

INSTRUCTIONS CAREFULLY BEFORE PROCEEDING

FEDERAL COMMUNICATIONS COMMISSION

REMITTANCE ADVICE

SPECIAL USE

FCC USE ONLY

(1) LOCKBOX # 358160

PAGE NO. 1 OF 1 JUL 24 2001
FCC/MELLON

SECTION A - PAYER INFORMATION

(2) PAYER NAME (if paying by credit card, enter name exactly as it appears on your card)

Wiley Rein & Fielding LLP

(3) TOTAL AMOUNT PAID (dollars and cents)

\$ 145.00

(4) STREET ADDRESS LINE NO. 1

1776 K Street, N.W.

(5) STREET ADDRESS LINE NO. 2

(6) CITY

Washington, D.C.

(7) STATE

D.C.

(8) ZIP CODE

20006

(9) DAYTIME TELEPHONE NUMBER (include area code)

202.719.7000

(10) COUNTRY CODE (if not in U.S.A.)

COPY

IF PAYER NAME AND THE APPLICANT IF MORE THAN ONE APPLICANT, I

SECTION B - A

SAT-STA-20010724-00064
SIRIUS SATELLITE RADIO, INC.

(11) APPLICANT NAME (if paying by credit card, enter name exactly as it appears on your card)

Sirius Satellite Radio Inc.

(12) STREET ADDRESS LINE NO. 1

1221 Avenue of the Americas

(13) STREET ADDRESS LINE NO. 2

36th Floor

(14) CITY

New York

(15) STATE

New York

(16) ZIP CODE

10020

(17) DAYTIME TELEPHONE NUMBER (include area code)

212.584.5100

(18) COUNTRY CODE (if not in U.S.A.)

COMPLETE SECTION C FOR EACH SERVICE, IF MORE BOXES ARE NEEDED, USE CONTINUATION SHEETS (FORM 159-C)

SECTION C - PAYMENT INFORMATION

(19A) FCC CALL SIGN/OTHER ID

(20A) PAYMENT TYPE CODE (PTC)

(21A) QUANTITY

(22A) FEE DUE FOR (PTC) IN BLOCK 20A

FCC USE ONLY

C G B

1

\$ 145.00

(23A) FCC CODE 1

(24A) FCC CODE 2

(19B) FCC CALL SIGN/OTHER ID

(20B) PAYMENT TYPE CODE (PTC)

(21B) QUANTITY

(22B) FEE DUE FOR (PTC) IN BLOCK 20B

FCC USE ONLY

\$

(23B) FCC CODE 1

(24B) FCC CODE 2

(19C) FCC CALL SIGN/OTHER ID

(20C) PAYMENT TYPE CODE (PTC)

(21C) QUANTITY

(22C) FEE DUE FOR (PTC) IN BLOCK 20C

FCC USE ONLY

\$

(23C) FCC CODE 1

(24C) FCC CODE 2

(19D) FCC CALL SIGN/OTHER ID

(20D) PAYMENT TYPE CODE (PTC)

(21D) QUANTITY

(22D) FEE DUE FOR (PTC) IN BLOCK 20D

FCC USE ONLY

\$

(23D) FCC CODE 1

(24D) FCC CODE 2

SECTION D - TAXPAYER INFORMATION (REQUIRED)

(25)

PAYER TIN

0 5 2 1 2 8 9 9 8 8

(26) COMPLETE THIS BLOCK ONLY IF APPLICANT NAME IN B-11 IS DIFFERENT FROM PAYER NAME IN A-2)

APPLICANT TIN

0 5 2 1 7 0 0 2 0 7

SECTION E - CERTIFICATION

(27) CERTIFICATION STATEMENT

I, _____, Certify under penalty of perjury that the foregoing and supporting information are true and correct to the best of my knowledge, information and belief. SIGNATURE

SECTION F - CREDIT CARD PAYMENT INFORMATION

(28)

MASTERCARD/VISA ACCOUNT NUMBER:

EXPIRATION DATE:

MASTERCARD

Account number grid

Expiration date grid

MONTH YEAR

VISA

I hereby authorize the FCC to charge my VISA or MASTERCARD for the service(s)/authorization(s) herein described.

AUTHORIZED SIGNATURE

DATE



Sirius Satellite Radio
1221 Avenue of the Americas
New York, NY 10020
tel 212 584 5100
fax 212 584 5200
www.siriusradio.com

July 24, 2001

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
The Portals
445 12th Street, SW
Washington, DC 20554

Re: IB Docket No. 95-91: Request for Special Temporary Authority to Operate Satellite DARS Terrestrial Repeaters

Dear Ms. Salas:

Sirius Satellite Radio Inc. ("Sirius"), one of the two satellite digital audio radio service ("satellite DARS") licensees in the United States, requests special temporary authority ("STA") pursuant to Section 25.120 of the Federal Communications Commission's ("FCC" or "Commission") Rules¹ to operate terrestrial repeaters in 104 sites in connection with its satellite DARS system. STA is requested for 180 days or until such time as the Commission issues final rules governing the use of satellite DARS terrestrial repeaters.² Grant of Sirius' STA request would serve the public interest by allowing Sirius imminently to initiate uniformly high quality commercial satellite DARS programming nationwide. Attached is a FCC Form 159, with a check payable to the Federal Communications Commission in the amount of \$145.00.³

Sirius seeks STA to use its terrestrial repeater stations to provide signal coverage to areas where its satellite transmissions are blocked or subject to severe multipath interference,

¹ 47 C.F.R. § 25.120

² *Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band*, 12 FCC Rcd 5754, 5810-12 (1997) (Report and Order Memorandum Opinion and Order and Further Notice of Proposed Rulemaking) ("*Terrestrial Repeater NPRM*").

³ Sirius is filing this STA request consistent with the Commission's procedures for blanket U.S. mobile satellite earth stations because the Commission has proposed to authorize operation of satellite DARS terrestrial repeaters using that same authorization process.

particularly in so-called 'urban canyons' between tall buildings. In order to limit the effects of such signal blockage, Sirius, in its initial application, and consistently since that time, has proposed to use terrestrial repeaters to augment space station service in certain locations.⁴ The Commission acknowledged in the grant of Sirius' license that terrestrial repeaters were a key component of the intended service.⁵ Furthermore, the Commission has expressly defined the satellite DARS service to include such terrestrial augmentation.⁶

Sirius has been operating a system of terrestrial repeaters since October 14, 1999 pursuant to its experimental license, call sign WA2XXE.⁷ Sirius expects to continue to employ its experimental license to complete testing of its service nationwide. Sirius has not received any interference complaints as a result of its operation of the repeaters under experimental authority, and now simply seeks to use this nationwide system of repeaters to provide commercial service to its customers.

Attached as Exhibit A is a list of sites in which Sirius seeks to operate terrestrial repeaters pursuant to this STA. Sirius has also included the following information for each of the high power (EIRP between greater than 10 kW and 40 kW) and medium power (EIRP between greater than 2 kW and 10 kW) repeaters it seeks to operate at each of these sites:⁸

(1) geographic coordinates; (2) antenna type; (3) antenna orientation; (4) antenna radiation

⁴ *Petition of Satellite CD Radio, Inc. For Amendment of Section 2.106 And Part 25 Of The Commission's Rules To Establish A Satellite And Terrestrial CD Quality Broadcasting Service*, SAT-LOA-19900518-00037 (May 18, 1990).

⁵ *Satellite CD Radio, Inc., Application for Authority to Construct, Launch, and Operate Two Satellites in the Satellite Digital Audio Radio Service*, 13 FCC Rcd 7971, 7994 (1997) (Order and Authorization), *modified by* 16 FCC Rcd (2001).

⁶ Satellite DARS is defined as "[a] radiocommunication service in which audio programming is digitally transmitted by one or more space stations directly to fixed, mobile, and/or portable stations, and which may involve complementary repeating terrestrial transmitters." 47 C.F.R. § 25.201. *See also Terrestrial Repeater NPRM*, 12 FCC Rcd at 5770 (stating "[i]t has been widely known and discussed in the record that DARS providers will need to rely on terrestrial repeaters and gap fillers").

⁷ *See Experimental Radio Station Construction Permit and License for Satellite CD Radio, Inc.*, Call Sign WA2XXE (File No. 0037-EX-ML-2000) (July 5, 2000); *Satellite CD Radio, Inc., Application to Modify Experimental Authority* (filed June 13, 2000); *Experimental Radio Station Construction Permit and License for Satellite CD Radio, Inc.*, Call Sign WA2XXE (File No. 0252-EX-ML-1999) (Oct. 14, 1999); *Satellite CD Radio, Inc., Application for Experimental Authority* (filed Sept. 21, 1999).

⁸ STA is requested for 151 high and medium power terrestrial repeaters in 104 sites because Sirius employs sector antennas.

pattern vertical downtilt; (5) total EIRP; and (6) height Above Ground Level (AGL).⁹ Attached as Exhibit B are antenna specification sheets for each of the antenna types described in Exhibit A.

