



125 Technology Parkway  
Norcross, Georgia, US 30092

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## Test Report

LXE Model: 6526

FCC ID: KDZLXE6526M

Direct Sequence Spread  
Spectrum Transmitter

## Mobile Equipment Certification

Applicant: LXE Inc.  
125 Technology Parkway  
Norcross, GA 30092

Purpose of Testing: To demonstrate compliance with FCC Part 15 Subpart C

Prepared By:

  
R. Sam Wismer  
Lead Regulatory Engineer

Reviewed By:

  
Cyril Binnom  
EMI/EMC Engineer

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## **1.0 GENERAL**

### **1.1 Introduction**

The purpose of this report is to demonstrate compliance with Part 15, Subpart C of the FCC's Code of Federal Regulations.

### **1.2 Product Description**

#### **1.2.1 General**

The Equipment Under Test(EUT) is the LXE Model 6526 2.4GHz Spread Spectrum transceiver. It is offered with three capabilities of Wired Equivalent Privacy(WEP). LXE part numbers for the three versions are:

- 480631-4710 - No WEP
- 480631-4410 - 40 bit WEP
- 480631-4610 - 128 bit WEP

The differences in the three version are insignificant for this filing as the transmitter portion of all three versions are identical. The degree of WEP only determines how the data is processed after it has been received or before it has been transmitted.

The LXE 6526 is an OEM Direct Sequence Spread Spectrum product manufactured by Cisco Systems. It is IEEE 802.11b compliant and operates in the band of 2400-2483.5 GHz. The radio is capable of 4 data rates and self adjusts to the most appropriate rate depending on the performance required. The data rates are 11, 5.5, 2 and 1 Mbps, where 11 Mbps gives the maximum throughput for data transfer, and 1 Mbps gives the best coverage where only small data packets are sent.

The radio has 2 ports. The main port is TX/RX and the auxiliary port is RX only. The card can be used either with a single antenna scheme in the main port, or a diverse antenna scheme using both ports.

#### **1.2.1 Intended Use**

The LXE 6526 transceiver is intended to be integrated into LXE terminals defined as mobile and portable according to section 2.1091 and 2.1093 respectively of the FCC rules. Portable terminals identified in this report are hand-held devices only and are not intended to be used on the body. Users instructions are being updated to inform the user of the correct way to use these device in such a manner as to maintain a distance of 20cm from the rest of the body. Detailed operating configurations and exposure conditions are included in the RF safety submittal of this filing.

A separate certification has been obtained for this same radio for LXE devices defined as portable that are intended to be used on the operators body. The FCC ID for this certification is KDZLXE6526P.

Terminals currently targeted for integration of the 6526 radio card are the MX1, MX2, 2325, 1380, 1390, VX1 VX2. These terminals are LXE PC based mini-computers equipped with PCMCIA slots to accommodate the various radio cards offered, or they can be used as batch terminals with no radio card at all. For batch operations, the PCMCIA slots are utilized as memory or storage space enhancements.

All terminals have been evaluated to, and found to comply with, FCC Part 15, Subpart B, Class A, and in some cases Class B emission requirements.

### 1.2.2 Technical Specifications

**Table 1: Specifications**

|                                 |                                                                                   |
|---------------------------------|-----------------------------------------------------------------------------------|
| Frequency Band                  | 2400-2483.5 MHz                                                                   |
| Number of Channels              | 11                                                                                |
| Modulation Technique            | BPSK 1 Mbps<br>QPSK 2 Mbps<br>CCK 5.5 and 11 Mbps                                 |
| Interface                       | PC Card Type II Size                                                              |
| Dimensions                      | 85.0 mm X 53.95 mm X 5.0 mm (PC Card)                                             |
| Output power                    | 14 dBm nominal                                                                    |
| Power Consumption PC Card       | Doze mode 10 mA<br>Receive mode 280 mA<br>Transit mode 400 mA at max output power |
| Temperature Range (operational) | 0-70°C 95% max. humidity (non condensing)                                         |
| Operating Systems               | Windows 95<br>Windows 98<br>Windows NT®<br>Windows 2000                           |
| Standards                       | IEEE 802.11b                                                                      |
| Regulations                     | FCC Part 15 Subpart C<br>RSS 139 & RSS 102<br>ETS 300 328 & 300 826               |

### 1.2.3 Antennas

Table 1 below gives the antennas we wish to add with this filing. In addition it identifies the terminal devices in which each antenna will be used with the transmitter. These terminal devices are further described in section 1.2 and in the RF safety submittal of this filing.

