



**15.247 CERTIFICATION
FCC ID: IMKRL8AP**

EMI TEST REPORT

ON

RANGELAN802 MODEL 8520/8521 ACCESS POINT

WITH:

**CENTURION 1.0 DBI OMNIDIRECTIONAL ANTENNA
CUSHCRAFT 5.15 DBI OMNIDIRECTIONAL ANTENNA
HUBER+SUHNER 8.5 DBI PATCH ANTENNA
MOBILE MARK 9.0 DBI OMNIDIRECTIONAL
VERTEX 9.0 DBI PATCH ANTENNA**

PREPARED FOR

PROXIM

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PREPARED BY

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**TEST REPORT NUMBER: A803014
DATE OF TEST: MARCH 24, 1998**

**IF THIS DOCUMENT IS REPRODUCED, IT MUST BE REPRODUCED
IN ITS ENTIRETY.**



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1.0 TEST FACILITY

Name: Electronic Compliance Laboratories

Location: 1249 Birchwood Dr.
Sunnyvale, CA 94089

Site Filing: A site description is on file at the Federal Communications Commission
P.O. Box 429
Columbia, MD 21045

NVLAP LAB CODE: 200089

Types of Sites: Open Field Radiated and Indoor Screen Room (Line Conducted). All sites are constructed and calibrated to meet ANSI C63.4-1994 requirements.

2.0 TEST EQUIPMENT

Description	Manufacturer	Model	SN
EMI Receiver	HP	8546A	3325A00137
Spectrum Analyzer	HP	8563A	3137A01183
Preamp	HP	8447F	3113A05849
Preamp	HP	8449B	3008A00527
LISN	EM	ANS-25/2	2532
Biconical Antenna	EM	EM 6912	677
Log Periodic Ant	EM	EM 6950	858
Double Ridge Horn	EM	EM 6961	6231
Filter BP 1.2-45 GHz	FSY	HM 1160-1155	001
Filter BP 4-10 GHz	FSY	HM 2950-1565	001
Filter HP 10-18GHz	FSY	HP 8601-7SS	001

3.0 EUT

RangeLAN802 AP
M/N 8521
S/N 0020A6324BA7
FCC ID: IMKRL8AP

Centurion	P/N CAF28777	1.0 dBi Omnidirectional Antenna
Cushcraft	P/N S2403BP48SM	5.15 dBi Omnidirectional Antenna
Huber+Suhner	P/N 1324.19.0002	8.5 dBi Patch Antenna
Mobile Mark	P/N OD9-2400	9.0 dBi Omnidirectional
Vertex	P/N 245LD9W	9.0 dBi Patch Antenna

(antennas not serialized)

4.0 SUPPORT EQUIPMENT

110v/10Hz to 24Vac Transformer

5.0 EQUIPMENT CONFIGURATION

All of the equipment and cables were placed in worst case positions to maximize emissions.

Interconnecting cables were of the type and length specified in the individual equipment requirements.

Grounding was in accordance with the manufacturer requirements and conditions for intended use.

6.0 SUMMARY OF TESTS

The RangeLAN802 AP is a Wireless Point to Multipoint data communications System with a low power frequency hopping spread spectrum (FHSS) radio system operating in the 2400-2483.5 MHz band. Tests were performed with two different antennas. Test firmware resident in the EUT and was used to do the test.

6.1 15.247(a)(1) FREQUENCY HOPPING SYSTEMS

RangeLAN802 AP uses 79 channels, each 1 MHz wide. The system hops over one of 15 pseudorandom sequences. On average, each channel is used equally. Please refer to " RangeLAN802 AP frequency Hopping Theory of Operation" attached to this submission for more details.

6.1.1 15.247(a)(1)(ii) CHANNEL UTILIZATION

A spectrum analyzer plots labeled "Channel UTILIZATION". The total number of channels is 79. The channels used have nominal center frequencies of 2402 through 2480 MHz. Three spectrum analyzer MAX HOLD plots labeled ""BANDWIDTH" show the 20 dB bandwidth of the hopping channel to be < 1 MHz (.960 / .940/ .965 MHz) at the low/midband/high frequencies of 2.402/2.440/2.480 GHz. **Test Plots are shown in Appendix A.**

Zero span spectrum analyzer plot labeled "DWELL TIME" shows Worst case transmission time in a given slot: 390ms dwell-time elapsed time, <100 % duty
Maximum allowed: 400 msec.

Test Data in Appendix A.

6.1.2 **15.247(b) MAXIMUM PEAK OUTPUT POWER**

The three spectrum analyzer plots labeled " POWER OUT" show the maximum power of the hopping channel to be 26.67dBm or 464mW. The EUT was made to transmit uninterrupted random data on each of the low/mid/high channels. **Test Plots are shown in Appendix A.**

The output was taken through 3 feet of RG 142 cable, to Spectrum Analyzer set on Max Hold with no additional attenuation.

Power = 26.37dBm (peak reading) +0.3dB cable loss = +26.67dBm / 464mW EIRP

Limit: +30 dBm / 1 W maximum power

Centurion 2.15 dBi Omnidirectional antenna,

EIRP = +26.67 (peak power) +2.15 (peak gain, dBi) = +28.82 dBm / 762mW EIRP

Limit: +36 dBm / 4 W maximum EIRP

Cushcraft 5 dBi Omnidirectional antenna,

EIRP = +26.37 (peak power) +5.0 (peak gain, dBi) = +31.37 dBm / 1.37W EIRP

Limit: +36 dBm / 4 W maximum EIRP

Huber+Suhner 8.5 dBi Patch Antenna

EIRP = +26.37 (peak power) +8.5 (peak gain, dBi) = +34.87 dBm / 3.07mW EIRP

Limit: +36 dBm / 4 W maximum EIRP

Mobile Mark 9.0 dBi Omnidirectional

EIRP = +26.37 (peak power) +9.0 (peak gain, dBi) = +35.37 dBm / 3.44mW EIRP

Limit: +36 dBm / 4 W maximum EIRP

Vertex 9.0 dBi Patch Antenna

EIRP = +26.37(peak power) +9.0 (peak gain, dBi) = +35.37 dBm / 3.44mW EIRP

Limit: +36 dBm / 4 W maximum EIRP

6.1.3 15.247(c) OUT OF BAND EMISSIONS

The spectrum analyzer plots titled "" OUT OF BAND - BAND EDGES" shows the output spectrum of the EUT while hopping one of the pseudorandom sequences and continuously transmitting packetized data. The analyzer was placed in MAX HOLD mode, and individual sweeps were recorded continually for 10 minutes with the same spectrum analyzer connection as was used for peak output power. The resultant plot shows that the EUT emissions remain inside the 2400 - 2483.5 MHz band when measured in ≥ 100 kHz bandwidth during operation.

The spectrum analyzer plots labeled "OUT OF BAND <1GHz GHz", "OUT OF BAND 1 -2.75 GHz", and "OUT OF BAND 2.75 - 26.5 GHz" show that emissions measured in ≥ 100 kHz bandwidth are more than 20 dB below the highest level of the desired power outside of the 2400 - 2483.5 MHz band. **Test Plots are shown in Appendix A.**

6.1.4 15.203 ANTENNA REQUIREMENT

The unit requires professional installation and is therefore exempt from the requirements of 15.203. This product has a standard N type Antenna connector to provide a coupling to the intentional radiator. The Manufacture's control drawings, and the antenna drawings are in **Appendix B.**

6.1.5 15.205 RESTRICTED BAND RADIATION LIMITS

The EUT was placed on a wooden table resting on a turntable. The wooden table was approximately 1 meter above the groundplane of the 3 meter test site. The search antenna was moved in to 1 meter when necessary to improve the noise floor, and the appropriate range factor was applied. While the EUT was transmitting uninterrupted random data on each of the low/mid/high channels and with the spectrum analyzer on MAX HOLD, the turntable was rotated, and the search antenna raised and lowered in an attempt to maximize the received radiated emission level. **Test results are attached in Appendix C** in tabular form showing that no spurious signals were detected above the 74dBuV/m peak/54dBuV/m average limits. Peak measurements were made with a RBW and VBW = 1Mhz. Average measurements were made with a RBW = 1 MHz and a VBW = 10 Hz.

6.1.6 15.207 AC LINE CONDUCTED EMISSIONS

The RF line conducted levels for emissions in the 0.45 - 30 MHz band must not exceed 250 μ V when measured with a LISN. Attached graphs and tabular data show that emissions are below the 250 μ V (48 dB μ V) maximum allowed level. **Test Data is in Appendix D.**

6.1.7 15.209 RADIATED EMISSIONS

The attached table shows that the Class B radiated limits from 30 - 1000 MHz are not exceeded by the EUT. The EUT was operating normally with a combination of transmission and reception and hopping one of the fifteen pseudorandom sequences during this test. The EUT was placed near one edge of a wooden table resting on a turntable. The wooden table was approximately 1 meter above the groundplane of the 3 meter test site. The search antennas were located at 3 meters. Measurements were made in accordance with ANSI C63.4-1994. **Test Data is in Appendix E.**