Grant of Sirius' request for STA would clearly serve the public interest. STA would allow Sirius to incorporate terrestrial repeaters in its initial commercial rollout thus ensuring there would be no further delay in nationwide deployment, and no reduction in the quality of service. Grant of the STA would allow the public to take advantage of long-awaited satellite DARS service, offering both an increase in listening choices and greatly improved digital quality sound.

As the Commission is well aware, one decade has passed since Sirius filed its initial application to construct, launch, and operate a satellite DARS system. Sirius has successfully launched all of its satellites, and now holds all the FCC authorizations currently required to provide satellite DARS programming to the public. However, the FCC has not yet issued final rules governing operation of our terrestrial repeaters.

Sirius has established that its terrestrial repeaters will not cause harmful interference to other radio services.¹⁰ Nevertheless, Sirius will immediately cease operations of a repeater operating pursuant to STA upon notification of interference to a lawfully operated radiocommunication station. Sirius' repeaters also will not (1) originate any original programming, (2) transmit signals other than those used by its satellites or (3) extend satellite DARS coverage outside of the satellites' authorized service area.¹¹ Sirius certifies that the out-of-band emissions of these terrestrial repeaters will be attenuated below the transmitted EIRP by no less than $75 + 10 \log (P)$.

In accordance with Part 17 of the Commission's Rules, Sirius has or will notify the Federal Aviation Administration ("FAA") of antenna structures for which such notification is required. 47 C.F.R. § § 17.7-17.17. Sirius hereby certifies that operation of these repeaters will not have a significant environmental effect, as defined by 47 C.F.R. § § 1.1301-1.1319, and that no party to this application is subject to a denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. § 862(a).

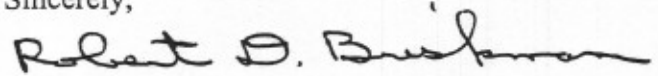
⁹ Sirius has not included this information for the low power repeaters (*i.e.*, EIRP of 2 kW or less) it seeks to operate pursuant to this STA.

¹⁰ *In the Matter of Establishment of Rules and Policies for the Digital Audio Radio Service in 2310-2360 MHz Frequency Band, Supplemental Comments of Sirius Satellite Radio* (Jan. 18, 2000).

¹¹ *Terrestrial Repeater NPRM*, 12 FCC Rcd at 5845-46 (Appendix C).

If there are any questions concerning this request, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink that reads "Robert D. Briskman". The signature is written in a cursive style with a prominent initial "R".

Robert D. Briskman
Technical Executive
Sirius Satellite Radio Inc.

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **Request for Special Temporary Authority to Operate Satellite DARS Terrestrial Repeaters** was delivered via hand-delivery, on this 24th day of July, 2001 to each of the following:

Donald Abelson
International Bureau
Federal Communications Commission
445 Twelfth Street, S.W. Room 6-C750
Washington, DC 20554

Ron Repasi
International Bureau
Federal Communications Commission
445 Twelfth Street, S.W., Room 6-A505
Washington, DC 20554

Chris Murphy
International Bureau
Federal Communications Commission
445 Twelfth Street, S.W., Room 6-C437
Washington, DC 20554

Jennifer Gilson
International Bureau
Federal Communications Commission
445 Twelfth Street, S.W., Room 6-A520
Washington, DC 20554

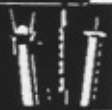

Claudia L. Cartagena

EXHIBIT A

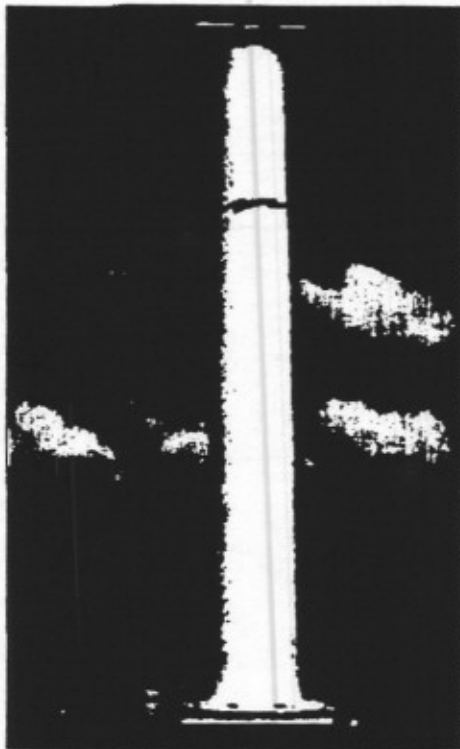
Market	No Of Sectors	Antenna Type	Sector 1				Sector 2				Sector 3				Coordinates		Antenna Height (feet)
			Antenna Beamwidth	Orientation	Downtilt	EIRP (Watts)	Antenna Beamwidth	Orientation	Downtilt	EIRP (Watts)	Antenna Beamwidth	Orientation	Downtilt	EIRP (Watts)	Longitude (W)	Latitude (N)	
Akron	1	HMD8V90-R05-H	90	320	0	14125.38	-	-	-	-	-	-	-	81-30-14.00	41-03-53.00	150	
Albany	1	HMD8V360-R05-H	Omni	-	-	8511.38	-	-	-	-	-	-	-	73-45-55.80	42-39-32.18	178	
Albuquerque	1	HMD8V90-R05-H	90	230	0	22387.21	-	-	-	-	-	-	-	106-26-58.50	35-12-48.50	65	
Atlanta	2	HMD8PV180-R05-H	180	0	0	6309.57	180	180	0	7943.28	-	-	-	84-23-13.19	33-45-39.46	1016	
Atlanta	1	HMD8V120-R05-H	120	250	0	19952.62	-	-	-	-	-	-	-	84-20-07.00	33-55-16.00	443	
Atlanta	2	HMD8V90-R05-H	90	30	0	8317.64	90	150	0	7585.78	-	-	-	84-28-25.09	33-53-59.70	228	
Atlanta	2	HMD8V90-R05-H	90	45	0	10715.19	90	180	0	10964.78	-	-	-	84-22-39.00	33-51-07.00	231	
Atlanta	2	HMD8PV180-R05-H	180	0	0	7585.78	180	180	0	7413.10	-	-	-	84-23-25.80	33-47-54.60	154	
Austin	1	HMD8V120-R05-H	120	175	0	12589.25	-	-	-	-	-	-	-	87-44-28.00	30-17-00.00	292	
Baltimore	1	HMD8PV180-R05-H	180	0	0	9332.54	-	-	-	-	-	-	-	76-36-50.12	39-17-15.41	526	
Birmingham	1	HMD8V360-R05-H	Omni	-	-	8241.38	-	-	-	-	-	-	-	86-48-30.00	33-31-04.00	537	
Boston	1	HMD8V360-R05-H	Omni	-	-	7943.28	-	-	-	-	-	-	-	71-03-41.2	42-21-30.60	554	
Buffalo	1	HMD8V90-R05-H	90	30	0	9332.54	-	-	-	-	-	-	-	78-52-35.00	42-52-47.00	580	
Charlotte	1	HMD8PV180-R05-H	180	65	0	10471.29	-	-	-	-	-	-	-	80-50-49.74	35-13-29.49	524	
Chicago	2	HMD8V90-R05-H/HMD8V120-R05-H	120	235	0	3060.30	90	340	0	3019.95	-	-	-	87-37-17.81	41-53-6.88	998	
Chicago	2	HMD8V120-R05-H	120	170	0	5623.41	120	340	0	5128.61	-	-	-	87-38-21.13	41-55-33.28	286	
Chicago	2	HMD8V90-R05-H	90	180	0	4265.80	90	310	0	3388.44	-	-	-	87-39-18.00	41-58-50.00	489	
Cincinnati	2	HMD8PV180-R05-H	180	170	0	8511.38	180	350	0	7585.78	-	-	-	84-30-51.00	39-06-24.00	308	
Cleveland	2	HMD8V120-R05-H	120	70	0	7585.78	120	260	0	6606.93	-	-	-	81-41-34.37	41-29-58.50	656	
Columbus	1	HMD8V360-R05-H	Omni	-	-	5370.32	-	-	-	-	-	-	-	82-59-46.00	39-57-47.00	442	
Dallas	2	HMD8V120-R05-H	120	80	0	8511.38	120	260	0	8511.38	-	-	-	96-47-52.23	32-47-8.95	489	
Dallas	1	HMD8PV180-R05-H	180	240	0	10000.00	-	-	-	-	-	-	-	97-19-46.00	32-45-11.00	525	
Dayton	1	HMD8V120-R05-H	120	115	0	5888.44	-	-	-	-	-	-	-	84-11-46.00	39-45-39.00	240	
Denver/Boulder	2	HMD8PV180-R05-H	180	150	0	6309.57	180	330	0	7585.78	-	-	-	104-59-22.06	39-44-52.04	508	
Detroit	1	HMD8V120-R05-H	120	330	0	16218.10	-	-	-	-	-	-	-	83-02-51.00	42-19-50.00	648	
Detroit	2	HMD8V45-R05-H	45	90	0	19952.62	45	315	0	19952.62	-	-	-	83-14-35.42	42-28-28.15	389	
Fresno	1	HMD8V90-R05-H	90	120	0	22387.21	-	-	-	-	-	-	-	119-52-56.90	36-48-59.50	180	
Greensboro	1	HMD8V90-R05-H	90	240	0	14125.38	-	-	-	-	-	-	-	79-45-38.10	36-05-10.30	504	
Harrisburg	1	HMD8V90-R05-H	90	140	0	22387.21	-	-	-	-	-	-	-	76-56-45.00	40-19-07.00	176	
Hartford	1	HMD8V360-R05-H	Omni	-	-	6309.57	-	-	-	-	-	-	-	72-40-32.00	41-46-06.00	383	
Houston	2	HMD8V90-R05-H	90	175	0	9772.37	90	295	0	9772.37	-	-	-	95-21-50.00	29-45-37.00	1060	
Indianapolis	1	HMD8V360-R05-H	Omni	-	-	8709.64	-	-	-	-	-	-	-	86-09-20.00	39-46-13.00	532	
Jacksonville	1	HMD8PV180-R05-H	180	345	0	6918.31	-	-	-	-	-	-	-	81-39-24.00	30-19-08.00	436	
Kansas City	2	HMD8V90-R05-H	90	115	0	12302.69	90	205	0	11481.54	-	-	-	94-34-57.00	39-06-12.00	558	
Knoxville	1	HMD8V90-R05-H	90	90	0	22387.21	-	-	-	-	-	-	-	84-01-22.60	35-57-46.20	265	
Las Vegas	2	HMD8PV180-R05-H	180	20	0	4466.84	180	200	0	4570.88	-	-	-	115-08-31.00	36-10-10.10	466	
Las Vegas	1	HMD8V120-R05-H	120	105	0	7943.28	-	-	-	-	-	-	-	115-10-00.00	36-07-57.00	401	
Little Rock	1	HMD8V360-R05-H	Omni	-	-	5623.41	-	-	-	-	-	-	-	82-16-32.46	34-44-37.67	586	
Los Angeles	3	HMD8V120-R05-H	120	0	3	3715.35	120	120	3	3715.35	120	240	3	118-15-22.00	34-02-58.00	868	
Los Angeles	2	HMD8V90-R05-H	90	60	0	7943.28	90	215	0	7943.28	-	-	-	118-27-35.00	34-03-03.00	273	
Los Angeles	2	HMD8PV180-R05-H	180	110	0	5011.87	180	290	0	5011.87	-	-	-	118-23-55.00	34-03-20.00	158	
Los Angeles	2	HMD8PV180-R05-H	180	45	0	4265.80	180	225	0	4677.35	-	-	-	118-21-04.55	34-03-44.18	372	
Los Angeles	2	HMD8PV180-R05-H	180	90	0	4365.16	180	270	0	5623.41	-	-	-	118-18-34.00	34-03-41.00	302	
Los Angeles	1	HMD8V45-R05-H	45	110	0	16595.87	-	-	-	-	-	-	-	118-11-44.00	34-09-48.00	78	
Los Angeles	1	HMD8V90-R05-H	90	10	0	10232.93	-	-	-	-	-	-	-	118-15-26.39	34-08-29.27	98	
Los Angeles	2	HMD8V90-R05-H	90	135	0	7943.28	90	225	0	7943.28	-	-	-	118-11-09.00	33-46-03.00	148	
Los Angeles	2	HMD8V90-R05-H	90	0	0	7943.28	90	180	0	7943.28	-	-	-	117-52-8.01	33-45-34.23	120	
Los Angeles	2	HMD8PV180-R05-H	180	135	0	5011.87	180	315	0	5011.87	-	-	-	117-52-52.00	33-41-22.00	159	
Los Angeles	2	HMD8V90-R05-H	90	30	0	6918.31	90	290	0	6918.31	-	-	-	118-22-03.00	34-07-34.00	50	
Los Angeles	1	HMD8V120-R05-H	120	290	0	7079.46	-	-	-	-	-	-	-	118-27-55.86	34-09-15.13	218	
Louisville	1	HMD8V360-R05-H	Omni	-	-	5623.41	-	-	-	-	-	-	-	85-45-28.00	38-15-20.00	560	
Memphis	1	HMD8V360-R05-H	Omni	-	-	21379.63	-	-	-	-	-	-	-	90-2-58.80	35-8-39.70	358	
Miami	2	HMD8V90-R05-H	90	0	0	12022.64	90	230	0	12882.50	-	-	-	80-11-31.00	25-46-19.00	596	