**Table 1: New Antennas**

| LXE Part Number                                            |             | Mfg.        | Mfg.<br>P/N  | Antenna<br>Type | Gain<br>(dBi) | Terminal<br>Used With        | Terminal<br>Type | System<br>EIRP<br>(dBm) |
|------------------------------------------------------------|-------------|-------------|--------------|-----------------|---------------|------------------------------|------------------|-------------------------|
| Antennas Submitted With Original Application on 12/20/2000 |             |             |              |                 |               |                              |                  |                         |
| 1                                                          | 155104-0001 | LXE         | 155104-0001  | Omni            | 0             | MX1                          | Hand-Held Only   | 13.87                   |
| 2                                                          | 153180-0001 | Cushcraft   | RTN2400SXR   | Omni            | 0             | 1380/1390<br>VX1/VX2<br>1590 | Vehicle Mount    | 13.87                   |
| 3                                                          | 990004-0027 | Huber&Suner | 9090.16.0001 | Omni            | 1.8           | 2325                         | Hand-Held Only   | 15.67                   |
| 4                                                          | 154591-0001 | LXE         | 154591-0001  | Patch           | 0             | MX1                          | Hand-Held Only   | 13.87                   |
| 5                                                          | None        | Toko        | DAC2450CT1   | Omni            | 2.15          | MX2                          | Hand-Held Only   | 16.02                   |

### 2.0 LOCATION OF TEST FACILITY

The LXE test facility is located at the following address:

LXE, Inc.  
An Electromagnetic Sciences Company  
125 Technology Parkway  
Norcross, GA US 30092-2993

## 2.1 DESCRIPTION OF OPEN AREA TEST SITE

All tests were conducted at the manufacture's test facility at a location specifically prepared for this testing. The radiated emissions test site meets the characteristics of ANSI C63.4:1992, CISPR 16 and EN 55022:1998-. This site has been fully described and submitted to the FCC, and accepted in their letter marked 31040/SIT, 1300F2.

The open area test site(OATS) is located in the center of the rooftop of the building. The roof is located at a height of approximately 8 meters above the ground. The 3 meter radiated emissions test site is an open, flat area approximately 6.2m x 9.2m in dimension. All reflecting objects including test personnel lie outside the perimeter of the ellipse. The site has a ground plane which extends 2 meters past the mast and equipment under test(EUT). Material of the ground plane, comprised of individual 1/4" metal screen mesh rolls, were soldered at the seams with gaps smaller than 1/10 of the wavelength at 1000MHz. The ground plane is connected to the earth ground by ground rods. All wiring is done at floor level around the test site periphery.

A nonconductive remotely controlled turntable approximately 0.91m x 1.2m x 0.8m was used to measure radiated emissions from all sides of the EUT. The turntable has a center opening that allows cabling to be routed directly down to the conducting ground plane.

The radiated emissions test setup is shown in figure 1.

## 2.2 Radiated Emissions Testing Facility Drawing

All dimensions are in meters(m)

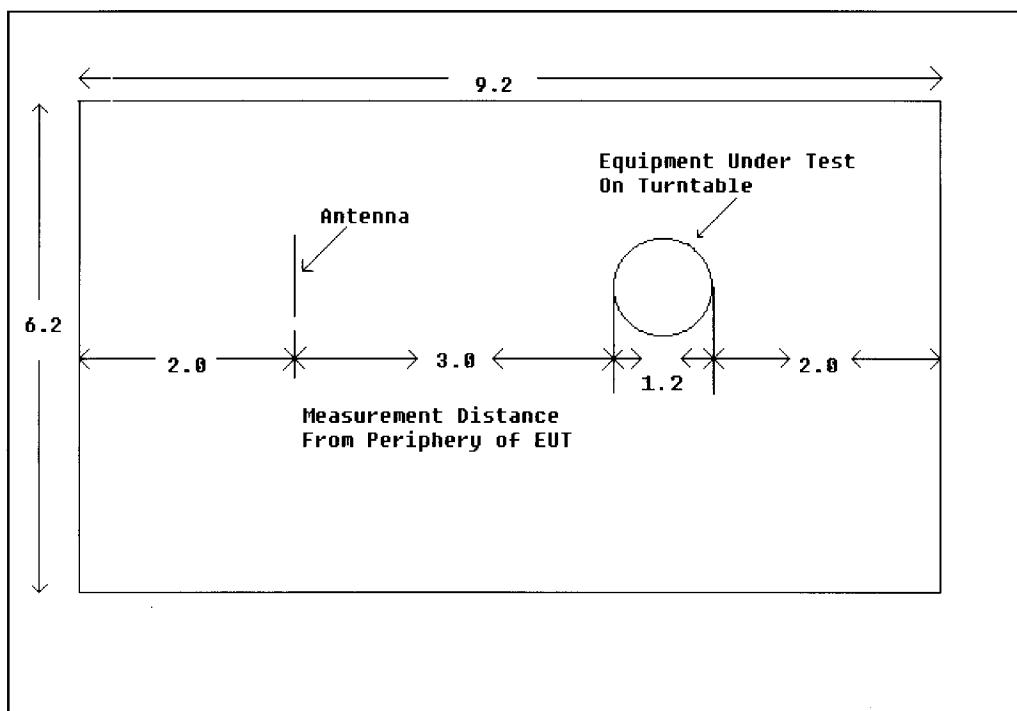


Figure 1: Open Area Test Site(OATS)

