

7.6.2 Radiated Spurious Emissions(Restricted Bands) - FCC Section 15.205

Radiated emissions tests were made over the frequency range of 30MHz to 25GHz, 10 times the highest fundamental frequency. Measurements of the radiated field strength were made at a distance of 3m from the boundary of the equipment under test(EUT)and the receiving antenna. The antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. The spectrum analyzer's video and resolution bandwidths were set to 1MHz.

Due to high ambient noise levels and small EUT size, radiated emission measurements may be made at a distance of 1 meter. An inverse proportionality factor of 20 dB per decade is used to normalize the measured data to the specified distance to determine compliance. The formula used to calculate an inverse proportionality factor is $20 \log (D1/D2)$, where D1 is the distance used and D2 is the specified distance.

Of the antennas listed in section 1.2.4, only the three identified below were tested. These antennas are the highest gain of their respective types and are considered worst case of all the antennas in section 1.2.4. The antennas tested are:

Manufacturer	Model Number	LXE Part Number	Type	Gain(dBi)
Cushcraft	PC2415	460602-3020	Yagi	15
Cushcraft	245BD5W	480424-0411	Patch	4&6
Mobile Mark	OD9-2500	480424-3411	Omnidirectional	9

The EUT was caused to generate a constant carrier on the high, mid and low channels of operation at each of the data rates available. Tables 7, 8 and 9 below, show the results of all recordable points in the band of evaluation. Plots of each significant signal were also taken for each antenna and can be found following the respective tables:

Table 7: 460602-3020 15dBi Yagi

Channel	Data Rate (Mbps)	Frequency (MHz)	Antenna Distance (m)	Receiver Level (dBm)	Correction Factors (dB)	Corrected Level (dBm)	Corrected Level (uV/m)	Limit (uV/m)	Margin (uV)
1	2	4120	1	-65.50	6.01	-59.49	237.31	5000	4762.69
		4824	1	-63.17	7.48	-55.69	367.67	5000	4632.33
		7237	1	-65.67	11.82	-53.85	454.37	5000	4545.63
	5.5	4119	1	-66.17	6.01	-60.16	219.70	5000	4780.30
		4829	1	-65.17	7.50	-57.67	292.61	5000	4707.39
	11	4120	1	-66.17	6.01	-60.16	219.91	5000	4780.09
		4824	1	-62.67	7.48	-55.19	389.46	5000	4610.54
7	2	4884	1	-66.67	7.68	-58.99	251.40	5000	4748.60
		7328	1	-70.17	12.01	-58.16	276.56	5000	4723.44
	5.5	4889	1	-67.83	7.69	-60.20	218.87	5000	4781.13
		7332	1	-68.33	12.01	-56.32	342.13	5000	4657.87
	11	4884	1	-68.17	7.68	-60.49	211.52	5000	4788.48
11	2	4924	1	-68.83	7.81	-61.02	199.05	5000	4800.95