Electronic Compliance Laboratories

Chris Byleckie
Technical Director

Date

APPENDIX A
SPREAD SPECTRUM PLOTS

Channel Utilization

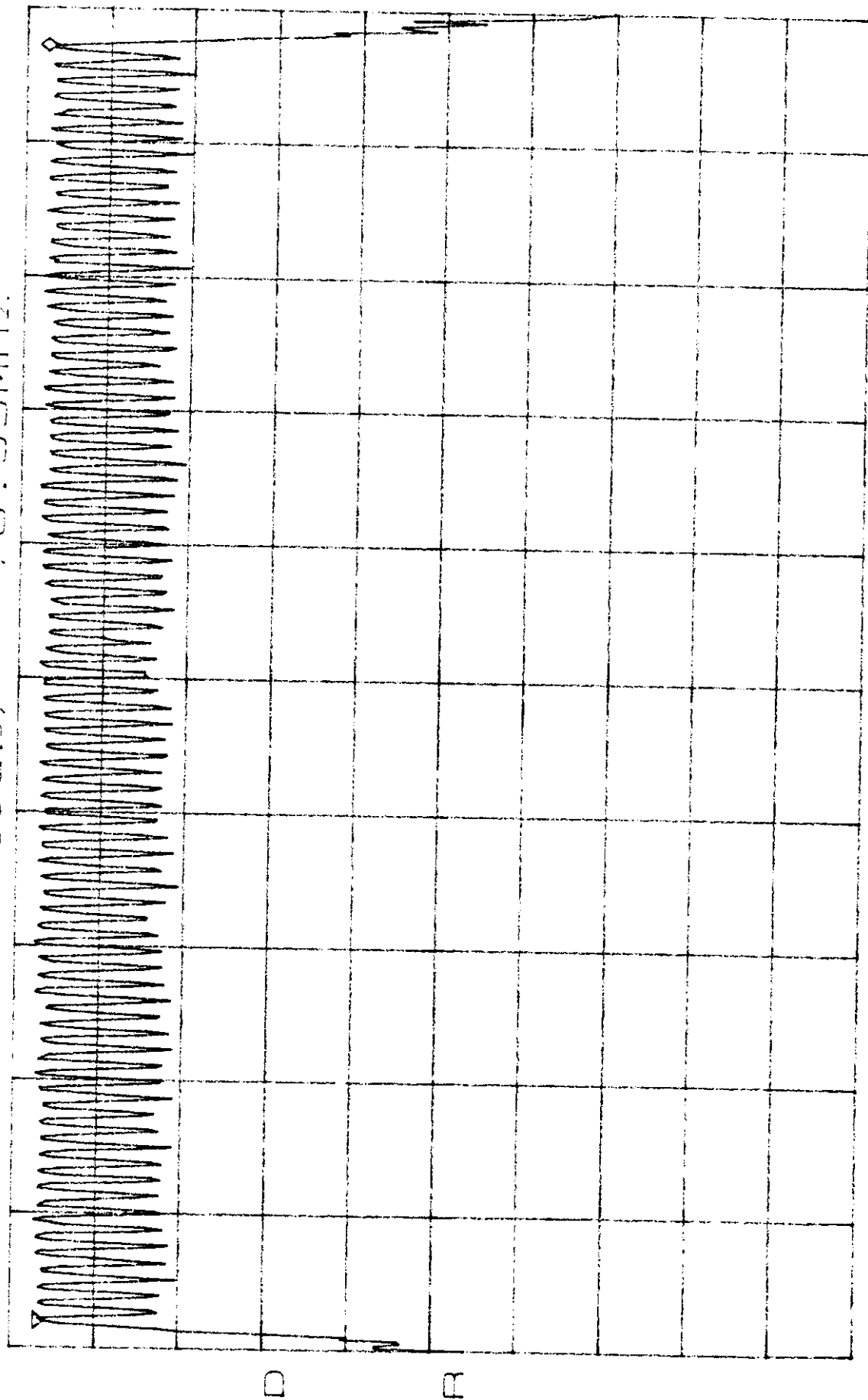
ATTEN 40dB

RL 28.0dBm

10dB/

AMKR .50dB

78.99MHz



A8054100ART 2.40000GHz

STOP 2.48300GHz

*RBW 100KHz

*VBW 100KHz

SWP 50ms

Bandwidth

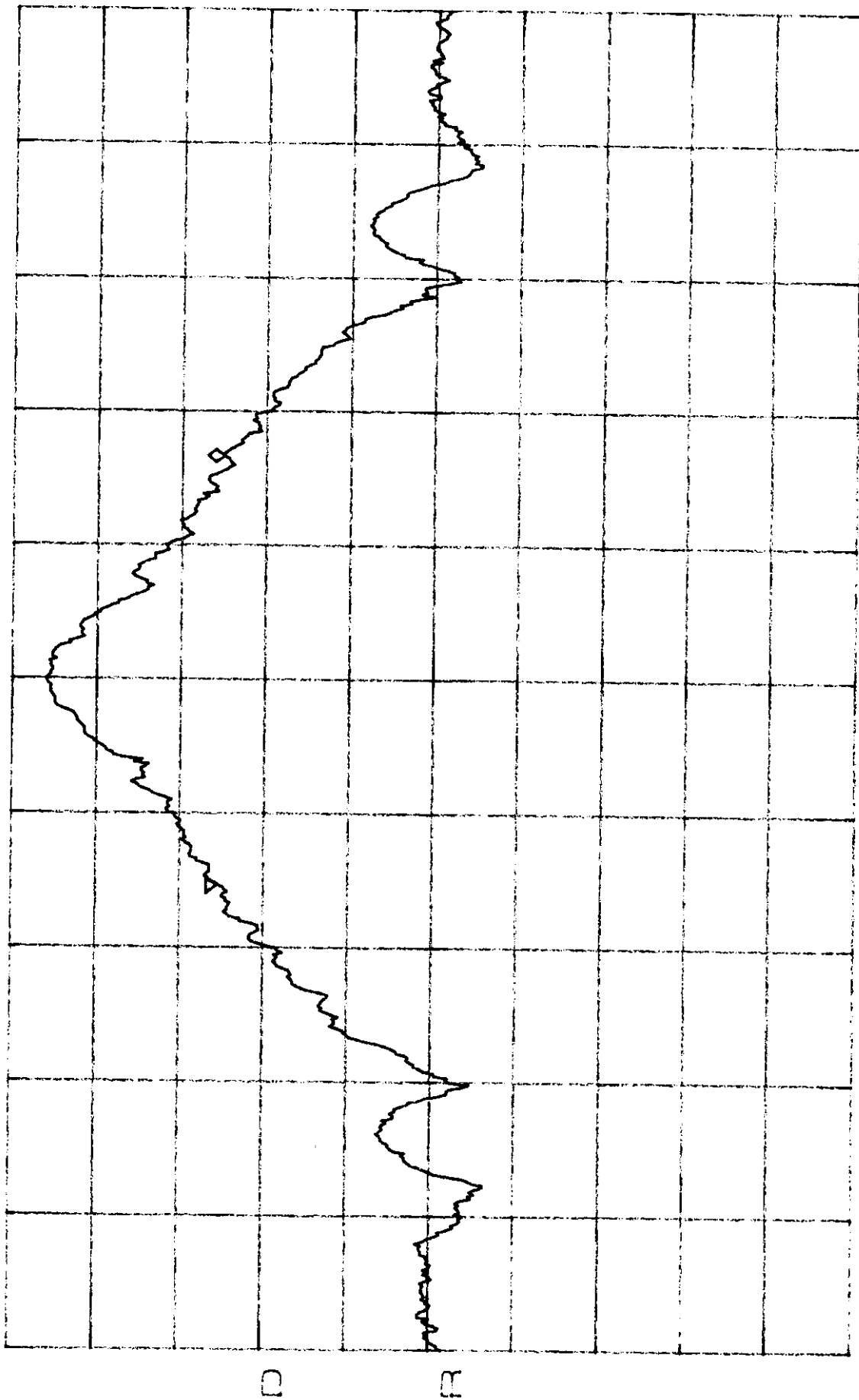
ATTEN 40dB

RL 28.0dBm

ΔMKR --.50dB

960kHz

10dB/



CENTER 2.402000GHZ

SPAN 3.000MHZ

AS03014200C

VBW 30KHZ

SWP 50mS

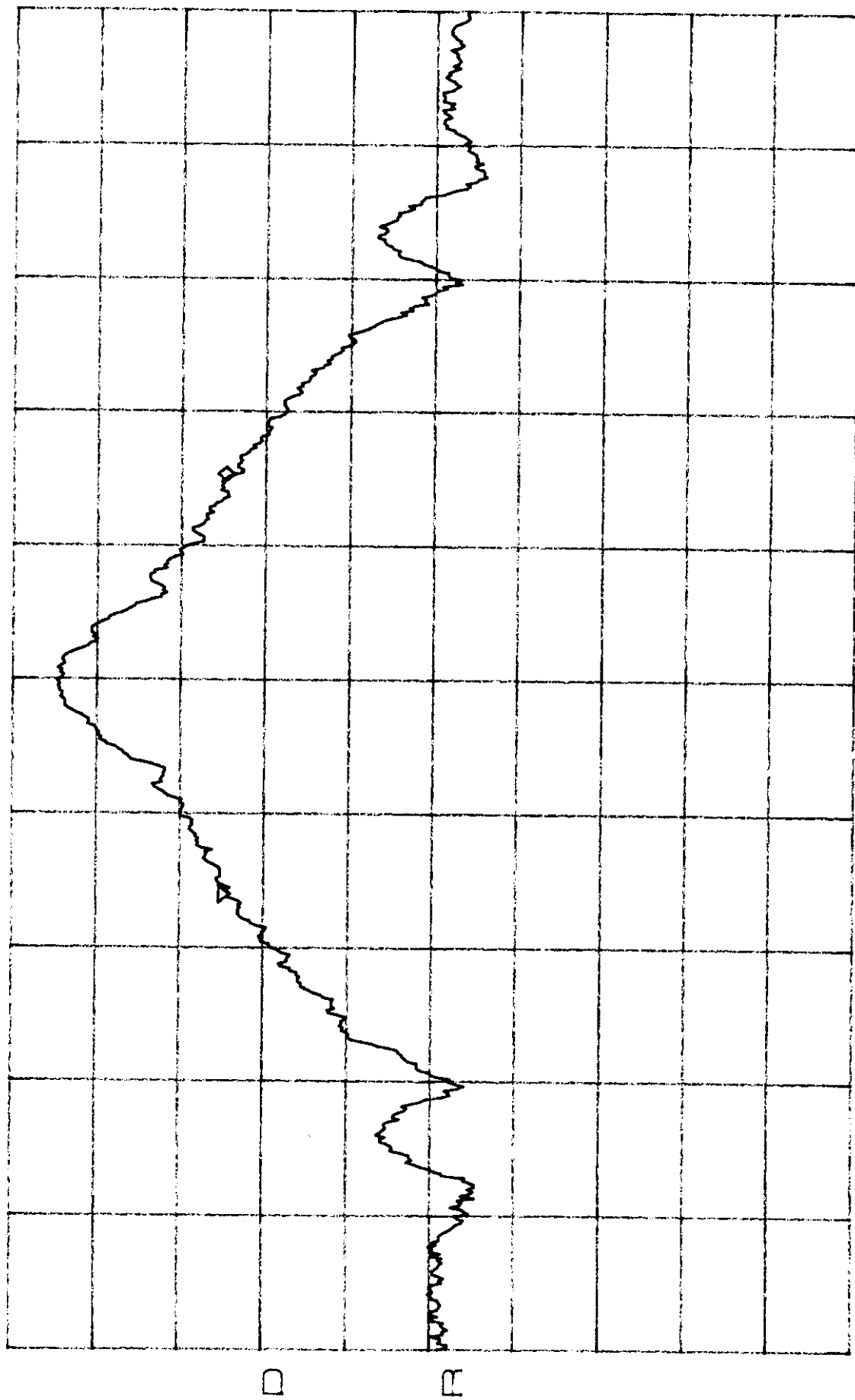
Bandwidth

ATTEN 40dB

RL 28.0dBm

ΔMKR -.33dB

10dB/ 940KHZ



CENTER 2.440000GHZ

SPAN 3.000MHZ

A803014.DOC

*RBW 30KHZ

VBW 30KHZ

SWP 50ms

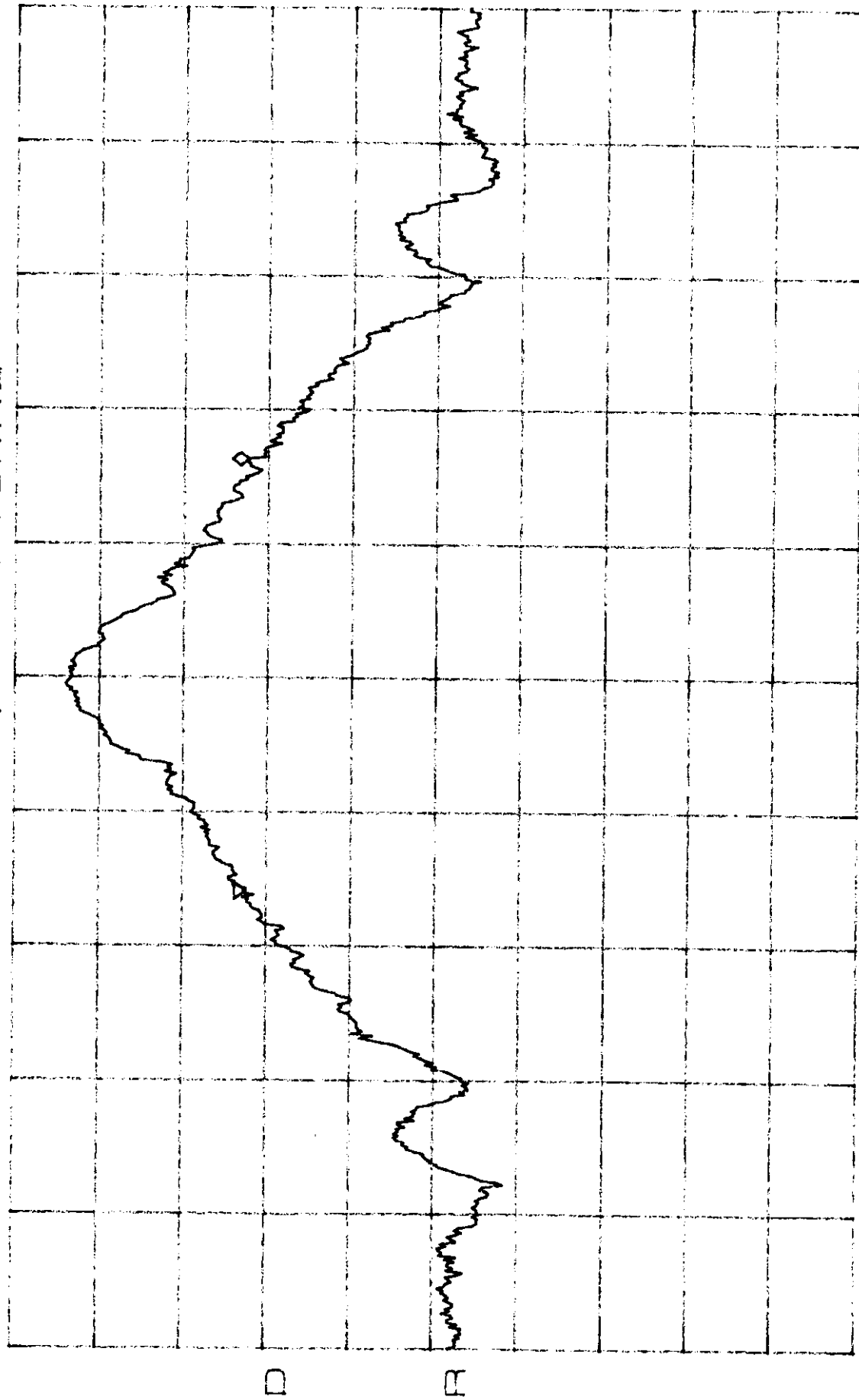
Bandwidth

ATTEN 40dB

RL 23.0dBm

MARKER -1.17dB

10dB/ 965KHZ



CENTER 2.4800000GHZ

SPAN 3.000MHZ

A803014.DOC

*RBW 30KHZ

VBW 30KHZ

SWP 50ms

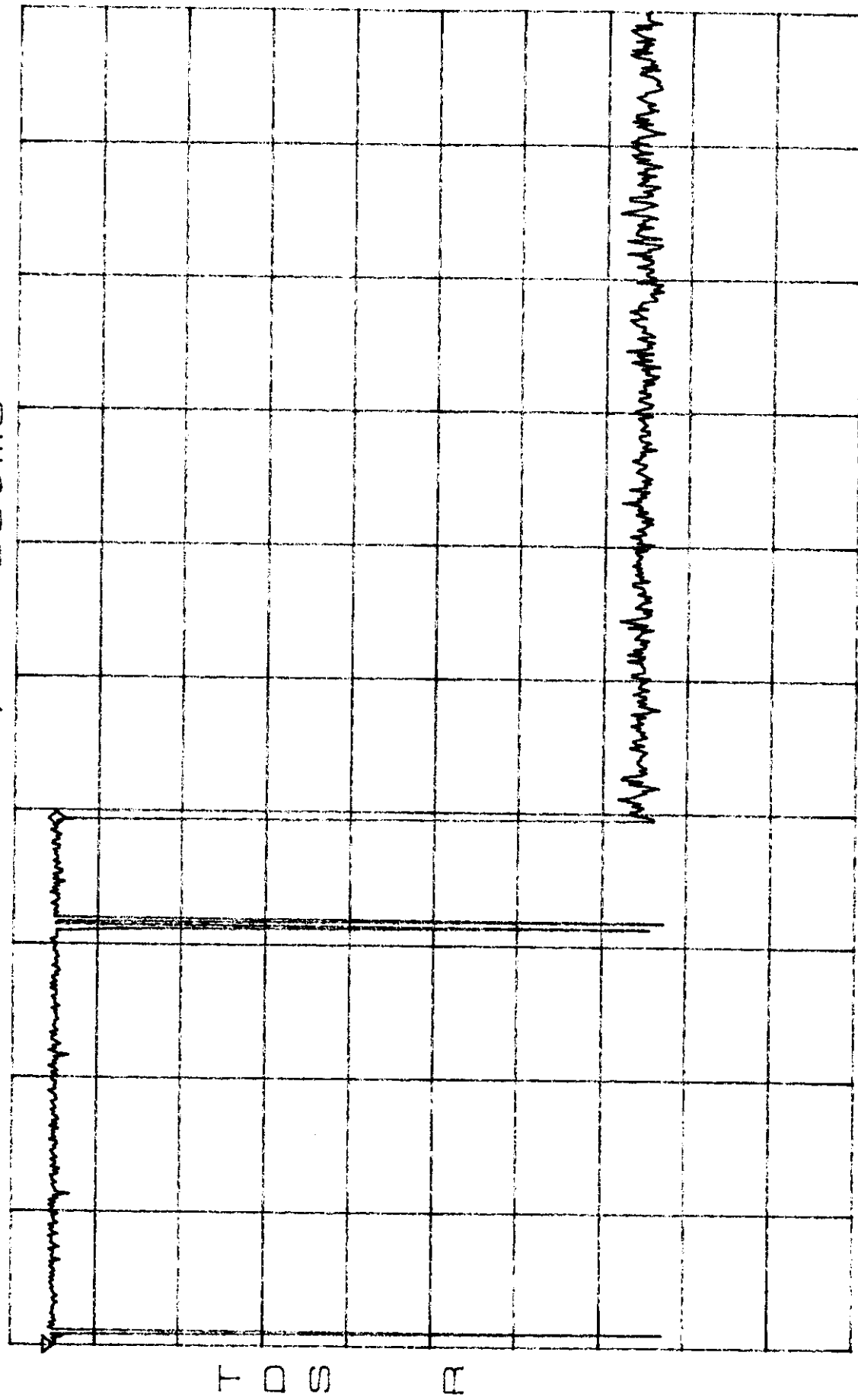
Dwell Time

ATTEN 40dB

ΔMKR - .83dB

RL 28.0dBm

10dB/ 390ms



CENTER 2.440000000GHZ

SPAN 0HZ

A803014DOC

*RBW 30KHZ

VBW 30KHZ

*SWP 1.0Sec

Power Out

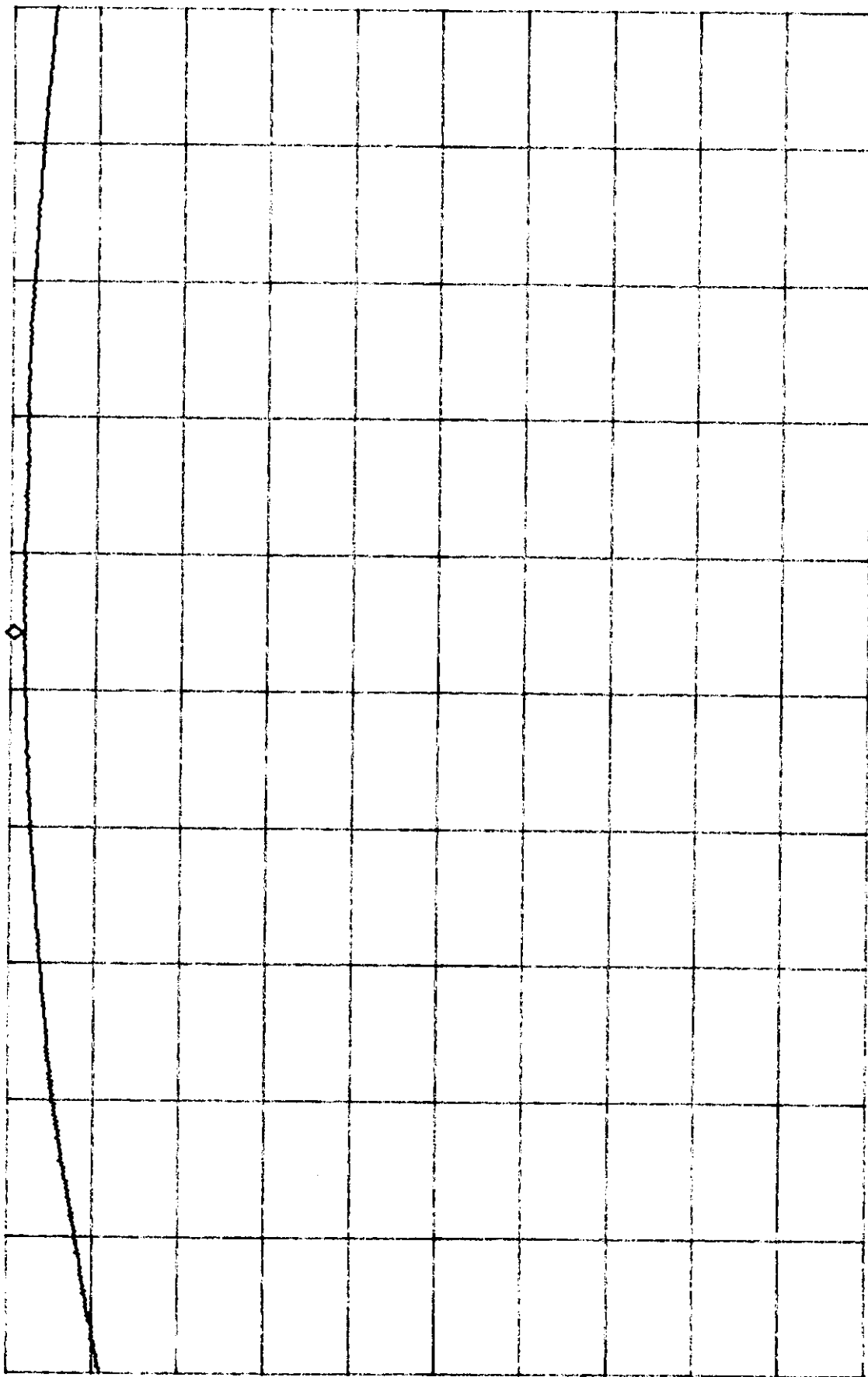
ATTEN 40dB

RL 28.0dBm

MKR 26.67dBm

2.401930GHz

10dB/



D

R

CENTER 2.4018056GHz

SPAN 3.000MHz

A803014.DOC

*RBW 2.0MHz

VBW 3.0MHz

SWP 50ms

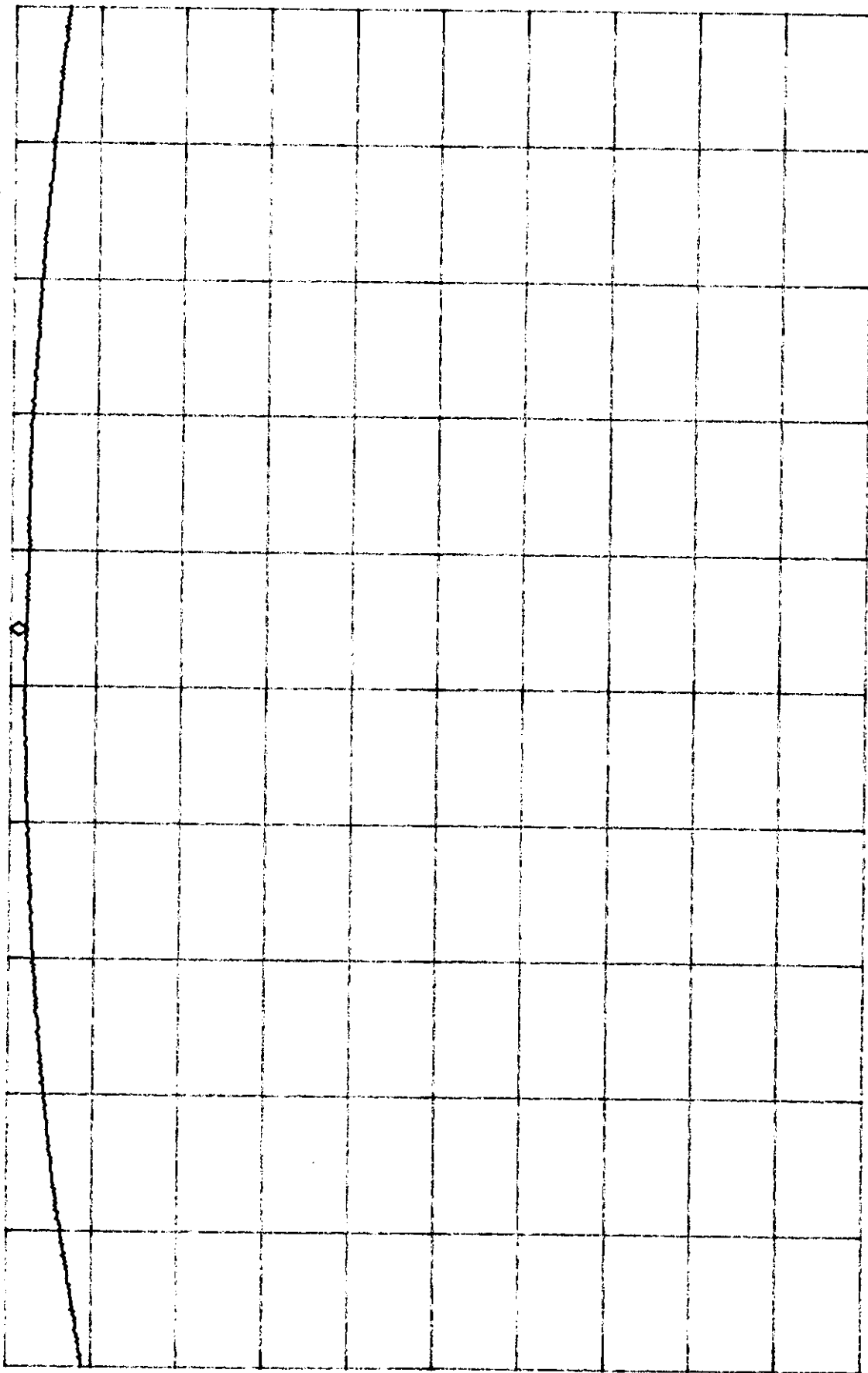
Power Out

ATTEN 40dB

RL 28.0dBm

MKR 26.17dBm

10dB/ 2.440125GHz



D

R

CENTER 2.440000GHz

SPAN 3.000MHz

A803014.DOC

*RBW 2.0MHz

VBW 3.0MHz

SWP 50ms

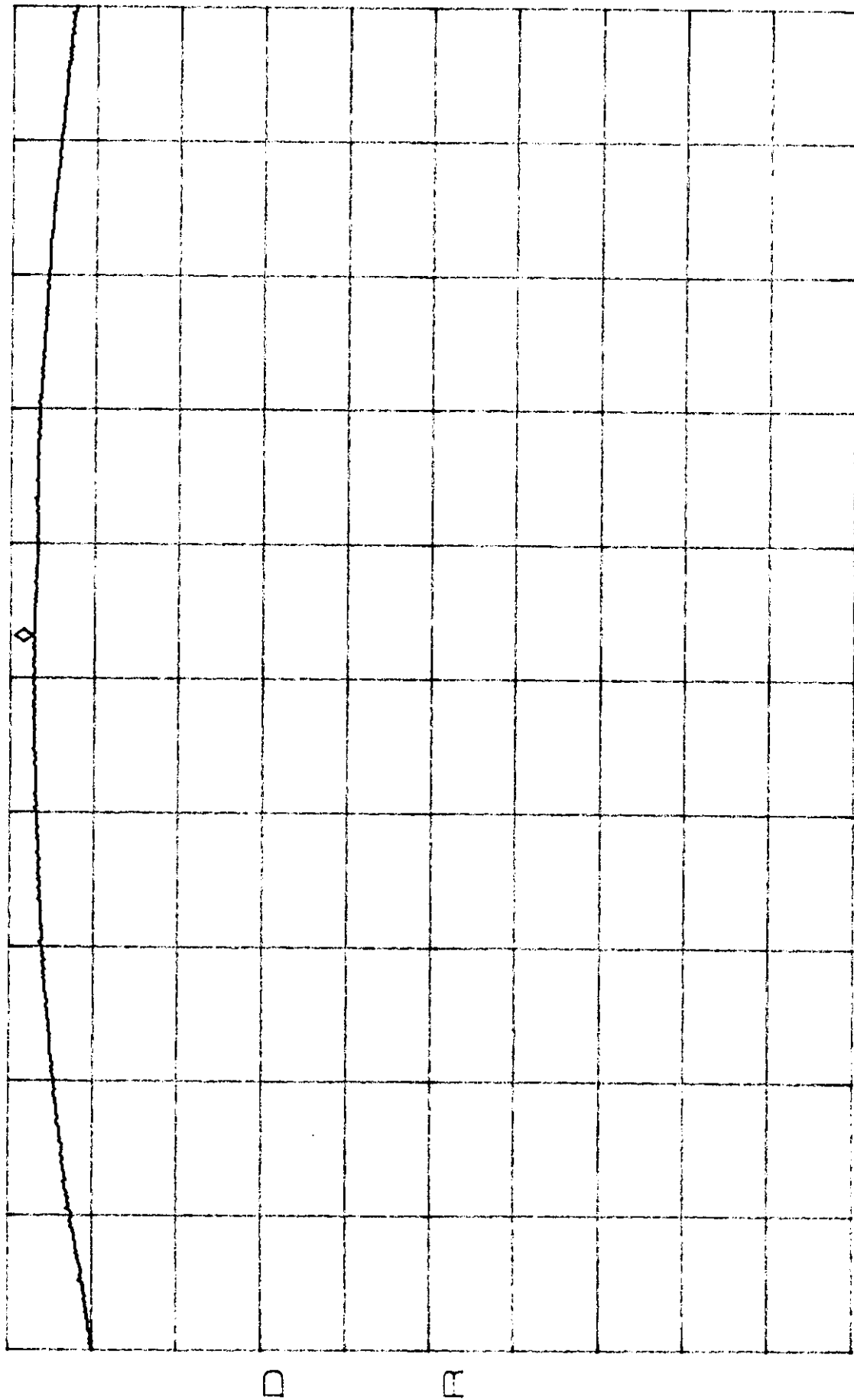
Power Out

ATTEN 40dB

MKR 25.50dBm

RL 28.0dBm

10dB/ 2.480095GHz



D

F

CENTER 2.480000GHz

SPAN 3.000MHz

A803014DOC

*RBW 2.0MHz

VBW 3.0MHz

SWP 50mV

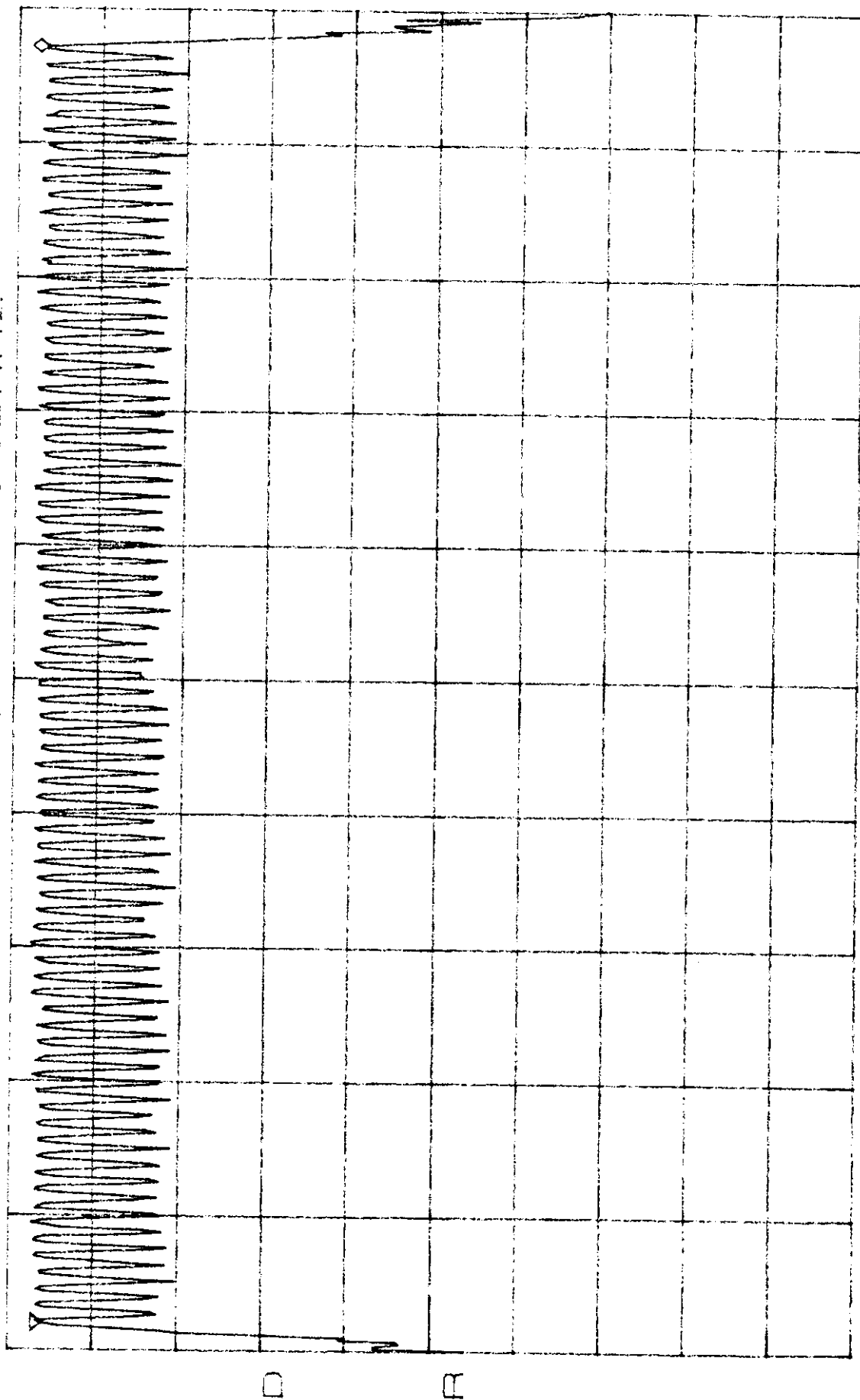
Out Of Band Emissions Band Edges

ATTEN 40dB

MARKER .550dB

RL 28.0dBm