### 3.0 APPLICABLE STANDARD REFERENCES

The following standards were used:

- 1 - ANSI C63.4-1992: Method of Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the 9KHz to 40GHz
- 2 - US Code of Federal Regulations (CFR): Title 47, Part 15, Subpart C: Radio Frequency Devices, Intentional Radiators (October 1997)
- 3 - FCC Bulletin 97-114 Appendix C - Guidance on Measurements for Direct Sequence Spread Spectrum Systems
- 4 - FCC OET Bulletin 65 Appendix C - Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields

### 4.0 LIST OF TEST EQUIPMENT

All test equipment used for regulatory testing is calibrated yearly or according to manufacturers specifications. Some or all of the equipment shown below in table 2 was used during this testing.

**Table 2: Test Equipment**

| Cal # | MFG Name                | Item Name                     | Model #:   | Serial #    | Recal Date: |
|-------|-------------------------|-------------------------------|------------|-------------|-------------|
| 53    | Hewlett Packard         | Spectrum Analyzer             | 8563E      | 3304A00657  | 5/4/01      |
| 62    | Compliance Design, Inc. | Antenna, Dipole               | B1000      | 265         | 4/12/01     |
| 202   | Hewlett Packard         | Amp, .01-26.5 GHz             | 83006A     | 3104A00543  | 11/30/01    |
| 228   | Electro-Metrics         | Antenna                       | RGA-60     | 6165        | 8/20/01     |
| 229   | Electro-Metrics         | Antenna                       | RGA-60     | 6166        | 4/10/01     |
| 230   | EMCO                    | LISN                          | 3810/2NM   | 9505-1024   | 5/16/01     |
| 234   | EMCO                    | Antenna, Log Periodic         | 3146       | 9011-2946   | 6/21/01     |
| 238   | Hewlett Packard         | Spectrum Analyzer             | 8591A      | 3131A02254  | 5/8/01      |
| 239   | LXE                     | Pre-Amp                       | 20-1000GHz | 001         | 4/7/01      |
| 394   | Microwave Circuits      | High-Pass Filter              | H3G020G2   | 0001 DC9853 | 1/27/01     |
| 399   | Mini Circuits           | High-Pass Filter              | SHP-1000   | none        | N/A         |
| 450   | LXE                     | RF Cables (High Freq. Short)  | none       | Copper      | 11/17/01    |
| 451   | LXE                     | RF Cables (High Freq. Double) | 7015/6986  | MFR-57500   | 11/17/01    |
| 452   | EMCO                    | Mast, Antenna, Mini           | 2075       | PN399235    | N/A         |
| 453   | EMCO                    | Turntable                     | 2065       | PN399230    | N/A         |
| 99998 | Lindgren Enclosure      | RF Enclosure                  | 14-2/2-0   | 8147        | N/A         |

### 5.0 SUPPORT EQUIPMENT

**Table 3: Support Equipment**

| Manufacturer | Equipment Type  | Model Number | Serial Number | FCC ID      |
|--------------|-----------------|--------------|---------------|-------------|
| WinBookxp    | LapTop Computer | ANL-4        | 10AUA01756    | JRUANL-4D75 |