125 Technology Parkway
Norcross, Georgia, US 30092

Appendix B

Radiated Spurious Emissions Plots

LXE Model: 480628-4096

FCC ID: KDZ480628-4096

Issue Date: January 19, 2000

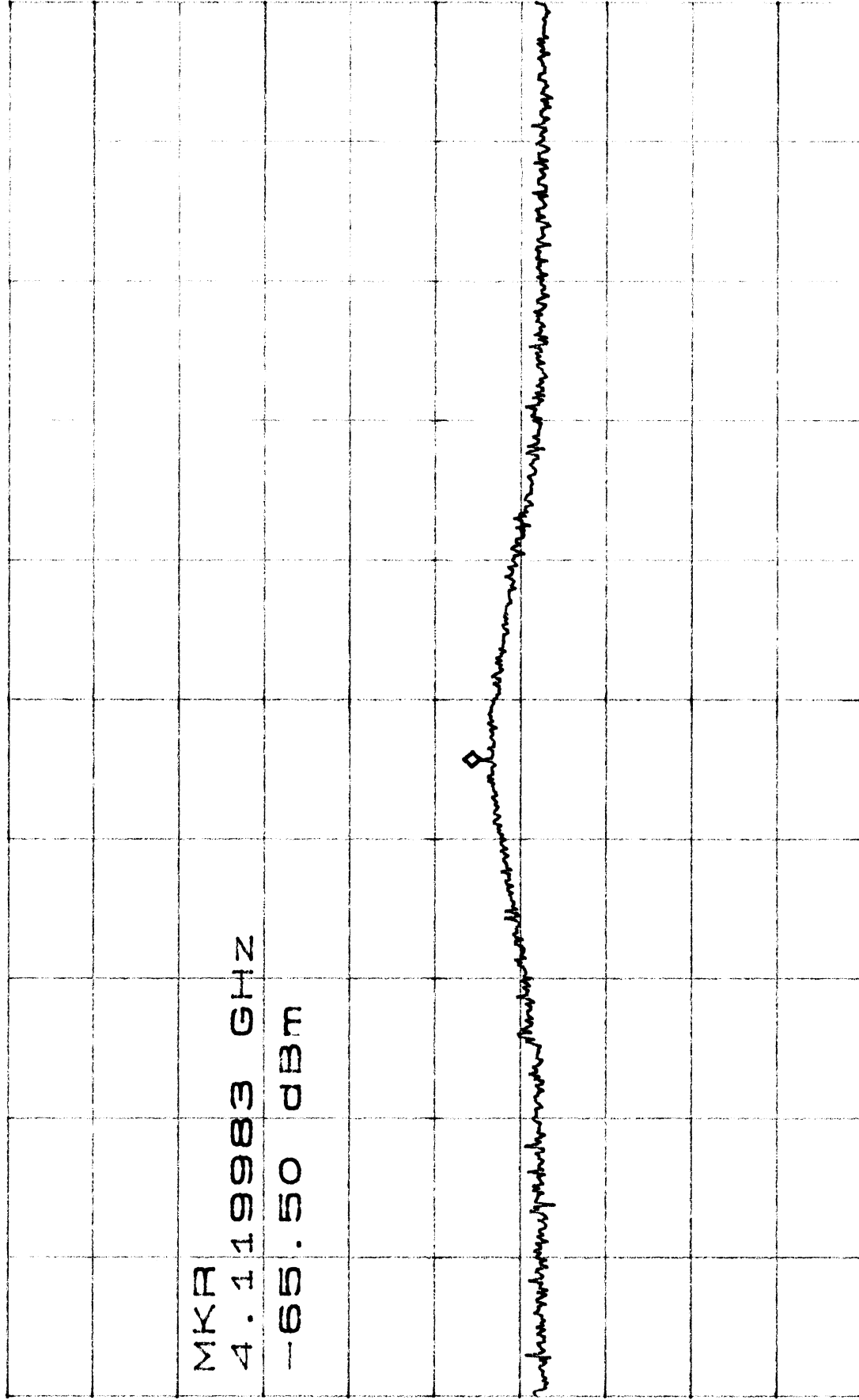
*ATTEN 0dB

MKR -65.50dBm

RL -10.0dBm

10dB/

4.119983GHz



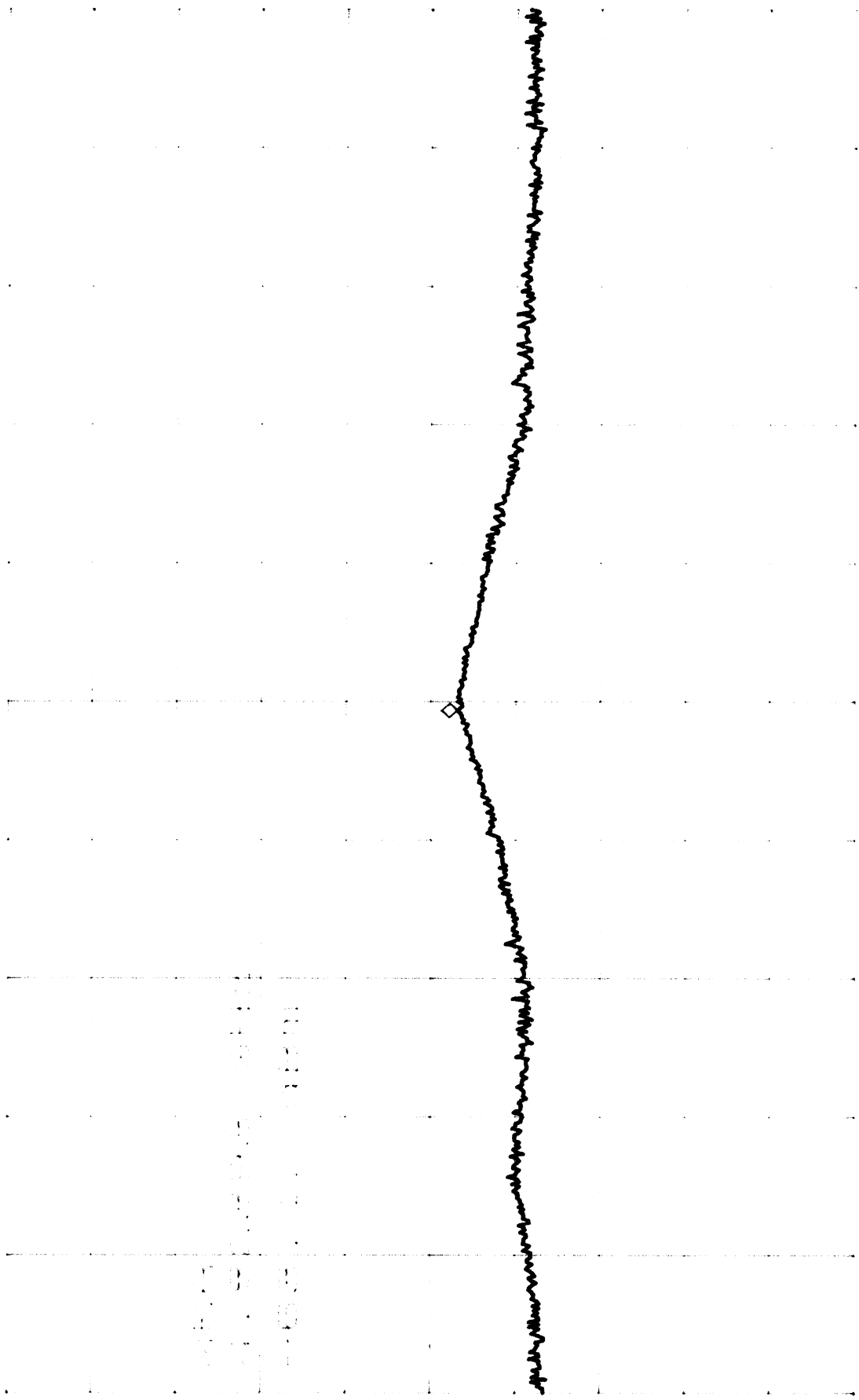
CENTER 4.120200GHz

SPAN 5.000MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50ms





*ATTEN 0dB

MKR -66.17dBm

RL -10.0dBm

10dB/

4.119758GHz

MKR

4.119758 GHz

-66.17 dBm



CENTER 4.120200GHz

SPAN 5.000MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50ms



*ATTEN 0dB

MKR -66.17dBm

RL -10.0dBm

10dB/

4.120117GHz

MKR

4.120117 GHz

-66.17 dBm



CENTER 4.120200GHz

SPAN 5.000MHz

*RBW 1.0MHz

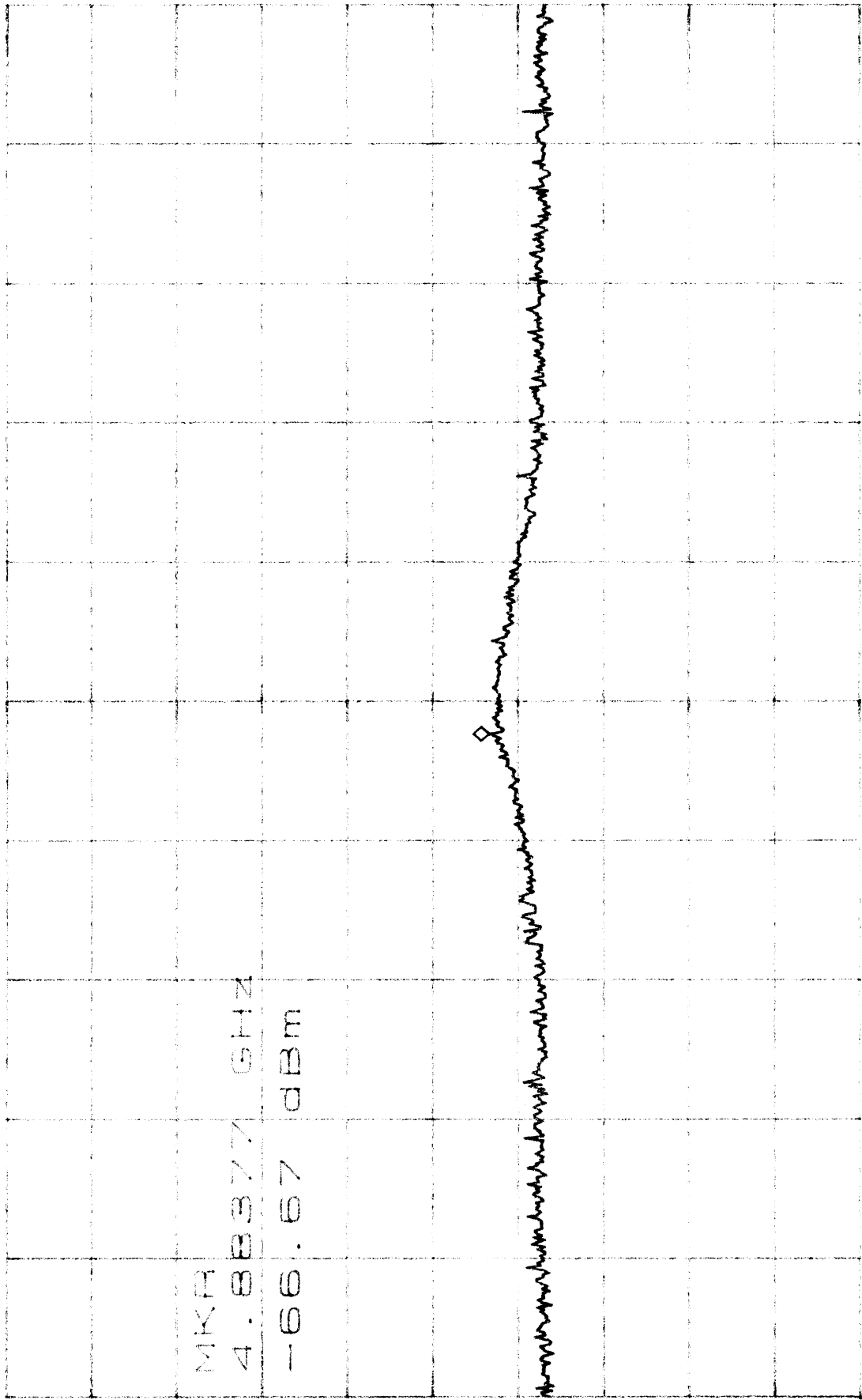
*VBW 1.0MHz

SWP 50ms

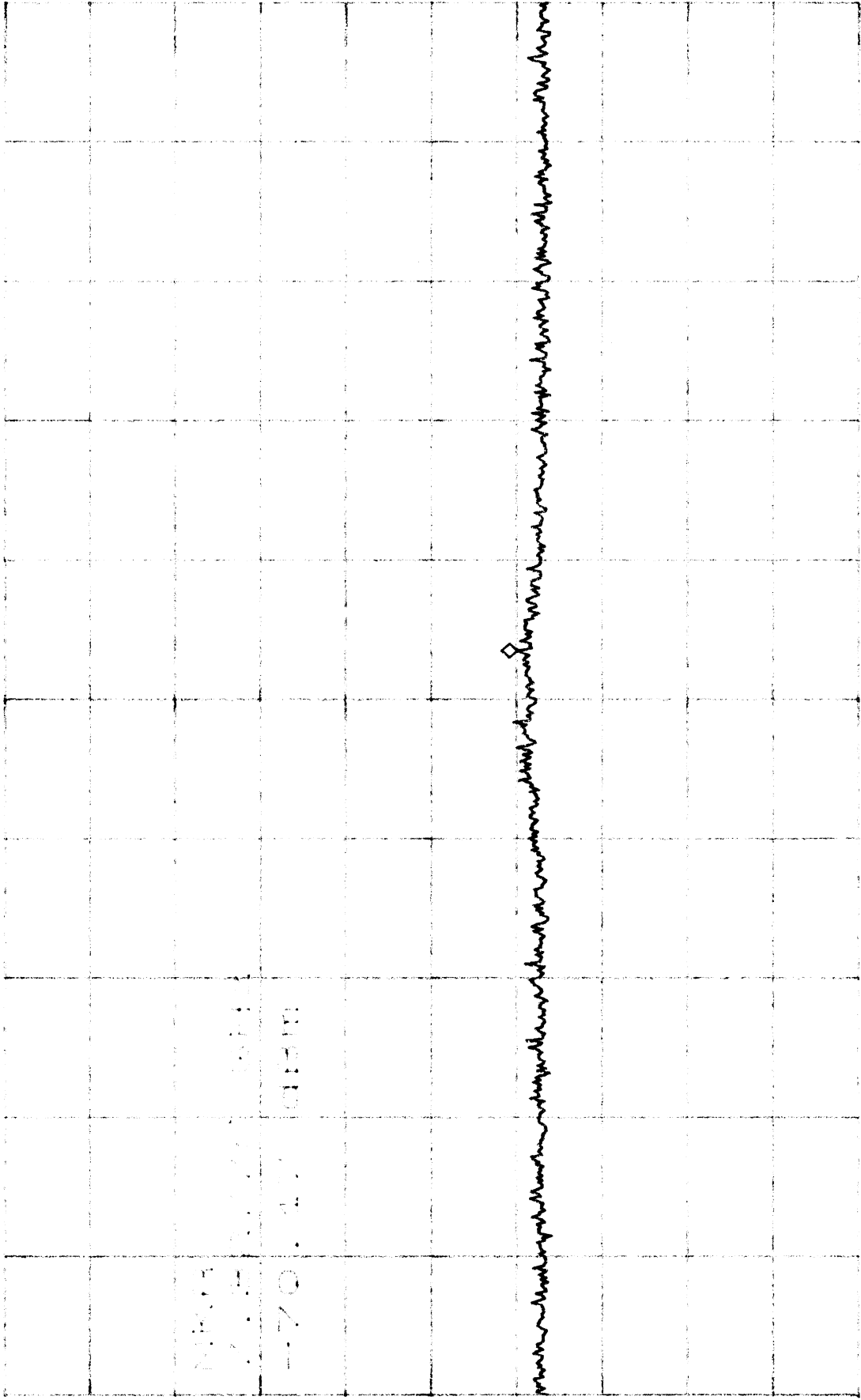
21K1
4.82388 GHz
-62.67 dBm



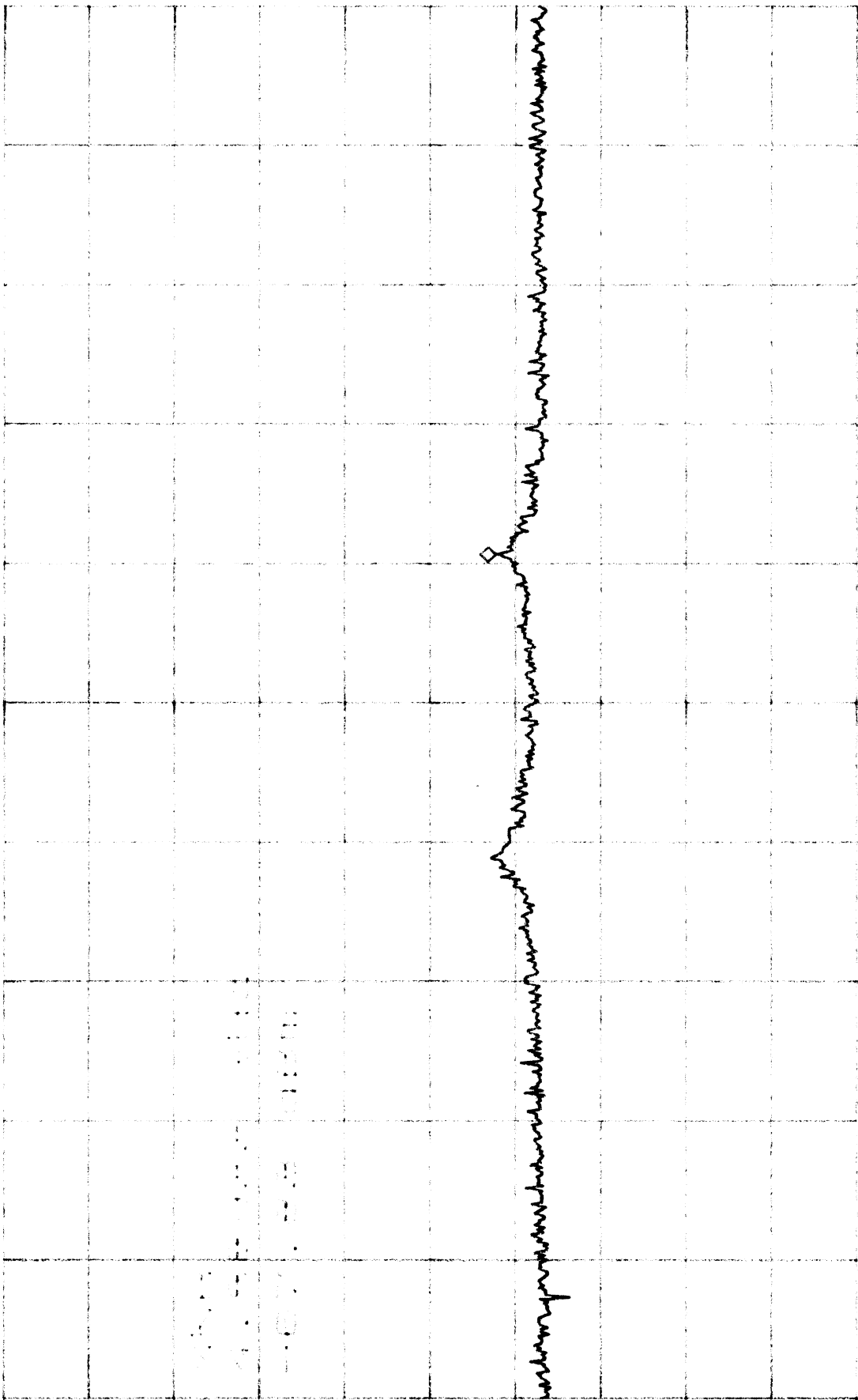
4.82388 GHz
-62.67 dBm



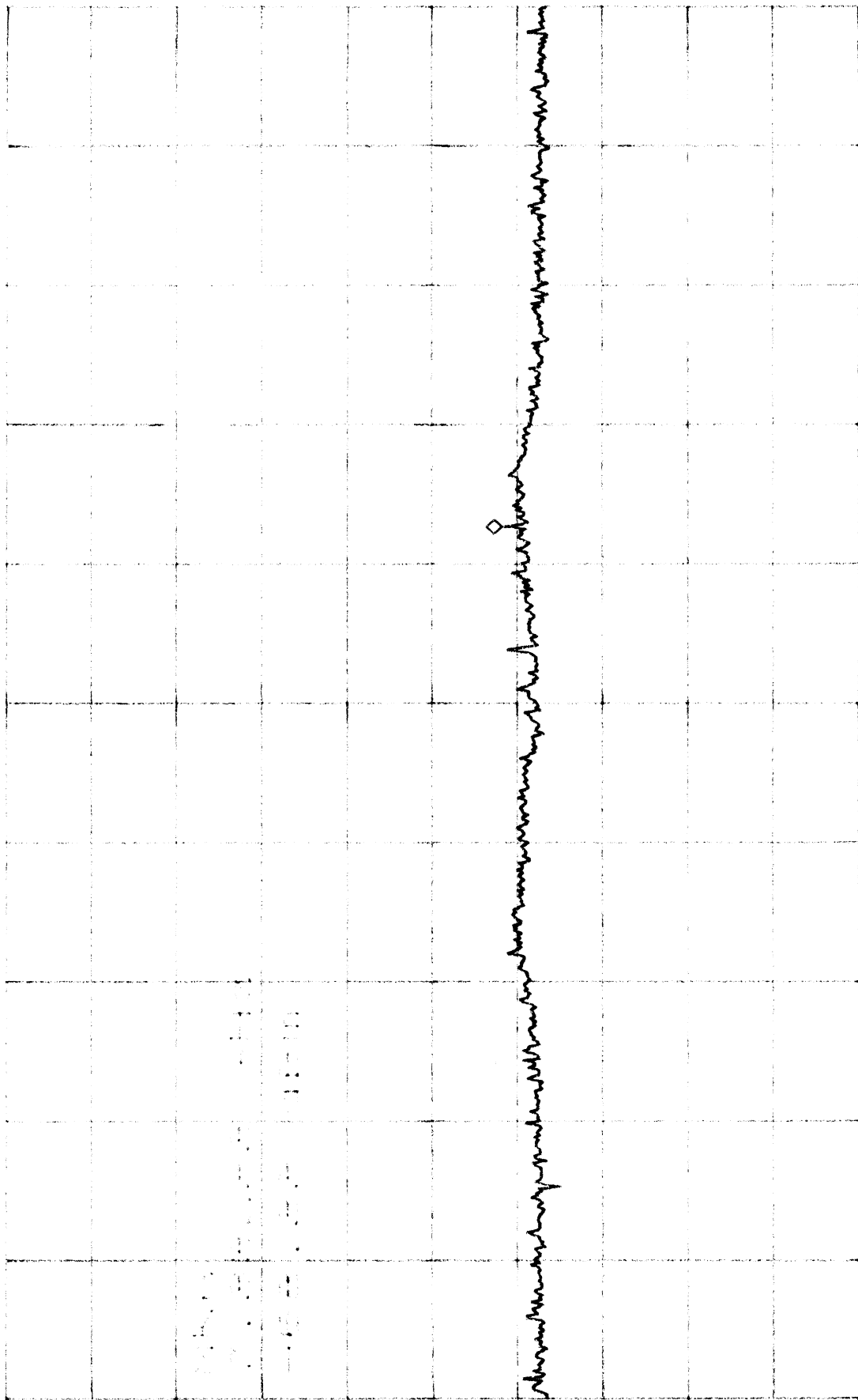
Hand-drawn graph showing a signal waveform. The graph is labeled with '4.000000' and '0.000000' on the left side. The waveform is a series of vertical pulses of varying heights, with a small diamond symbol marking a specific point.