Market	No Of Sectors	Antenna Type	Sector 1				Sector 2				Sector 3				Coordinates		Antenna Height (feet)
			Antenna Beamwidth	Orientation	Downtilt	EIRP (Watts)	Antenna Beamwidth	Orientation	Downtilt	EIRP (Watts)	Antenna Beamwidth	Orientation	Downtilt	EIRP (Watts)	Longitude (W)	Latitude (N)	
Miami	1	HMD8V90-R05-H	90	0	0	18620.87	-	-	-	-	-	-	-	80-08-30.84	26-06-50.67	640	
Milwaukee	1	HMD8PV180-R05-H	180	310	0	15488.17	-	-	-	-	-	-	-	87-54-06.69	43-02-17.95	588	
Minneapolis	2	HMD8V120-R05-H	120	90	0	5370.32	120	270	0	4466.84	-	-	-	93-16-16.00	44-58-36.00	775	
Minneapolis	1	HMD8V90-R05-H	90	135	0	8912.51	-	-	-	-	-	-	-	93-05-43.00	44-56-52.00	500	
Monterey	1	HMD8PV180-R05-H	180	180	0	8912.51	-	-	-	-	-	-	-	121-51-24.00	36-36-26.00	135	
Nashville	1	HMD8V360-R05-H	Omni	-	-	6165.95	-	-	-	-	-	-	-	86-46-55.09	36-09-48.85	868	
New Haven	1	HMD8PV180-R05-H	180	250	0	10715.19	-	-	-	-	-	-	-	72-55-20.00	41-18-33.00	243	
New Orleans	1	HMD8V360-R05-H	Omni	-	-	10351.42	-	-	-	-	-	-	-	90-04-16.00	29-57-00.00	626	
New York	1	HMD8V360-R05-H	Omni	-	-	8912.51	-	-	-	-	-	-	-	73-58-55.20	40-45-33.00	670	
New York	2	HMD8V90-R05-H	90	140	0	12589.25	90	340	0	12589.25	-	-	-	73-57-01.70	40-46-30.00	560	
New York	1	HMD8PV180-R05-H	180	210	0	15848.93	-	-	-	-	-	-	-	74-00-40.32	40-42-29.88	524	
New York	1	HMD8V360-R05-H	Omni	-	-	8912.51	-	-	-	-	-	-	-	73-59-48.00	40-42-54.00	474	
New York	2	HMD8PV180-R05-H	180	30	0	6165.95	180	210	0	6606.93	-	-	-	73-54-19.50	40-51-57.50	170	
New York	2	HMD8PV180-R05-H	180	0	0	5754.40	180	180	0	5888.44	-	-	-	73-56-36.00	40-48-54.00	180	
New York	2	HMD8PV180-R05-H	180	110	0	6309.57	180	290	0	7943.28	-	-	-	73-58-22.53	40-51-18.12	210	
New York	1	HMD8PV180-R05-H	180	110	0	16218.10	-	-	-	-	-	-	-	74-00-03.00	40-47-25.00	438	
New York	2	HMD8PV180-R05-H	180	90	0	7943.28	180	270	0	7943.28	-	-	-	73-45-44.75	41-01-51.38	261	
Newark	1	HMD8V360-R05-H	Omni	-	-	8912.51	-	-	-	-	-	-	-	74-10-11.00	40-44-07.00	334	
Norfolk	1	HMD8V360-R05-H	Omni	-	-	6760.83	-	-	-	-	-	-	-	76-17-29.21	36-50-44.47	270	
Oklahoma City	1	HMD8V90-R05-H	90	190	0	22387.21	-	-	-	-	-	-	-	97-29-22.00	35-35-52.00	400	
Orlando	2	HMD8PV180-R05-H	180	0	0	2511.88	180	180	0	2630.27	-	-	-	81-22-44.32	28-32-37.45	312	
Philadelphia	2	HMD8V120-R05-H	120	120	0	8317.64	120	280	0	9332.54	-	-	-	75-10-11.00	39-57-13.00	758	
Phoenix	2	HMD8PV180-R05-H	180	0	0	5888.44	180	180	0	7585.78	-	-	-	112-04-23.66	33-28-37.70	298	
Pittsburgh	2	HMD8V120-R05-H	120	90	0	8332.54	120	270	0	10000.00	-	-	-	79-59-42.00	40-26-29.00	690	
Portland	2	HMD8V90-R05-H	90	0	0	3801.89	90	190	0	3715.35	-	-	-	122-40-33.74	45-30-47.16	464	
Providence	1	HMD8V360-R05-H	Omni	-	-	8912.51	-	-	-	-	-	-	-	71-24-36.94	41-49-29.33	421	
Raleigh	1	HMD8PV180-R05-H	180	0	0	10000.00	-	-	-	-	-	-	-	78-38-25.00	35-46-27.00	458	
Richmond	2	HMD8V120-R05-H	120	65	0	6456.54	120	305	0	5370.32	-	-	-	77-26-06.00	37-32-11.94	369	
Rochester	2	HMD8V90-R05-H	90	130	0	10471.29	90	220	0	11481.54	-	-	-	77-36-33.00	43-09-23.00	365	
Sacramento	1	HMD8PV180-R05-H	180	5	0	15848.93	-	-	-	-	-	-	-	121-29-27.00	38-34-28.00	140	
Salt Lake City	1	HMD8V90-R05-H	90	290	0	8912.51	-	-	-	-	-	-	-	111-51-02.40	40-45-28.80	135	
San Antonio	1	HMD8V90-R05-H	90	110	0	10471.29	-	-	-	-	-	-	-	98-29-32.00	29-25-42.00	428	
San Diego	2	HMD8V120-R05-H	120	60	0	6309.57	120	240	0	6309.57	-	-	-	117-09-43.28	32-42-57.70	450	
San Francisco	2	HMD8V45-R05-H,HMD8V120-R05-H	120	25	0	10000.00	45	130	0	18952.62	-	-	-	122-26-03.00	37-41-12.00	100	
San Francisco	1	HMD8V120-R05-H	120	50	0	15848.93	-	-	-	-	-	-	-	122-27-05.00	37-45-20.00	382	
San Jose	1	HMD8V90-R05-H	90	270	0	25118.86	-	-	-	-	-	-	-	121-45-11.23	37-19-20.06	20	
Santa Cruz	1	HMD8PV180-R05-H	180	180	0	8912.51	-	-	-	-	-	-	-	121-59-45.00	36-59-35.50	60	
Seattle	2	HMD8V120-R05-H	120	180	0	9549.93	120	330	0	8709.64	-	-	-	122-19-41.77	47-36-16.71	943	
Springfield	1	HMD8V90-R05-H	90	90	0	14125.38	-	-	-	-	-	-	-	72-35-33.50	42-06-09.50	445	
St. Louis	2	HMD8V90-R05-H	90	135	0	9549.93	90	225	0	10232.93	-	-	-	90-11-26.00	38-37-48.00	482	
Syracuse	2	HMD8V90-R05-H	90	160	0	6918.31	90	280	0	6025.60	-	-	-	76-08-32.00	43-02-49.00	207	
Tampa	1	HMD8V360-R05-H	Omni	-	-	10000.00	-	-	-	-	-	-	-	82-27-33.00	27-56-48.00	576	
Tucson	1	HMD8V120-R05-H	120	135	0	11220.18	-	-	-	-	-	-	-	110-58-16.50	32-13-20.10	265	
Tulsa	1	HMD8V90-R05-H	90	240	0	15848.93	-	-	-	-	-	-	-	95-57-10.85	36-10-10.02	400	
Washington D.C.	1	HMD8V360-R05-H	Omni	-	-	6918.31	-	-	-	-	-	-	-	77-00-41.00	38-53-48.00	158	
Washington D.C.	1	HMD8V360-R05-H	Omni	-	-	10715.19	-	-	-	-	-	-	-	77-04-35.08	38-53-43.60	198	
Washington D.C.	2	HMD8V120-R05-H	120	90	0	9549.93	120	250	0	8912.51	-	-	-	77-03-39.00	38-51-45.00	208	
Washington D.C.	1	HMD8V360-R05-H	Omni	-	-	4897.79	-	-	-	-	-	-	-	77-06-55.87	38-50-36.60	208	
Washington D.C.	3	HMD8V120-R05-H	120	90	0	6025.60	120	210	0	6165.95	120	330	0	77-05-44.00	38-59-07.00	200	
Wilmington	1	HMD8V90-R05-H	90	225	0	14125.38	-	-	-	-	-	-	-	75-32-49.00	39-44-53.00	430	
Winston-Salem	1	HMD8V90-R05-H	90	30	0	14125.38	-	-	-	-	-	-	-	80-15-05.00	36-05-24.00	330	