## 6.0 EQUIPMENT UNDER TEST SETUP BLOCK DIAGRAM

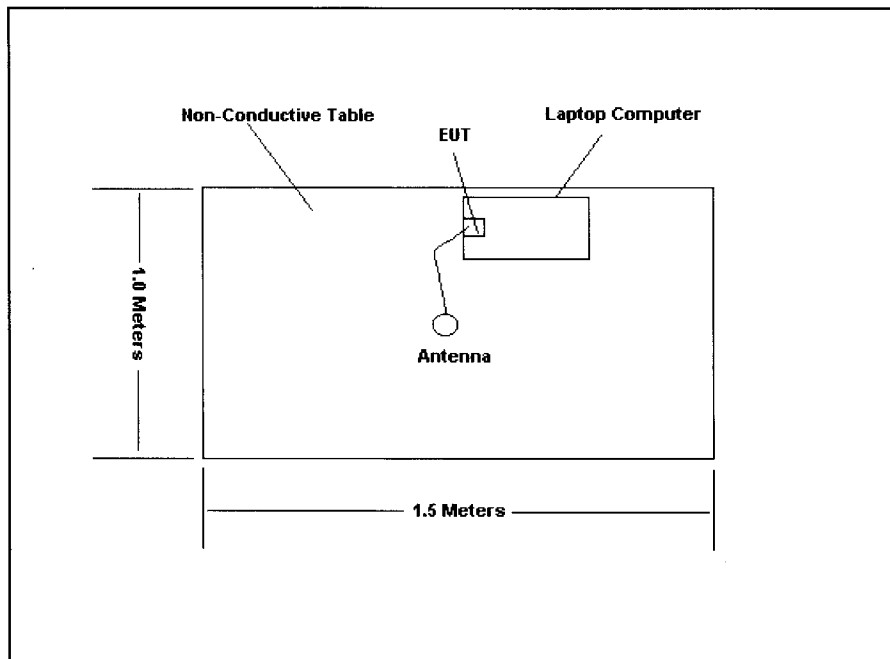


Figure 2: EUT Test Setup

## 7.0 SUMMARY OF TESTS

Along with the tabular data shown below, plots were taken of all signals deemed important enough to document.

### 7.1 Antenna Requirement - FCC Section 15.203

The antennas described in section 1.2.3 are designed with a unique and/or proprietary connectors and are not interchangeable with standard antennas without electrical and mechanical modification of the radio card or host unit.

### 7.2 Power Line Conducted Emissions - FCC Section 15.207

The EUT is powered by a PCMCIA bus of host device supplying 3.3 or 5VDC, and has no connection to the AC Mains. Conducted emissions are not required.

### 7.3 Radiated Emissions - FCC Section 15.209

Radiated emissions tests were attempted 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. Radiated measurements were made with the Spectrum Analyzer's resolution bandwidth set to 120KHz for measurements above 30MHz.

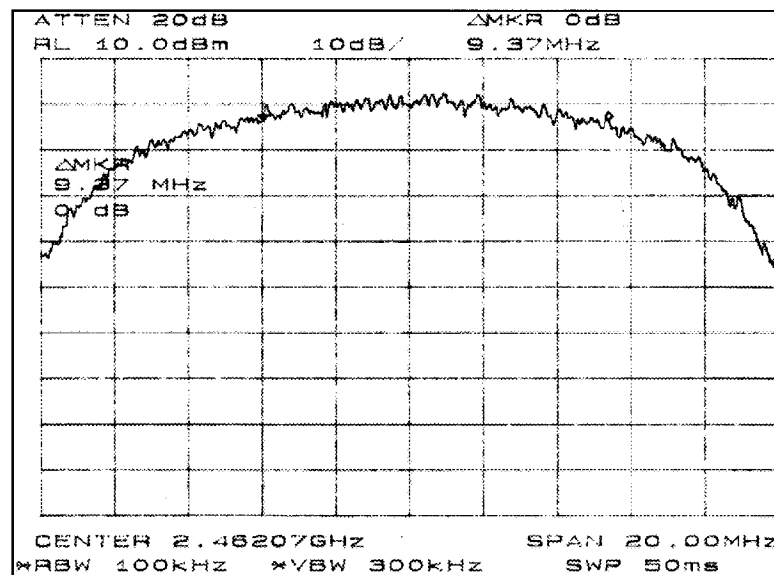
The EUT was caused to go into a "Receive Only" mode of operation for this test. No emissions attributed to the EUT could be detected in the band.

#### 7.4 6dB Bandwidth Requirement - FCC Section 15.247(a)(2)

For the 6dB bandwidth test, the EUT was caused to generate a continuous carrier on the high, middle and low channels at all available data rates. Tabulated data is shown below in table 4 and a plot of the worst case is shown in figure 3 below. The plot is of the high channel(2462 MHz) at a data rate of 11Mbps.

**Table 4: 6dB Bandwidth**

| Data Rate (Mbps) | Channel 1 - 2412MHz (MHz) | Channel 7 - 2442MHz (MHz) | Channel 11 - 2462MHz (MHz) |
|------------------|---------------------------|---------------------------|----------------------------|
| 1                | 10.20                     | 11.13                     | 10.17                      |
| 2                | 10.03                     | 9.83                      | 10.03                      |
| 5.5              | 10.53                     | 11.10                     | 9.83                       |
| 11               | 10.07                     | 10.00                     | 9.37                       |



**Figure 3: Worst Case 6dB Bandwidth**

#### 7.5 Peak Output Power Requirement - FCC Section 15.247(b)

The peak output power of the EUT was made at the antenna connector using an HP436A power meter and an HP8482H power sensor. The EUT was caused to generate a constant carrier on high, mid and low channels of the device. On each channel the EUT was then cycled through each of it's data rates. Table 5 below shows the results of this test.