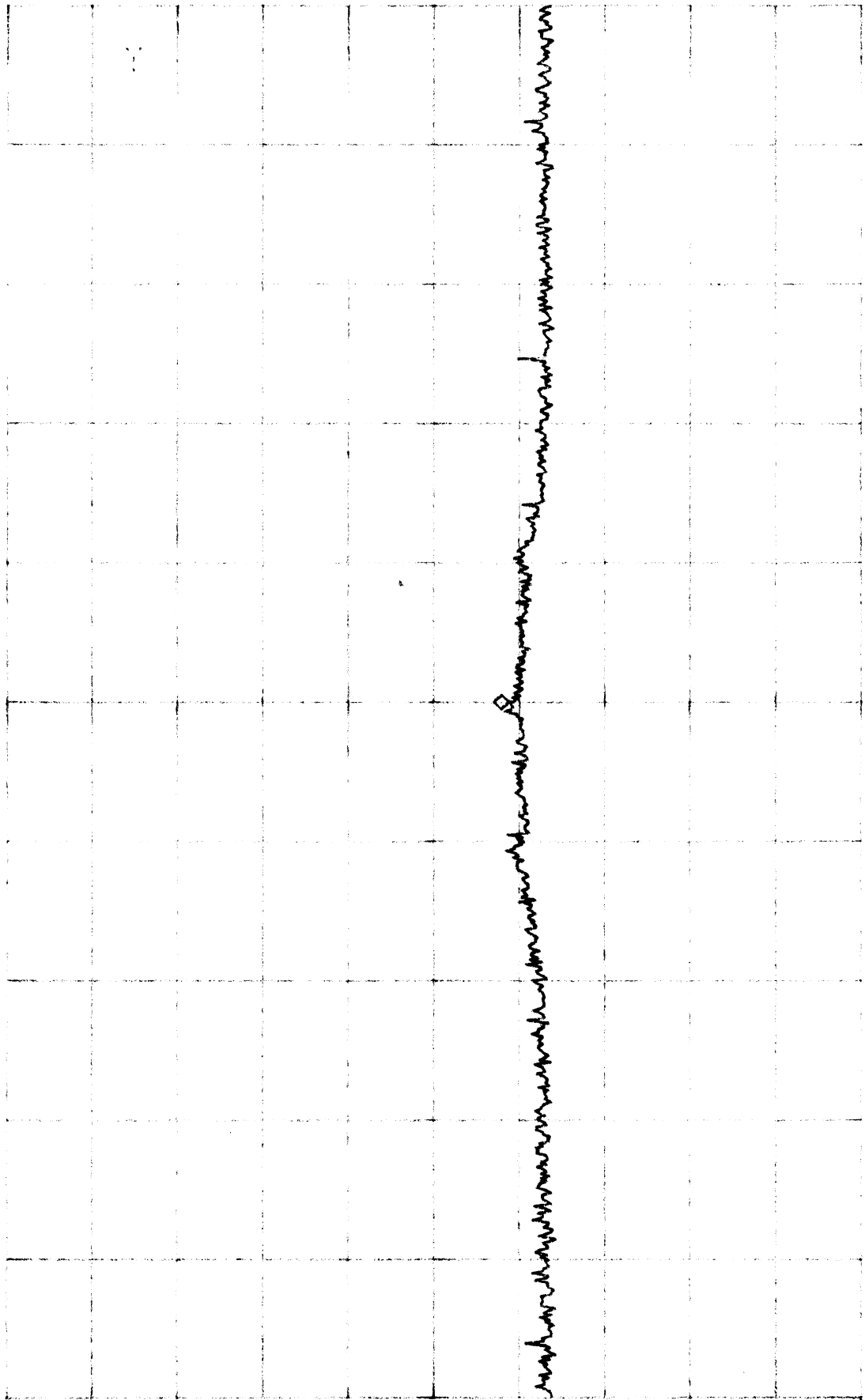
Y-axis: 0, 1, 2, 3, 4
X-axis: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10



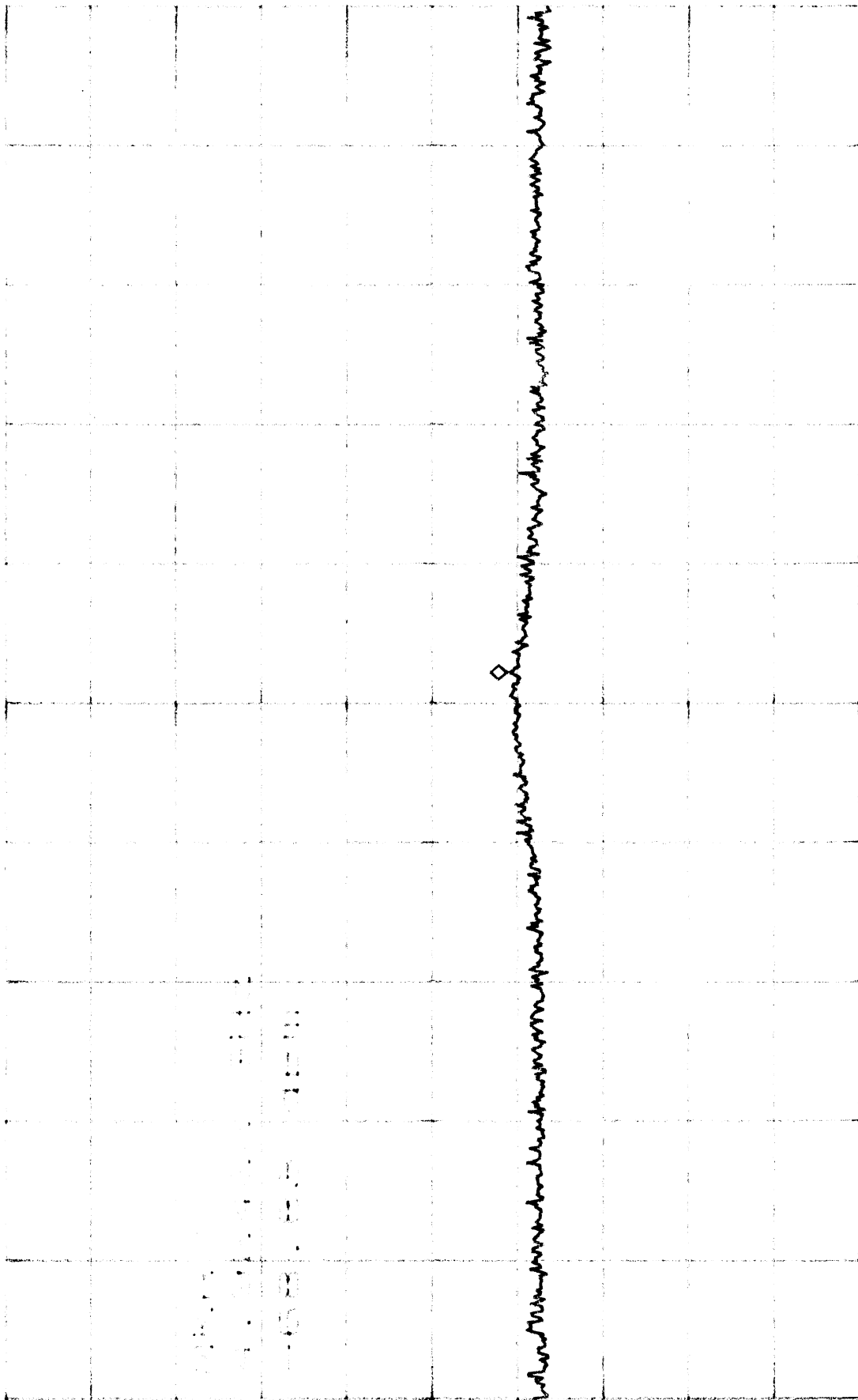
$y = x^2 - 4x + 4$



Handwritten text, possibly a signature or date, located at the bottom right of the page.



*HBW 1. ONI:2



7.6.2 Radiated Spurious Emissions(cont.)

Table 8: 480424-3411 4/6 dBi Patch

Channel	Data Rate (Mbps)	Frequency (MHz)	Antenna Distance (m)	Receiver Level (dBm)	Correction Factors (dB)	Corrected Level (dBm)	Corrected Level (uV/m)	Limit (uV/m)	Margin (uV)
1	2	4824	1	-65.17	7.48	-57.69	292.05	5000	4707.95
	5.5	4818	1	-66.33	7.46	-58.87	254.96	5000	4745.04
	11	4824	1	-66.67	7.48	-59.19	245.73	5000	4754.27
7	2	4884	1	-68.83	7.68	-61.15	196.05	5000	4803.95
	5.5	4878	1	-70.17	7.66	-62.51	167.64	5000	4832.36
	11	4889	1	-69.67	7.69	-61.98	178.31	5000	4821.69
11	2	4924	1	-66.50	7.81	-58.69	260.29	5000	4739.71
	5.5	4919	1	-67.00	7.79	-59.21	245.26	5000	4754.74
	11	4924	1	-66.50	7.81	-58.69	260.29	5000	4739.71

