

EXHIBIT B.6

REPORT OF RADIATED AND CONDUCTED EMISSION MEASUREMENTS.

FCC authorization per para 15.201(b), 15.223 - Certification per Part 2, Subpart J.
Certification (2.907)

Average detector . Operation in 1.705 to 10.0 MHz
Emissions limits for signals >10 MHz per 15.209 (includes 15.205).

LIMIT = 100 uV/m at D = 30 m.

**Fundamental Freq = 3.281 MHz
10th harmonic = 32.81 MHz**

All Restricted band frequencies up to 10 th harmonic:

4.125	-	4.128
4.17725	-	4.17775
4.20725	-	4.20775
6.215	-	6.218
6.26775	-	6.26825
6.31175	-	6.31225
8.291	-	8.294
8.362	-	8.366
8.37625	-	8.38675
8.41425	-	8.41475
12.29	-	12.293
12.51975	-	12.52025
12.57675	-	12.57725
13.36	-	13.41
16.42	-	16.423
16.69475	-	16.69525
16.80425	-	16.80475
25.5	-	25.67

Detector function per 15.35

USE CISPR QUASI PEAK BW.

From 10 kHz to 150 kHz : 200 Hz
150 kHz to 30 MHz: 9 kHz
30 MHz to 1000 MHz: 120 kHz

Test Procedure ANSI c63.4-1992 paragraph 8.2.2 except EMPIRE LP-105 Loop antenna was used in Lieu of monopole antenna.

TEST DATA FOR E-CODE

DATE: 8/13/98

Test Unit with 10 Ft loop measured at 30 meters test distance.

Frequency MHz	S/A Reading dBuV	Antenna Factor dB/m	Pre Amp Gain dB	corrected read dBuV/m	Limit dBuV/m
3.281	16.7	46.6	-27	36.3	40/para 15.223
3.281	16.4	46.6	-27	36	40

Test Unit with 33 Ft loop measured at 30 meters test distance.

2.783	17.9	47.6	-27	38.5	40
6.5956	30.5	45.4	-27-19*	29.9	40
9.7569	31.4	42.3	-27-19*	27.7	40
13.0706	29.7	39.8	-27-19*	23.5	30/para 15.209
16.3639	31	37.5	-27-19*	22.5	30
19.7649	30	36.2	-27-19*	20.2	30

NOTE: No signals fall in the restricted bands of paragraph 15.205.

* Test distance = 10 meters. Distance factor = $40 \cdot \log(10/30)$

Because the EUT uses microprocessors, test data were measured to 1000 MHz. There were no test failures.
Test data follow this page.

TEST EQUIPMENT LIST

<u>NOMENCLATURE</u>	<u>MANUFACTURE</u>	<u>MODEL</u>	<u>ASSET NUMBER</u>	<u>CAL DUE</u>	<u>CAL DATE</u>
SPECTRUM ANALYZER	HPC	8568B	488	12/14/98	12/14/97
PREAMPLIFIER	HPC	8447D	430	8/12/99	8/12/98
ANTENNA	EMPIRE DEV	LP-105	456	12/14/98	12/14/97
COMPUTER/CONTROLLER	HPC	9836	377	N/A	N/A

File: HSP-02701
Date: 21 Aug 01 PM
Page: 67

TEST DATA 1

TEST	RADIATION
SYSTEM	10 FOOT LOOP
TEST ANTENNA DISTANCE	30 METERS
CENTER FREQUENCY	3.3 MHz
TEST FREQUENCY SPAN	1200 kHz
RESULTS	36.70 DB
REQUIREMENT	40 DB
RESULTS	PASSED

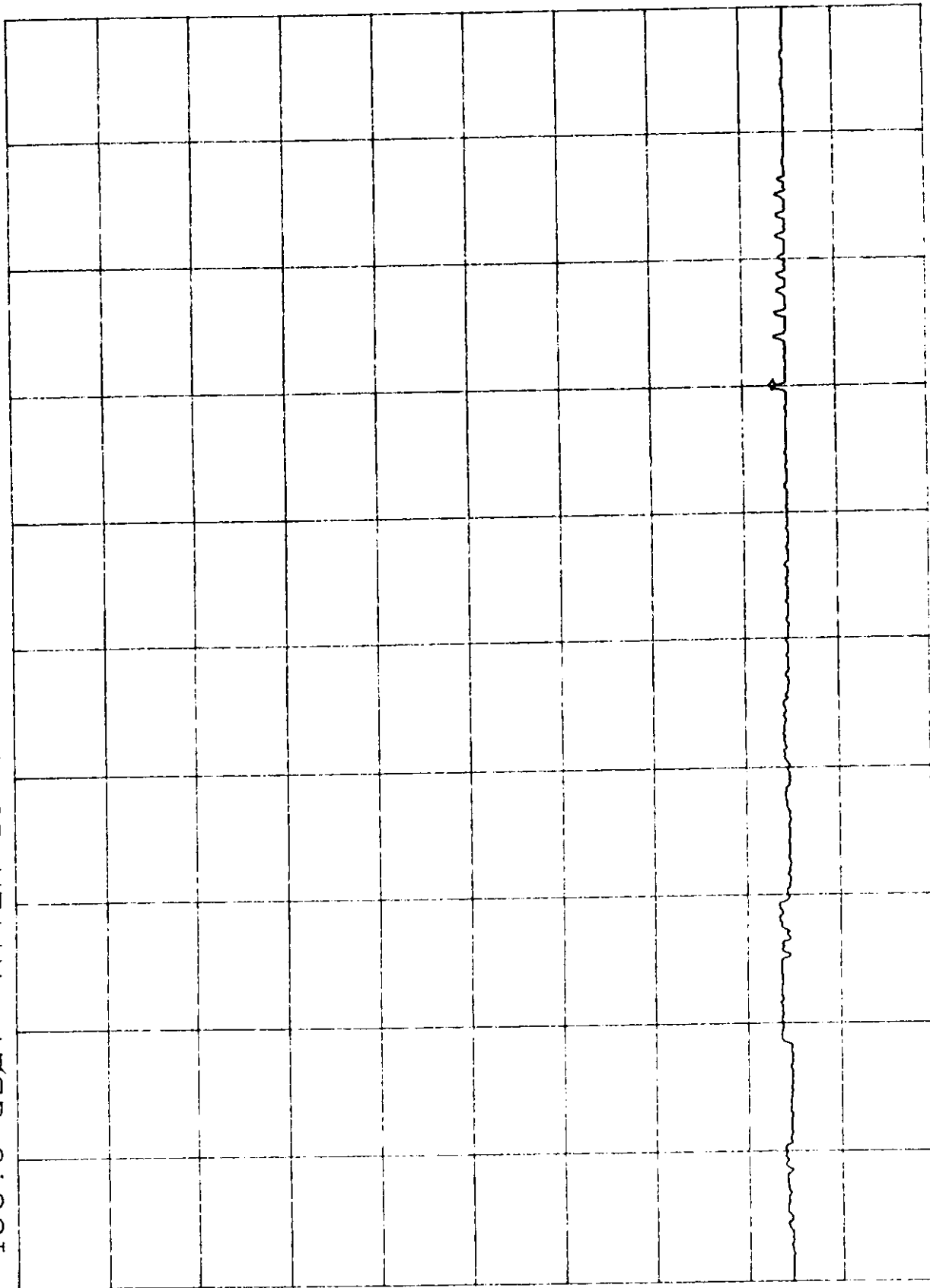
NOTES: Second page of data is reference background noise with system turned off.