**Table 5: Peak Output Power**

| Data Rate (Mbps) | Channel 1 - 2412 MHz (dBm) | Channel 7 - 2442 MHz (dBm) | Channel 11 - 2462 MHz (dBm) |
|------------------|----------------------------|----------------------------|-----------------------------|
| 1                | 13.54                      | 13.56                      | 13.42                       |
| 2                | 13.43                      | 13.52                      | 13.39                       |
| 5.5              | 13.82                      | 13.87                      | 13.61                       |
| 11               | 13.68                      | 13.75                      | 13.50                       |

## 7.6 Spurious Emissions - FCC Section 15.247(c)

### 7.6.1 RF Conducted Spurious Emissions

The EUT was investigated for conducted spurious emissions from 30MHz to 25GHz, 10 times the highest fundamental frequency. For each measurement, the spectrum analyzer's VBW was set to 100kHz and the RBW was set to 1MHz.

The RF conducted spurious emissions found in the band of 30MHz to 25GHz are reported in Table 6 below. Each emission was compared to the fundamental reference level, also reported in the table below, to determine if they were at least 20dB below the reference level. Plots of the emissions were taken and filed separately as Appendix A

**Table 6: Conducted Spurious Emissions**

| Channel | Fundamental Frequency (MHz) | Fundamental Reference Level (dBm) | Frequency of Spurious Emissions (MHz) | Level (dBm) | $\Delta$ (dB) |
|---------|-----------------------------|-----------------------------------|---------------------------------------|-------------|---------------|
| 1       | 2412                        | 1.83                              | 447                                   | -54.33      | 56.16         |
|         |                             |                                   | 2396                                  | -28.50      | 30.33         |
|         |                             |                                   | 2427                                  | -26.83      | 28.66         |
|         |                             |                                   | 4820                                  | -55.67      | 57.50         |
|         |                             |                                   | 8862                                  | -60.67      | 62.50         |
| 7       | 2442                        | 3.17                              | 1071                                  | -60.50      | 63.67         |
|         |                             |                                   | 2429                                  | -26.17      | 29.34         |
|         |                             |                                   | 2454                                  | -26.67      | 29.84         |
|         |                             |                                   | 4884                                  | -61.50      | 64.67         |
| 11      | 2462                        | 2.33                              | 638                                   | -60.00      | 62.33         |
|         |                             |                                   | 2449                                  | -27.83      | 30.16         |
|         |                             |                                   | 2475                                  | -29.67      | 32.00         |
|         |                             |                                   | 7054                                  | -59.67      | 62.00         |

### 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. For convenience, peak measurements were taken and compared to the average limits. If the peak measurement did not meet the average limit, then an average measurement was made and compared to the average limit.

Due to high ambient noise levels and small EUT size, radiated emission measurements were made at a distance of 1 meter. An inverse proportionality factor of 20 dB per decade was 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. A correction factor of 9.54dB applied to the measurements.

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.

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. Table 7 below shows the results of all detectable points in the band of evaluation. Plots of each significant signal were taken and were filed separately as appendix B.