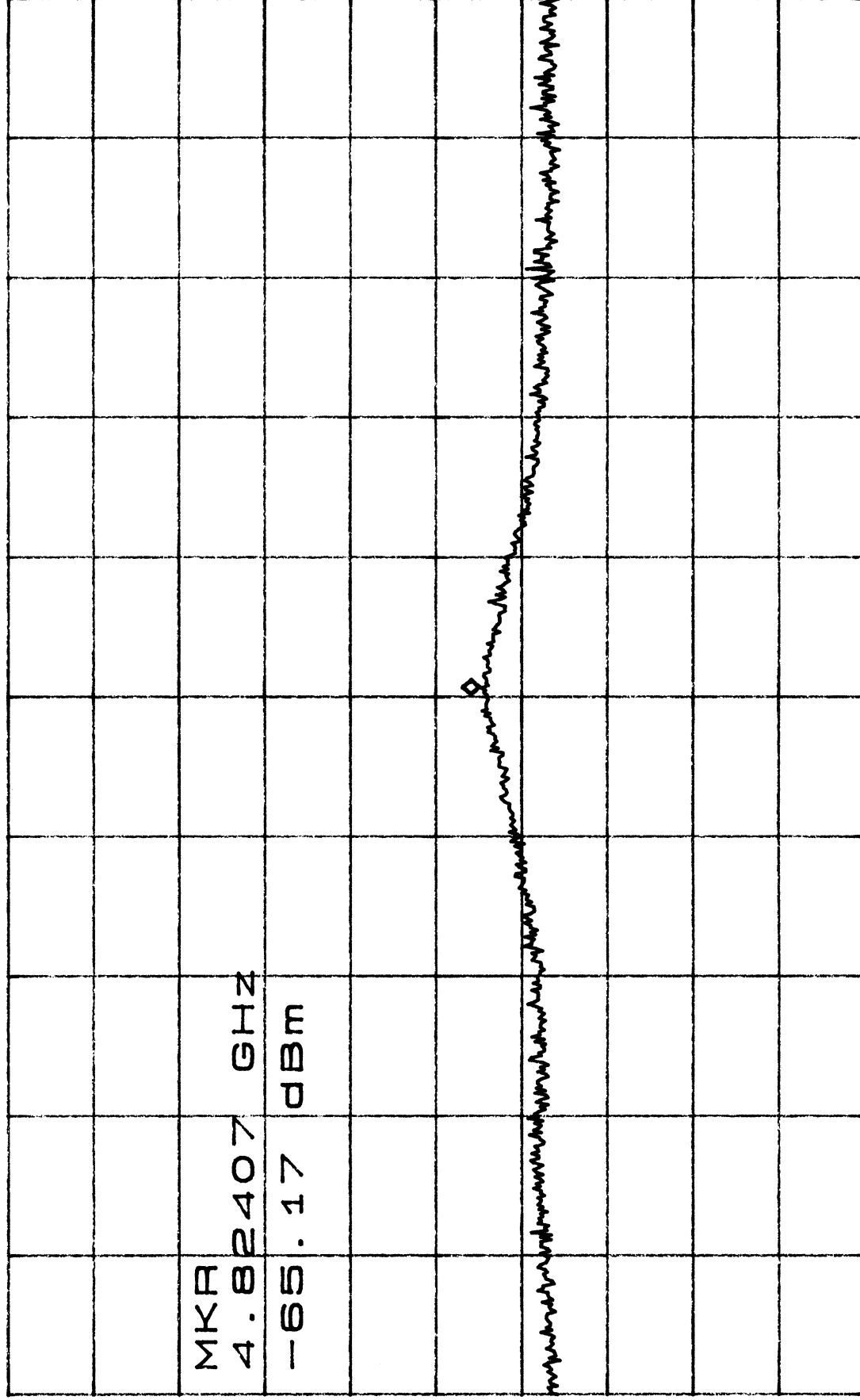
*ATTEN 0dB

MKR -65.17dBm

RL -10.0dBm

10dB/

4.82407GHz



CENTER 4.82400GHz

SPAN 10.00MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50ms

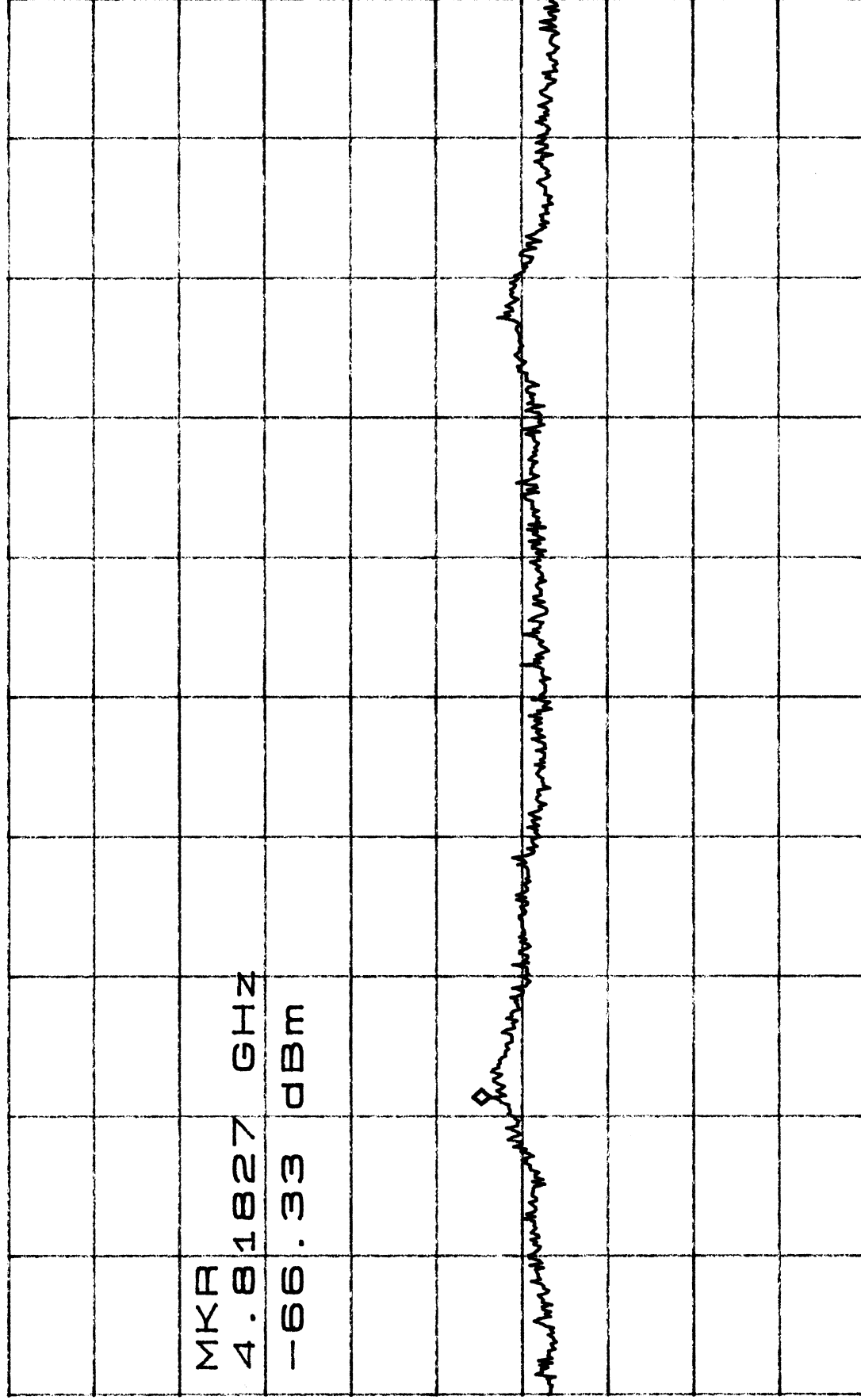
*ATTEN 0dB

MKR -66.33dBm

RL -10.0dBm

10dB/

4.81827GHz



CENTER 4.82400GHz

SPAN 20.00MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50ms

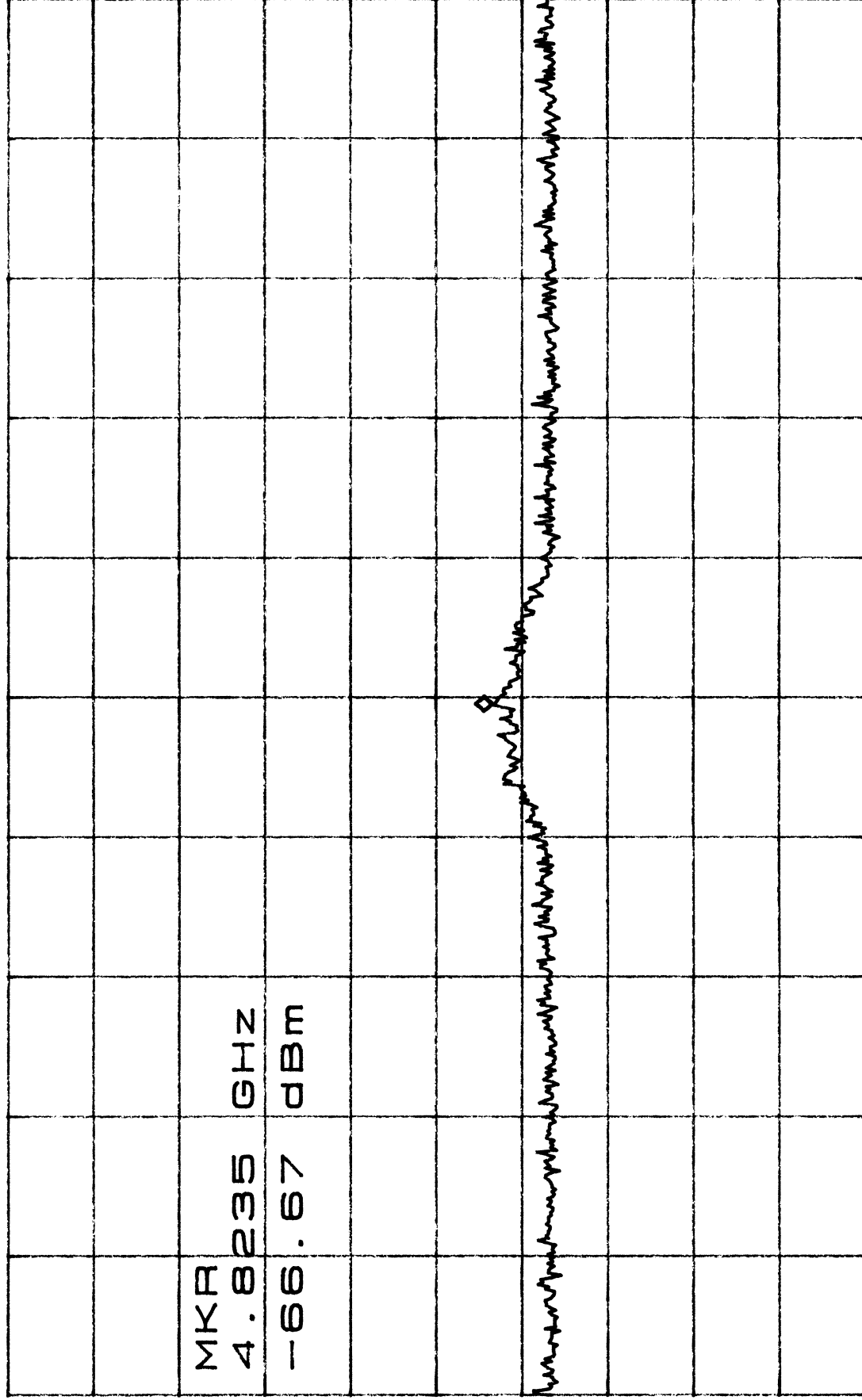
*ATTEN 0dB

MKR -66.67dBm

RL -10.0dBm

10dB/

4.8235GHz



CENTER 4.8240GHz

SPAN 100.0MHz

*RBW 1.0MHz

*VBW

1.0MHz

SWP 50ms

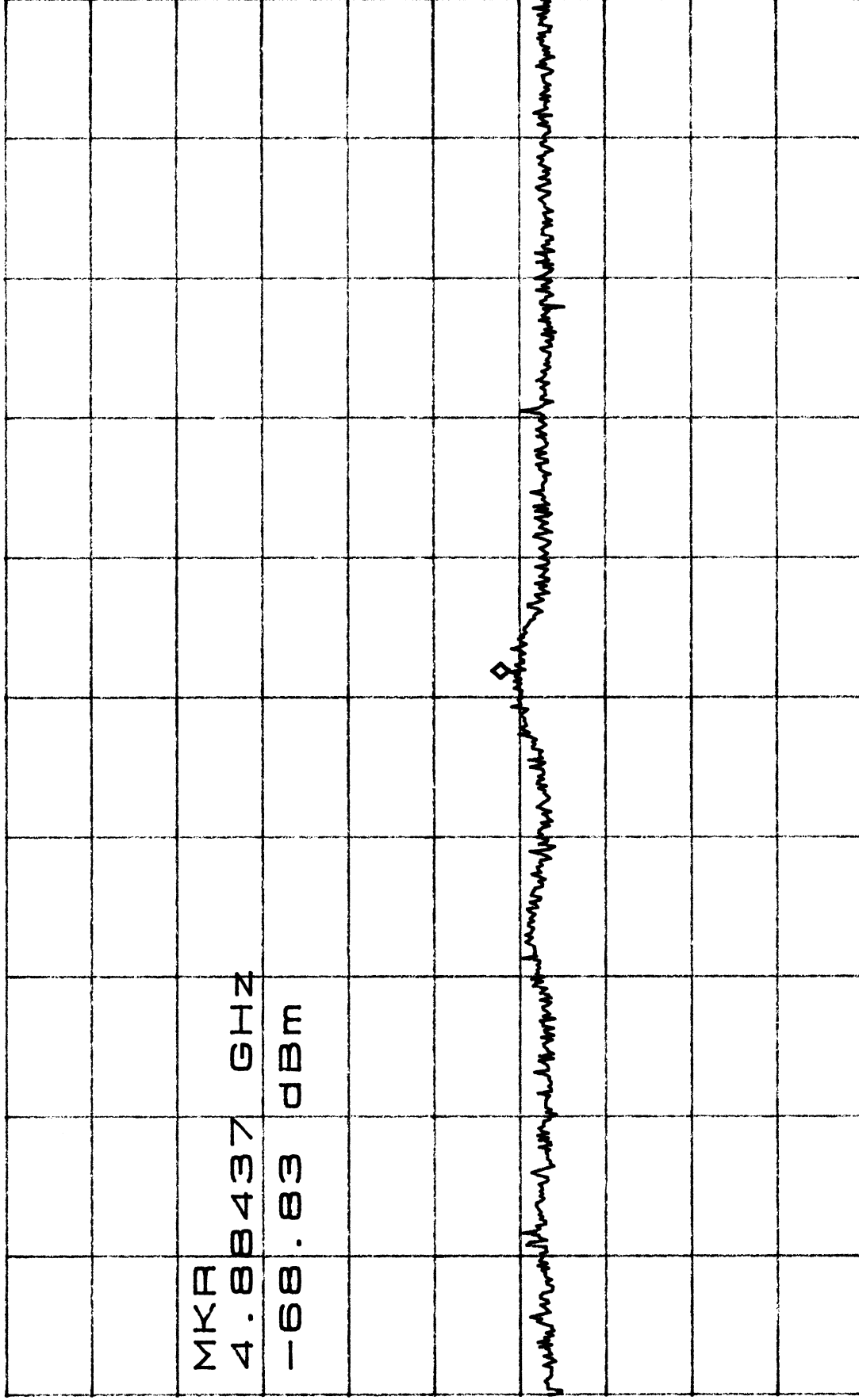
*ATTEN 0dB

MKR -68.83dBm

RL -10.0dBm

10dB/

4.88437GHz



CENTER 4.88400GHz

SPAN 20.00MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50ms

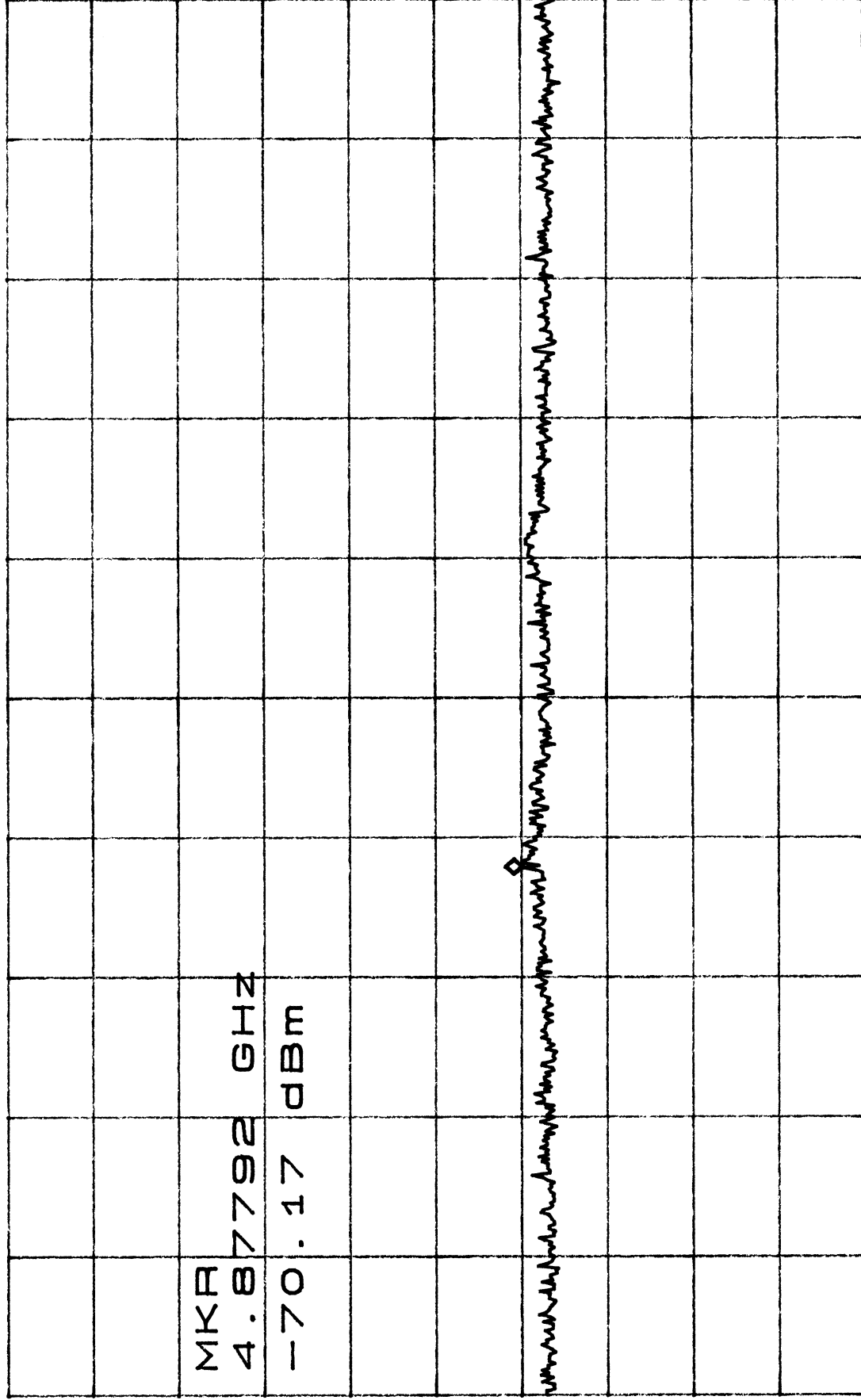
*ATTEN 0dB

MKR -70.17dBm

RL -10.0dBm

10dB/

4.87792GHz



CENTER 4.88400GHz

SPAN 50.00MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50ms

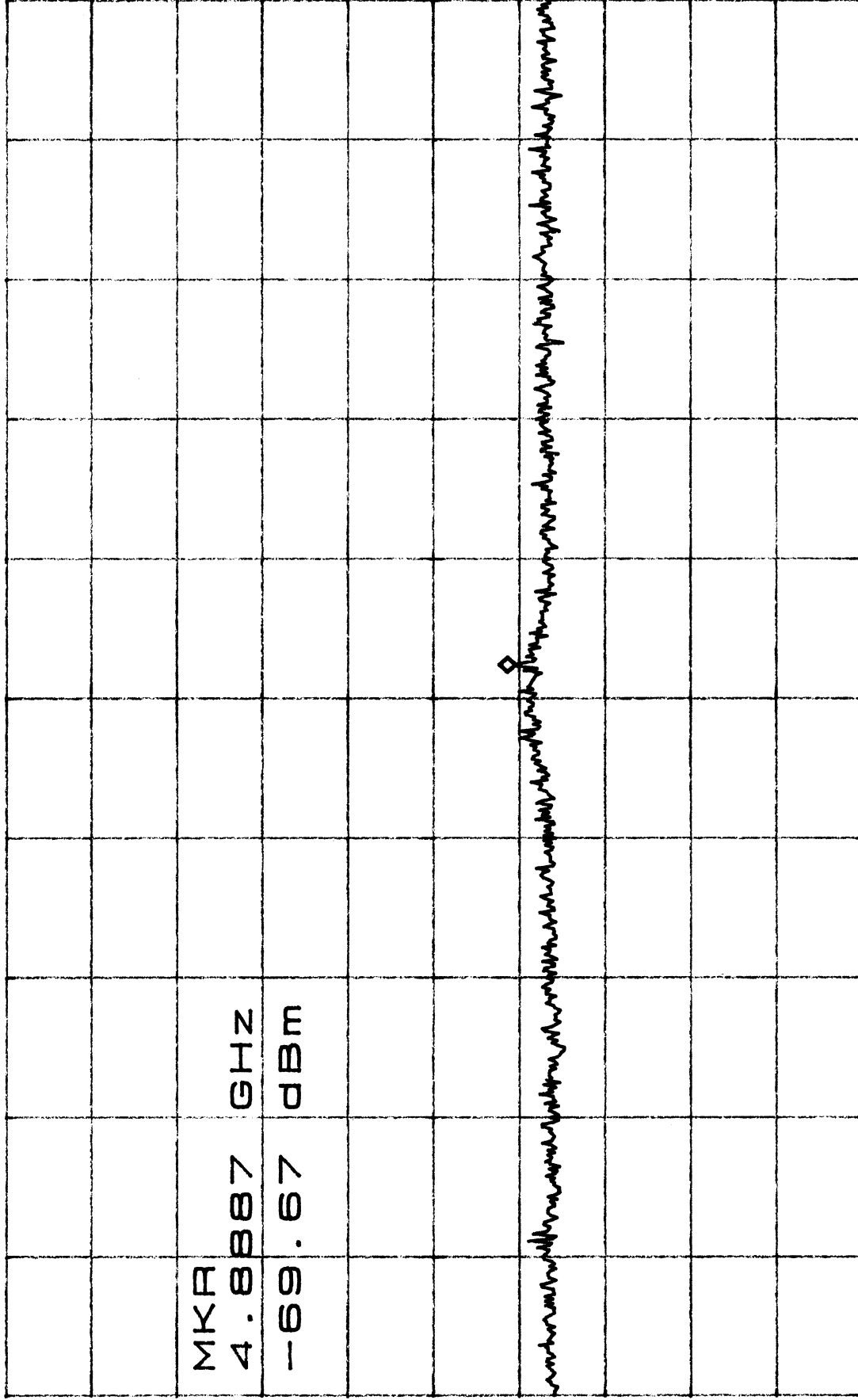
*ATTEN 0dB

MKR -69.67dBm

RL -10.0dBm

10dB/

4.8887GHz



CENTER 4.8840GHz

SPAN 200.0MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50ms

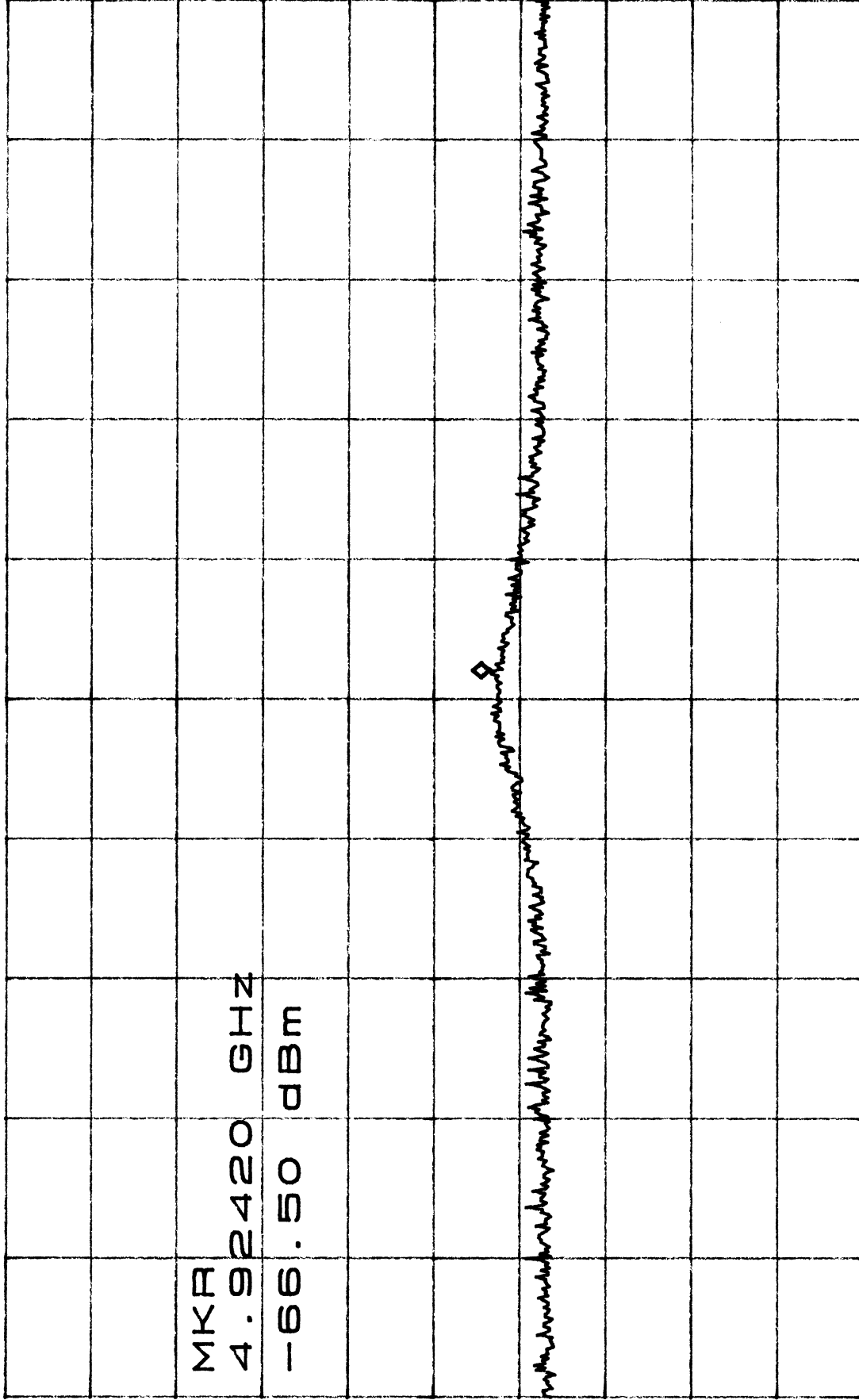
*ATTEN 0dB

MKR -66.50dBm

RL -10.0dBm

10dB/

4.92420GHz



CENTER 4.92400GHz

SPAN 10.00MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50ms

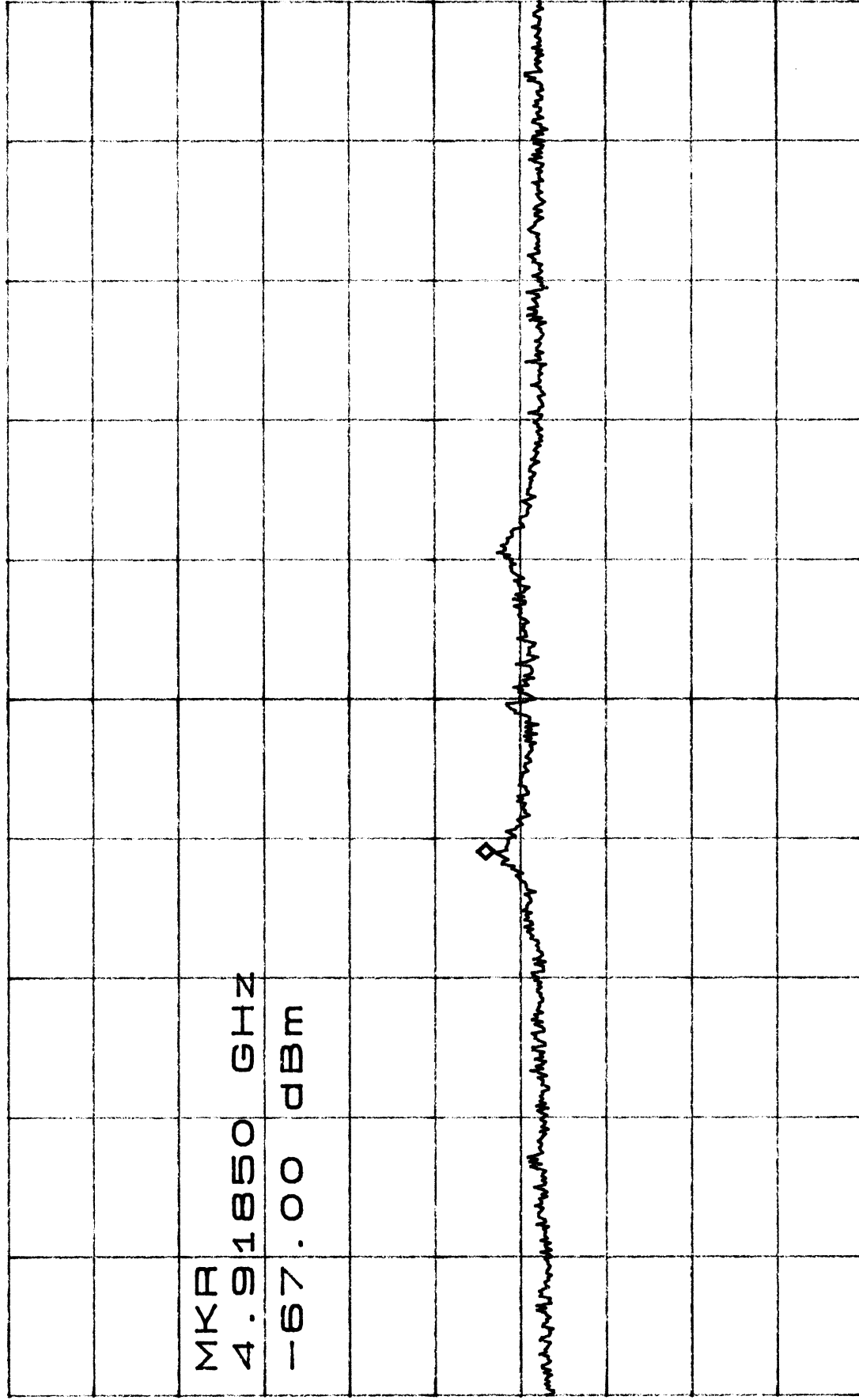
*ATTEN 0dB