MKR 3.521 MHz
16.70 dBμV

HP REF 100.0 dBμV ATTN 10 dB

10 dB/

CORR'D



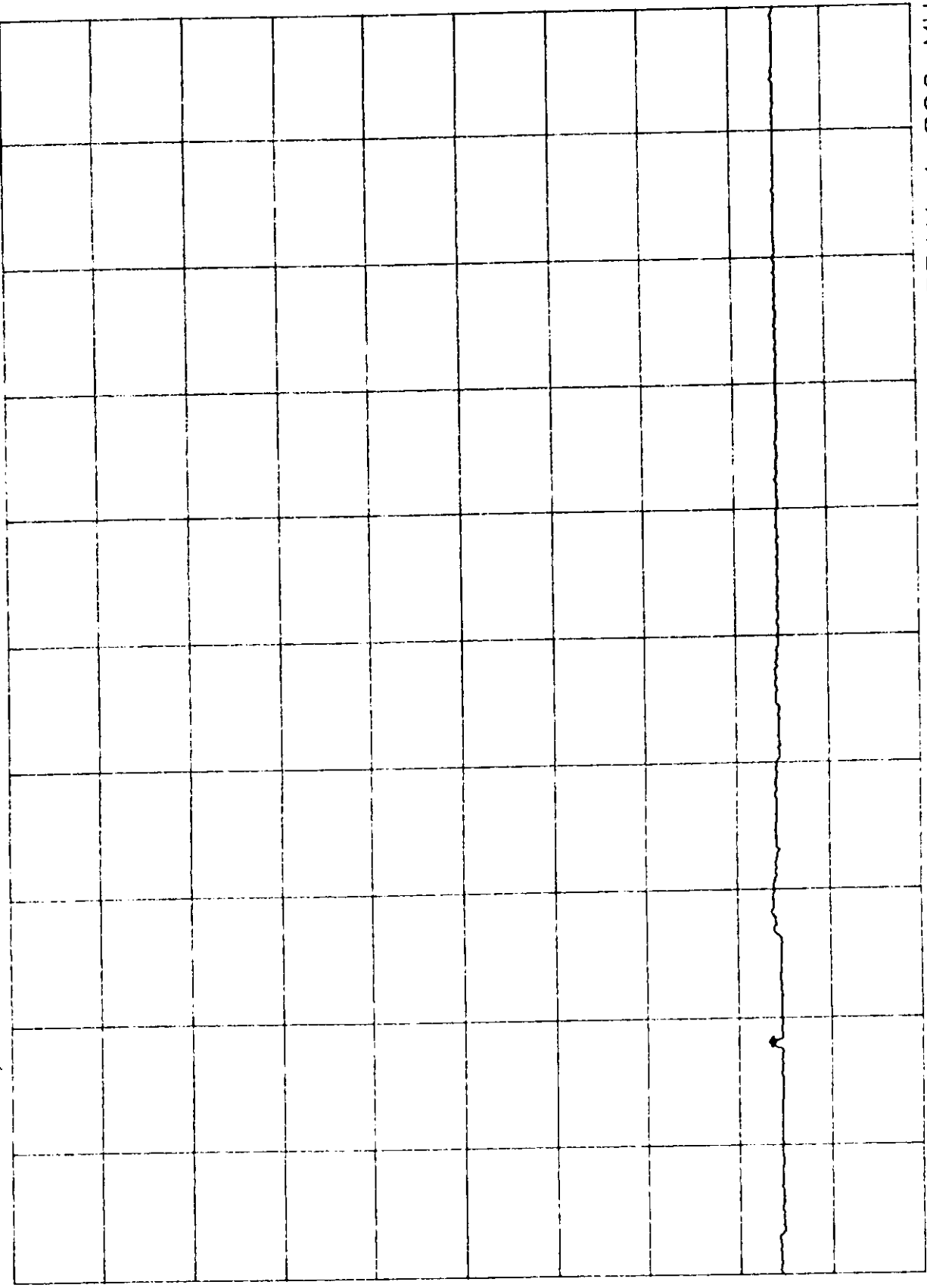
CENTER 3.281 MHz
RES BW 100 KHZ
SPAN 1.200 MHz
SWP 200 sec
VBW 100 KHZ

File: H30007601
Date: 21 August 1998
Page: 01

MKR 2.897 MHz
16.40 dBμV

hP REF 100.0 dBμV ATTN 10 dB

10 dB/



CORR'D

CENTER 3.281 MHz
RES BW 100 kHz
VBW 100 kHz
SPAN 1.200 MHz
SWP 200 sec

TEST DATA 2

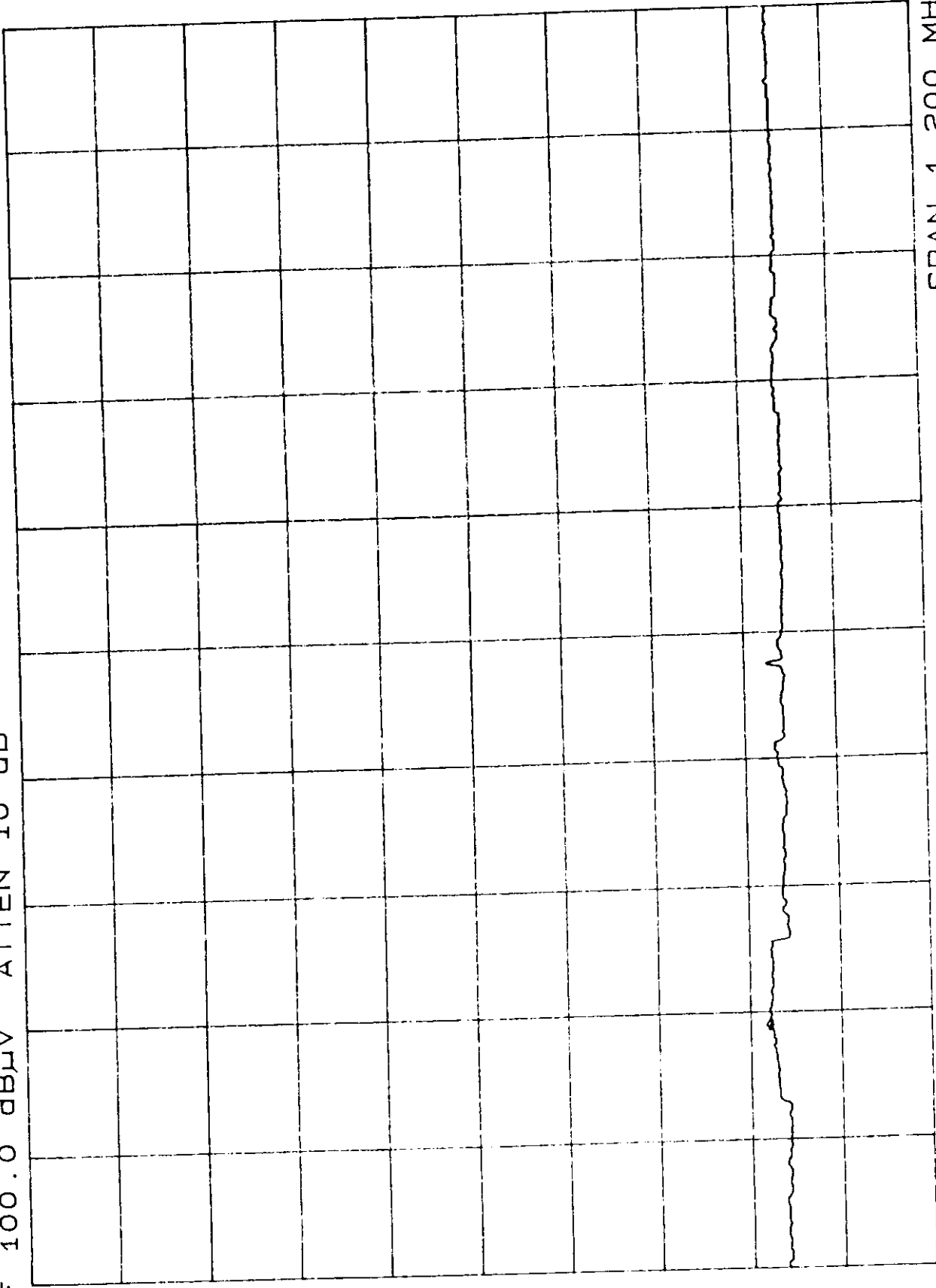
TEST	RADIATION
SYSTEM	33 FOOT LOOP
TEST ANTENNA DISTANCE	30 METERS
CENTER FREQUENCY	3.3 MHz
TEST FREQUENCY SPAN	1200 kHz
RESULTS	37 DB
REQUIREMENT	40 DB
RESULTS	PASSED

NOTES: Second set of data is reference background noise with system turned off.