10dB/ 78.99MHz



START 2.400000GHz

STOP 2.483000GHz

*RBW 100kHz

*VBW 100kHz

SWP 50ms

A803014.DOC

Out Of Band < 1 GHz

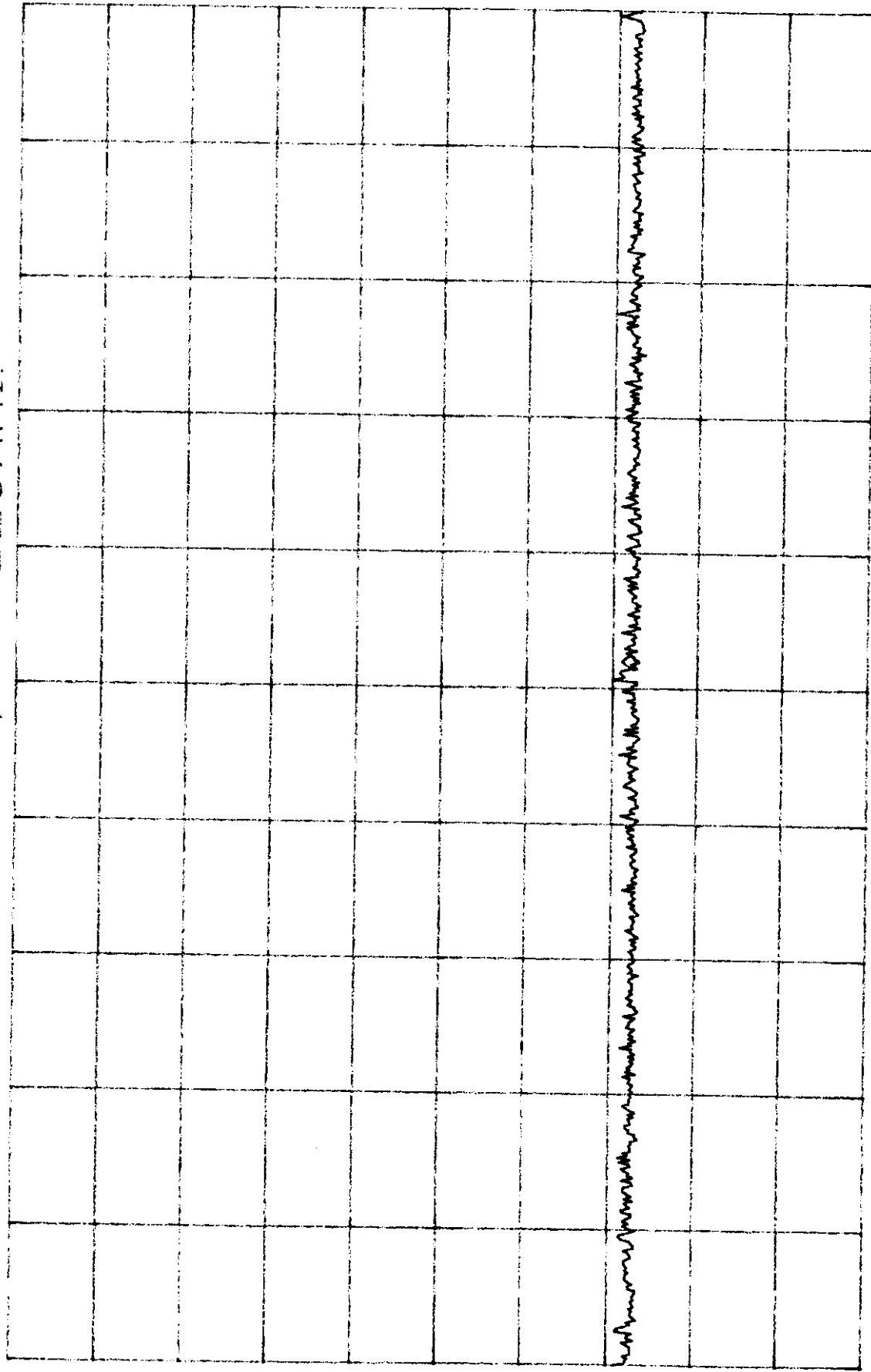
ATTEN 40dB

RL 28.0dBm

40dB/

MKR -45.00dBm

520MHz



START 0Hz

STOP 1.000GHz

A803014.DOC

*RBW 100kHz

*VBW 100kHz

SWP 300ms

19

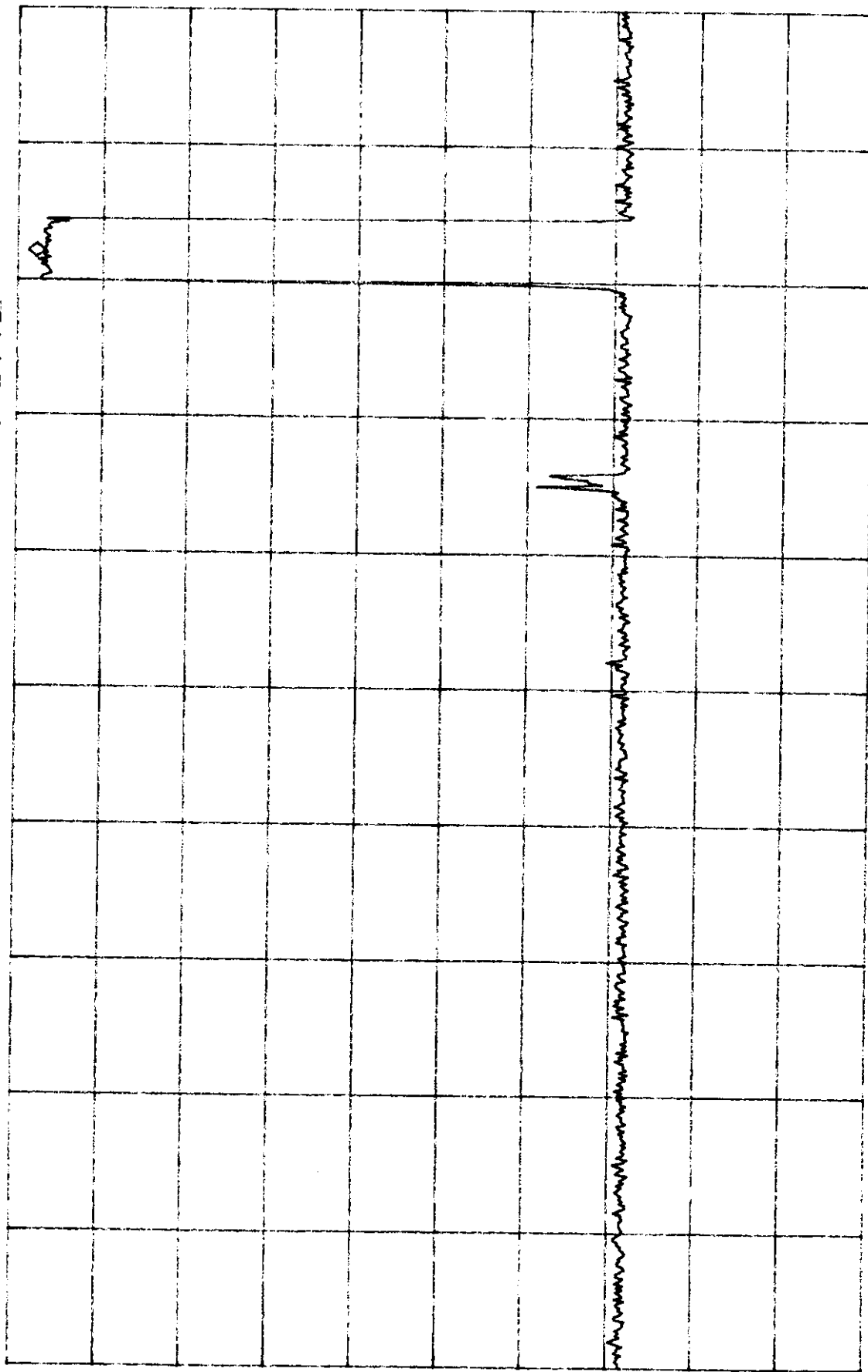
Out Of Band 1 - 2.75 GHz

ATTEN 40dB

MKR 24.83dBm

RL 28.0dBm

10dB/ 2.438GHz



START 1.000GHz

STOP 2.750GHz

A803014.DOC

*RBW 100kHz

*VBW 100kHz

SWP 500ms

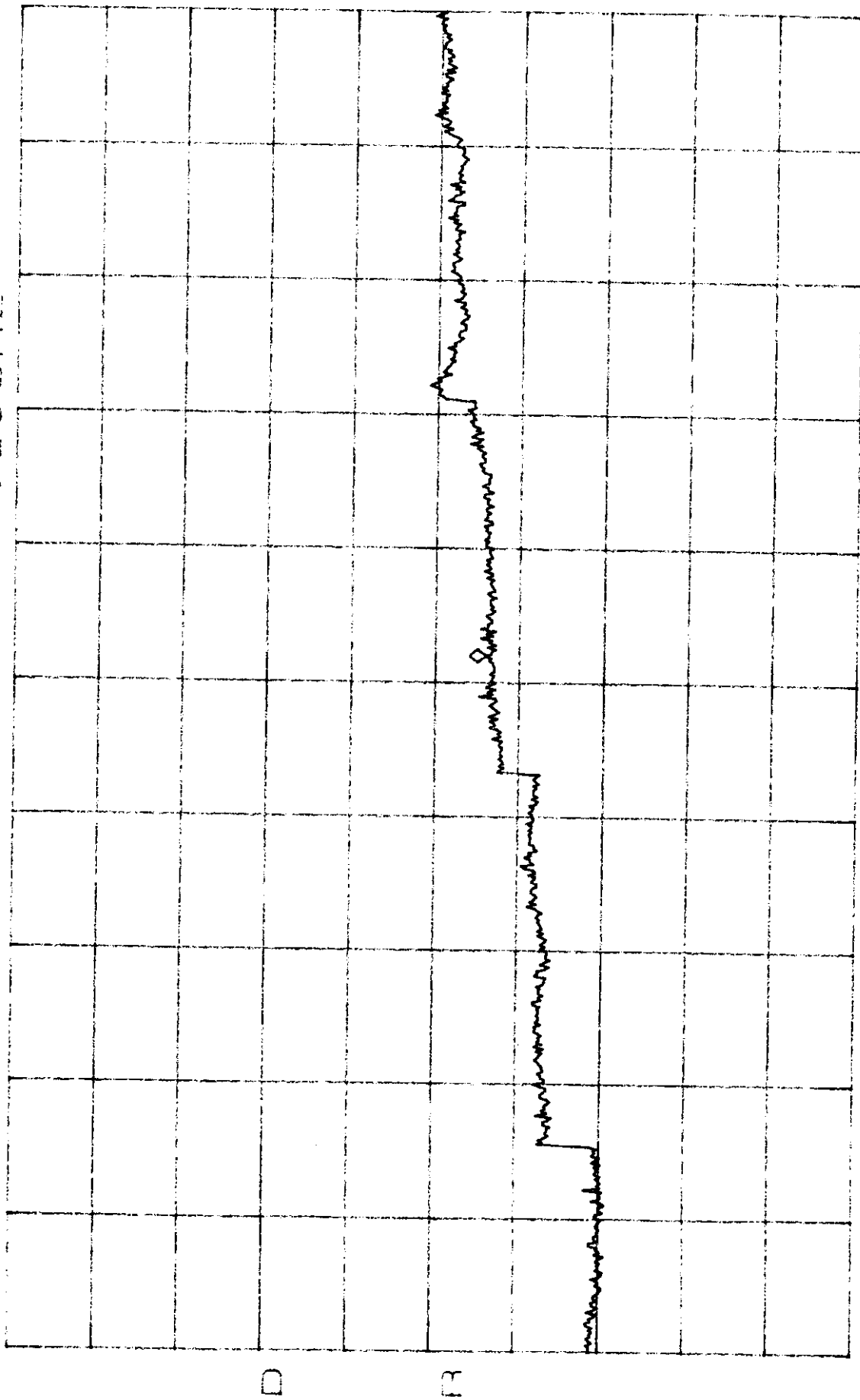
Out of Band 2.75 - 26.5 GHz

ATTEN 40dB

RL 28.0dBm

MKPR -28.00dBm

10dB/ 15.10GHz



START 2.75GHz

STOP 26.50GHz

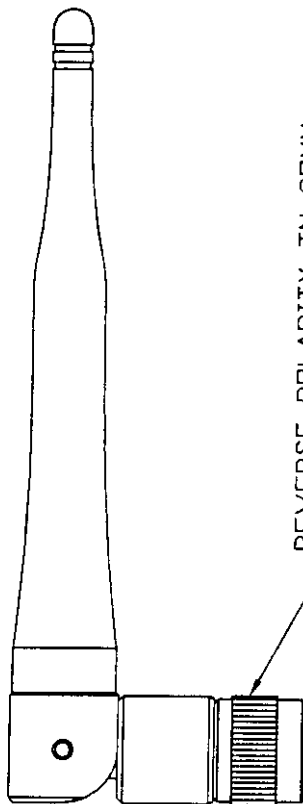
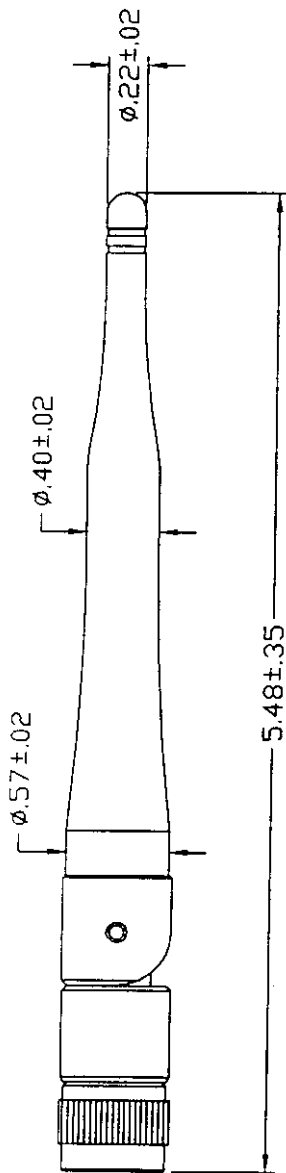
*A803014DQC

*VBW 100kHz

*VBW 100kHz

SWP 6.08sec

APPENDIX B
ANTENNA DRAWINGS



PNR DATA SHEET
Part # 1932-0051
Sheet 2 of 2

NOTES:

1 SPECIFICATIONS:

GAIN: 215 dBi
OPERATING TEMPERATURE: -40°C TO +85°C
FLEX TEST: PER QEA0014
PULL TEST: 20 lbs. LINEAR PULL
TORQUE TEST: 20 in-lbs
POWER RATING: 50 WATTS
VSWR 1.5:1 MAX. AT RESONANCE

CENTURION	FREQ. CODE	FREQUENCY RANGE	COLOR CODE
CAF28777	2.4GHZ	2.4-2.5GHZ	NONE

ALL DIMENSIONS ARE IN INCHES

LET	REVISION	DATE	CK	APP	SCALE	1:1	TOL. UNLESS NOTED:
A	EC0951387	12/95	DR: JB	CK:			XX = ± .010 XXX = ± .005 ANGULAR ± 30°
							PH 402-467-4491 FAX 402-467-4528 P.O. BOX 82846 LINCOLN, NE 68501
							CENTURION INT. INC.
							ANT, CELL, EXR-2400-TNSP
							MATERIAL: N/A
							DATE: 12/07/95 DWG NO: CAF28777 PG: REV: 1/5 A

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OD Series Site Antenna (pat.pnd.) PCS, ISM & High Frequency Bands



OD Series Antenna

- 6 dBi & 9 dBi fiberglass antennas with omnidirectional pattern
- Can be mounted anywhere; no ground plane required