MKR -67.00dBm

RL -10.00dBm

10dB/

4.91850GHZ



CENTER 4.92400GHZ

SPAN 50.00MHZ

*RBW 1.0MHZ

*VBW 1.0MHZ

SWP 50ms

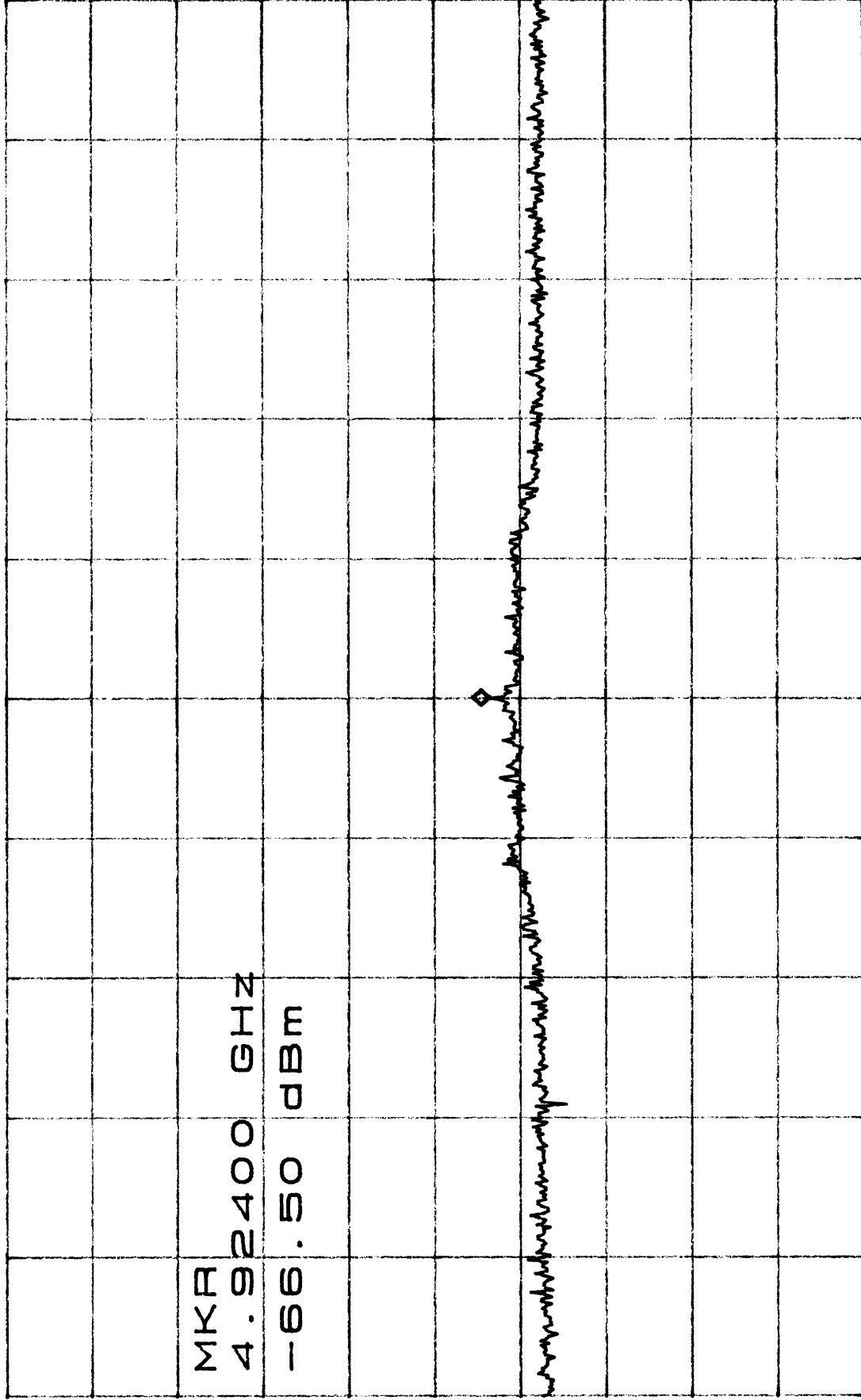
*ATTEN 0dB

MKR -66.50dBm

RL -10.0dBm

10dB/

4.92400GHZ



CENTER 4.92400GHZ

SPAN 50.00MHZ

*RBW 1.0MHZ

*VBW 1.0MHZ

SWP 50ms

Table 9: 480424-0411 - 9dBi Omni

Channel	Data Rate (Mbps)	Frequency (MHz)	Antenna Distance (m)	Receiver Level (dBm)	Correction Factor - CF _T (dB)	Corrected Level (dBm)	Corrected Level (uV/m)	Limit (uV/m)	Margin (uV)
1	All	4826	1	-72.33*	7.49	-64.84	128.17	5000	4871.83
		7230	1	-71.50*	11.80	-59.70	231.84	5000	4768.16
		9652	1	-70.58*	14.46	-56.12	349.88	5000	4650.12
7	All	4882	1	-72.25*	7.67	-64.58	132.14	5000	4867.86
		7324	1	-73.08*	12.00	-61.08	197.64	5000	4802.36
		9764	1	-70.58*	14.65	-55.93	357.63	5000	4642.37
11	All	4917	1	-71.50*	7.79	-63.71	145.98	5000	4854.02
		7387	1	-70.92*	12.13	-58.79	257.25	5000	4742.75
		9845	1	-70.83*	14.79	-56.04	353.04	5000	4646.96

*Noise Floor Measurement

Correction Factors

AF = Antenna Factor

CA = Cable Attenuation

AG = Amplifier Gain

RL = Receiver Level

RC = Range Correction = $20\log(D1/D2)$ Where D1 is the specified distance used and D2 is the distance used to make measurements = $[20\log(3/1)] = 9.54$ dB

Therefore:

CF_T = Total Correction Factor = RL+AF+CA-AG-RC**Sample Calculations**Corrected Level(dBm) = RL+ CF_TConversion from dBm to uV/m = $\text{Antilog}(\text{dBm} + 107)/20$

