46	-9.91	182.3	-9.91	100.0
180	0.00	50.28	-10.00	285.2	-10.00	107.0

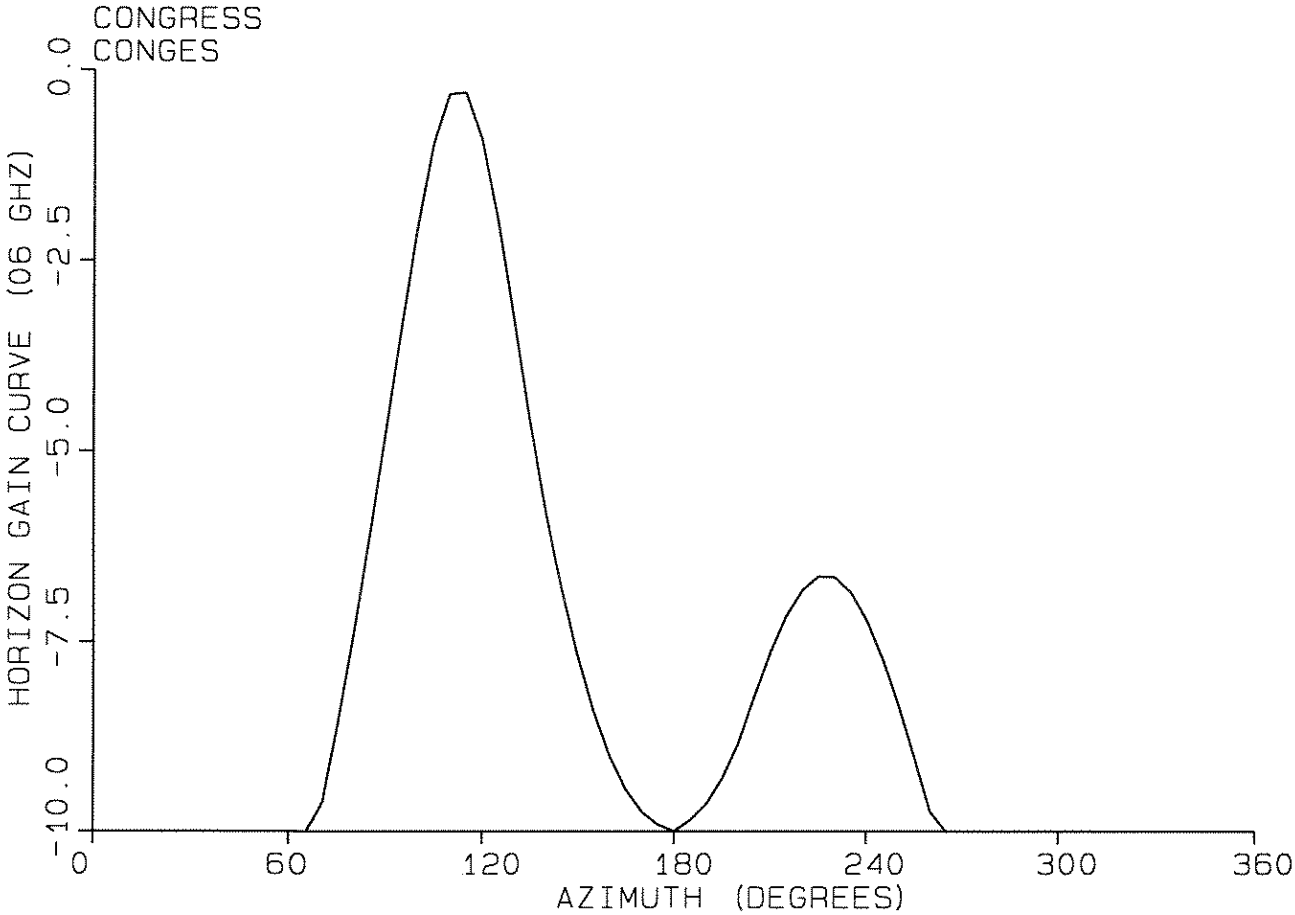
Table of Earth Station Coordination Values