- Extended aperture minimizes fading effect
- Mounting kit includes all hardware needed

The OD Series Base Station Antenna are high frequency designs for use in PCS, ISM & other high frequency applications. These small antennas consist of a collinear array with the radiating elements stacked vertically.

A unique designed phasing element (pat.pnd.) cancels unwanted out-of-phase current distribution. This results in improved bandwidth, and minimizes minor sidelobes in the radiation pattern. The design maintains a circular pattern in the horizontal plane and compresses the vertical pattern to achieve gain.

These multi-element collinear gain antennas improve both transmit and receive signal in all installations. They are effective for both close-in and fringe applications. The antenna's design characteristics further improve performance by increasing the effective spatial signal-to-noise ratio.

The OD Series antennas are free space antennas and can be mounted anywhere; no ground plane is required.

The low profile radome makes the OD series durable and rugged. They can withstand the harshest environments of snow, wind, rain, and ice. The lower feed assembly is made of precision machined aluminum components and is irradiated for further weather protection.

The OD Series comes with all the hardware needed to install it to a mast. Customized hardware is also available for unique mounting applications.

PNR DATA SHEET
PART # 1900.0035
SH. 7 OF 7 REV A

	<u>6 dBi Models</u>	<u>9 dBi Models</u>
1700 - 1900 MHz range	OD6-1800	OD9-1800
1800 - 2000 MHz range	OD6-1900	OD9-1900
2300 - 2600 MHz range	OD6-2400	OD9-2400 ←

Note: Specify center frequency desired for all models. Other frequencies available upon request, please consult factory.