EXHIBIT B



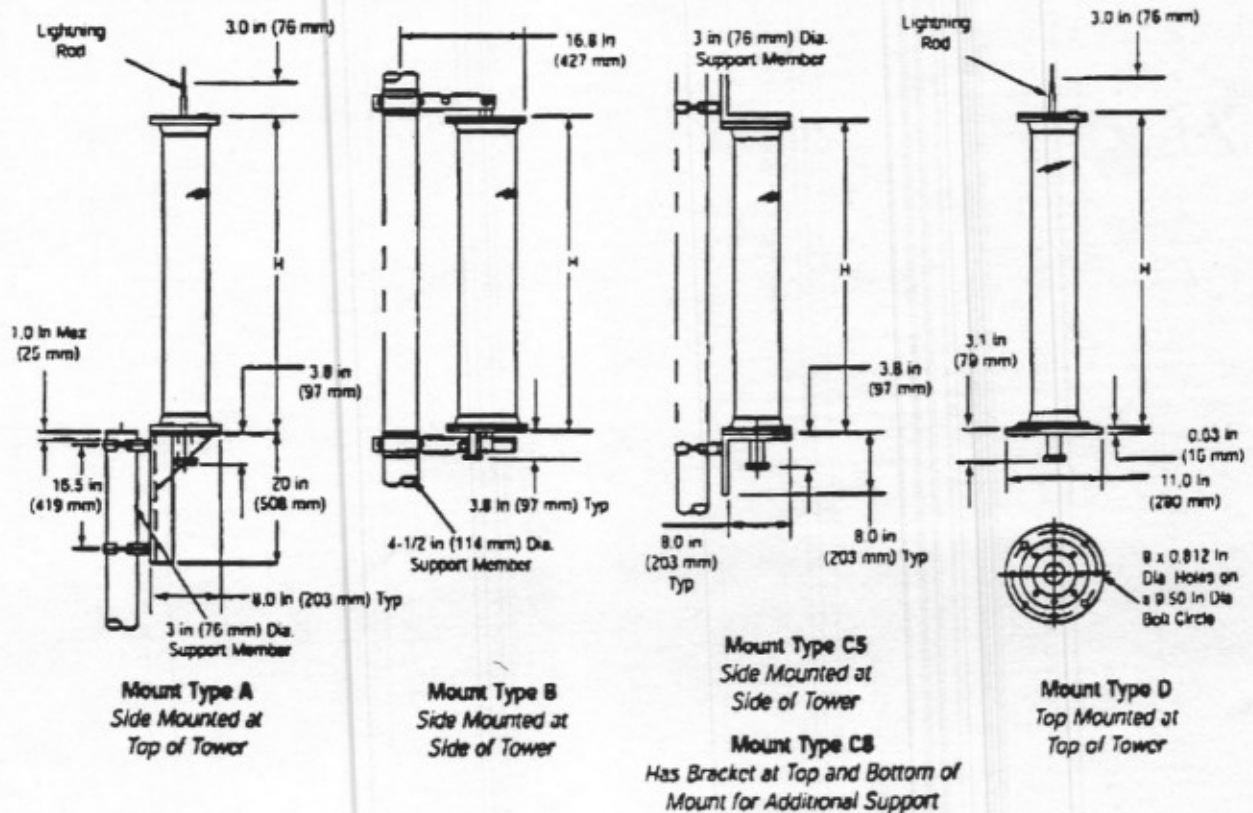
HMD Series Antennas for MMDS/ITFS and Wireless Cable Applications