Anders och hans hustru gifte sig i Stockholm den 17 Mars 1772. Anders var då 24 år gammal och hustrun 21 år gammal. De hade tillsammans 10 barn, 5 söner och 5 döttrar. De bodde i Stockholm på Södra Sjöströmen. Anders var en rik man och hade många ägodelar. Han var också en god älskare och hade många älskarinnor. Hans hustru var en god hustru och hade många älskare. De hade en god vänskap och var mycket kär till varandra. De hade också många barn och var mycket kär till dem. De levde ett lyckligt liv tillsammans i Stockholm.

1. The first part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them.

8.7 Power Spectral Density - FCC Section 15.247(d)

The spectral density was measured in accordance with OET bulletin 97-114, appendix C. The EUT was caused to generate a constant carrier on a high, middle and low channels at all the available data rates. The results are recorded in Table 7 below. Plots were also taken of each of the emissions and can be found in order, in appendix C of this report.

Table 10: Spectral Density

Channel	Data Rate (Mbps)	Receiver Level (dBm)	Limit (dBm)	Margin (dB)
1 (2412 MHz)	2	-9.50	8	17.50
	5.5	-10.17	8	18.17
	11	-8.17	8	16.17
7 (2442 MHz)	2	-3.17	8	11.17
	5.5	-9.33	8	17.33
	11	-8.00	8	16.00
11 (2462 MHz)	2	-3.17	8	11.17
	5.5	-10.50	8	18.50
	11	-8.00	8	16.00