MKR 2.908 MHz
17.90 dBμV

HP REF 100.0 dBμV ATTN 10 dB

10 dB/



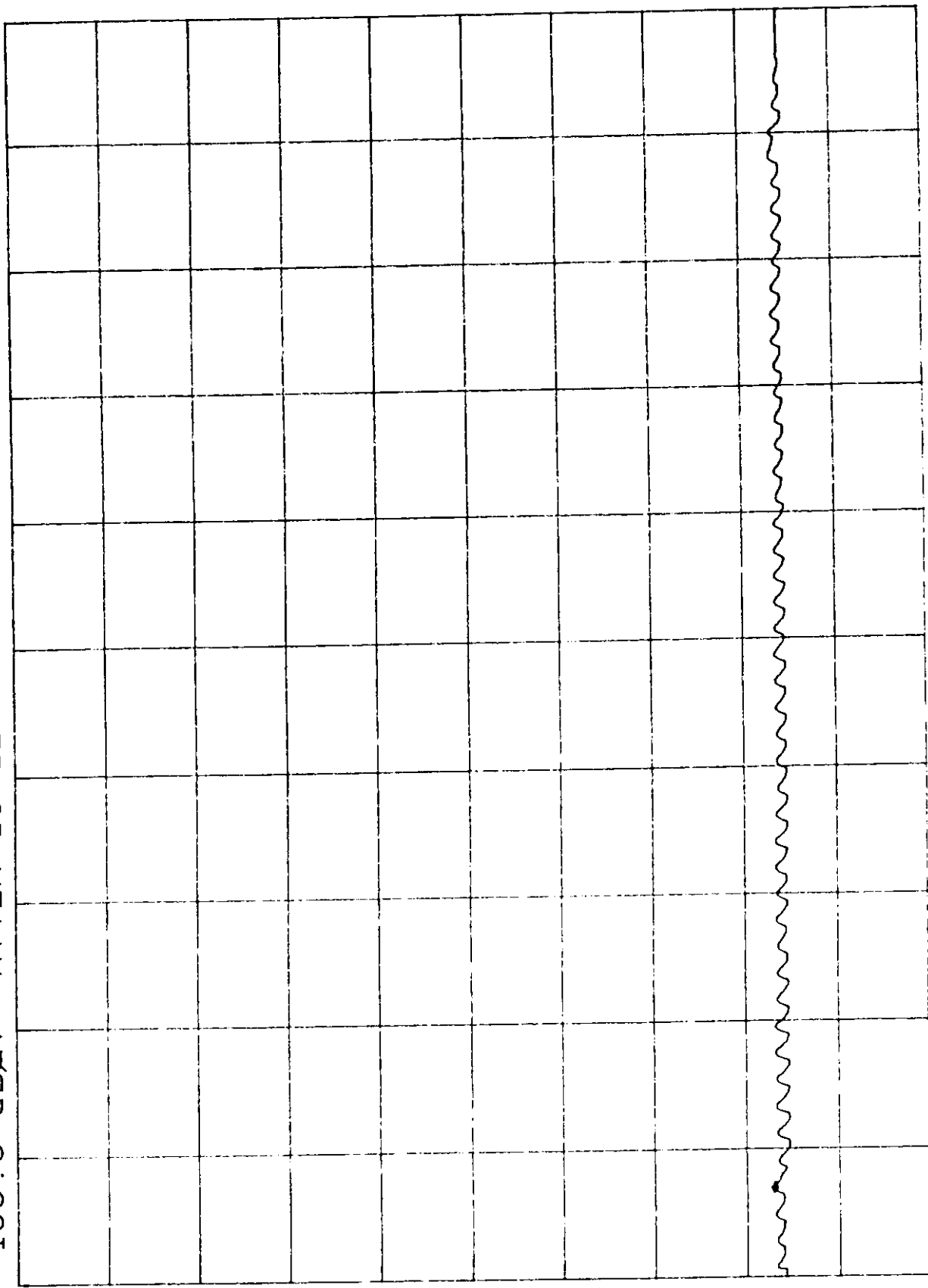
CORR'D

CENTER 3.281 MHz
RES BW 100 KHZ
SPAN 1.200 MHz
SWP 200 sec
VBW 100 KHZ

MR 2.783 MHz
17.00 dBμV

hp REF 100.0 dBμV ATTN 10 dB

10 dB/



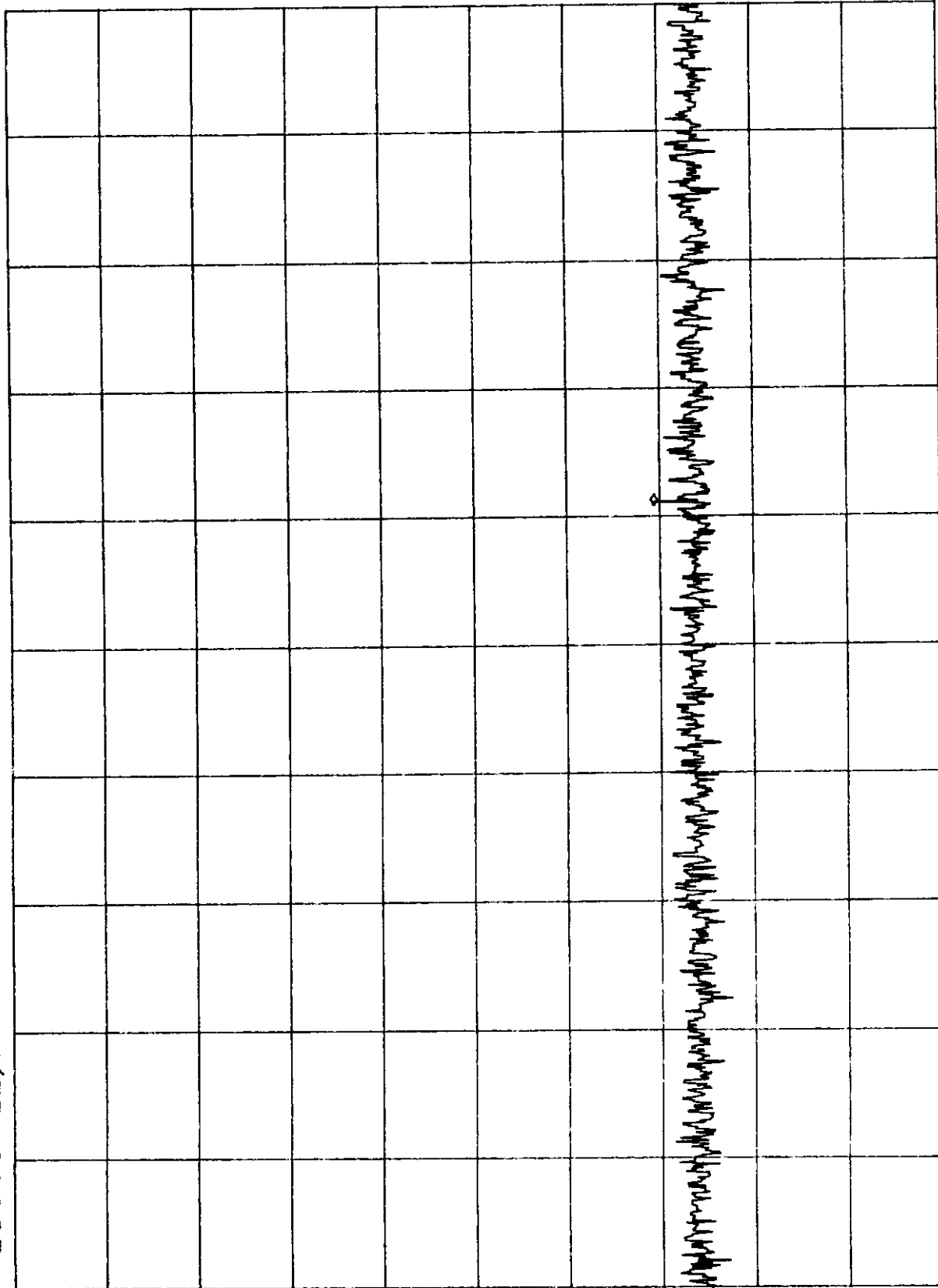
CENTER 3.300 MHz
RES BW 100 KHz
SPAN 1.200 MHz
SWP 50 sec
VBW 300 KHz