Features

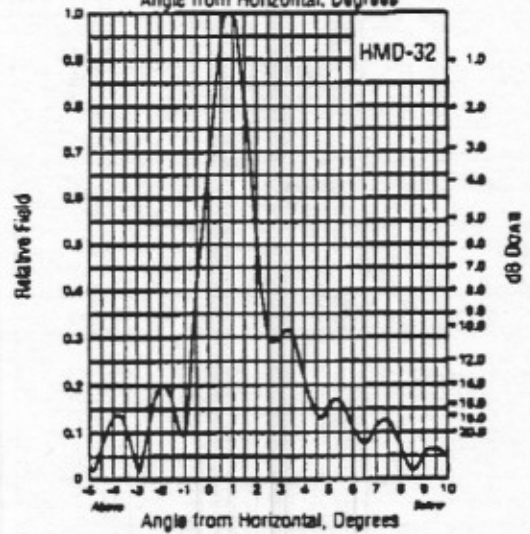
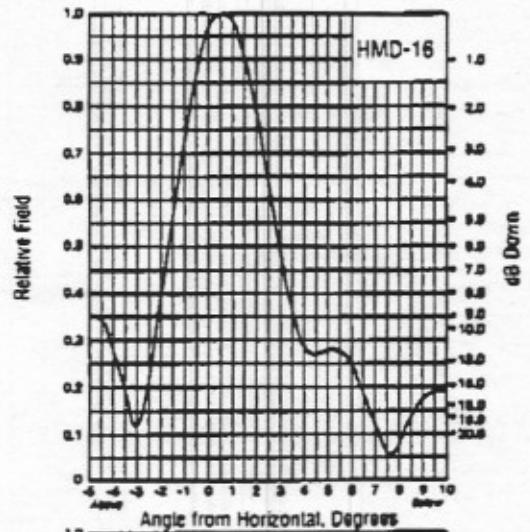
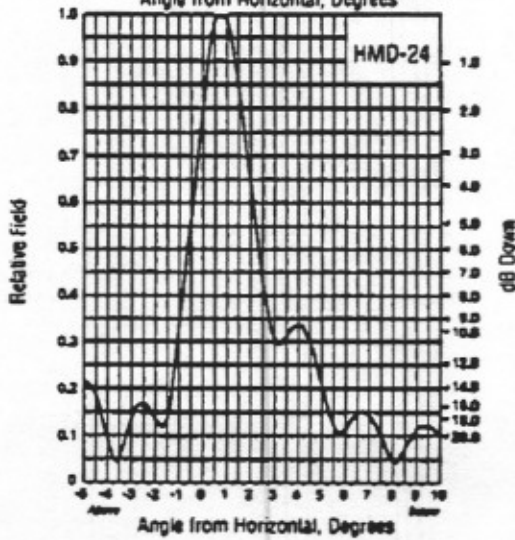
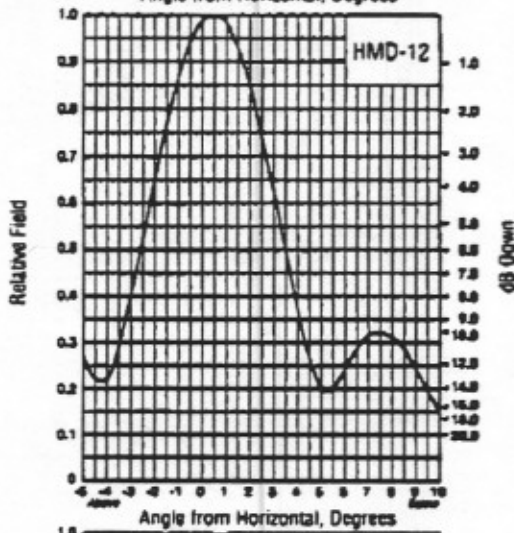
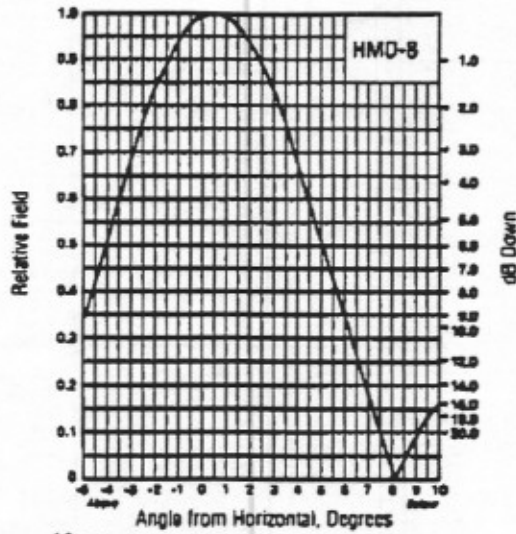
- Pressurizable, radome enclosed for long, trouble-free life
- Excellent VSWR performance
 - 1.35:1 max for W-Band
 - 1.5:1 max for other bands
- Optimized beam tilt
 - 0.5° Standard for 8, 12, and 16 bay
 - 0.75° Standard for 24 and 32 bay
 - Others available on request
- High power handling - 800 watts typical
- Wide selection of frequency bands and patterns
- Horizontal or vertical polarization
- Suitable for analog or digital transmission
- Null fill for excellent coverage

Standard Mounting Configurations

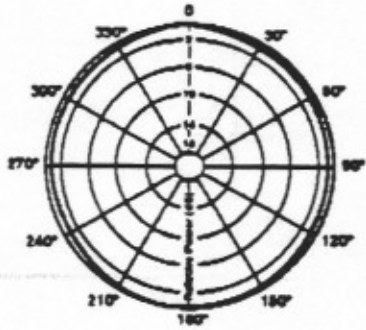




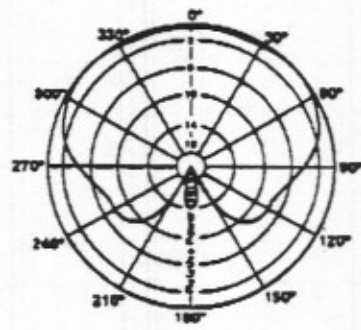
HMD Series Antennas Elevation Patterns



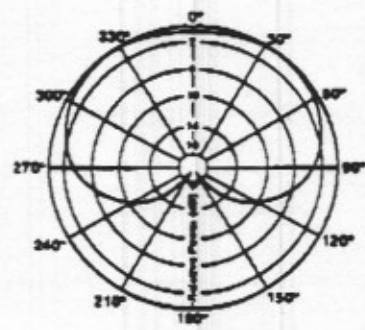
HMD Series Antennas Azimuth Patterns



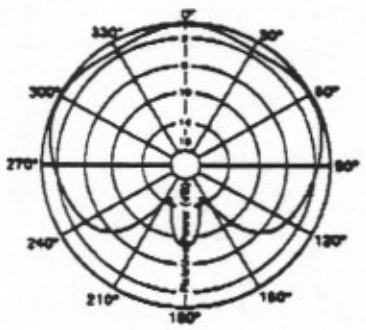
Omnidirectional



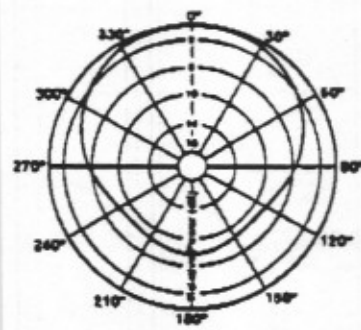
Horizontal Cardioid



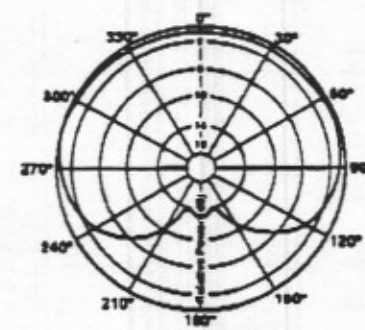
Vertical Cardioid



Wide Horizontal Cardioid



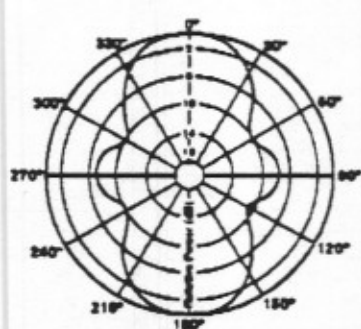
Narrow Horizontal Cardioid



Wide Vertical Cardioid



Narrow Vertical Cardioid



Horizontal Peanut

List for Andrew Antennas for Sirius Radio Deployment

Andrew Corporation Products Antennas	Product Description	Average		Null Fill (%)	E-Plane Beamwidth (-3 dB)	Total Length (in)	Weight (lbs.)	Radome Diam. (in)
		Power Gain (dBi)	Input Power (W)					
45 DEGREE ANTENNA								
HMD8V45-R05-H	45 degree Az. Pattern, 8 Bays, Vertical Polarization, Standard Beamtilt (0.5 deg.), 2300 -2500 MHz Freq. Band, 50 Ohm, 7/8" EIA Flange, 1.38 :1 Max. VSWR	18 dBi	1000 W (rms)	None	7.0 - 7.5 deg.	57"	50 lbs	8"
60 DEGREE ANTENNA								
HMD8V60-R05-H	60 degree Azimuth pattern, 8 Bays, Vertical Polarization, Standard Beamtilt (0.5 deg.), 2300 -2500 MHz Freq. Band, 50 Ohm, 7/8" EIA Flange, 1.38 :1 Max. VSWR	17.0 dBi	1000 W (rms)	None	7.0 - 7.5 deg.	57"	40 lbs	5"
90 DEGREE ANTENNA								
HMD8V90-R05-H	90 degree Az. Pattern, 8 Bays, Vertical Polarization, Standard Beamtilt (0.5 deg.), 2300 -2500 MHz Freq. Band, 50 Ohm, 7/8" EIA Flange, 1.38 :1 Max. VSWR	16 dBi	1000 W (rms)	None	7.0 - 7.5 deg.	57"	40 lbs	5"

List for Andrew Antennas for Sirius Radio Deployment

120 DEGREE ANTENNA

120 degree Azimuth pattern, 8 Bays, Vertical Polarization, Standard Beamtilt (0.5 deg.), 2300 - 2500 MHz Freq. Band, 50 Ohm, 7/8" EIA Flange, 1.38 :1 Max.							
HMD8V120-R05	VSWR	15.0 dBi	1000 W (rms)	None	7.0 - 7.5 deg.	57"	40 lbs 5"

160 DEGREE ANTENNA

160 degree Azimuth pattern, 8 Bays, Vertical Polarization, Standard Beamtilt (0.5 deg.), 2300 - 2500 MHz Freq. Band, 50 Ohm, 7/8" EIA Flange, 1.38 :1 Max.							
HMD8V160-R05-H	VSWR	15.0 dBi	1000 W (rms)	None	7.0 - 7.5 deg	57"	40 lbs 5"