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Appendix C

Power Spectral Density Plots

LXE Model: 480628-4096

FCC ID: KDZ480628-4096

Issue Date: January 19, 2000

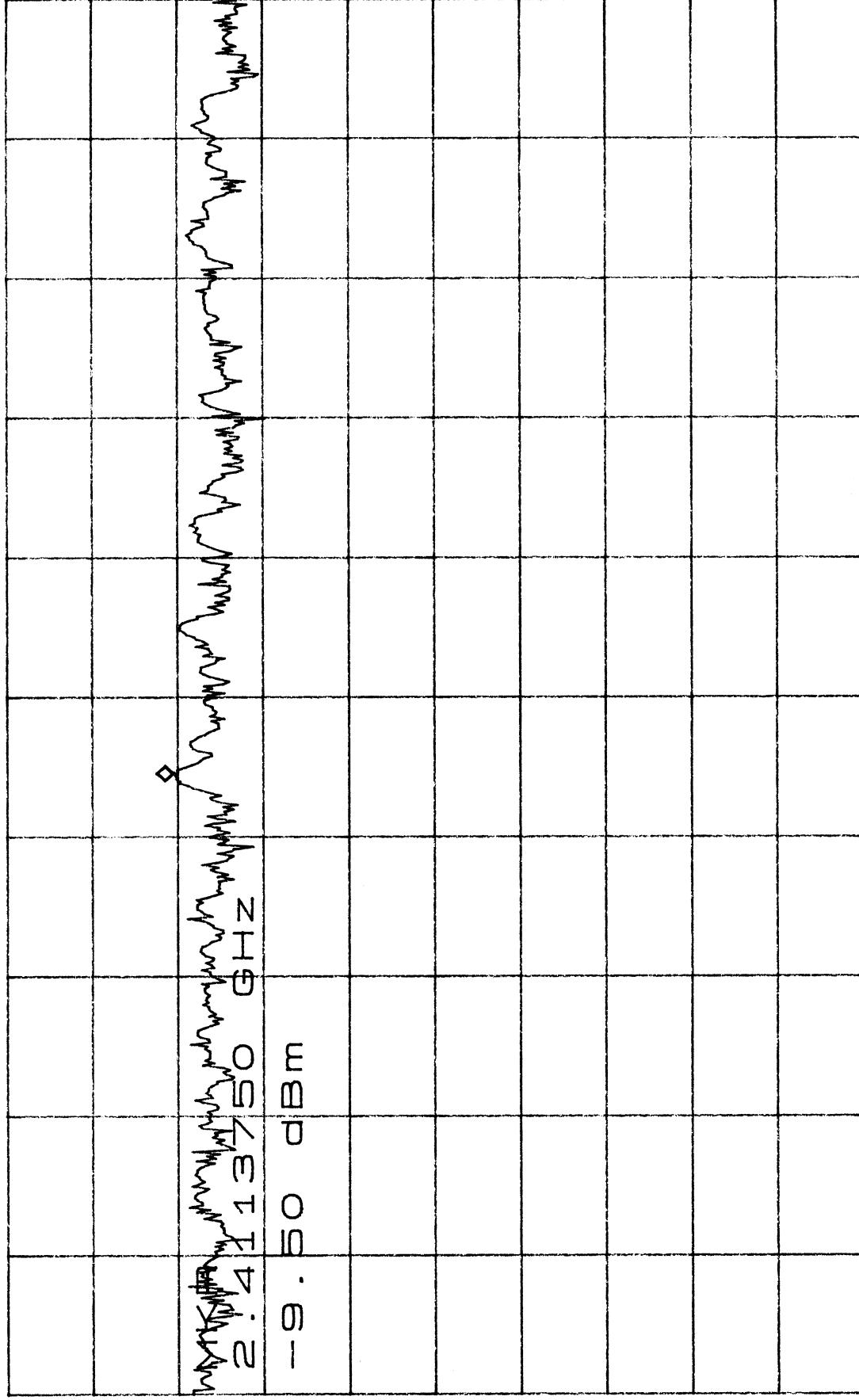
*ATTEN 20dB

MKR -9.50dBm

RL 10.0dBm

10dB/

2.4113750GHZ



CENTER 2.4113750GHZ

SPAN 300.0KHZ

*RBW 3.0KHZ

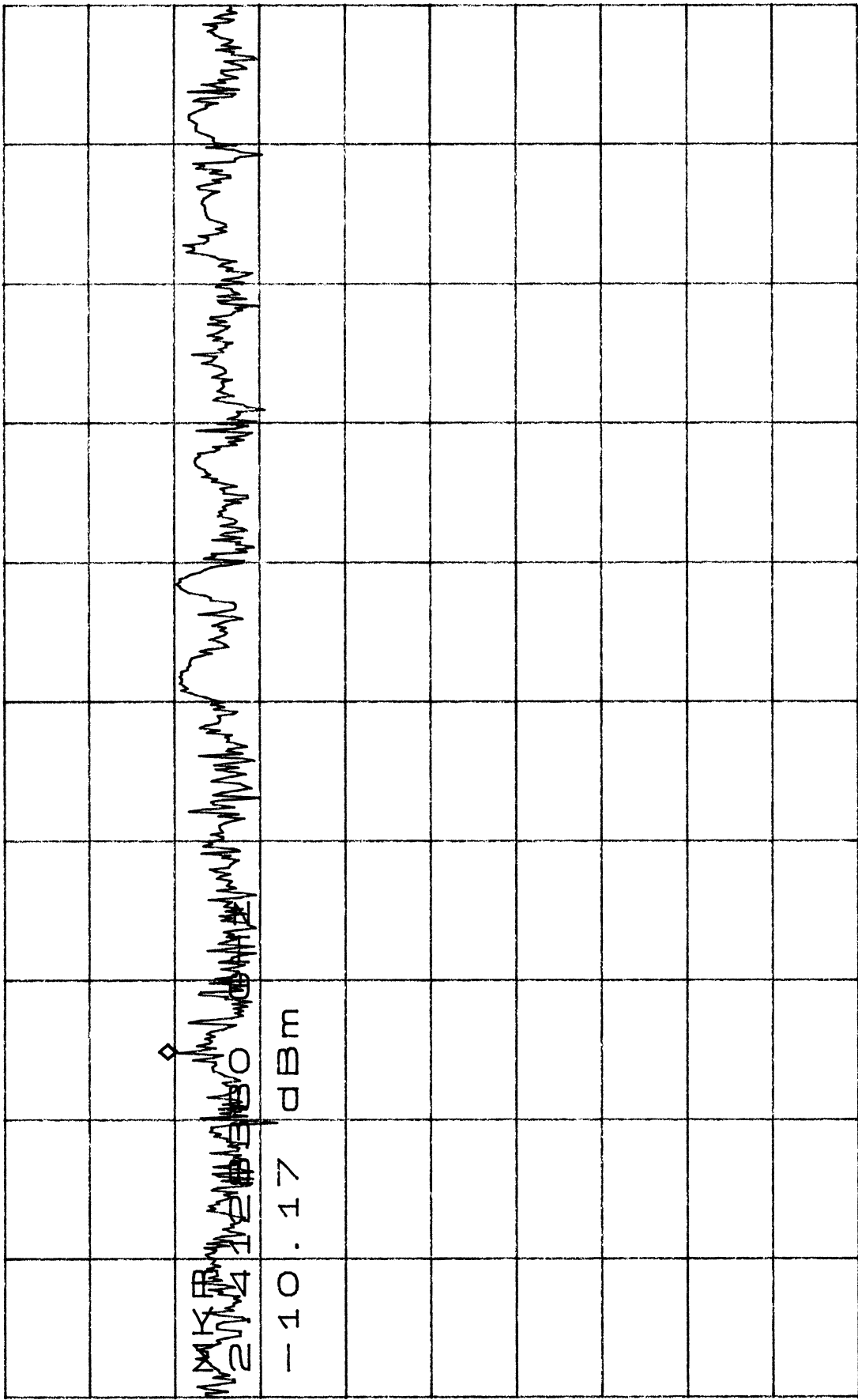
*VBW 100KHZ

*SWP 100sec

*ATTEN 20dB
RL 10.0dBm

MKR -10.17dBm
2.4128380GHz

10dB/



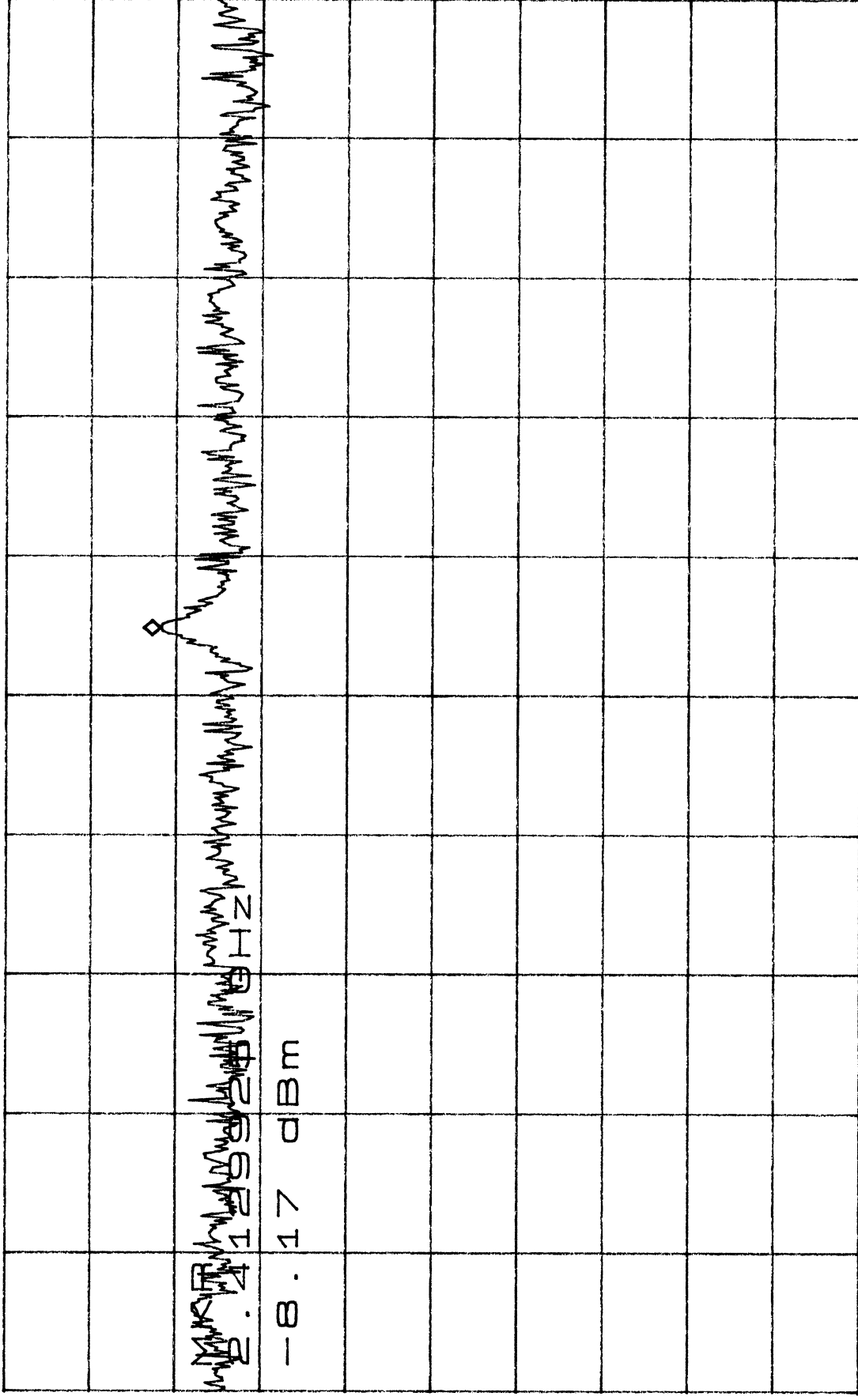
CENTER 2.4129135GHz SPAN 300.0KHz
*RBW 3.0KHz *VBW 100KHz *SWP 100sec