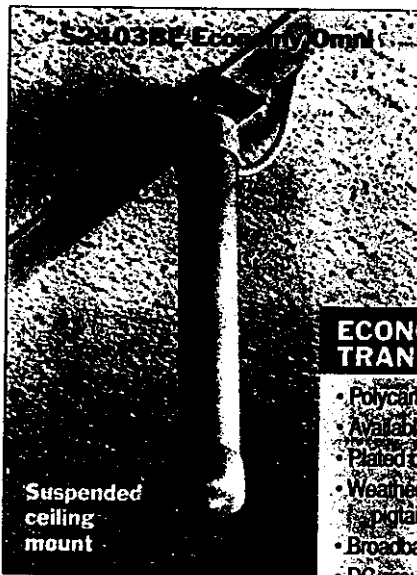
Specifications

Frequency:	See above	Material:	fiberglass radome, with aluminum feed
Gain:	See above	Antenna length:	
Bandwidth @2:1:	140 MHz	6 dBi Models	17 inches
Nominal Impedance:	50 ohms	9 dBi Models	25 inches
Max. Power (continuous):	100 watts	Antenna Weight:	1.8 lbs with clamp
Vertical Beamwidth (-3 dB point)		Termination:	N male connector
6 dBi model:	32 degrees	Mounting Kit:	Mast mount kit included
9 dBi model:	17 degrees	Mounting Dimensions:	Use mast up to 2" OD
Wind Loading (flat plate equiv.):	30 sq. inches		
Rated Wind Velocity:	100+ mph		
Lightning Protection:	direct ground		

Economy Data Transmission Omnidirectional Antennas

These economy models of the above antennas are built without the extensive decoupling circuits found in the standard models. For some applications this can enhance performance. In others it has little effect on actual performance.

Economy Omnis are housed in long-life ultraviolet-stabilized poly-carbonate radomes. They may be used indoors or out without regard to the environment. Their radiation patterns have a tendency to fill the available space. There are a variety of mounting options from suspension ceiling clamps to pole mounts.

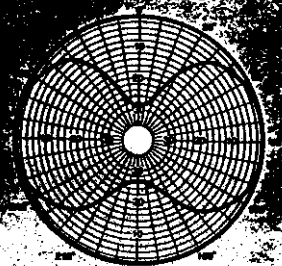
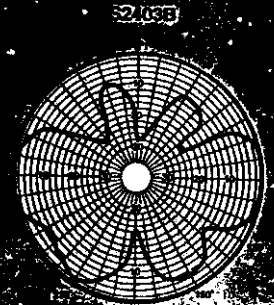
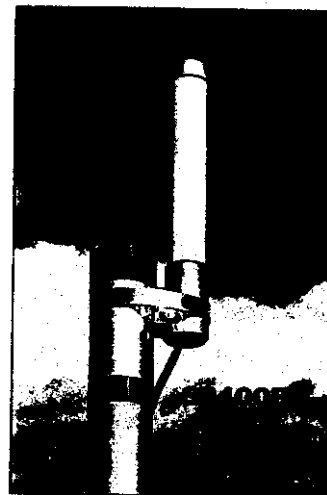


Omnidirectional antenna designs are also available for any frequency between 25 MHz and 6 GHz. Please call our sales engineers for full information.

ECONOMY DATA TRANSMISSION OMNIS

- Polycarbonate enclosures
- Available with ceiling mounts
- Plated copper laminated radiator
- Weatherproof designs with UltraLink digital
- Broadband performance
- DC grounded
- Omnidirectional performance

Model	Spread Spectrum	SCADA
S8960BE	Yes	Yes
S8963BE	Yes	No
S2400BE	Yes	NA
S2403BE	Yes	NA



PNR DATA SHEET
PART # 1900.0040
SH. 3 OF 3 REV A

DATA OMNI SELECTOR CHART

Model	Freq. MHz	Gain dBi	Bandwidth 1.5:1 MHz	3dB bandwidth E-Plane*	Height in (cm)	Weight lb (kg)	W/sur Area ft ² (m ²)	W/survival temp (kph)	Power (Watts)	Enclosure Material	Mount Style	Max Dia in (cm)
S8960B	896-960	0	64	75	17-1/2 (44.5)	0.56 (0.25)	0.083 (0.009)	125 (200)	150	Fiberglass	Tube end	2 (5.1)
S8960BE	896-960	0	64	75	9 (22.9)	0.36 (0.16)	0.122 (0.011)	125 (200)	150	Polycarbonate	Ceiling	N/A
S8963B	896-960	3	64	38	30-3/4 (78)	1.19 (0.53)	0.176 (0.016)	125 (200)	150	Fiberglass	Tube end	2 (5.1)
S8963BE	896-960	3	64	38	17 (43.2)	0.41 (0.18)	0.24 (0.022)	125 (200)	150	Polycarbonate	Ceiling	N/A
S8964B	896-960	4	64	30	42-1/8 (107)	1.56 (0.70)	0.22 (0.02)	125 (200)	150	Fiberglass	Tube end	2 (5.1)
S1403B	1410-1455	3	45	38	30 (76.2)	0.58 (0.26)	0.43 (0.04)	125 (200)	75	Polycarbonate	Tube end	2 (5.1)
S1406B	1410-1455	6	45	20	17-1/2 (44.5)	0.34 (0.15)	0.25 (0.023)	125 (200)	75	Polycarbonate	Tube end	2 (5.1)
S1804B	1850-1970	0	120	38	20-1/2 (52.1)	0.40 (0.17)	0.26 (0.024)	125 (200)	50	Polycarbonate	Tube end	2 (5.1)
S1806B	1850-1970	3	120	20	26-1/2 (67.3)	0.51 (0.23)	0.38 (0.035)	125 (200)	50	Polycarbonate	Tube end	2 (5.1)
S2400B	2400-2500	0	100	75	8 (20.3)	0.25 (0.11)	0.122 (0.011)	125 (200)	50	Polycarbonate	Tube end	2 (5.1)
S2400BE	2400-2500	0	100	75	9 (22.9)	0.29 (0.64)	0.122 (0.011)	125 (200)	50	Polycarbonate	Ceiling	N/A
S2403B	2400-2500	3	100	38	13-1/2 (34.3)	0.41 (0.18)	0.22 (0.02)	125 (200)	50	Polycarbonate	Tube end	2 (5.1)
S2403BE	2400-2500	3	100	38	9 (22.9)	0.31 (0.14)	0.122 (0.011)	125 (200)	50	Polycarbonate	Ceiling	2 (5.1)

Common Specifications: VSWR - 1.2: nominal; Connector Type - N-female; Element material - printed circuit

A803014.DOC



2.4 GHz Datacomm Antenna

245LD9W

The 245LD9w is designed specifically for the specialized needs of wireless communication equipment operating at 2.4 GHz. This high frequency antenna has been designed specifically for spread spectrum applications such as Wireless Local Area Networks.

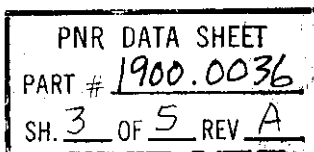
The Datacomm Antenna is roughly the size of a small smoke detector. It has a conformal design that fits flush against any wall and an off-white case and cable. This aesthetically pleasing antenna seems to almost disappear in most office environments.

Electrical Specifications

Frequency:	2.4 to 2.5 GHz
Gain:	9 dBi
Typical Bandwidth (1.5:1 VSWR):	140 MHz
Polarization:	Linear (Vertical or Horizontal)
3dB Beamwidth (typical):	
E-Plane:	55 degrees
H-Plane:	60 degrees
Pattern:	Directional

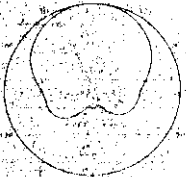
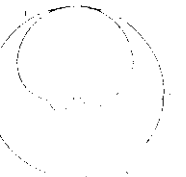
Mechanical Specifications

Dimensions:	4.755 x 4.755 x 0.66 inches
Connector:	SMA Male
Cable Length:	12 inches
Color:	Shell White
Environmental:	Indoor/Outdoor Use



PNR DATA SHEET
 PART # 1900.0043
 SH. 5 OF 6 REV A

TECHNICAL DATA

Application	DCS 1800/PCN etc.	DECT/PCS etc.	Rural tel. etc.	ISM/WLAN etc.
Electrical Data				
Frequency range (MHz)	1710-1880	1850-1990	2100-2300	2300-2500
Impedance (Ohm)	50	50	50	50
VSWR (max.)	1.5	1.5	1.5	1.5
Polarisation	vertical	vertical	vertical	vertical
Gain min. (dBi)	7	7.5	8	8.5
3 dB beamwidth horizontal (deg.)	85	80	80	75
3 dB beamwidth vertical (deg.)	50	50	50	50
Front to back ratio min. (dB)	12	15	15	15
Max. input power (W)	75	75	75	75
Standard connector (female)	SMA	SMA	SMA	SMA
Mechanical Data				
Dimensions (mm)	101x95x32	101x95x32	101x95x32	101x95x32
Dimensions w. mounting bracket (mm)	100x80x21	100x80x21	100x80x21	100x80x21
Weight (g)	100	100	100	100
Housing material	ASA	ASA	ASA	ASA
Antenna colour	RAL 7035 grey	RAL 7035 grey	RAL 7035 grey	RAL 7035 grey
Mounting bracket colour	RAL 7042 dark grey	RAL 7042 dark grey	RAL 7042 dark grey	RAL 7042 dark grey
Operating temp. range (°C)	-40...+80	-40...+80	-40...+80	-40...+80
Windload max. (200 km/h) (N)	24	24	24	24
Indoor and/or outdoor use	yes	yes	yes	yes
Typical Radiation Pattern (H plane)				
	1318 19 0005 649571	1319 19 0003 649572	1322 19 0003 649573	27 19 0002 649574

APPENDIX C
RESTRICTED BAND DATA

FCC RADIATED DATA SHEET

EUT:	RANGELAN802 AP	DATE:	MAR 24 98
S/N:		CUSTOMER NAME:	PROXIM
RULE PART:	15.247	WORK ORDER:	8032601
		FILE:	8032601A.xls
ANTENNA:	HORN	OTHER CAL FACTOR	ATTN dB: 0
MODULATION TYPE:			DUTY dB: 0
TESTED BY:	DONNIE		HP IL dB: 0
COMMENTS:	CENTURION 1.0 dBi		DIST dB: 10
	OMNIDIRECTIONAL ANTENNA		

FREQ.	EADING	PK, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2402									
4804	41.7	Pk	32.8	7.0	35.0	10.0	36.5	74.0	-37.5
4804	31.7	Avg	32.8	7.0	35.0	10.0	26.5	54.0	-27.5
12010	38.5	Pk	39.3	13.6	35.0	10.0	46.4	74.0	-27.7
12010	27.5	Avg	39.3	13.6	35.0	10.0	35.4	54.0	-18.7
Fund = 2440									
4880	40.3	Pk	32.8	7.0	35.0	10.0	35.1	74.0	-38.9
4880	30.5	Avg	32.8	7.0	35.0	10.0	25.3	54.0	-28.7
7320	41.3	Pk	36.0	10.6	35.0	10.0	42.9	74.0	-31.1
7320	31.0	Avg	36.0	10.6	35.0	10.0	32.6	54.0	-21.4
12200	38.8	Pk	39.3	13.6	35.0	10.0	46.7	74.0	-27.4
12200	17.7	Avg	39.3	13.6	35.0	10.0	25.6	54.0	-28.5
Fund = 2480									
4960	43.0	Pk	32.8	7.0	35.0	10.0	37.8	74.0	-36.2
4960	32.5	Avg	32.8	7.0	35.0	10.0	27.3	54.0	-26.7
7440	41.2	Pk	36.0	10.6	35.0	10.0	42.8	74.0	-31.2
7440	30.3	Avg	36.0	10.6	35.0	10.0	31.9	54.0	-22.1
12400	37.8	Pk	39.3	13.6	35.0	10.0	45.7	74.0	-28.4
12400	17.5	Avg	39.3	13.6	35.0	10.0	25.4	54.0	-28.7

FCC RADIATED DATA SHEET

EUT: RANGELAN802 AP
S/N:
RULE PART: 15.247

DATE: MAR 24 98
CUSTOMER NAME: PROXIM
WORK ORDER: 8032601
FILE: 8032601B.xls

ANTENNA: HORN OTHER CAL FACTOR ATTN dB: 0
MODULATION TYPE: DUTY dB: 0
TESTED BY: DONNIE HP IL dB: 0
COMMENTS: CUSHCRAFT 5.15 DBI DIST dB: 10
OMNIDIRECTIONAL ANTENNA

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2402									
4804	41.3	Pk	32.8	7.0	35.0	10.0	36.1	74.0	-37.9
4804	30.8	Avg	32.8	7.0	35.0	10.0	25.6	54.0	-28.4
12010	39.0	Pk	39.3	13.6	35.0	10.0	46.9	74.0	-27.2
12010	27.5	Avg	39.3	13.6	35.0	10.0	35.4	54.0	-18.7
Fund = 2440									
4880	39.7	Pk	32.8	7.0	35.0	10.0	34.5	74.0	-39.5
4880	29.7	Avg	32.8	7.0	35.0	10.0	24.5	54.0	-29.5
7320	42.0	Pk	36.0	10.6	35.0	10.0	43.6	74.0	-30.4
7320	30.8	Avg	36.0	10.6	35.0	10.0	32.4	54.0	-21.6
12200	37.3	Pk	39.3	13.6	35.0	10.0	45.2	74.0	-28.9
12200	17.8	Avg	39.3	13.6	35.0	10.0	25.7	54.0	-28.4
Fund = 2480									
4960	40.5	Pk	32.8	7.0	35.0	10.0	35.3	74.0	-38.7
4960	30.2	Avg	32.8	7.0	35.0	10.0	25.0	54.0	-29.0
7440	40.5	Pk	36.0	10.6	35.0	10.0	42.1	74.0	-31.9
7440	30.2	Avg	36.0	10.6	35.0	10.0	31.8	54.0	-22.2
12400	37.2	Pk	39.3	13.6	35.0	10.0	45.1	74.0	-29.0
12400	17.7	Avg	39.3	13.6	35.0	10.0	25.6	54.0	-28.5

FCC RADIATED DATA SHEET

EUT: RANGELAN802 AP
S/N:
RULE PART: 15.247

DATE: MAR 24 98
CUSTOMER NAME: PROXIM
WORK ORDER: 8032601
FILE: 8032601C.xls

ANTENNA: HORN OTHER CAL FACTOR ATTN dB: 0
MODULATION TYPE: DUTY dB: 0
TESTED BY: DONNIE HP IL dB: 0
COMMENTS: HUBER+SUHNER 5.15 DBI DIST dB: 10
PATCH ANTENNA

FREQ.	EADING	Pk, QP	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2402									
4804	40.0	Pk	32.8	7.0	35.0	10.0	34.8	74.0	-39.2
4804	29.5	Avg	32.8	7.0	35.0	10.0	24.3	54.0	-29.7
12010	37.0	Pk	39.3	13.6	35.0	10.0	44.9	74.0	-29.2
12010	27.5	Avg	39.3	13.6	35.0	10.0	35.4	54.0	-18.7
Fund = 2440									
4880	39.7	Pk	32.8	7.0	35.0	10.0	34.5	74.0	-39.5
4880	27.8	Avg	32.8	7.0	35.0	10.0	22.6	54.0	-31.4
7320	40.7	Pk	36.0	10.6	35.0	10.0	42.3	74.0	-31.7
7320	30.5	Avg	36.0	10.6	35.0	10.0	32.1	54.0	-21.9
12200	37.8	Pk	39.3	13.6	35.0	10.0	45.7	74.0	-28.4
12200	16.7	Avg	39.3	13.6	35.0	10.0	24.6	54.0	-29.5
Fund = 2480									
4960	41.0	Pk	32.8	7.0	35.0	10.0	35.8	74.0	-38.2
4960	28.8	Avg	32.8	7.0	35.0	10.0	23.6	54.0	-30.4
7440	41.0	Pk	36.0	10.6	35.0	10.0	42.6	74.0	-31.4
7440	29.8	Avg	36.0	10.6	35.0	10.0	31.4	54.0	-22.6
12400	37.0	Pk	39.3	13.6	35.0	10.0	44.9	74.0	-29.2
12400	16.7	Avg	39.3	13.6	35.0	10.0	24.6	54.0	-29.5