VERI FENCE OF LOOP
ZAND HARMONIC

MKR 6.5956 MHz
30.60 dBμV

EMC REF 100.0 dBμV ATTN 10 dB

10 dB/



CENTER 6.5620 MHz
RES BW 100 KHZ
SPAN 300.0 KHZ
SWP 20 msec

VBW 100 KHZ

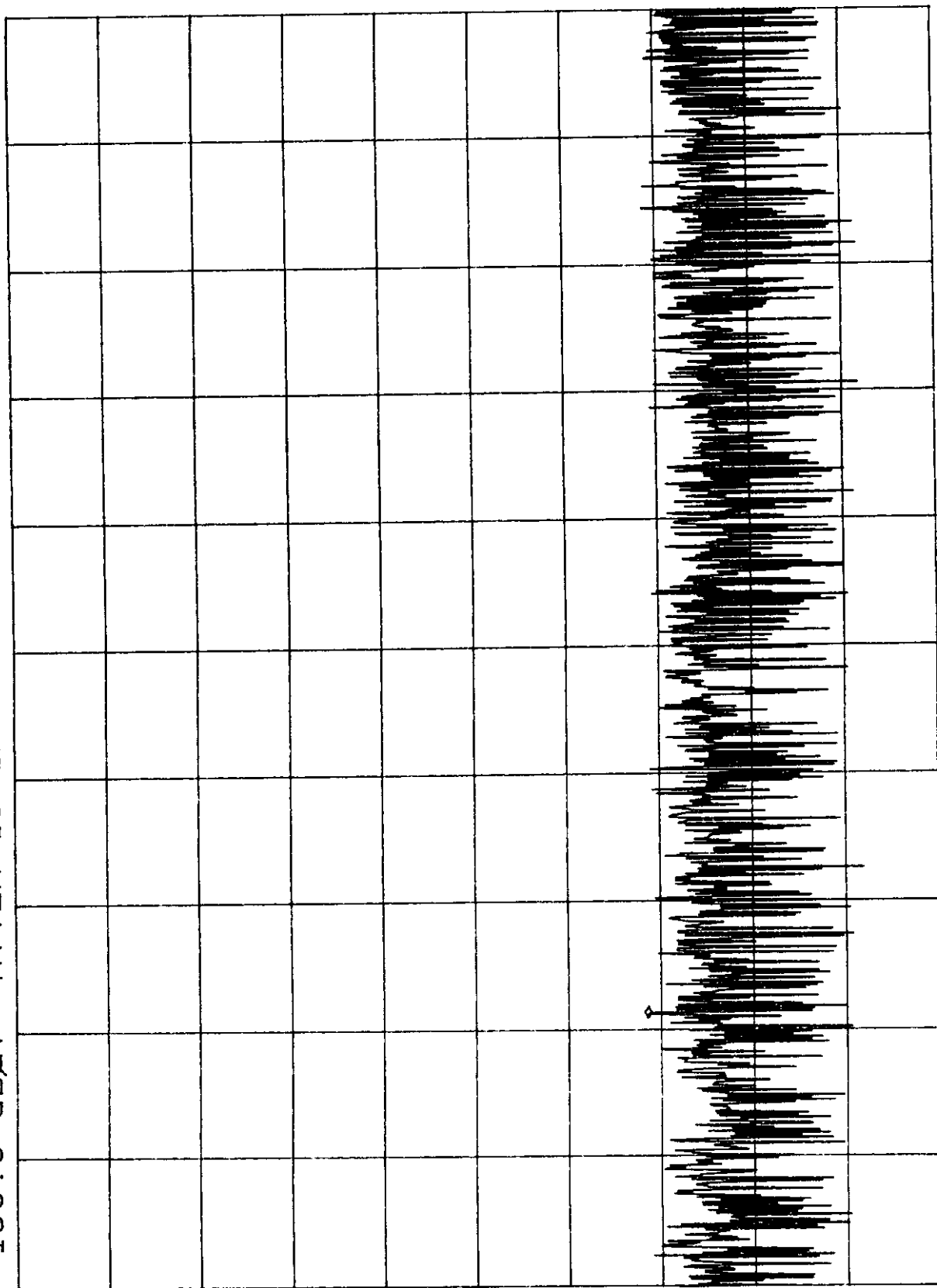
VERI FENCE OF LOOP
ZAND HARMONIC

VERT PLANE OF LOOP
3RD HARMONIC

MKR 9.7569 MHz
31.40 dBμV

EMC REF 100.0 dBμV ATTN 10 dB

10 dB/



CENTER 9.8430 MHz
RES BW 100 KHZ
VBW 100 KHZ
SPAN 300.0 KHZ
SWP 20 msec

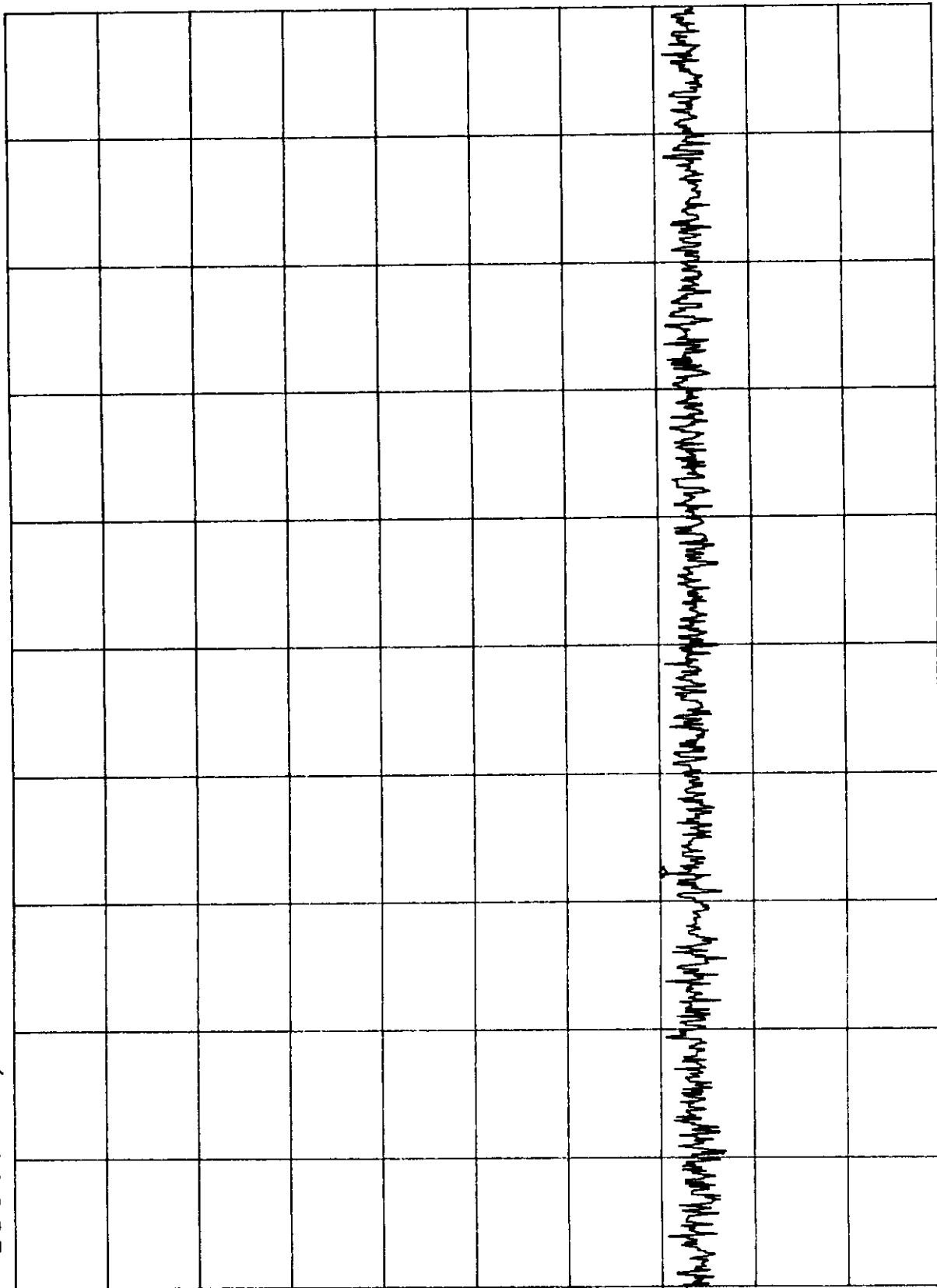
VERT PLANE OF LOOP
4TH HARMONIC

8/13/98

MKR 13.0706 MHz
29.70 dBμV

EMC REF 100.0 dBμV ATTN 10 dB

10 dB/



CENTER 13.1240 MHz RES BW 100 kHz VBW 100 kHz SPAN 300.0 kHz
SWP 20 msec

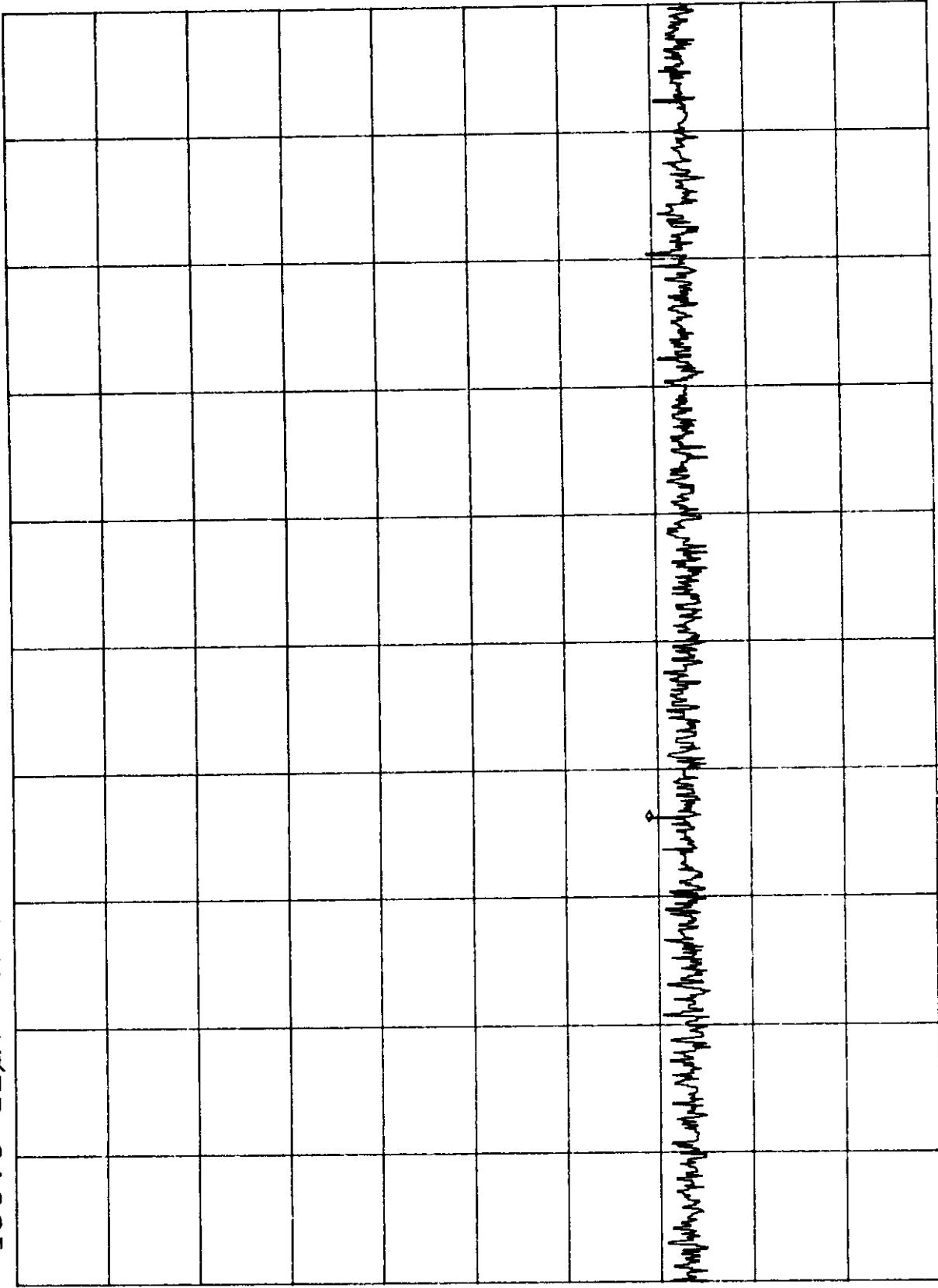
VERT PLANE OF ELEC
5TH HARMONIC

8/13/98

MKR 16.3639 MHZ
31.00 dBμV

EMC REF 100.0 dBμV ATTN 10 dB

10 dB/



CENTER 16.4050 MHZ
RES BW 100 KHZ
VBW 100 KHZ
SPAN 300.0 KHz
SWP 20 msec