Table 7: Peak Measurements Compared to Average Limits

| Frequency<br>(MHz)      | Antenna<br>Distance<br>(m) | Level<br>(dBm) | Detector<br>Function<br>(P/A) | Correctio<br>n<br>Factors<br>(dB) | Corrected<br>Level<br>(dBm) | Corrected<br>Level<br>(uV/m) | Limit<br>(uV/m) | Margin<br>(dB) | Final<br>Result<br>(Pass/Fail) |
|-------------------------|----------------------------|----------------|-------------------------------|-----------------------------------|-----------------------------|------------------------------|-----------------|----------------|--------------------------------|
| <b>Bit Rate 1Mb/s</b>   |                            |                |                               |                                   |                             |                              |                 |                |                                |
| Channel 1               |                            |                |                               |                                   |                             |                              |                 |                |                                |
| 4824                    | 1                          | -67.5          | P                             | 7.51                              | -59.99                      | 224.24                       | 500             | 275.76         | PASS                           |
| 7236                    | 1                          | -72.5          | P                             | 12.20                             | -60.30                      | 216.26                       | 500             | 283.74         | PASS                           |
| Channel 7               |                            |                |                               |                                   |                             |                              |                 |                |                                |
| 4884                    | 1                          | -63.5          | P                             | 7.70                              | -55.80                      | 363.09                       | 500             | 136.91         | PASS                           |
| 7326                    | 1                          | -73.7          | P                             | 12.49                             | -61.21                      | 194.82                       | 500             | 305.18         | PASS                           |
| Channel 11              |                            |                |                               |                                   |                             |                              |                 |                |                                |
| 4924                    | 1                          | -64.33         | P                             | 7.82                              | -56.51                      | 334.75                       | 500             | 165.25         | PASS                           |
| 7386                    | 1                          | -72.83         | P                             | 12.69                             | -60.14                      | 220.25                       | 500             | 279.75         | PASS                           |
| <b>Bit Rate 5.5Mb/s</b> |                            |                |                               |                                   |                             |                              |                 |                |                                |
| Channel 1               |                            |                |                               |                                   |                             |                              |                 |                |                                |
| 4824                    | 1                          | -69.67         | P                             | 7.51                              | -62.16                      | 174.67                       | 500             | 325.33         | PASS                           |
| 7236                    | 1                          | -74.1          | P                             | 12.20                             | -61.90                      | 179.87                       | 500             | 320.13         | PASS                           |
| Channel 7               |                            |                |                               |                                   |                             |                              |                 |                |                                |
| 4884                    | 1                          | -67            | P                             | 7.70                              | -59.30                      | 242.67                       | 500             | 257.33         | PASS                           |
| 7326                    | 1                          | -72.8          | P                             | 12.49                             | -60.31                      | 216.09                       | 500             | 283.91         | PASS                           |
| Channel 11              |                            |                |                               |                                   |                             |                              |                 |                |                                |
| 4924                    | 1                          | -68.83         | P                             | 7.82                              | -61.01                      | 199.40                       | 500             | 300.60         | PASS                           |
| 7386                    | 1                          | -73.8          | P                             | 12.69                             | -61.11                      | 196.98                       | 500             | 303.02         | PASS                           |
| <b>Bit Rate 11Mb/s</b>  |                            |                |                               |                                   |                             |                              |                 |                |                                |
| Channel 1               |                            |                |                               |                                   |                             |                              |                 |                |                                |
| 4824                    | 1                          | -67.83         | P                             | 7.51                              | -60.32                      | 215.88                       | 500             | 284.12         | PASS                           |
| 7236                    | 1                          | -72.17         | P                             | 12.20                             | -59.97                      | 224.63                       | 500             | 275.37         | PASS                           |
| Channel 7               |                            |                |                               |                                   |                             |                              |                 |                |                                |
| 4884                    | 1                          | -64.83         | P                             | 7.70                              | -57.13                      | 311.54                       | 500             | 188.46         | PASS                           |
| 7326                    | 1                          | -73.17         | P                             | 12.49                             | -60.68                      | 207.08                       | 500             | 292.92         | PASS                           |
| Channel 11              |                            |                |                               |                                   |                             |                              |                 |                |                                |
| 4924                    | 1                          | -66.83         | P                             | 7.82                              | -59.01                      | 251.03                       | 500             | 248.97         | PASS                           |
| 7386                    | 1                          | -73.5          | P                             | 12.69                             | -60.81                      | 203.90                       | 500             | 296.10         | PASS                           |

**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:

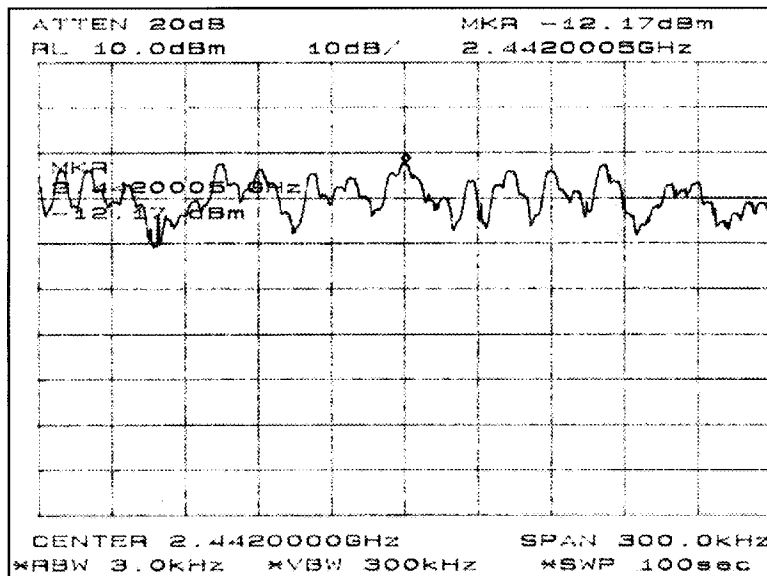
 $CF_T = \text{Total Correction Factor} = RL + AF + CA - AG - RC$ **Sample Calculations**Corrected Level(dBm) =  $RL + CF_T$ Conversion from dBm to uV/m =  $\text{Antilog}(\text{dBm} + 107)/20$

**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 8 below. A plot of the worst case measurement was taken of each of the emissions and is shown in figure 4 below.