FCC RADIATED DATA SHEET

EUT:	RANGELAN802 AP	DATE:	MAR 25 98
S/N:		CUSTOMER NAME:	PROXIM
RULE PART:	15.247	WORK ORDER:	8032601
		FILE:	8032601D.xls
ANTENNA:	HORN	OTHER CAL FACTOR	ATTN dB: 0
MODULATION TYPE:			DUTY dB: 0
TESTED BY:	DONNIE		HP IL dB: 0
COMMENTS:	TELEX 5.15		DIST dB: 10
OMNIDIRECTIONAL ANTENNA			

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2402									
4804	42.7	Pk	32.8	7.0	35.0	10.0	37.5	74.0	-36.5
4804	33.5	Avg	32.8	7.0	35.0	10.0	28.3	54.0	-25.7
12010	38.0	Pk	39.3	13.6	35.0	10.0	45.9	74.0	-28.2
12010	27.5	Avg	39.3	13.6	35.0	10.0	35.4	54.0	-18.7
Fund = 2440									
4880	41.3	Pk	32.8	7.0	35.0	10.0	36.1	74.0	-37.9
4880	32.2	Avg	32.8	7.0	35.0	10.0	27.0	54.0	-27.0
7320	42.5	Pk	36.0	10.6	35.0	10.0	44.1	74.0	-29.9
7320	31.5	Avg	36.0	10.6	35.0	10.0	33.1	54.0	-20.9
12200	38.5	Pk	39.3	13.6	35.0	10.0	46.4	74.0	-27.7
12200	17.8	Avg	39.3	13.6	35.0	10.0	25.7	54.0	-28.4
Fund = 2480									
4960	43.3	Pk	32.8	7.0	35.0	10.0	38.1	74.0	-35.9
4960	34.2	Avg	32.8	7.0	35.0	10.0	29.0	54.0	-25.0
7440	41.5	Pk	36.0	10.6	35.0	10.0	43.1	74.0	-30.9
7440	30.5	Avg	36.0	10.6	35.0	10.0	32.1	54.0	-21.9
12400	37.3	Pk	39.3	13.6	35.0	10.0	45.2	74.0	-28.9
12400	17.8	Avg	39.3	13.6	35.0	10.0	25.7	54.0	-28.4

FCC RADIATED DATA SHEET

EUT: RANGELAN802 AP
S/N:
RULE PART: 15.247

DATE: MAR 25 98
CUSTOMER NAME: PROXIM
WORK ORDER: 8032601
FILE: 8032601E.xls

ANTENNA: HORN OTHER CAL FACTOR ATTN dB: 0
MODULATION TYPE: DUTY dB: 0
TESTED BY: DONNIE HP IL dB: 0
COMMENTS: MOBILE MARK DIST dB: 10
OMNIDIRECTIONAL ANTENNA

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL.	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2402									
4804	42.7	Pk	32.8	7.0	35.0	10.0	37.5	74.0	-36.50
4804	33.5	Avg	32.8	7.0	35.0	10.0	28.3	54.0	-45.7
12010	38.0	Pk	39.3	13.6	35.0	10.0	45.9	74.0	-8.2
12010	27.5	Avg	39.3	13.6	35.0	10.0	35.4	54.0	-38.7
Fund = 2440									
4880	41.3	Pk	32.8	7.0	35.0	10.0	36.1	74.0	-37.9
4880	32.2	Avg	32.8	7.0	35.0	10.0	27.0	54.0	-47.0
7320	42.5	Pk	36.0	10.6	35.0	10.0	44.1	74.0	-9.9
7320	31.5	Avg	36.0	10.6	35.0	10.0	33.1	54.0	-40.9
12200	38.5	Pk	39.3	13.6	35.0	10.0	46.4	74.0	-7.7
12200	17.8	Avg	39.3	13.6	35.0	10.0	25.7	54.0	-48.4
Fund = 2480									
4960	43.3	Pk	32.8	7.0	35.0	10.0	38.1	74.0	-35.9
4960	34.2	Avg	32.8	7.0	35.0	10.0	29.0	54.0	-45.0
7440	41.5	Pk	36.0	10.6	35.0	10.0	43.1	74.0	-10.9
7440	30.5	Avg	36.0	10.6	35.0	10.0	32.1	54.0	-41.9
12400	37.3	Pk	39.3	13.6	35.0	10.0	45.2	74.0	-8.9
12400	17.8	Avg	39.3	13.6	35.0	10.0	25.7	54.0	-48.4

FCC RADIATED DATA SHEET

EUT:	RANGELAN802 AP	DATE:	MAR 25 98
S/N:		CUSTOMER NAME:	PROXIM
RULE PART:	15.247	WORK ORDER:	8032601
		FILE:	8032601F.xls
ANTENNA:	HORN	OTHER CAL FACTOR	ATTN dB: 0
MODULATION TYPE:			DUTY dB: 0
TESTED BY:	DONNIE		HP IL dB: 0
COMMENTS:	VERTEX		DIST dB: 10
	PATCH ANTENNA		

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2402									
4804	39.3	Pk	32.8	7.0	35.0	10.0	34.1	74.0	-39.9
4804	29.3	Avg	32.8	7.0	35.0	10.0	24.1	54.0	-29.9
12010	37.7	Pk	39.3	13.6	35.0	10.0	45.6	74.0	-28.5
12010	27.5	Avg	39.3	13.6	35.0	10.0	35.4	54.0	-18.7
Fund = 2440									
4880	39.2	Pk	32.8	7.0	35.0	10.0	34.0	74.0	-40.0
4880	28.3	Avg	32.8	7.0	35.0	10.0	23.1	54.0	-30.9
7320	42.2	Pk	36.0	10.6	35.0	10.0	43.8	74.0	-30.2
7320	30.8	Avg	36.0	10.6	35.0	10.0	32.4	54.0	-21.6
12200	38.8	Pk	39.3	13.6	35.0	10.0	46.7	74.0	-27.4
12200	17.8	Avg	39.3	13.6	35.0	10.0	25.7	54.0	-28.4
Fund = 2480									
4960	41.5	Pk	32.8	7.0	35.0	10.0	36.3	74.0	-37.7
4960	30.3	Avg	32.8	7.0	35.0	10.0	25.1	54.0	-28.9
7440	41.2	Pk	36.0	10.6	35.0	10.0	42.8	74.0	-31.2
7440	30.2	Avg	36.0	10.6	35.0	10.0	31.8	54.0	-22.2
12400	38.5	Pk	39.3	13.6	35.0	10.0	46.4	74.0	-27.7
12400	17.7	Avg	39.3	13.6	35.0	10.0	25.6	54.0	-28.5

FCC RADIATED DATA SHEET

EUT: RANGELAN802 AP
S/N:
RULE PART: 15.247

DATE: MAR 25 98
CUSTOMER NAME: PROXIM
WORK ORDER: 8032601
FILE: 8032601G.xls

ANTENNA: HORN
MODULATION TYPE:
TESTED BY: DONNIE
COMMENTS: TECOM

OTHER CAL FACTOR ATTN dB: 0
DUTY dB: 0
HP IL dB: 0
DIST dB: 10

OMNIDIRECTIONAL ANTENNA

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2402									
4804	41.7	Pk	32.8	7.0	35.0	10.0	36.5	74.0	-37.5
4804	31.8	Avg	32.8	7.0	35.0	10.0	26.6	54.0	-27.4
12010	38.2	Pk	39.3	13.6	35.0	10.0	46.1	74.0	-28.0
12010	27.5	Avg	39.3	13.6	35.0	10.0	35.4	54.0	-18.7
Fund = 2440									
4880	39.7	Pk	32.8	7.0	35.0	10.0	34.5	74.0	-39.5
4880	29.2	Avg	32.8	7.0	35.0	10.0	24.0	54.0	-30.0
7320	41.5	Pk	36.0	10.6	35.0	10.0	43.1	74.0	-30.9
7320	31.2	Avg	36.0	10.6	35.0	10.0	32.8	54.0	-21.2
12200	38.0	Pk	39.3	13.6	35.0	10.0	45.9	74.0	-28.2
12200	18.0	Avg	39.3	13.6	35.0	10.0	25.9	54.0	-28.2
Fund = 2480									
4960	40.5	Pk	32.8	7.0	35.0	10.0	35.3	74.0	-38.7
4960	30.8	Avg	32.8	7.0	35.0	10.0	25.6	54.0	-28.4
7440	41.7	Pk	36.0	10.6	35.0	10.0	43.3	74.0	-30.7
7440	30.2	Avg	36.0	10.6	35.0	10.0	31.8	54.0	-22.2
12400	37.8	Pk	39.3	13.6	35.0	10.0	45.7	74.0	-28.4
12400	17.5	Avg	39.3	13.6	35.0	10.0	25.4	54.0	-28.7

FCC RADIATED DATA SHEET

EUT:	RANGELAN802 AP	DATE:	MAR 25 98
S/N:		CUSTOMER NAME:	PROXIM
RULE PART:	15.247	WORK ORDER:	8032601
		FILE:	8032601H.xls
ANTENNA:	HORN	OTHER CAL FACTOR	ATTN dB: 0
MODULATION TYPE:			DUTY dB: 0
TESTED BY:	DONNIE		HP IL dB: 0
COMMENTS:	TELEX		DIST dB: 10
LOG PERIODIC ANTENNA			

FREQ	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2402									
4804	40.5	Pk	32.8	7.0	35.0	10.0	35.3	74.0	-38.7
4804	29.3	Avg	32.8	7.0	35.0	10.0	24.1	54.0	-29.9
12010	38.5	Pk	39.3	13.6	35.0	10.0	46.4	74.0	-27.7
12010	27.5	Avg	39.3	13.6	35.0	10.0	35.4	54.0	-18.7
Fund = 2440									
4880	41.0	Pk	32.8	7.0	35.0	10.0	35.8	74.0	-38.2
4880	33.0	Avg	32.8	7.0	35.0	10.0	27.8	54.0	-26.2
7320	41.3	Pk	36.0	10.6	35.0	10.0	42.9	74.0	-31.1
7320	31.0	Avg	36.0	10.6	35.0	10.0	32.6	54.0	-21.4
12200	37.5	Pk	39.3	13.6	35.0	10.0	45.4	74.0	-28.7
12200	18.0	Avg	39.3	13.6	35.0	10.0	25.9	54.0	-28.2
Fund = 2480									
4960	40.8	Pk	32.8	7.0	35.0	10.0	35.6	74.0	-38.4
4960	29.7	Avg	32.8	7.0	35.0	10.0	24.5	54.0	-29.5
7440	41.8	Pk	36.0	10.6	35.0	10.0	43.4	74.0	-30.6
7440	30.2	Avg	36.0	10.6	35.0	10.0	31.8	54.0	-22.2
12400	38.0	Pk	39.3	13.6	35.0	10.0	45.9	74.0	-28.2
12400	17.8	Avg	39.3	13.6	35.0	10.0	25.7	54.0	-28.4

FCC RADIATED DATA SHEET

EUT: RANGELAN802 AP
S/N:
RULE PART: 15.247

DATE: MAR 25 98
CUSTOMER NAME: PROXIM
WORK ORDER: 8032601
FILE: 8032401S.xls

ANTENNA: HORN OTHER CAL FACTOR ATTN dB: 0
MODULATION TYPE: DUTY dB: 0
TESTED BY: DONNIE HP IL dB: 0
COMMENTS: LO leakage DIST dB: 10
TELEX 5.0 DBI LOG PERIODIC ANTENNA

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2077									
4154	39.3	Pk	33.1	7.0	35.0	10.0	34.4	74.0	-39.6
4154	29.2	Avg	33.1	7.0	35.0	10.0	24.3	54.0	-29.7
8308	41.7	Pk	37.0	11.4	35.0	10.0	45.1	74.0	-28.9
8308	30.0	Avg	37.0	11.4	35.0	10.0	33.4	54.0	-20.6
12462	40.3	Pk	39.3	13.6	35.0	10.0	48.2	74.0	-25.9
12462	17.3	Avg	39.3	13.6	35.0	10.0	25.2	54.0	-28.9
Fund = 2115									
4230	41.0	Pk	33.1	7.0	35.0	10.0	36.1	74.0	-37.9
4230	30.3	Avg	33.1	7.0	35.0	10.0	25.4	54.0	-28.6
8460	41.7	Pk	37.0	11.4	35.0	10.0	45.1	74.0	-28.9
8460	29.8	Avg	37.0	11.4	35.0	10.0	33.2	54.0	-20.8
Fund = 2155									
4310	41.2	Pk	33.1	7.0	35.0	10.0	36.3	74.0	-37.7
4310	30.3	Avg	33.1	7.0	35.0	10.0	25.4	54.0	-28.6
10775	38.5	Pk	38.9	13.6	35.0	10.0	46.0	74.0	-28.0
10775	18.5	Avg	38.9	13.6	35.0	10.0	26.0	54.0	-28.0

FCC RADIATED DATA SHEET									
EUT:		RANGELAN802 AP				DATE:		MAR 25 98 MAR 25 98	
S/N:						CUSTOMER NAME:		PROXIM	
RULE PART:		15.247				WORK ORDER:		8032601	
						FILE:		8032401T.xls	
ANTENNA:		HORN		OTHER CAL FACTOR		ATTN dB: 0			
MODULATION TYPE:						DUTY dB: 0			
TESTED BY:		DONNIE				HP IL dB: 0			
COMMENTS:		Lo leakage				DIST dB: 10			
TECOM 8.0 DBI OMNIDIRECTIONAL ANTEN									
FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2077									
4154	40.2	Pk	33.1	7.0	35.0	10.0	35.3	74.0	-38.7
4154	29.3	Avg	33.1	7.0	35.0	10.0	24.4	54.0	-29.6
8308	41.2	Pk	37.0	11.4	35.0	10.0	44.6	74.0	-29.4
8308	30.2	Avg	37.0	11.4	35.0	10.0	33.6	54.0	-20.4
12462	37.7	Pk	39.3	13.6	35.0	10.0	45.6	74.0	-28.5
12462	17.8	Avg	39.3	13.6	35.0	10.0	25.7	54.0	-28.4
Fund = 2115									
4230	41.0	Pk	33.1	7.0	35.0	10.0	36.1	74.0	-37.9
4230	30.2	Avg	33.1	7.0	35.0	10.0	25.3	54.0	-28.7
8460	40.8	Pk	37.0	11.4	35.0	10.0	44.2	74.0	-29.8
8460	29.8	Avg	37.0	11.4	35.0	10.0	33.2	54.0	-20.8
Fund = 2155									
4310	40.7	Pk	33.1	7.0	35.0	10.0	35.8	74.0	-38.2
4310	30.2	Avg	33.1	7.0	35.0	10.0	25.3	54.0	-28.7
10775	38.5	Pk	38.9	13.6	35.0	10.0	46.0	74.0	-28.0
10775	19.5	Avg	38.9	13.6	35.0	10.0	27.0	54.0	-27.0