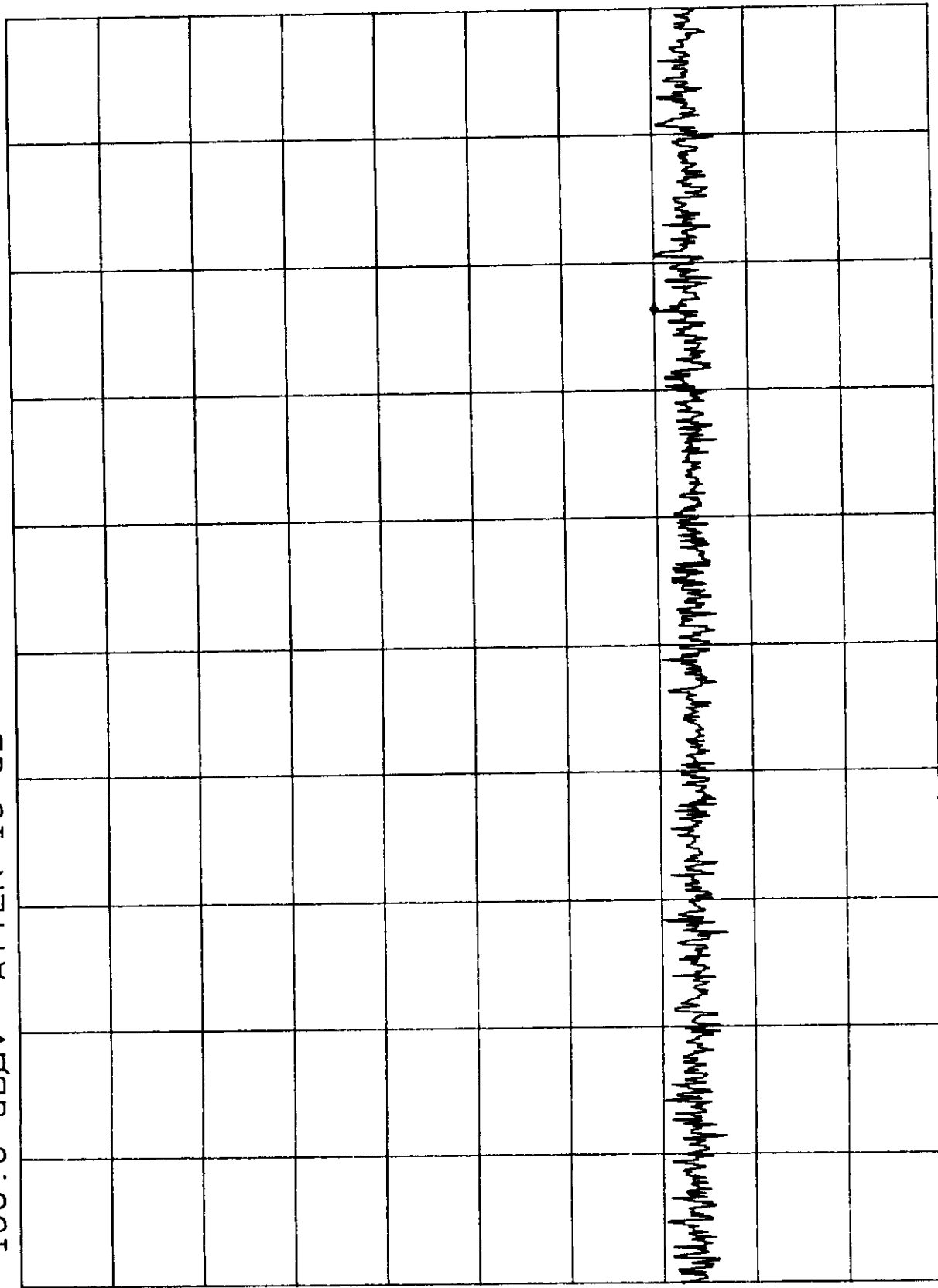
VERT PLANE OF LOOP
GTH HARMONIC

8/13/98

MKR 19.7649 MHZ
30.00 dBμV

EMC REF 100.0 dBμV ATTN 10 dB

10 dB/



CENTER 19.6860 MHZ
RES BW 100 KHZ
SPAN 300.0 KHZ
SWP 20 msec
VBW 100 KHZ

EMCE ENGINEERING INC.
4615 ENTERPRISE COMMON
FREMONT, CA 94538

DATE: 8/13/98
ANALYST: DB

PERFORMED FOR: ECODE
TEST SPECIMEN: UNIVERSAL MONITORING SYSTEM

MODEL NO: UMS2A
SERIAL NO: 001

115 VAC SUPPLY LINE

CONDUCTED NARROWBAND RESULTS: (FCC-B)

450KHz to 1.6 MHz

The Two Largest Signals are:	1.02 MHz	29.3 dBuV
	0.45 MHz	16.6 dBuV
Spec at This Frequency is:		48.0 dBuV
		PASSED

1.6 MHz to 8 MHz

The Two Largest Signals are:	7.85 MHz	25.4 dBuV
	1.60 MHz	16.3 dBuV
Spec at This Frequency is:		48.0 dBuV
		PASSED

8 MHz to 30 MHz

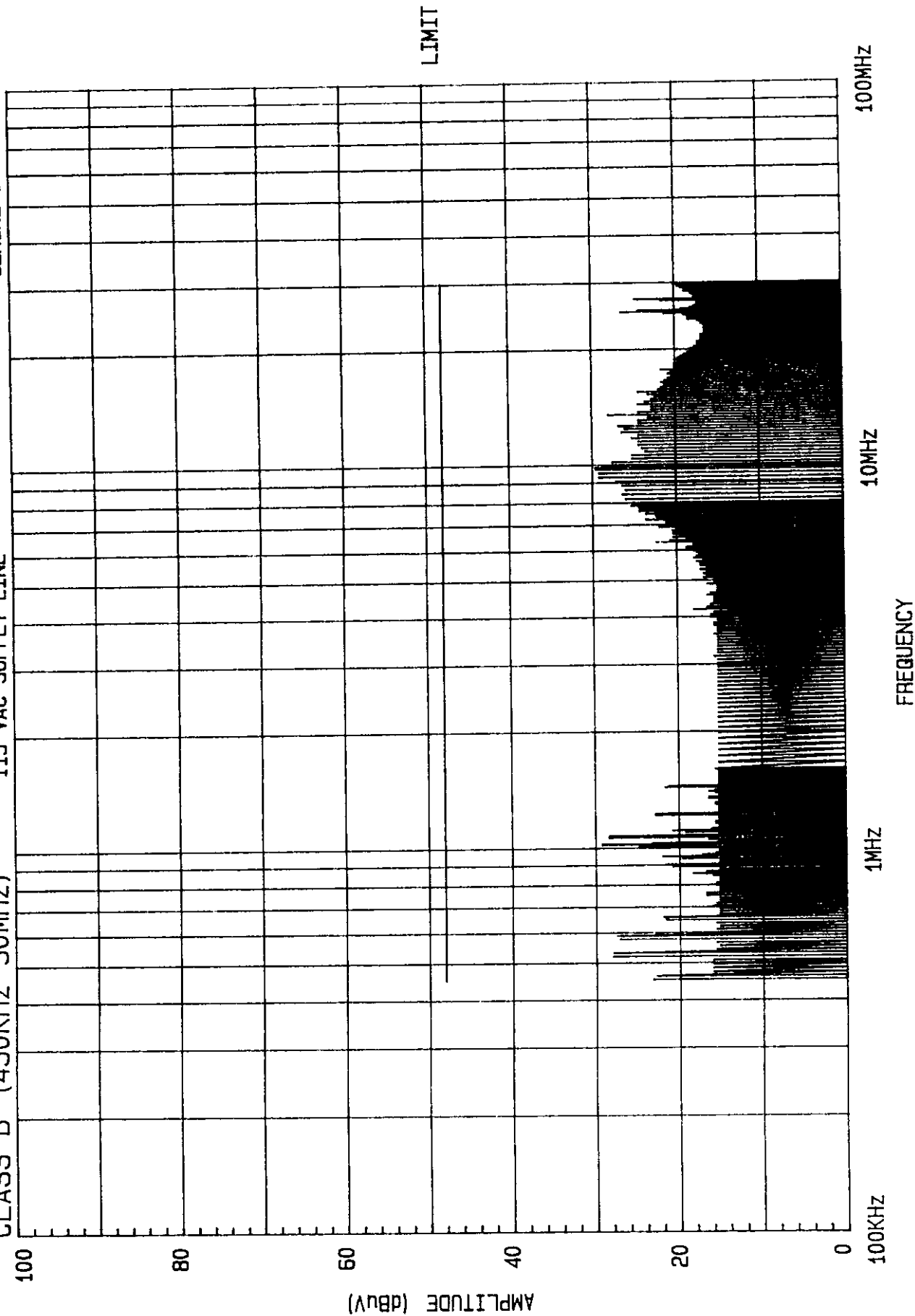
The Two Largest Signals are:	9.80 MHz	29.7 dBuV
	8.00 MHz	23.7 dBuV
Spec at This Frequency is:		48.0 dBuV
		PASSED