180 DEGREE ANTENNA

180 degree Azimuth pattern, 8 Bays, Vertical Polarization, Standard Beamtilt (0.5 deg.), 2300 - 2500 MHz Freq. Band, 50 Ohm, 7/8" EIA Flange, 1.38 :1 Max.							
HMD8PV180-R05-H	VSWR	14.0 dBi	1000 W (rms)	None	7.0 - 7.5 deg	57"	40 lbs 5"

Note: All Directional (Sector) Antennas come with Type 'C' Mount

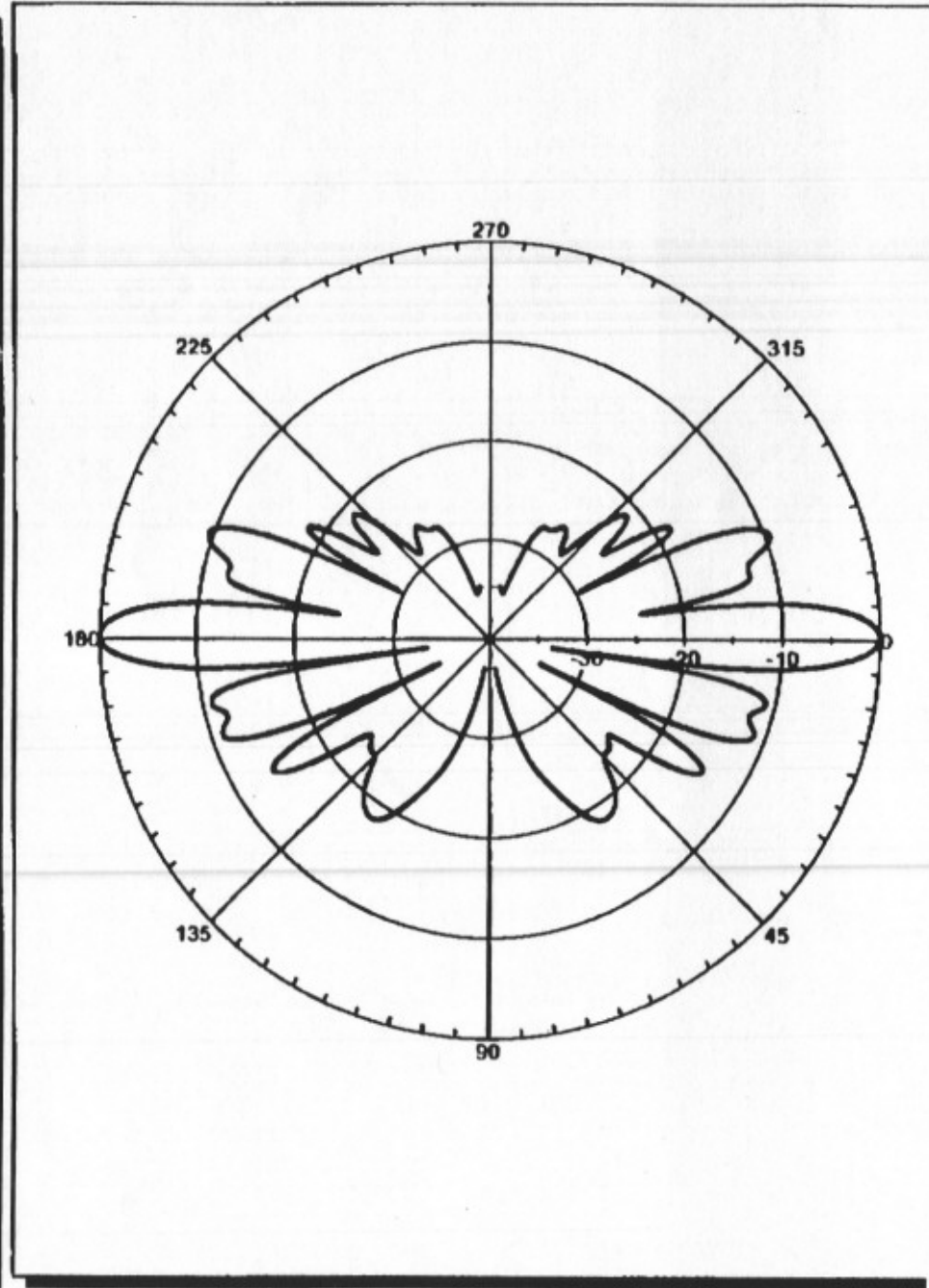
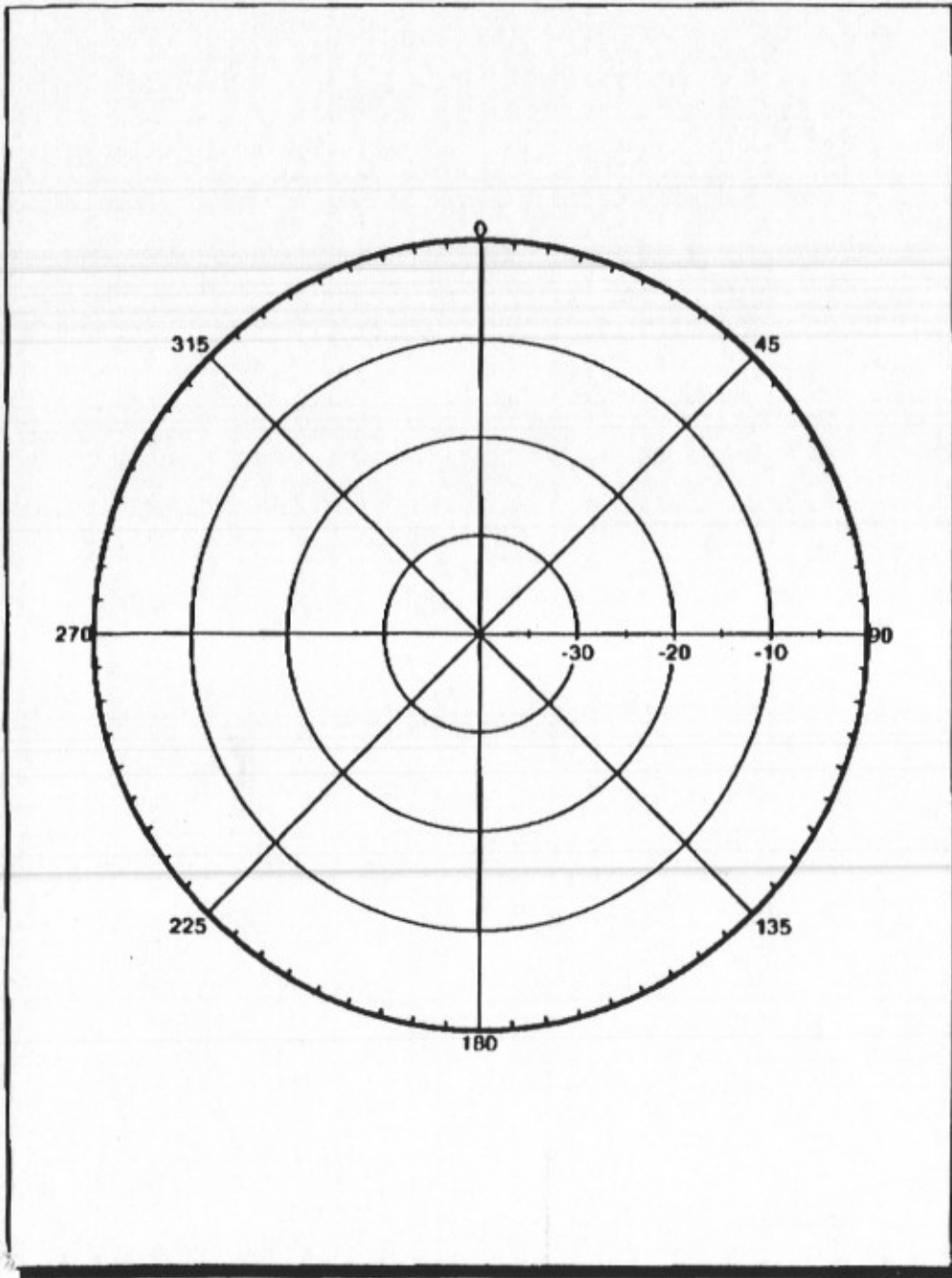
OMNI ANTENNAS

Omni pattern, 8 Bays, Standard Beamtilt (0.5 deg.), Vertical Polarization, 2300 -2500 MHz Freq. Band, 50 Ohm, 7/8" EIA Flange, 1.5 :1 Max.							
HMD8V360-R05-H	VSWR	11.5 dBi	1,000 W (rms)	None	7.0 - 7.5 deg.	44"	50 lbs 5"

Note: All Omni antennas come with Type 'A' Mount (for Top installation)