**Table 8: Spectral Density**

| Channel          | Data Rate<br>(Mbps) | Receiver<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|------------------|---------------------|----------------------------|----------------|----------------|
| 1<br>(2412 MHz)  | 1                   | -16.00                     | 8              | 24.00          |
|                  | 2                   | -13.83                     | 8              | 21.83          |
|                  | 5.5                 | -13.83                     | 8              | 21.83          |
|                  | 11                  | -12.50                     | 8              | 20.50          |
| 7<br>(2442 MHz)  | 1                   | -26.67                     | 8              | 34.67          |
|                  | 2                   | -22.67                     | 8              | 30.67          |
|                  | 5.5                 | -13.83                     | 8              | 21.83          |
|                  | 11                  | -12.17                     | 8              | 20.17          |
| 11<br>(2462 MHz) | 1                   | -27.00                     | 8              | 35.00          |
|                  | 2                   | -23.70                     | 8              | 31.70          |
|                  | 5.5                 | -14.33                     | 8              | 22.33          |
|                  | 11                  | -13.00                     | 8              | 21.00          |

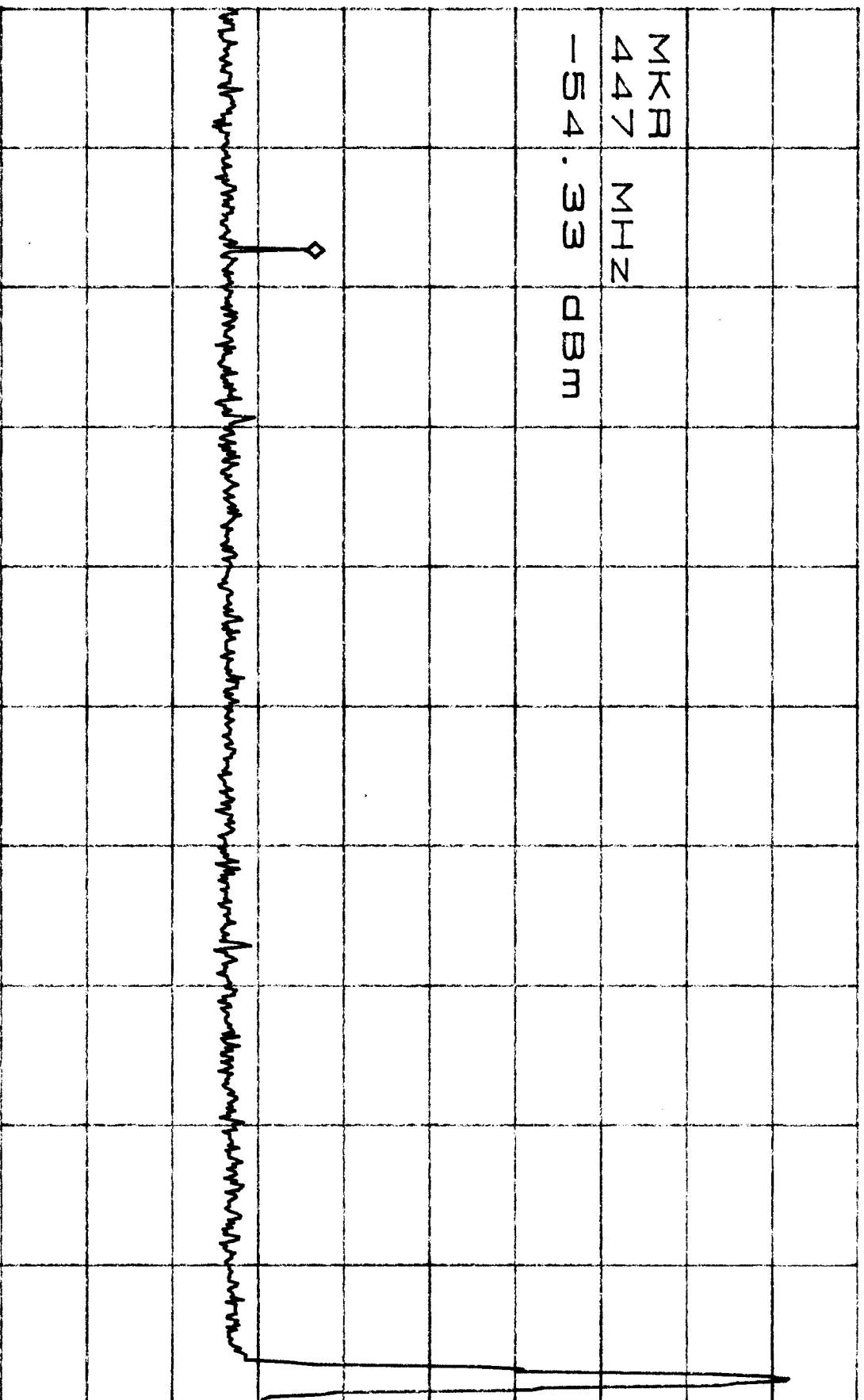
**Figure 4: Worst Case Spectral Density Measurement**