COMMENTS:

VERIFIED BY



NARROWBAND CONDUCTED EMI PERFORMED FOR: ECODE
CLASS B (450KHZ-30MHZ) 115 VAC SUPPLY LINE
MODEL # UMS2A
SERIAL # 001



EMCE ENGINEERING INC.
4615 ENTERPRISE COMMON
FREMONT, CA 94538

DATE: 8/13/98
ANALYST: DB

PERFORMED FOR: ECODE
TEST SPECIMEN: UNIVERSAL MONITORING SYSTEM

MODEL NO: UMS2A
SERIAL NO: 001

115 VAC RETURN LINE

CONDUCTED NARROWBAND RESULTS: (FCC-B)

450KHz to 1.6 MHz

The Two Largest Signals are:	1.11 MHz	29.3 dBuV
	0.45 MHz	22.6 dBuV
Spec at This Frequency is:		48.0 dBuV
		PASSED

1.6 MHz to 8 MHz

The Two Largest Signals are:	7.99 MHz	26.0 dBuV
	1.60 MHz	16.8 dBuV
Spec at This Frequency is:		48.0 dBuV
		PASSED

8 MHz to 30 MHz

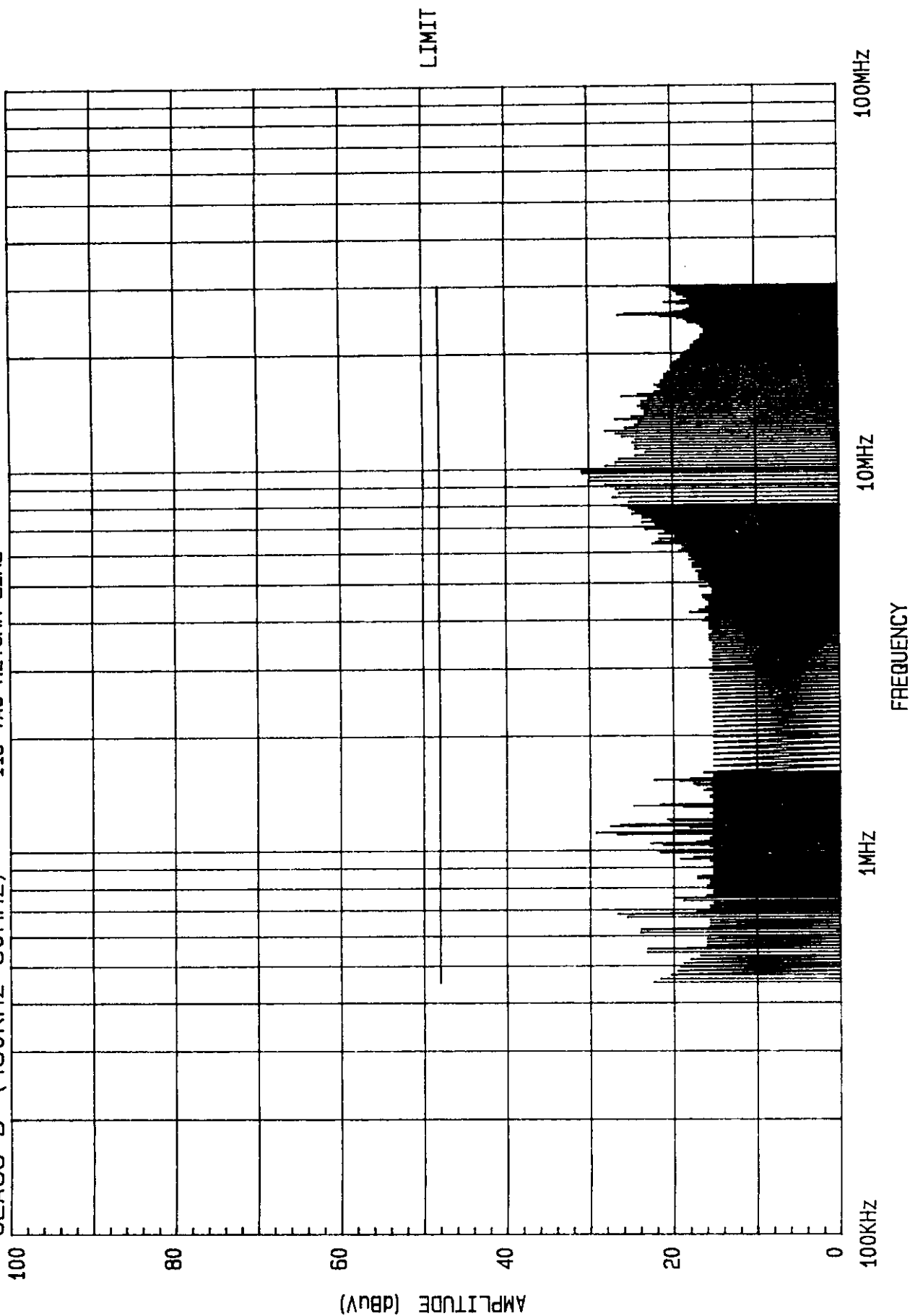
The Two Largest Signals are:	9.80 MHz	30.9 dBuV
	8.00 MHz	24.1 dBuV
Spec at This Frequency is:		48.0 dBuV
		PASSED

COMMENTS:

VERIFIED BY

Don Bullard

NARROWBAND CONDUCTED EMI PERFORMED FOR: ECODE MODEL # UMS2A
CLASS B (450KHZ-30MHZ) 115 VAC RETURN LINE SERIAL # 001



EMCE ENGINEERING, INC.
44370 S. GRIMMER BLVD
FREMONT, CA 94538

DATE: 8/13/98

FILE:

FCC No. 1051002801
Date: 20 August 1998
Page: 105

PERFORMED FOR: ECODE
TEST SPECIMEN: UNIVERSAL MONITORING SYSTEM

MODEL NUMBER: UMS2A
SERIAL NUMBER: 001

LOCATION: HORIZ POL

FINAL FCC-B, RADIATED RESULTS:

Freq MHz	Analyzer Reading dBuV	CF dB	Correct Reading dBuV/m	Spec Limit dBuV/m	margin dB	Ht cm	Angle Deg
75.68	50.7	-17.5	33.17	40.00	6.83	174	85
126.85	44.6	-11.7	32.86	43.00	10.14	196	325
139.53	41.7	-12.0	29.75	43.00	13.25	187	214
143.03	40.5	-11.9	28.63	43.00	14.37	165	325

NONE OUT OF SPECIFICATION

COMMENTS: Test Dist = 3.0 m. QP detector ON.

SAMPLE CALCULATION:

At 143.03 MHz

Analyzer Reading = 40.50 dBuV

Correction Factor, CF, = AF 12.14 dB + Cable 2.98 dB

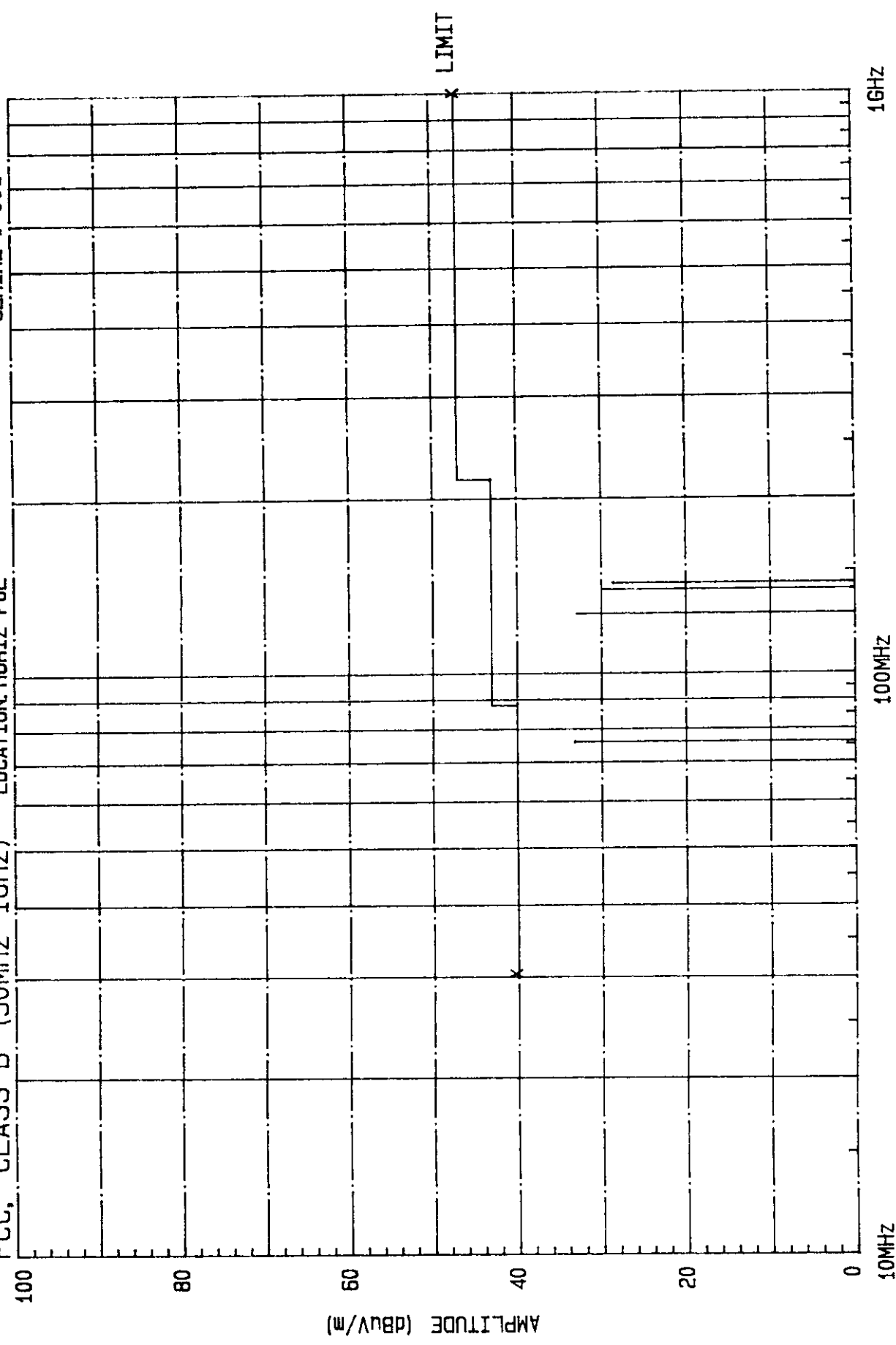
-Preamp Gain 27.00 dB = -11.87 dB

CORRECTED READING = 28.63 dBuV/m

VERIFIED BY

Conrad

NARROWBAND RADIATED EMI
FCC, CLASS B (30MHz-1GHz)
PERFORMED FOR: ECODE
LOCATION: HORIZ POL
MODEL # UMS2A
SERIAL # 001



FREQUENCY (NOTE: Test Dist=3.0 m)

EMCE ENGINEERING, INC.
44370 S. GRIMMER BLVD
FREMONT, CA 94538

DATE: 8/13/98
FILE:

PERFORMED FOR: ECODE
TEST SPECIMEN: UNIVERSAL MONITORING SYSTEM

MODEL NUMBER: UMS2A
SERIAL NUMBER: 001

FCC ID: N35R002001
Date: 21 August 1998
Page: 107

LOCATION: VERT POL

FINAL FCC-B, RADIATED RESULTS:

Freq MHz	Analyzer Reading dBuV	CF dB	Correct Reading dBuV/m	Spec Limit dBuV/m	margin dB	Ht cm	Angle Deg
129.50	39.0	-11.8	27.22	43.00	15.78	157	324
136.93	40.8	-11.9	28.89	43.00	14.11	168	241
140.00	38.5	-11.9	26.63	43.00	16.37	150	200
270.18	37.9	-8.0	29.90	43.00	13.10	174	52
322.10	41.5	-5.9	35.57	47.00	11.43	177	41

NONE OUT OF SPECIFICATION

COMMENTS: Test Dist = 3.0 m. QP detector ON.
SAMPLE CALCULATION:

At 322.10 MHz

Analyzer Reading = 41.50 dBuV

Correction Factor, CF, = AF 16.53 dB + Cable 4.54 dB

-Preamp Gain 27.00 dB = -5.93 dB

CORRECTED READING = 35.57 dBuV/m

VERIFIED BY

Edm. Ballard

MODEL # UMS2A

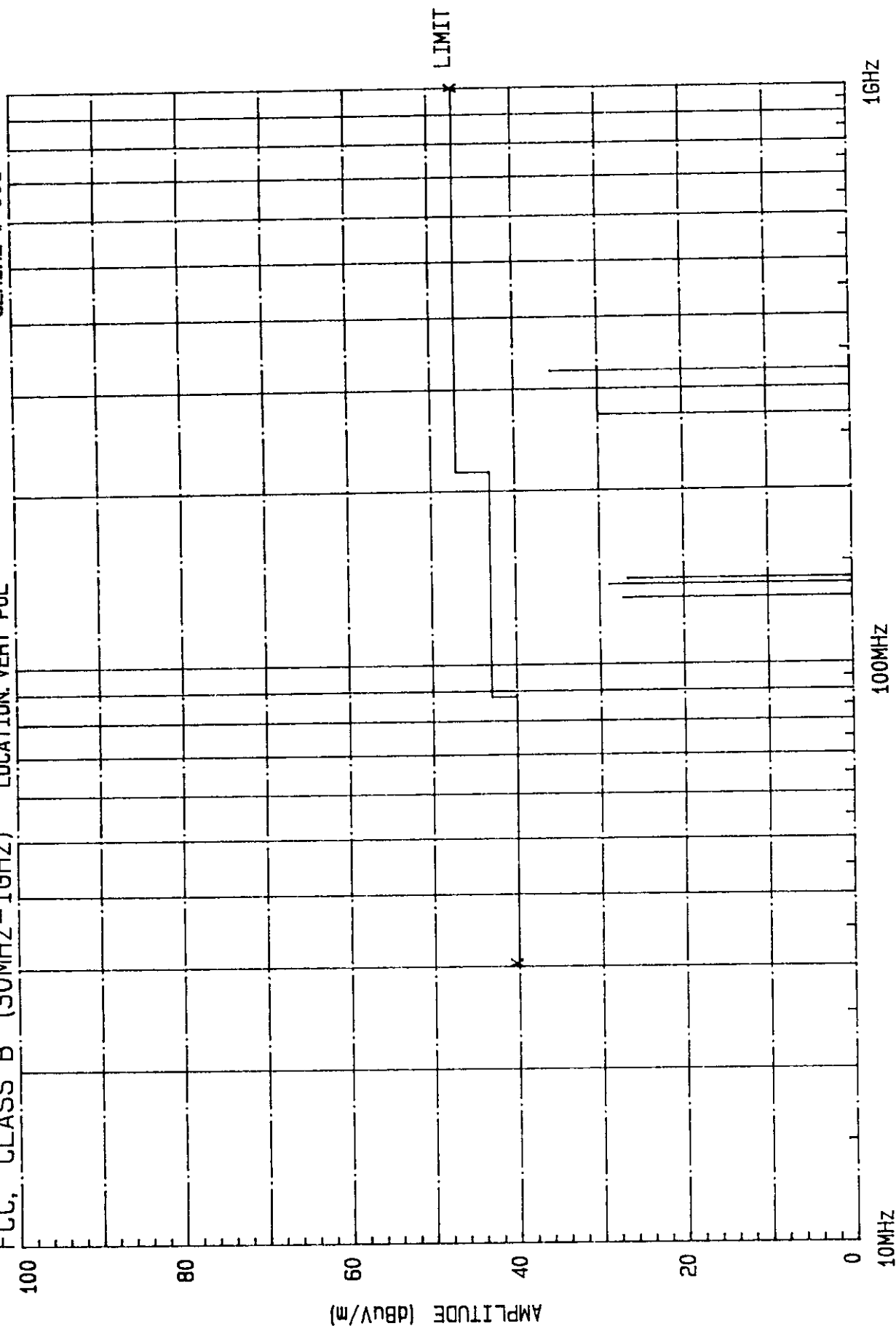
PERFORMED FOR: ECODE

SERIAL # 001

LOCATION: VERT POL

NARROWBAND RADIATED EMI

FCC, CLASS B (30MHz-1GHz)



FREQUENCY (NOTE: Test Dist=3.0 m)

**ELECTRO-MECHANICS CO.
 GAIN AND ANTENNA FACTORS
 MODEL 3104
 BICONICAL
 S/N 2505**

FREQUENCY (MHz)	ANTENNA FACTOR	GAIN NUMBERIC	GAIN (dB)
20	8.11	.065	-11.8
30	13.10	.047	-13.3
40	8.64	.232	-6.4
50	9.38	.305	-5.2
60	11.20	.289	-5.4
70	15.15	.159	-8.0
80	10.88	.554	-2.6
90	14.52	.303	-5.2
100	8.89	1.367	1.4
110	14.96	.409	-3.9
120	11.24	1.147	0.6
130	10.12	1.740	2.4
140	11.50	1.470	1.7
150	13.09	1.169	0.7
160	17.37	0.496	-3.0
170	19.63	.333	-4.8
180	16.58	.754	-1.2
190	15.63	1.046	.2
200	14.89	1.375	1.4