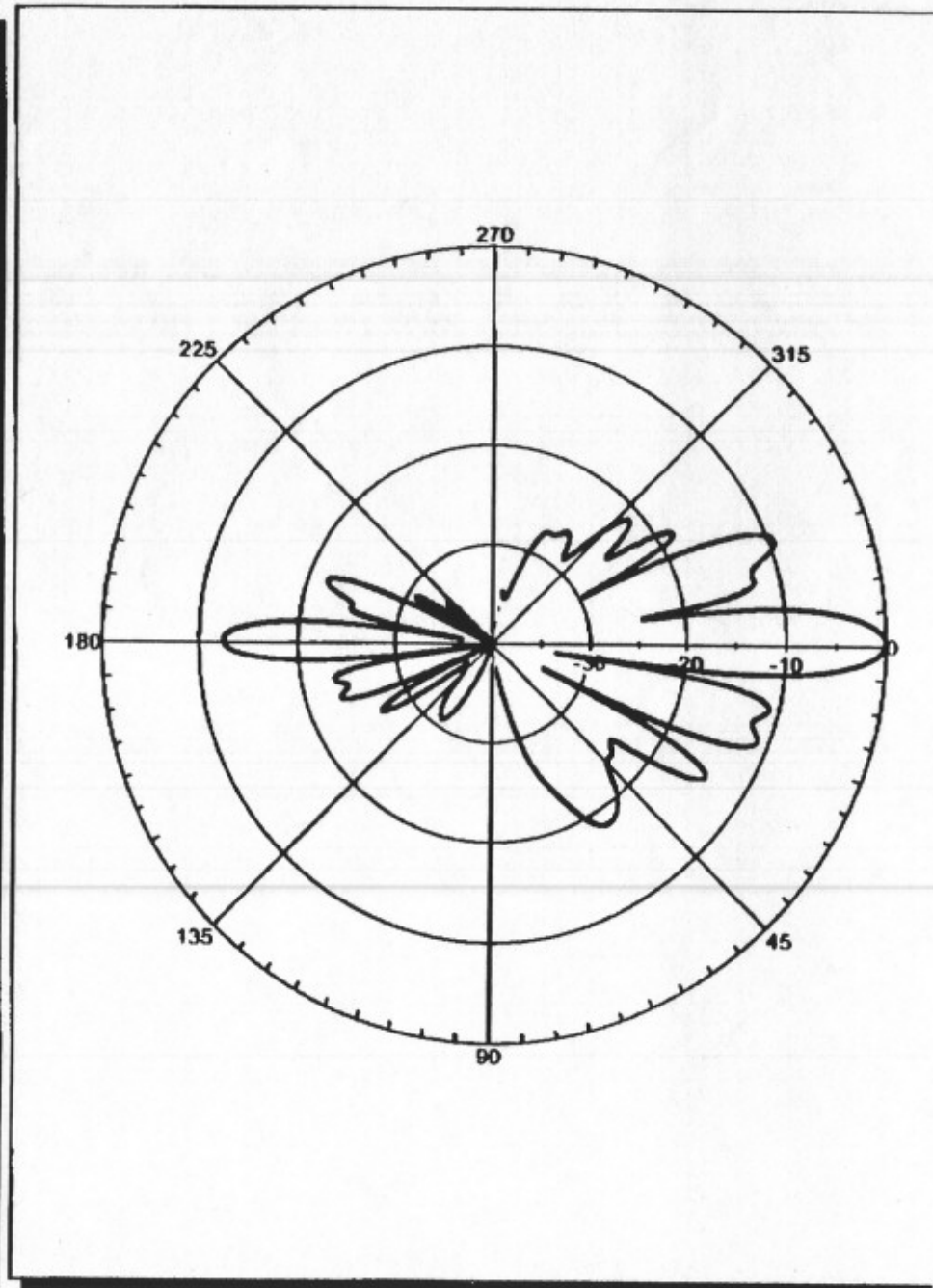
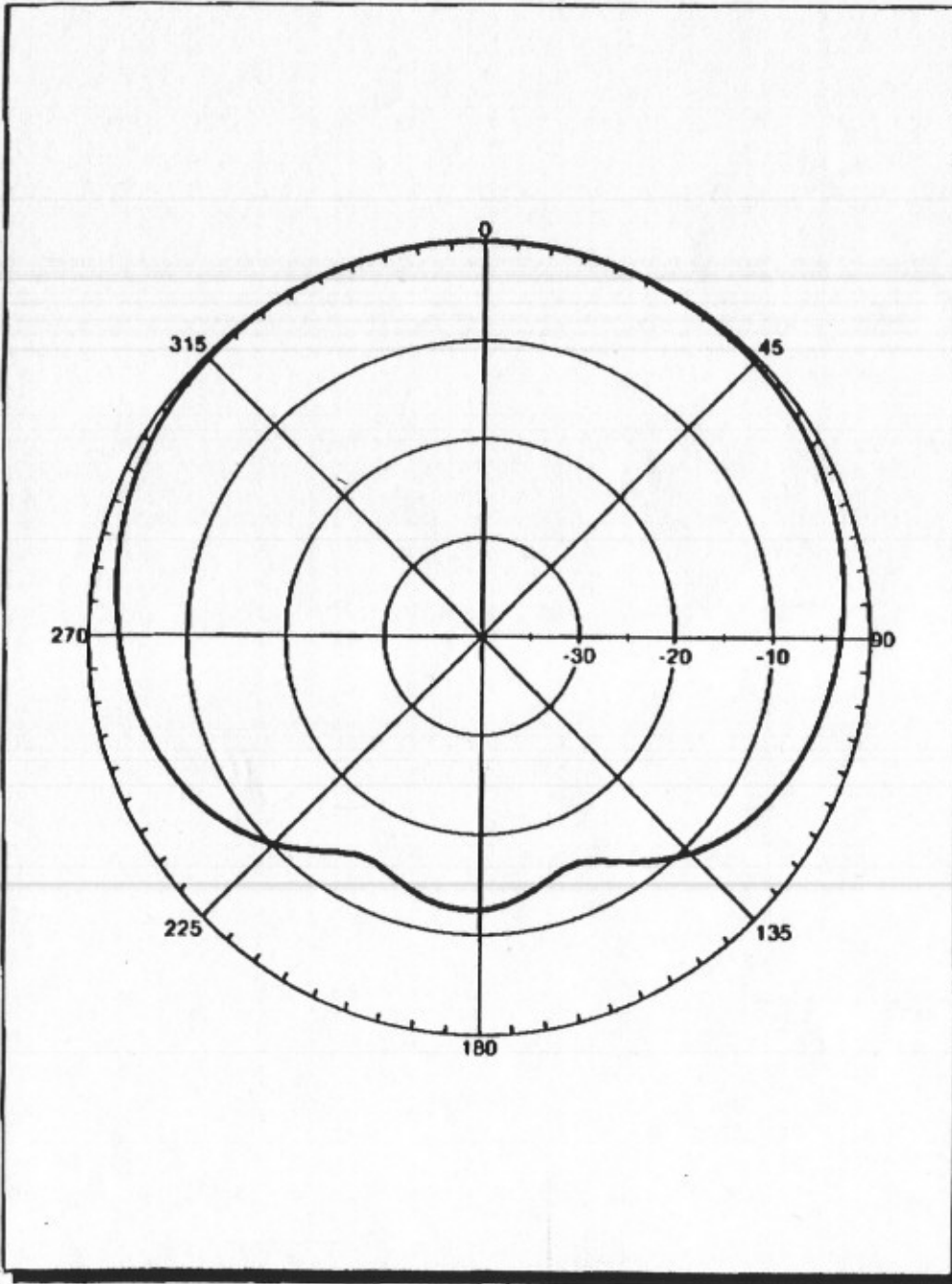
Boresight Gain: 0.00
Front to Back : 0.02 dB
H. Beamwidth : 360.00°