FCC RADIATED DATA SHEET

EUT: RANGELAN802 AP
S/N:
RULE PART: 15.247

DATE: MAR 25 98
CUSTOMER NAME: PROXIM
WORK ORDER: 8032601
FILE: 8032401U.xls

ANTENNA: HORN OTHER CAL FACTOR ATTN dB: 0
MODULATION TYPE: DUTY dB: 0
TESTED BY: DONNIE HP IL dB: 0
COMMENTS: LO Leakage DIST dB: 10
VERTEX 9.0 DBI PATCH ANTENNA

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2077									
4154	39.0	Pk	33.1	7.0	35.0	10.0	34.1	74.0	-39.9
4154	29.3	Avg	33.1	7.0	35.0	10.0	24.4	54.0	-29.6
8308	40.2	Pk	37.0	11.4	35.0	10.0	43.6	74.0	-30.4
8308	30.0	Avg	37.0	11.4	35.0	10.0	33.4	54.0	-20.6
12462	37.8	Pk	39.3	13.6	35.0	10.0	45.7	74.0	-28.4
12462	17.8	Avg	39.3	13.6	35.0	10.0	25.7	54.0	-28.4
Fund = 2115									
4230	40.5	Pk	33.1	7.0	35.0	10.0	35.6	74.0	-38.4
4230	30.0	Avg	33.1	7.0	35.0	10.0	25.1	54.0	-28.9
8460	41.8	Pk	37.0	11.4	35.0	10.0	45.2	74.0	-28.8
8460	30.0	Avg	37.0	11.4	35.0	10.0	33.4	54.0	-20.6
Fund = 2155									
4310	41.7	Pk	33.1	7.0	35.0	10.0	36.8	74.0	-37.2
4310	30.0	Avg	33.1	7.0	35.0	10.0	25.1	54.0	-28.9
10775	38.2	Pk	38.9	13.6	35.0	10.0	45.7	74.0	-28.3
10775	18.3	Avg	38.9	13.6	35.0	10.0	25.8	54.0	-28.2

FCC RADIATED DATA SHEET

EUT: RANGELAN802 AP
 S/N:
 RULE PART: 15.247
 DATE: MAR 25 98
 CUSTOMER NAME: PROXIM
 WORK ORDER: 8032601
 FILE: 8032401V.xls
 ANTENNA: HORN
 MODULATION TYPE:
 TESTED BY: DONNIE
 COMMENTS: LO Leakage
 OTHER CAL FACTOR ATTN dB: 0
 DUTY dB: 0
 HP IL dB: 0
 DIST dB: 10
 MOBILE MARK 9.0 DBI OMNIDIRECTIONAL

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2077									
4154	40.3	Pk	33.1	7.0	35.0	10.0	35.4	74.0	-38.6
4154	29.0	Avg	33.1	7.0	35.0	10.0	24.1	54.0	-29.9
8308	40.2	Pk	37.0	11.4	35.0	10.0	43.6	74.0	-30.4
8308	30.0	Avg	37.0	11.4	35.0	10.0	33.4	54.0	-20.6
12462	37.8	Pk	39.3	13.6	35.0	10.0	45.7	74.0	-28.4
12462	17.3	Avg	39.3	13.6	35.0	10.0	25.2	54.0	-28.9
Fund = 2115									
4230	41.2	Pk	33.1	7.0	35.0	10.0	36.3	74.0	-37.7
4230	30.2	Avg	33.1	7.0	35.0	10.0	25.3	54.0	-28.7
8460	41.5	Pk	37.0	11.4	35.0	10.0	44.9	74.0	-29.1
8460	29.8	Avg	37.0	11.4	35.0	10.0	33.2	54.0	-20.8
Fund = 2155									
4310	41.5	Pk	33.1	7.0	35.0	10.0	36.6	74.0	-37.4
4310	29.7	Avg	33.1	7.0	35.0	10.0	24.8	54.0	-29.2
10775	39.3	Pk	38.9	13.6	35.0	10.0	46.8	74.0	-27.2
10775	18.7	Avg	38.9	13.6	35.0	10.0	26.2	54.0	-27.8

FCC RADIATED DATA SHEET

EUT: RANGELAN802 AP
S/N:
RULE PART: 15.247
DATE: MAR 25 98
CUSTOMER NAME: PROXIM
WORK ORDER: 8032601
FILE: 8032401W.xls
ANTENNA: HORN
MODULATION TYPE:
TESTED BY: DONNIE
COMMENTS: LO Leakage
OTHER CAL FACTOR ATTN dB: 0
DUTY dB: 0
HP IL dB: 0
DIST dB: 10
TELEX 5.15 DBI OMNIDIRECTIONAL ANTE

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2077									
4154	40.5	Pk	33.1	7.0	35.0	10.0	35.6	74.0	-38.4
4154	29.5	Avg	33.1	7.0	35.0	10.0	24.6	54.0	-29.4
8308	41.0	Pk	37.0	11.4	35.0	10.0	44.4	74.0	-29.6
8308	30.2	Avg	37.0	11.4	35.0	10.0	33.6	54.0	-20.4
12462	38.5	Pk	39.3	13.6	35.0	10.0	46.4	74.0	-27.7
12462	17.3	Avg	39.3	13.6	35.0	10.0	25.2	54.0	-28.9
Fund = 2115									
4230	41.5	Pk	33.1	7.0	35.0	10.0	36.6	74.0	-37.4
4230	30.2	Avg	33.1	7.0	35.0	10.0	25.3	54.0	-28.7
8460	40.5	Pk	37.0	11.4	35.0	10.0	43.9	74.0	-30.1
8460	30.0	Avg	37.0	11.4	35.0	10.0	33.4	54.0	-20.6
Fund = 2155									
4310	40.5	Pk	33.1	7.0	35.0	10.0	35.6	74.0	-38.4
4310	30.2	Avg	33.1	7.0	35.0	10.0	25.3	54.0	-28.7
8620	40.8	Pk	37.4	11.7	35.0	10.0	44.9	74.0	-29.1
8620	20.8	Avg	37.4	11.7	35.0	10.0	24.9	54.0	-29.1

FCC RADIATED DATA SHEET

EUT:	RANGELAN802 AP	DATE:	MAR 24 98
S/N:		CUSTOMER NAME:	PROXIM
RULE PART:	15.247	WORK ORDER:	8032601
		FILE:	8032401X.xls
ANTENNA:	HORN	OTHER CAL FACTOR	ATTN dB: 0
MODULATION TYPE:			DUTY dB: 0
TESTED BY:	DONNIE		HP IL dB: 0
COMMENTS:	LO Leakage		DIST dB: 10
	HUBER+SUHNER 8.5 DBI PATCH		

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2077									
4154	39.7	Pk	33.1	7.0	35.0	10.0	34.8	74.0	-39.2
4154	29.7	Avg	33.1	7.0	35.0	10.0	24.8	54.0	-29.2
8308	40.3	Pk	37.0	11.4	35.0	10.0	43.7	74.0	-30.3
8308	30.3	Avg	37.0	11.4	35.0	10.0	33.7	54.0	-20.3
12462	38.3	Pk	39.3	13.6	35.0	10.0	46.2	74.0	-27.9
12462	17.5	Avg	39.3	13.6	35.0	10.0	25.4	54.0	-28.7
Fund = 2115									
4230	39.5	Pk	33.1	7.0	35.0	10.0	34.6	74.0	-39.4
4230	29.0	Avg	33.1	7.0	35.0	10.0	24.1	54.0	-29.9
8460	39.0	Pk	37.0	11.4	35.0	10.0	42.4	74.0	-31.6
8460	29.3	Avg	37.0	11.4	35.0	10.0	32.7	54.0	-21.3
Fund = 2155									
4310	40.8	Pk	33.1	7.0	35.0	10.0	35.9	74.0	-38.1
4310	30.2	Avg	33.1	7.0	35.0	10.0	25.3	54.0	-28.7
8620	39.3	Pk	37.4	11.7	35.0	10.0	43.4	74.0	-30.6
8620	19.5	Avg	37.4	11.7	35.0	10.0	23.6	54.0	-30.4

FCC RADIATED DATA SHEET									
EUT:		RANGELAN802 AP				DATE:		MAR 24 98	
S/N:						CUSTOMER NAME:		PROXIM	
RULE PART:		15.247				WORK ORDER:		8032601	
						FILE:		8032401Y.xls	
ANTENNA:		HORN		OTHER CAL FACTOR		ATTN dB:		0	
MODULATION TYPE:						DUTY dB:		0	
TESTED BY:		DONNIE				HP IL dB:		0	
COMMENTS:		LO Leakage				DIST dB:		10	
		CUSHCRAFT 5.15 DBI OMNI							
FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2077									
4154	40.7	Pk	33.1	7.0	35.0	10.0	35.8	74.0	-38.2
4154	30.0	Avg	33.1	7.0	35.0	10.0	25.1	54.0	-28.9
8308	39.7	Pk	37.0	11.4	35.0	10.0	43.1	74.0	-30.9
8308	30.0	Avg	37.0	11.4	35.0	10.0	33.4	54.0	-20.6
12462	36.8	Pk	39.3	13.6	35.0	10.0	44.7	74.0	-29.4
12462	17.5	Avg	39.3	13.6	35.0	10.0	25.4	54.0	-28.7
Fund = 2115									
4230	41.0	Pk	33.1	7.0	35.0	10.0	36.1	74.0	-37.9
4230	30.0	Avg	33.1	7.0	35.0	10.0	25.1	54.0	-28.9
8460	40.7	Pk	37.0	11.4	35.0	10.0	44.1	74.0	-29.9
8460	30.0	Avg	37.0	11.4	35.0	10.0	33.4	54.0	-20.6
Fund = 2155									
4310	40.2	Pk	33.1	7.0	35.0	10.0	35.3	74.0	-38.7
4310	30.5	Avg	33.1	7.0	35.0	10.0	25.6	54.0	-28.4
10775	38.0	Pk	38.9	13.6	35.0	10.0	45.5	74.0	-28.5
10775	18.7	Avg	38.9	13.6	35.0	10.0	26.2	54.0	-27.8

FCC RADIATED DATA SHEET

EUT:	RANGELAN802 AP	DATE:	MAR 24 98
S/N:		CUSTOMER NAME:	PROXIM
RULE PART:	15.247	WORK ORDER:	8032601
		FILE:	8032401Z.xls
ANTENNA:	HORN	OTHER CAL FACTOR	ATTN dB: 0
MODULATION TYPE:			DUTY dB: 0
TESTED BY:	DONNIE		HP IL dB: 0
COMMENTS:	LO Leakage		DIST dB: 10
	CENTURION 1.0 DBI OMNI		

FREQ.	EADING	Pk, QP,	A.F.	able los	AMP	O.C.F.	TOTAL,	LIMIT	DELTA
MHz	dB(uV)	or Av	dB	dB	dB	dB	dB(uV/m)	dB(uV/m)	dB
Fund = 2077									
4154	39.8	Pk	33.1	7.0	35.0	10.0	34.9	74.0	-39.1
4154	29.3	Avg	33.1	7.0	35.0	10.0	24.4	54.0	-29.6
8308	41.3	Pk	37.0	11.4	35.0	10.0	44.7	74.0	-29.3
8308	30.3	Avg	37.0	11.4	35.0	10.0	33.7	54.0	-20.3
12462	37.3	Pk	39.3	13.6	35.0	10.0	45.2	74.0	-28.9
12462	17.5	Avg	39.3	13.6	35.0	10.0	25.4	54.0	-28.7
Fund = 2115									
4230	41.8	Pk	33.1	7.0	35.0	10.0	36.9	74.0	-37.1
4230	30.0	Avg	33.1	7.0	35.0	10.0	25.1	54.0	-28.9
8460	39.5	Pk	37.0	11.4	35.0	10.0	42.9	74.0	-31.1
8460	30.0	Avg	37.0	11.4	35.0	10.0	33.4	54.0	-20.6
Fund = 2155									
4310	40.0	Pk	33.1	7.0	35.0	10.0	35.1	74.0	-38.9
4310	29.8	Avg	33.1	7.0	35.0	10.0	24.9	54.0	-29.1
10775	39.5	Pk	38.9	13.6	35.0	10.0	47.0	74.0	-27.0
10775	18.3	Avg	38.9	13.6	35.0	10.0	25.8	54.0	-28.2

APPENDIX D
15.207
CONDUCTED EMISSIONS

TEST FREQ	TEST dBuV	CLASS B LIMIT	VERSUS B LIMIT	CONDUCTOR	TYPE
=====	=====	=====	=====	=====	=====
0.186	11.4	54.6	-43.2	NEUTRAL	AV
0.235	9.8	52.6	-42.8	NEUTRAL	AV
0.308	8.5	50.2	-41.7	NEUTRAL	AV
0.332	8.2	49.6	-41.4	NEUTRAL	AV
6.440	13.3	50.0	-36.7	NEUTRAL	PK
16.940	13.8	50.0	-36.2	NEUTRAL	PK
18.250	13.8	50.0	-36.2	NEUTRAL	PK
18.440	14.5	50.0	-35.5	NEUTRAL	PK