Earth Station Name CONGRESS AZ
 Owner CONGRESS ELEMENTARY SCHOOL
 Latitude (DMS) (NAD83) 34 10 24.0 N
 Longitude (DMS) (NAD83) 112 51 41.0 W
 Ground Elevation (Ft/m) 3110.13 / 947.92 AMSL
 Antenna Centerline (Ft/m) 8.99 / 2.74 AGL
 Antenna Model PRODELIN 1374
 Objectives: Receive -156.0 (dBW /1 MHz)
 Transmit -154.0 (dBW /4 kHz) TX Power -24.0 (dBW/4 kHz)

Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	Antenna Gain (dBi)	4.0 GHz	Antenna Gain (dBi)	6.0 GHz
				Coordination Distance (Km)		Coordination Distance (Km)
185	2.79	47.22	-9.85	177.0	-9.85	100.0
190	2.89	46.32	-9.64	175.7	-9.64	100.0
195	3.01	44.89	-9.30	174.8	-9.30	100.0
200	3.15	42.95	-8.83	173.9	-8.83	100.0
205	3.28	40.63	-8.22	174.1	-8.22	100.0
210	3.39	38.51	-7.64	174.5	-7.64	100.0
215	3.53	36.84	-7.16	174.1	-7.16	100.0
220	3.66	35.70	-6.82	172.8	-6.82	100.0
225	3.82	35.12	-6.64	170.3	-6.64	100.0
230	3.96	35.17	-6.65	165.2	-6.65	100.0
235	4.12	35.82	-6.85	161.2	-6.85	100.0
240	4.28	37.06	-7.22	156.6	-7.22	100.0
245	4.43	38.83	-7.73	151.7	-7.73	100.0
250	4.56	41.08	-8.34	146.8	-8.34	100.0
255	4.68	43.74	-9.02	142.0	-9.02	100.0
260	4.79	46.71	-9.73	137.5	-9.73	100.0
265	4.88	49.95	-10.00	135.1	-10.00	100.0
270	4.97	53.41	-10.00	135.2	-10.00	100.0
275	5.04	57.04	-10.00	134.4	-10.00	100.0
280	5.11	60.81	-10.00	133.8	-10.00	100.0
285	5.16	64.69	-10.00	133.3	-10.00	100.0
290	5.19	68.66	-10.00	132.9	-10.00	100.0
295	5.21	72.70	-10.00	132.7	-10.00	100.0
300	5.23	76.79	-10.00	132.5	-10.00	100.0
305	5.26	80.91	-10.00	132.3	-10.00	100.0
310	5.29	85.05	-10.00	132.0	-10.00	100.0
315	5.33	89.21	-10.00	131.6	-10.00	100.0
320	5.38	93.38	-10.00	131.1	-10.00	100.0
325	5.41	97.54	-10.00	130.8	-10.00	100.0
330	5.45	101.69	-10.00	130.4	-10.00	100.0
335	5.49	105.81	-10.00	130.1	-10.00	100.0
340	5.44	109.88	-10.00	130.5	-10.00	100.0
345	5.35	113.87	-10.00	131.4	-10.00	100.0
350	5.25	117.78	-10.00	132.3	-10.00	100.0
355	5.16	116.76	-10.00	133.2	-10.00	100.0



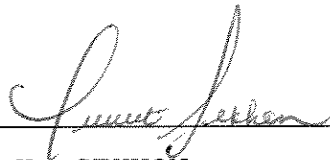




5. CERTIFICATION

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED PERSON RESPONSIBLE FOR THE PREPARATION OF THE FREQUENCY COORDINATION DATA CONTAINED IN THIS APPLICATION, THAT I AM FAMILIAR WITH PARTS 101 AND 25 OF THE FCC RULES AND REGULATIONS, THAT I HAVE EITHER PREPARED OR REVIEWED THE FREQUENCY COORDINATION DATA SUBMITTED WITH THIS APPLICATION, AND THAT IT IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: _____



PUNEET K. SEKHON
ENGINEER
COMSEARCH
19700 Janelia Farm Blvd.
Ashburn, Virginia 20147

DATED: August 22, 2001