V. Beamwidth : 7.42°



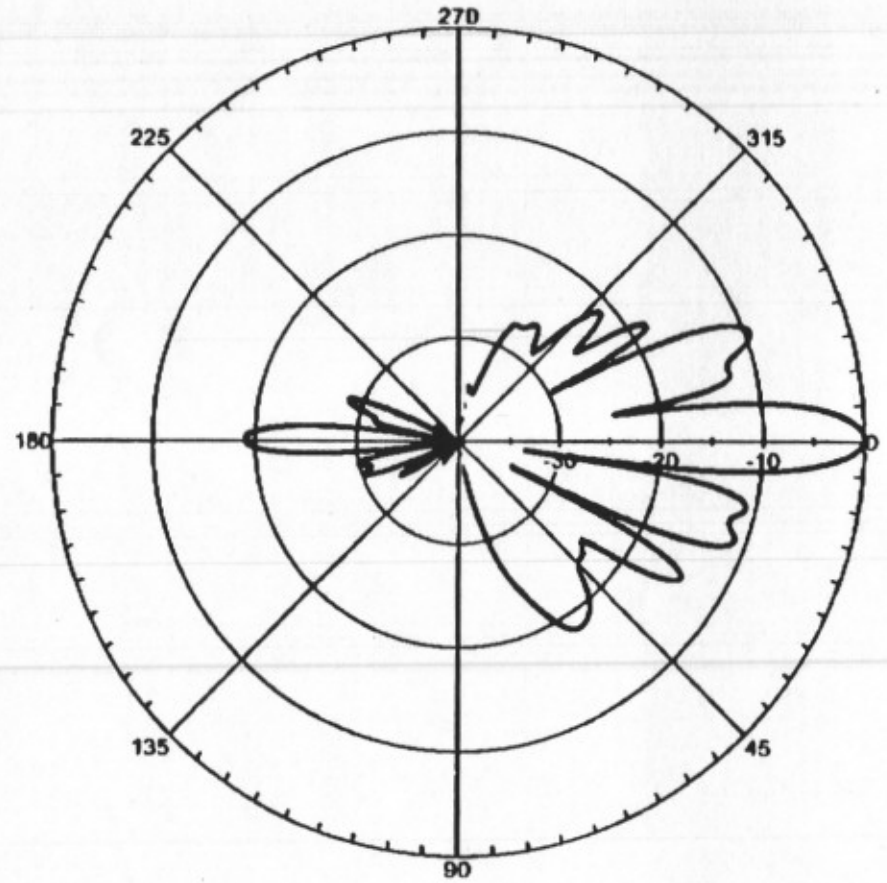
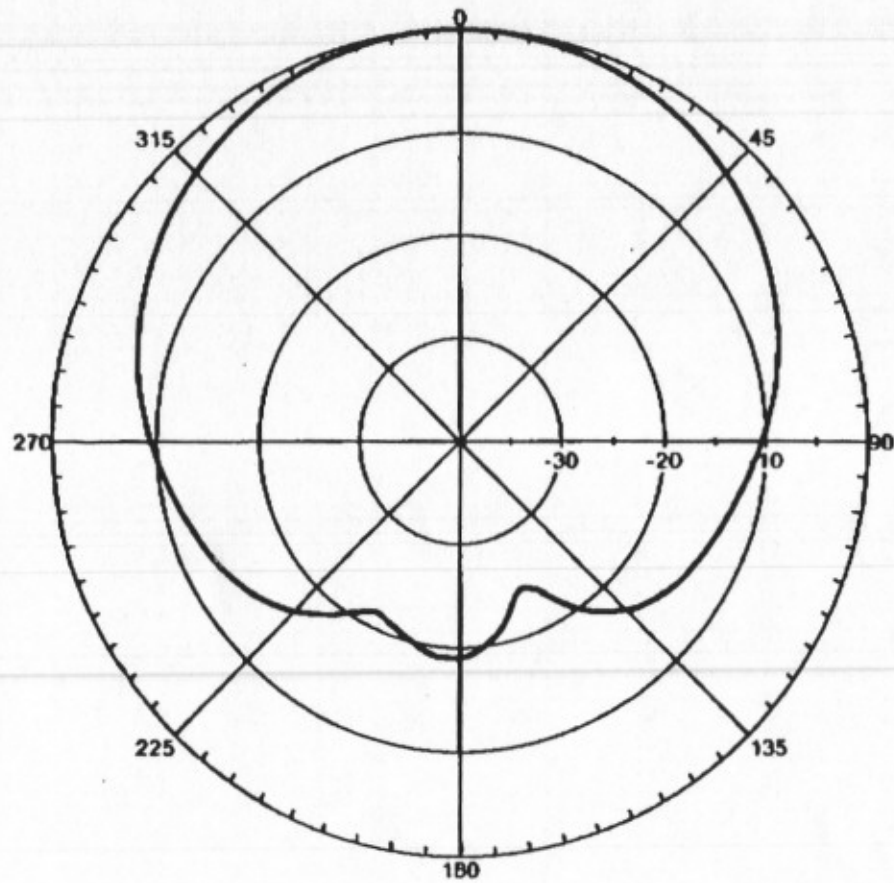
Boresight Gain: 0.00
Front to Back : 12.48 dB
H. Beamwidth : 178.25°

V. Beamwidth : 7.42°



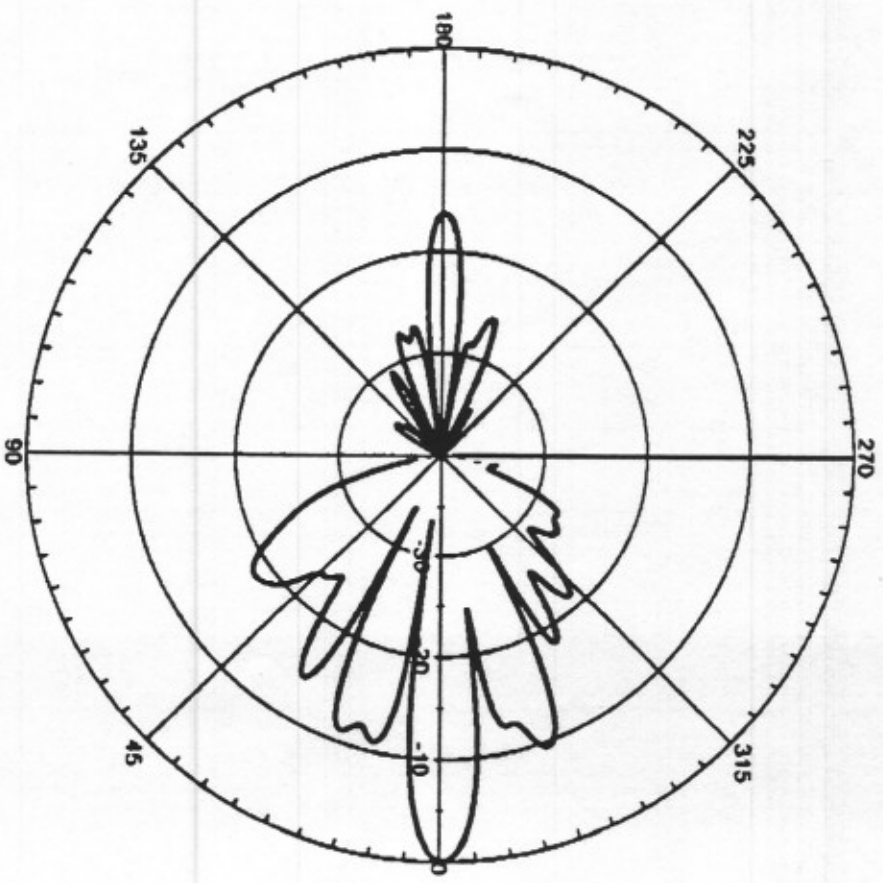
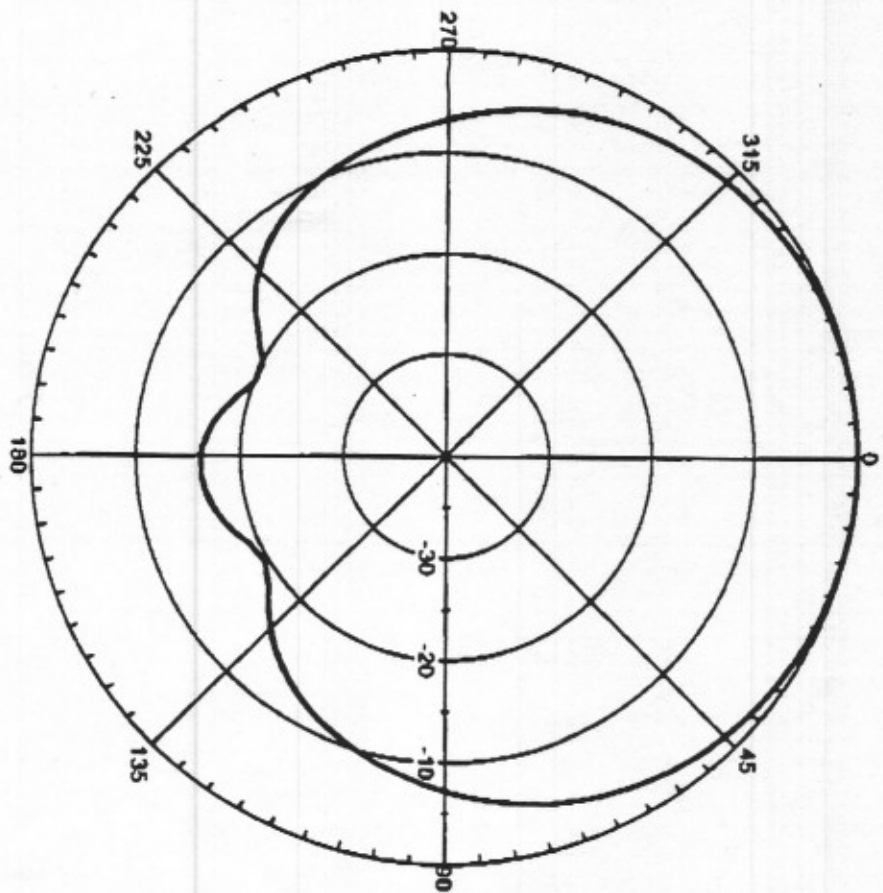
Boresight Gain: 10.62
Front to Back : 19.05 dB
H. Beamwidth : 88.75°

V. Beamwidth : 7.42°



Bore Sight Gain: 10.62
Front to Back : 16.31 dB
H. Beamwidth : 122.45°

V. Beamwidth : 7.42°



Boresight Gain: 0.00
Front to Back : 29.07 dB
H. Beamwidth : 44.78°

V. Beamwidth : 7.48°