*ATTEN 20dB

MKR -8.17dBm

RL 10.0dBm

10dB/ 2.4129925GHz



START 2.4128280GHz STOP 2.4131280GHz

*RBW 3.0kHz *VBW 300kHz *SWP 100sec

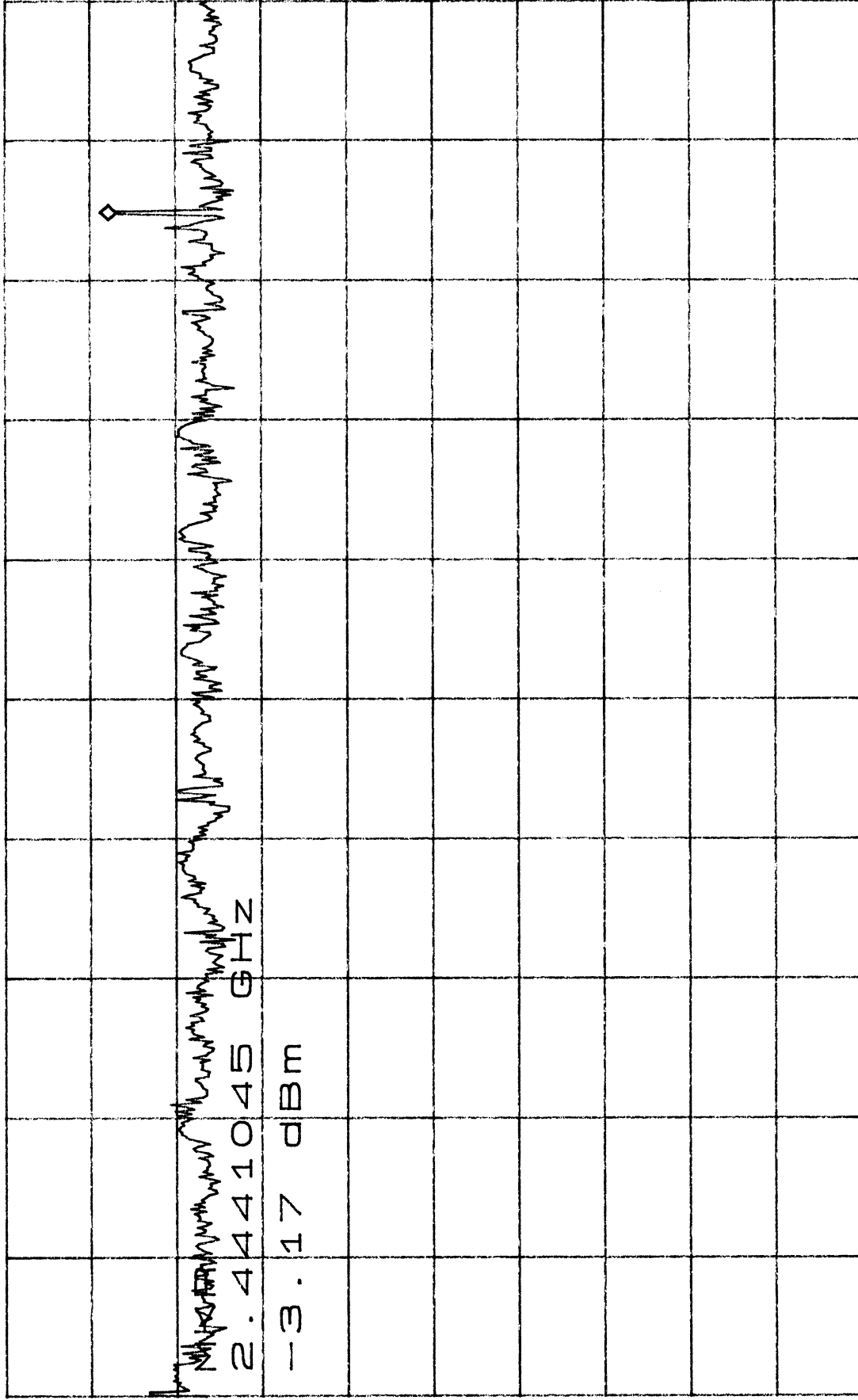
*ATTEN 20dB

MKR -3.17dBm

RL 10.0dBm

10dB/

2.4441045GHz



CENTER 2.4440000GHZ

SPAN 300.0KHZ

*RBW 3.0KHZ

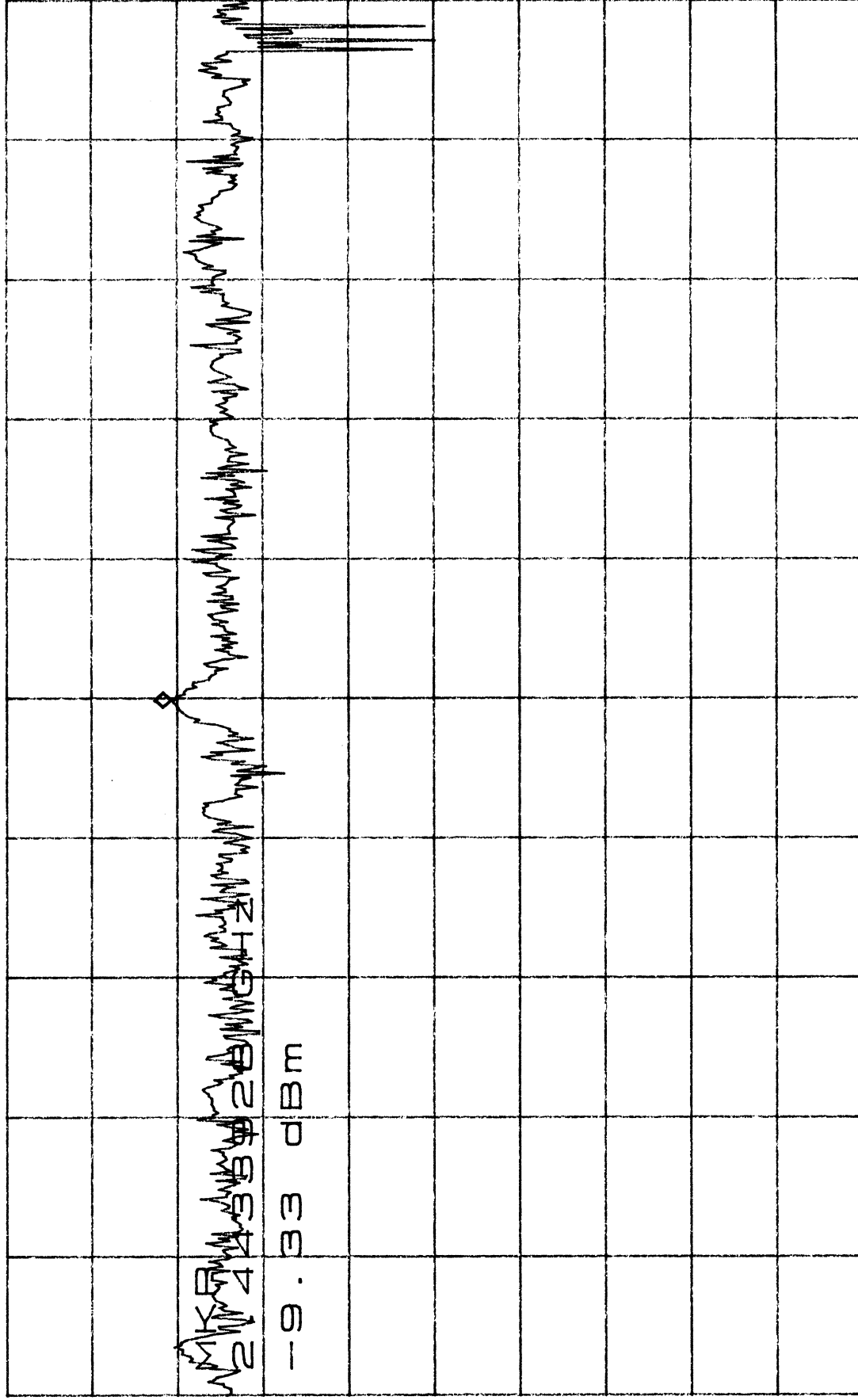
*VBW 100KHZ

*SWP 100sec

*ATTEN 20dB
RL 10.0dBm

MKR -9.33dBm
2.4433928GHz

10dB/



CENTER 2.4433933GHz
SPAN 300.0KHz
*RBW 3.0KHz *VBW 100KHz *SWP 100Sec

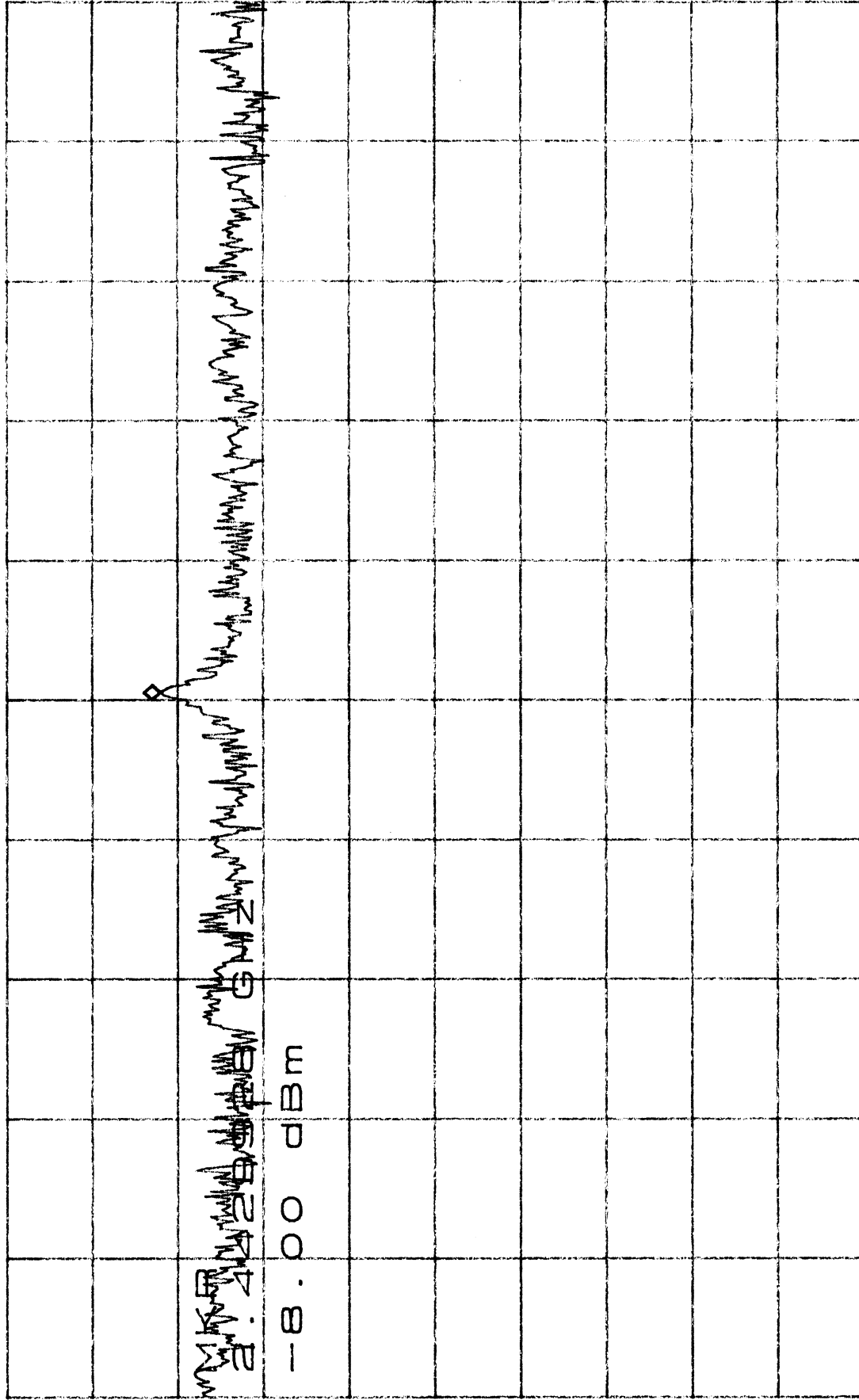
*ATTEN 20dB

MKR -8.00dBm

RL 10.0dBm

10dB/

2.4429928GHz



CENTER 2.4429913GHz

SPAN 300.0KHz

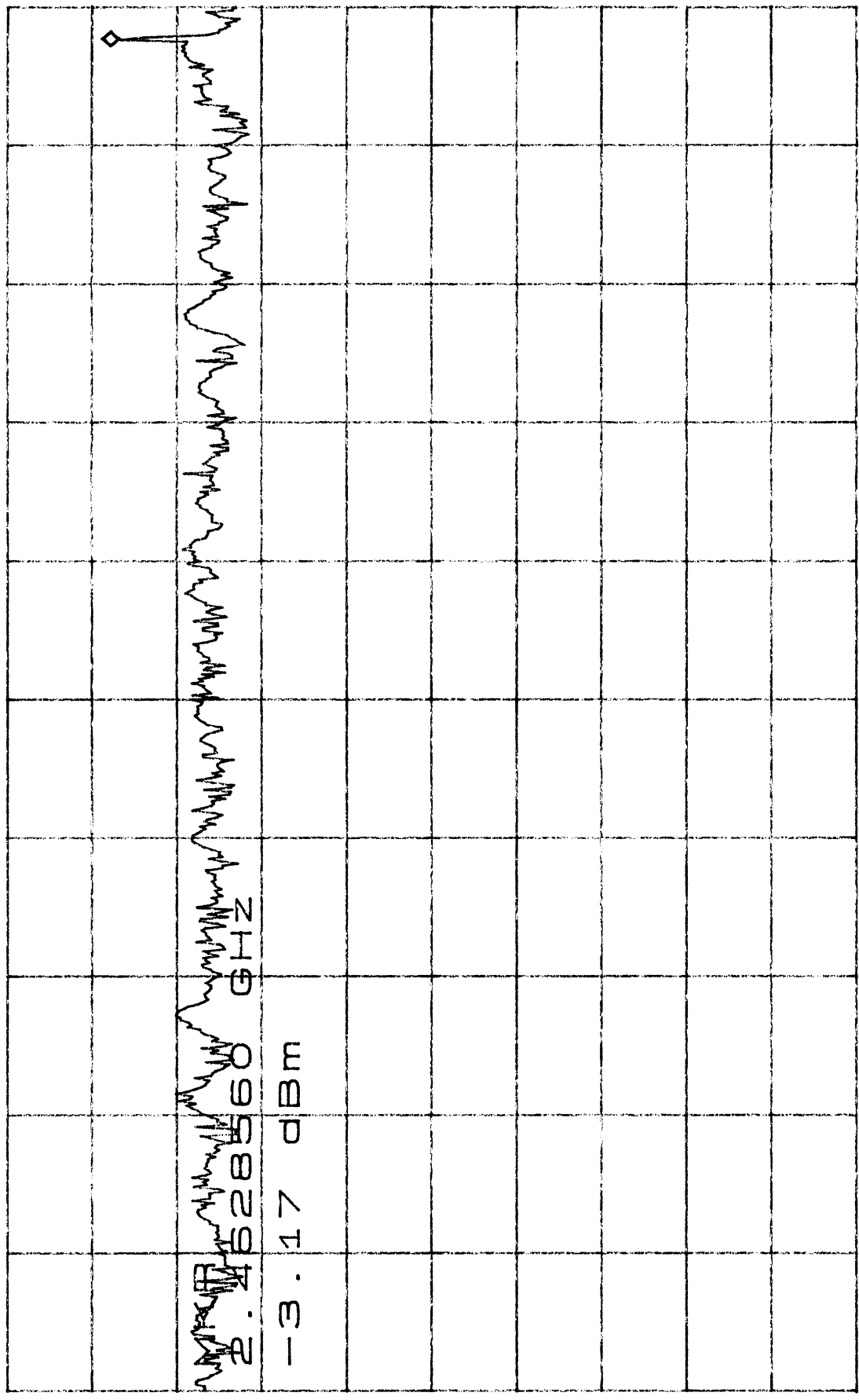
*RBW 3.0KHz

*VBW 100KHz

*SWP 100sec

*ATTEN 20dB
RL 10.0dBm

MKR -3.17dBm
2.4628560GHz

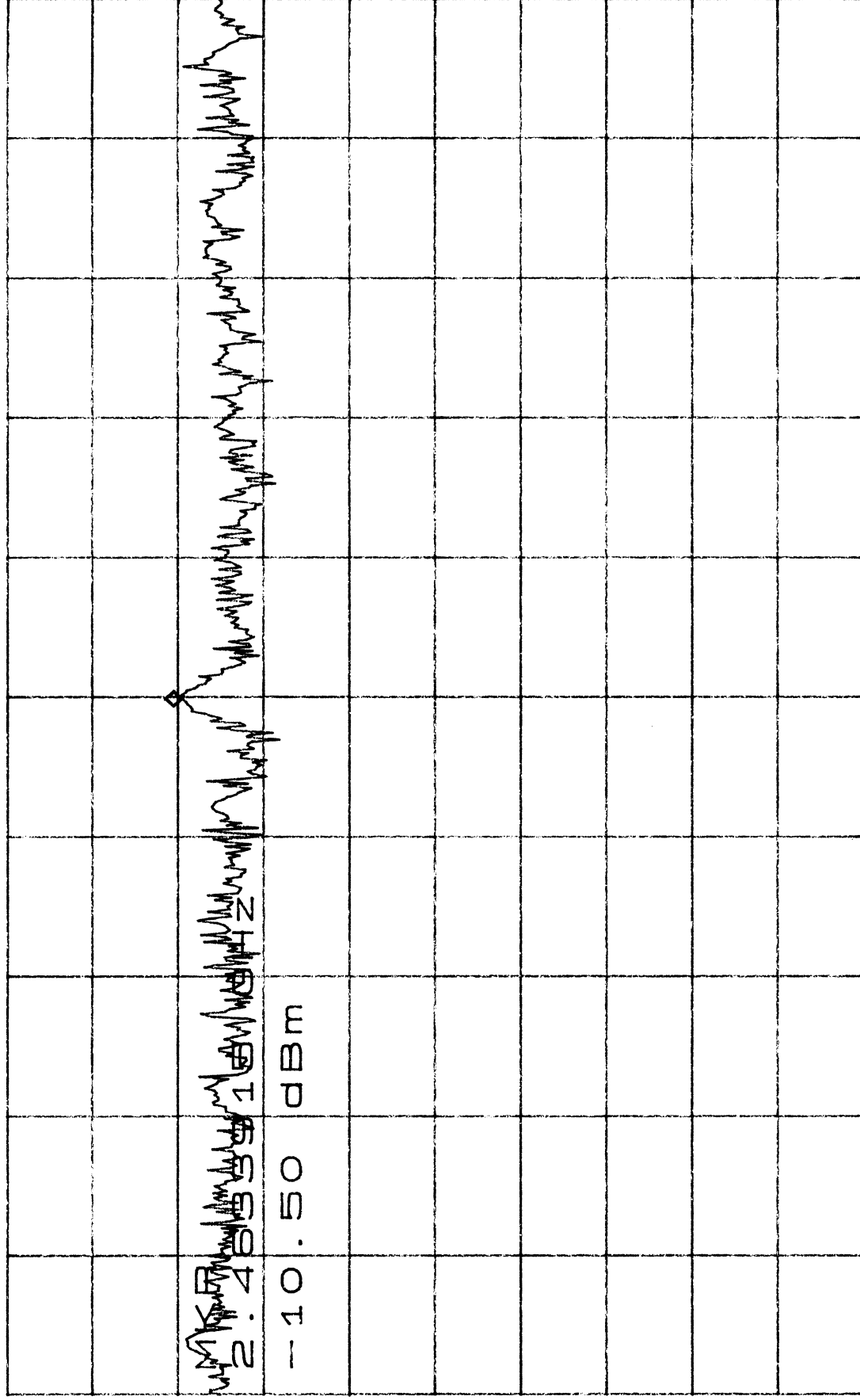


CENTER 2.4627130GHz SPAN 300.0KHz
*RBW 3.0KHz *VBW 100KHz *SWP 100sec

*ATTEN 20dB
RL 10.0dBm

MKR -10.50dBm
2.4633915GHz

10dB/



CENTER 2.4633920GHz
*RBW 3.0kHz *VBW 100kHz
SPAN 300.0kHz *SWP 100sec

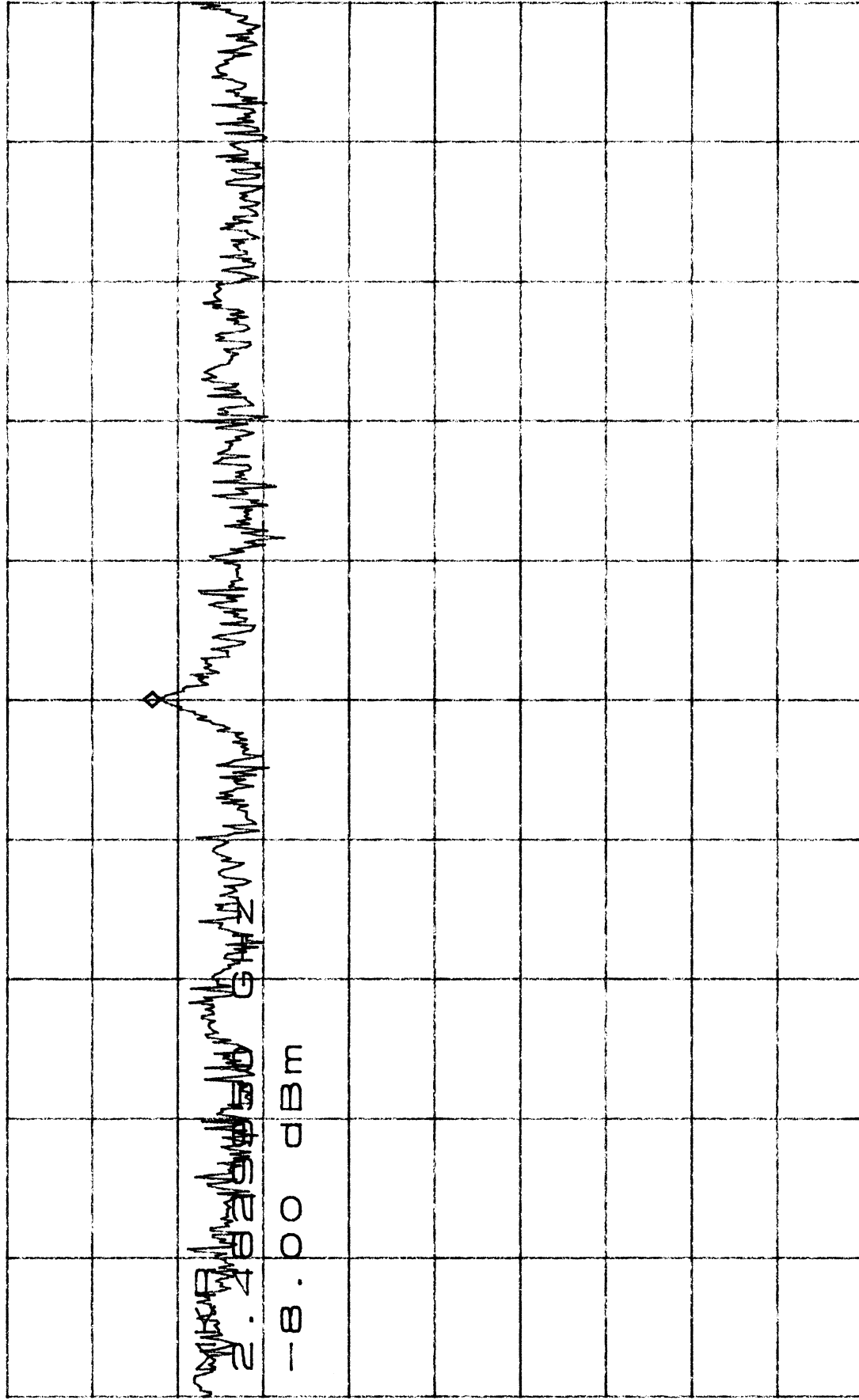
*ATTEN 20dB

MKR -8.00dBm

RL 10.0dBm

10dB/

2.4629950GHz



CENTER 2.4629950GHz

SPAN 300.0KHz

*RBW 3.0KHz

*VBW 100KHz

*SWP 100sec