[70] 13:10:50 MAR 24, 1998

16:09:17 JUN 29, 1994 16:36:52 JUN 29, 8032601 LINE

ACTV DET: PEAK

MEAS DET: PEAK QP AVG

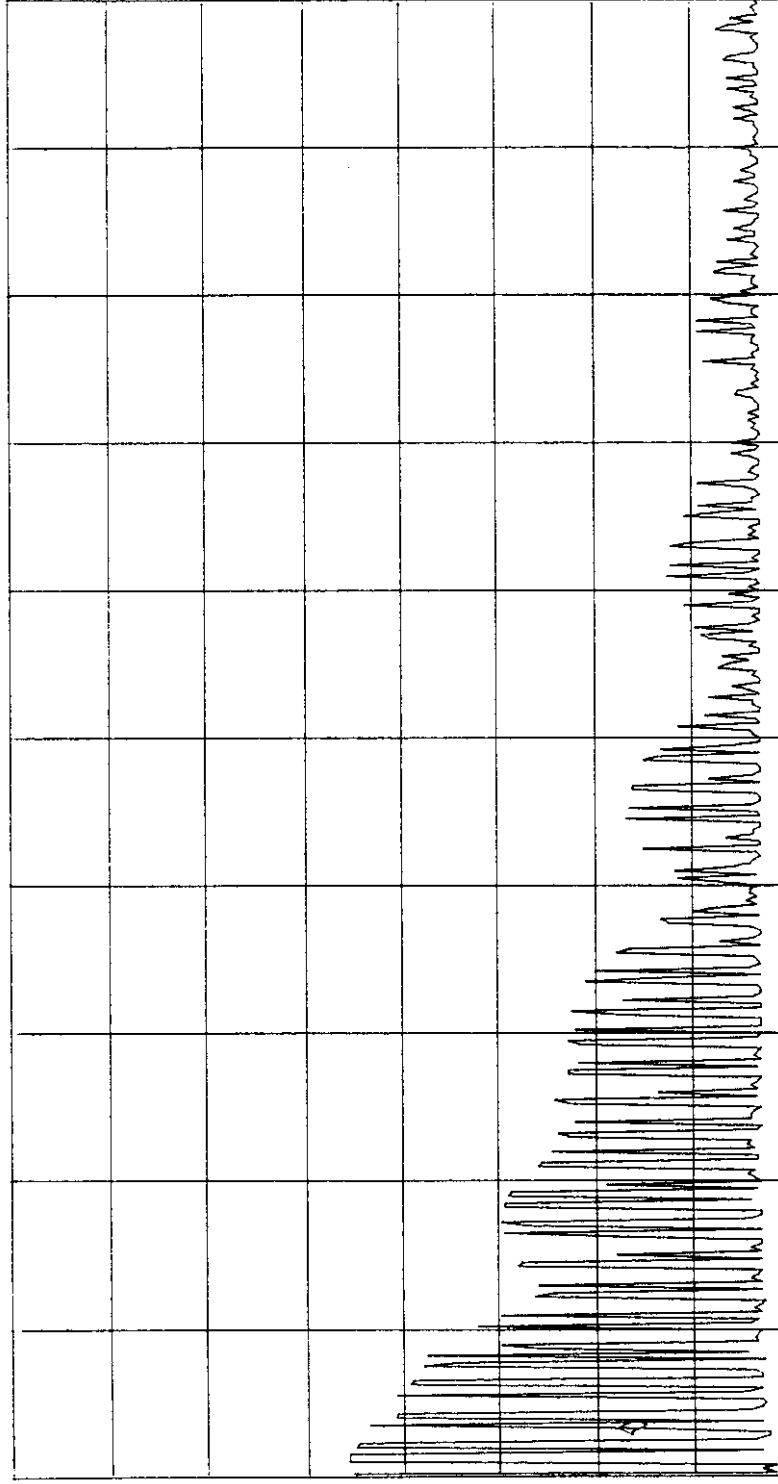
MKR 300 kHz

26.88 dBμV

LOG REF 92.0 dBμV

10
dB/
ATN
10 dB

VA SB
SC FC
ACORR



START 150 kHz

STOP 5.000 MHz

A803014.D00 BW 9.0 kHz

AVG BW 30 kHz

SWP 404 msec

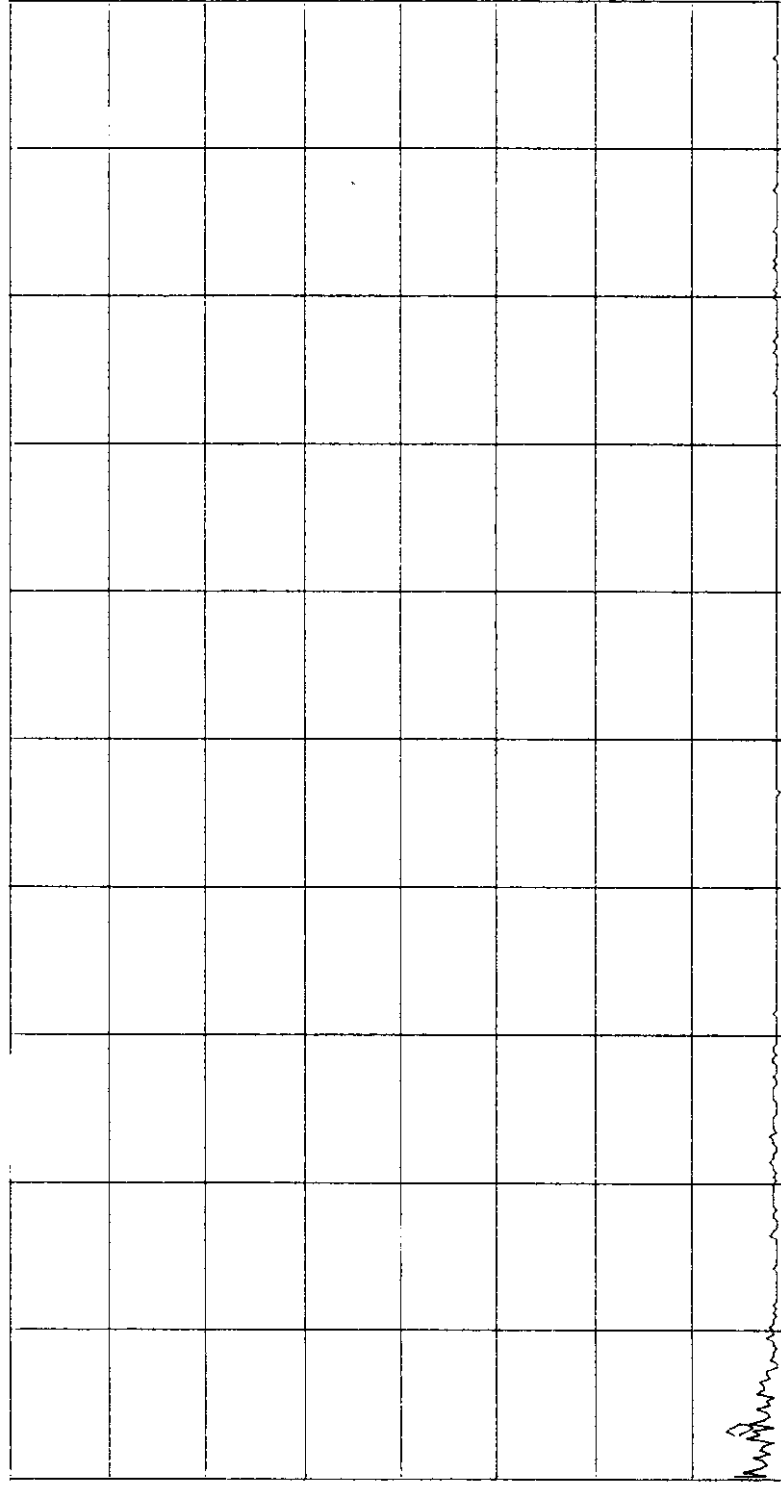
13:49:01 MAR 24, 1998

16:09:17 JUN 29, 1994 16:36:52 JUN 29, 1994

ACTV DEF: PEAK
MEAS DEF: PEAK QP AVG
MKR 5.01 MHz
15.67 dBuV

LOG REF 92.0 dBuV

10
dB/
ATTN
10 dB



VA SB
SC FC
ACDRR

START 5.00 MHz STOP 30.00 MHz
A803014.DOC IF BW 9.0 kHz AVG BW 30 kHz SWP 2.00 sec 49

(7p) 13:54:10 MAR 24, 1998 0032601 NEUTRAL
RFFS Error: COMMAND

ACTV DEF: PEAK
MEAS DEF: PEAK QP AVG
MKR 380 kHz
14.59 dBuV

LOG REF 92.0 dBuV

10

dB/

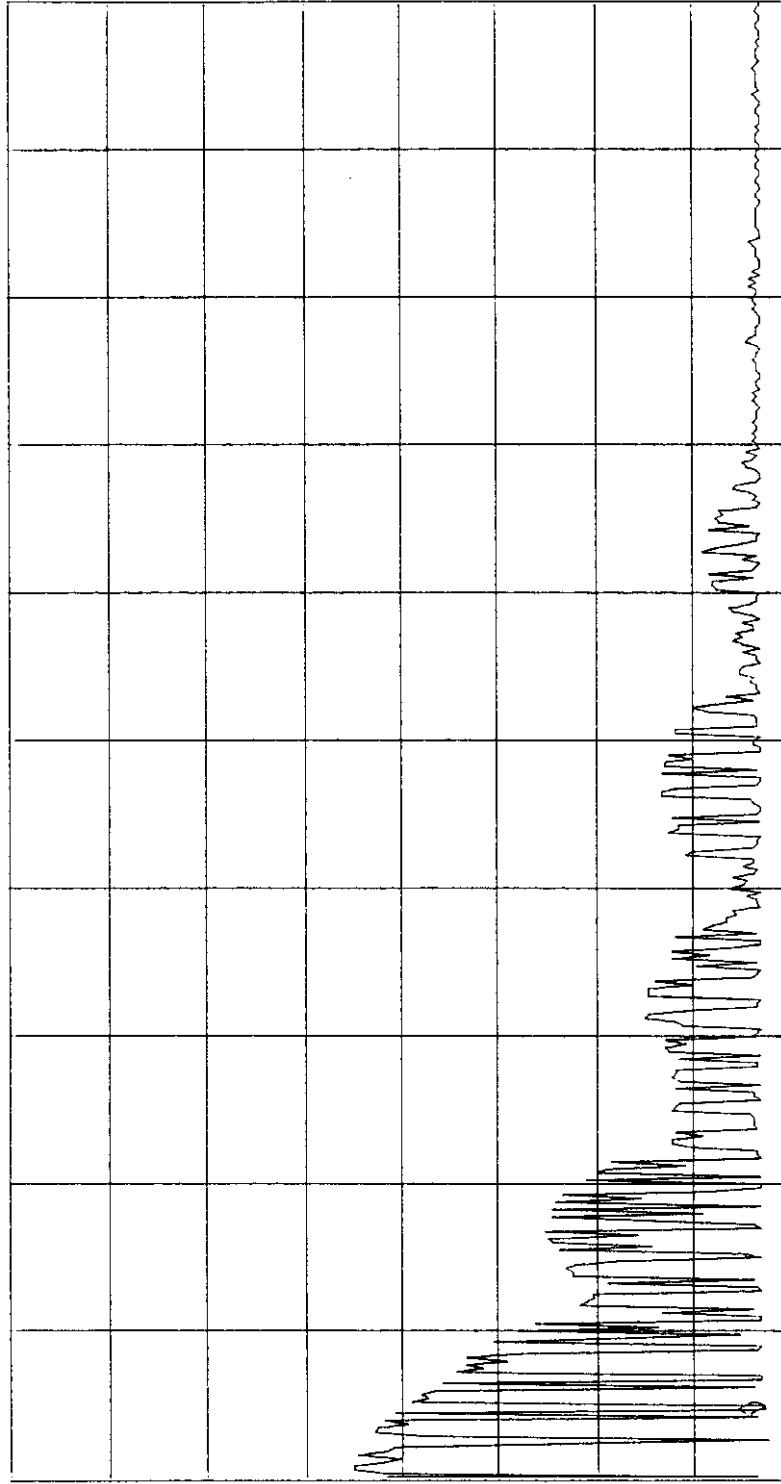
ATN

10 dB

VA SB

SC FC

ACDR



START 150 kHz

STOP 5.000 MHz

A803014.DOC F BW 9.0 kHz

AVG BW 30 kHz

SWP 404 msec

14:10:35 MAR 24, 1998 0032601 NEUTRAL
RFFS Error: COMMAND

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 17.50 MHz
12.99 dB μ V

LOG REF 92.0 dB μ V

10
dB/
ATTN
10 dB



VA SB
SC FC
ACDAR

START 5.00 MHz STOP 30.00 MHz
A803014.DOC JF BW 9.0 kHz AVG BW 30 kHz SWP 2.00 sec 51

APPENDIX E
15.209
RADIATED EMISSIONS

Electronic Compliance Laboratories, Inc.
 1249 Birchwood Ave.
 Sunnyvale, CA
 Radiated Emissions
 Frequency range: 30MHz-1000MHz

3 Meter Open Site
 Site Calibrated: June 1997

Government Agency and Limit: FCC Class B

QP = Quasi-Peak Note: Ignore peak readings when Quasi-Peak reading exists
 PK = Peak

Customer: PROXIM Operator: DONNIE
 Date: 03-24-1998 Time: 08:44:56
 Temperature Range: 60 Deg F Percent Humidity: 68
 E.U.T.: RANGELAN802 ACCESS POINT
 Report File Name: F:\TESTDATA\8032601.RF

Antenna Type: BICONICAL

TEST FREQ	TEST dBuV	ACTUAL dBuV/m	CLASS B LIMIT	VERSUS B LIMIT	TABLE DEGREES	ANTENNA HEIGHT	POLAR- IZATION	DETECTOR Type
=====	=====	=====	=====	=====	=====	=====	=====	=====
32.000	37.7	29.8	40.0	-10.2	180	1.5	V	PK
288.000	34.3	29.2	46.0	-16.8	180	1.0	V	PK
288.000	36.4	31.3	46.0	-14.7	135	1.3	H	PK
280.000	35.4	29.4	46.0	-16.6	180	1.4	V	PK
280.000	38.0	32.0	46.0	-14.0	270	1.4	H	PK

CHANGED ANTENNA TO LOG PERIODIC

300.000	39.7	30.6	46.0	-15.4	180	1.5	V	PK
320.000	42.8	33.5	46.0	-12.5	90	2.0	V	PK
340.000	33.3	24.2	46.0	-21.8	135	2.0	V	PK
+-----+								
360.000	41.1	32.4	46.0	-13.6	200	1.3	V	PK
400.000	38.8	31.1	46.0	-14.9	270	1.8	V	PK
480.000	43.7	37.8	46.0	-8.2	90	1.3	V	PK
500.000	38.5	33.2	46.0	-12.8	135	1.0	V	PK
520.000	39.6	34.7	46.0	-11.3	120	1.0	V	PK
540.000	42.9	38.1	46.0	-7.9	225	1.0	V	PK
560.000	45.8	41.2	46.0	-4.8	240	1.2	V	PK
560.000	45.0	40.4	46.0	-5.6	240	1.2	V	QP
580.000	41.9	37.8	46.0	-8.2	45	1.2	V	PK
600.000	43.2	39.4	46.0	-6.6	90	1.3	V	PK
620.000	37.8	34.3	46.0	-11.7	90	1.4	V	PK
640.000	38.5	35.5	46.0	-10.5	270	1.0	V	PK

TEST FREQ	TEST dBuV	ACTUAL dBuV/m	CLASS B LIMIT	VERSUS B LIMIT	TABLE DEGREES	ANTENNA HEIGHT	POLAR- IZATION	DETECTOR Type
=====	=====	=====	=====	=====	=====	=====	=====	=====
660.000	34.5	32.1	46.0	-13.9	135	1.0	V	PK
700.000	34.6	33.1	46.0	-12.9	135	1.0	V	PK
740.000	35.1	33.7	46.0	-12.3	90	1.0	V	PK
800.000	36.2	35.8	46.0	-10.2	90	1.0	V	PK
820.000	32.9	32.9	46.0	-13.1	225	1.0	H	PK
800.000	37.6	37.2	46.0	-8.8	135	1.0	H	PK
780.000	36.1	35.4	46.0	-10.6	315	1.0	H	PK
740.000	38.2	36.8	46.0	-9.2	135	1.0	H	PK
720.000	34.9	33.4	46.0	-12.6	135	1.2	H	PK
700.000	34.1	32.6	46.0	-13.4	225	1.2	H	PK
660.000	34.4	32.0	46.0	-14.0	90	1.2	H	PK
640.000	38.5	35.5	46.0	-10.5	135	1.2	H	PK
620.000	44.1	40.6	46.0	-5.4	270	1.2	H	PK
620.000	40.4	36.9	46.0	-9.1	270	1.2	H	QP
600.000	40.8	37.0	46.0	-9.0	0	1.3	H	PK
580.000	43.2	39.1	46.0	-6.9	270	1.0	H	PK
560.000	46.4	41.8	46.0	-4.2	270	1.1	H	PK
560.000	45.4	40.8	46.0	-5.2	270	1.1	H	QP
540.000	43.8	39.0	46.0	-7.0	45	1.0	H	PK
520.000	39.0	34.1	46.0	-11.9	0	1.0	H	PK
500.000	37.9	32.6	46.0	-13.4	180	1.0	H	PK
480.000	42.2	36.3	46.0	-9.7	135	1.0	H	PK
460.000	40.9	34.4	46.0	-11.6	120	1.0	H	PK
440.000	44.5	37.5	46.0	-8.5	135	1.0	H	PK
420.000	38.2	30.8	46.0	-15.2	90	1.0	H	PK
400.000	42.0	34.3	46.0	-11.7	45	1.0	H	PK
380.000	43.3	35.0	46.0	-11.0	90	1.0	H	PK
360.000	43.1	34.4	46.0	-11.6	135	1.0	H	PK
340.000	36.6	27.5	46.0	-18.5	135	1.0	H	PK
320.000	38.1	28.8	46.0	-17.2	270	1.0	H	PK
300.000	44.0	34.9	46.0	-11.1	90	1.0	H	PK