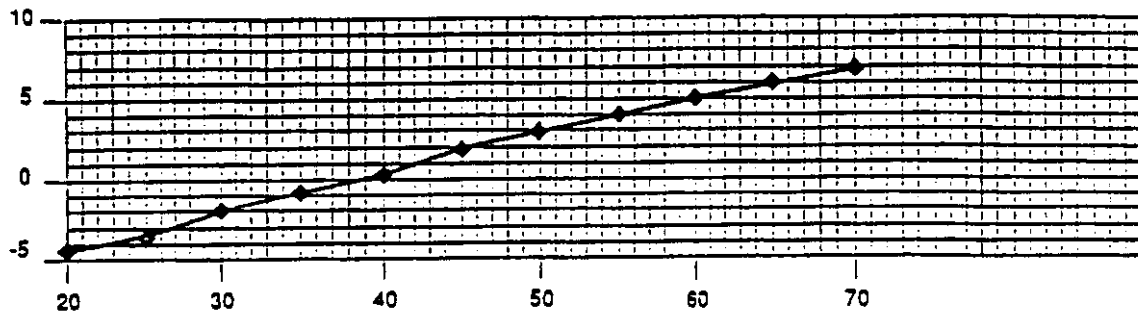
SPECIFICATION COMPLIANCE TESTING FACTOR (1 METER SPACING)
 TO BE ADDED TO RECEIVER METER READING IN dBuV TO CONVERT
 TO FIELD INTENSITY IN dBuV/meter

Figure 9. Biconical Antenna Factors.

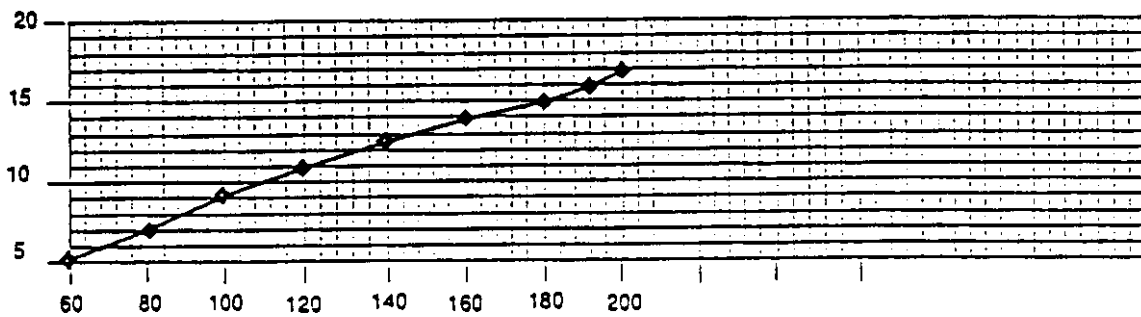
ROBERTS ANTENNA FACTORS

Factors Include 30' of RG-58/U cable

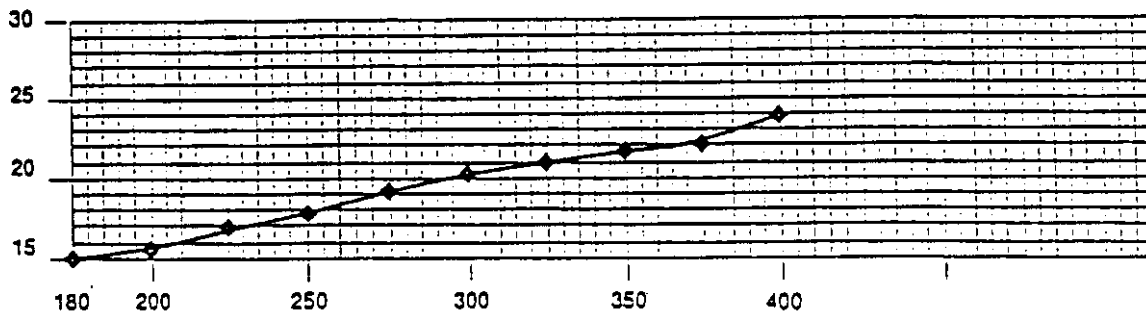
20 - 65 MHz



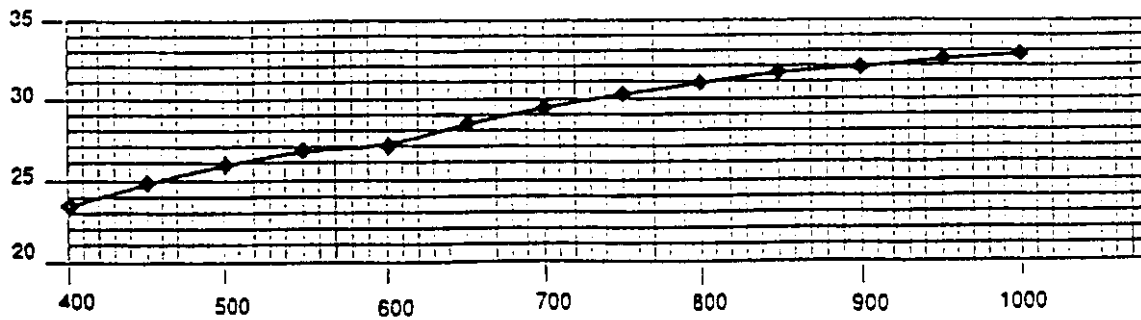
65 - 180 MHz



180 - 400 MHz



400 - 1000 MHz



ANTENNA FACTOR
 FOR
 LOOP ANTENNA LP-105
 S/N 980 (3013)

<u>FREQUENCY</u>	<u>dB</u>	<u>FREQUENCY</u>	<u>dB</u>
150 KHz	41.9	2.4 MHz	29.6
175 KHz	40.6	2.7 MHz	28.7
200 KHz	39.4	3.0 MHz	27.6
225 KHz	38.4	3.4 MHz	26.6
250 KHz	37.5	3.7 MHz	25.8
275 KHz	36.6	4.0 MHz	25.2
300 KHz	35.9	4.4 MHz	24.4
325 KHz	35.2	4.7 MHz	23.7
360 KHz	34.3	5.2 MHz	22.9
400 KHz	38.3	6.0 MHz	26.7
450 KHz	37.2	7.0 MHz	25.4
500 KHz	36.3	8.0 MHz	24.3
560 KHz	35.3	9.0 MHz	23.3
620 KHz	34.4	10.0 MHz	22.3
700 KHz	33.4	11.0 MHz	21.5
760 KHz	32.7	12.0 MHz	20.7
820 KHz	32.0	12.7 MHz	20.2
870 KHz	31.5	15.0 MHz	18.8
900 KHz	33.7	19.0 MHz	16.8
1000 KHz	32.8	21.0 MHz	15.9
1.1 MHz	31.9	24.0 MHz	14.7
1.3 MHz	30.5	27.0 MHz	13.7
1.5 MHz	29.3	30.0 MHz	12.7
1.7 MHz	28.1		
1.9 MHz	27.2		
2.1 MHz	26.3		

NOTE: For substitution measurements, add 20 dB to the above factors.

1. Addition of 20 dB not required for series injection and no antenna factor is used for antenna induced measurements.



Mountain View, CA 94043

Rentals and Sales of Electronic Test Equipment
(415) 964-3923 (800) 227-1995

12-14-96

TEST EQUIPMENT CORPORATION WARRANTS REPAIRS AND CALIBRATION SERVICES TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF THIRTY DAYS FROM DATE OF SERVICE. LIMIT OF LIABILITY UNDER THIS WARRANTY SHALL BE REPLACEMENT OF MATERIALS AND RECALIBRATION OF THE INSTRUMENT. THIS WARRANTY SHALL EXCLUDE EQUIPMENT FAILURES DUE FROM DAMAGES CAUSED BY MISUSE, NEGLIGENCE, ABUSE, ACCIDENT, FIRE, OR OTHER ABNORMAL USE. TEST EQUIPMENT CORPORATION'S STANDARDS ARE TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS. TEC'S CALIBRATION PROCEDURE CONFORMS TO MIL STD- 45662A.

3-1-98

OUT OF MFG. S SPEC

BILL

ORIGINAL - WHITE
CANARY - ACCOUNTING
PINK - LAB FILE



Rentals and Sales of Electronic Test Equipment
(415) 964-3923 (800) 227-1995

STEVE

ORIGINAL - WHITE
CANARY - ACCOUNTING
PINK - LAB FILE

FCC Filing

RFI TEST UPDATE LIST 5-13-98

The following changes were made to the Transmit Card Y2 in order to reduce RFI unintentional emissions in the RFI Qualification Tests performed on 5 / 11 / 1998 and 5 / 12 / 1998.

1. Remove pin #10 of U-27 from the power (+ Vdd) and reconnect it to pin #5 of U-27.
(this allows the 4X signal to be gated by the Microprocessor, Note that as a general good practice the high frequency and 4X clock lines should be shortened)
2. Remove X-=2 crystal.
3. Ground the TP-4 pin. (needs to be permanently stitched to ground in next artwork update)
4. Modified Firmware to switch on the 4X signal only when used during the Transmit and Receive time periods.

The Card passes the testing with good margin with the above and all prior updates.

FCC ID: A381002801
Date: 21 August 1998
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