# **Appendix A**

## **Conducted Spurious Emission Plots**

ATTEN 20dB  
RL 10.0dBm

MARK -154.33dBm  
10dB/ 447MHz



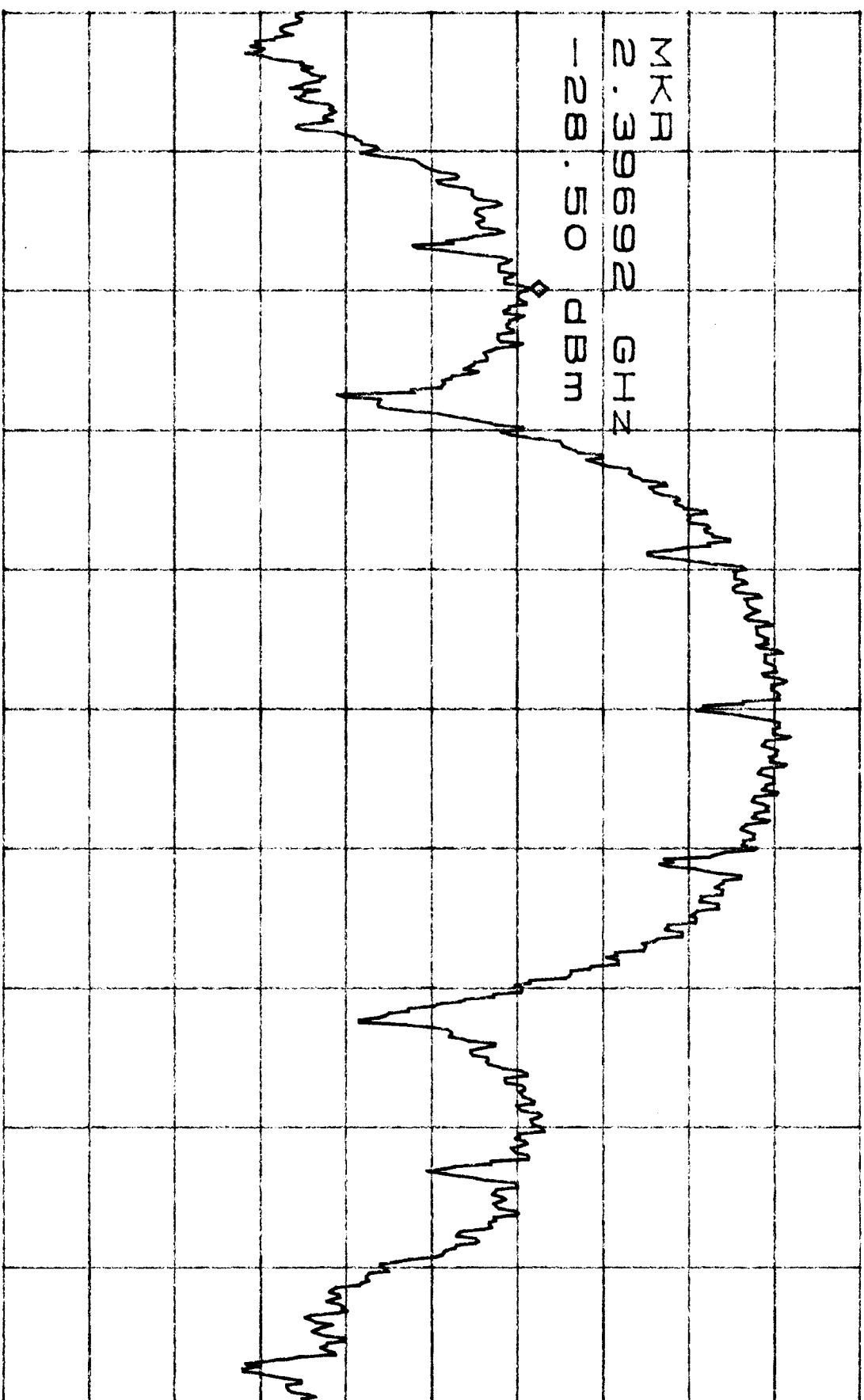
START 30MHz  
\*RBW 100kHz

STOP 2.437GHz  
\*VBW 1.0MHz  
SWP 610ms

ATTEN 20dB  
RL 10.0dBm

10dB/

MKII -20.50dBm  
2.39692GHz



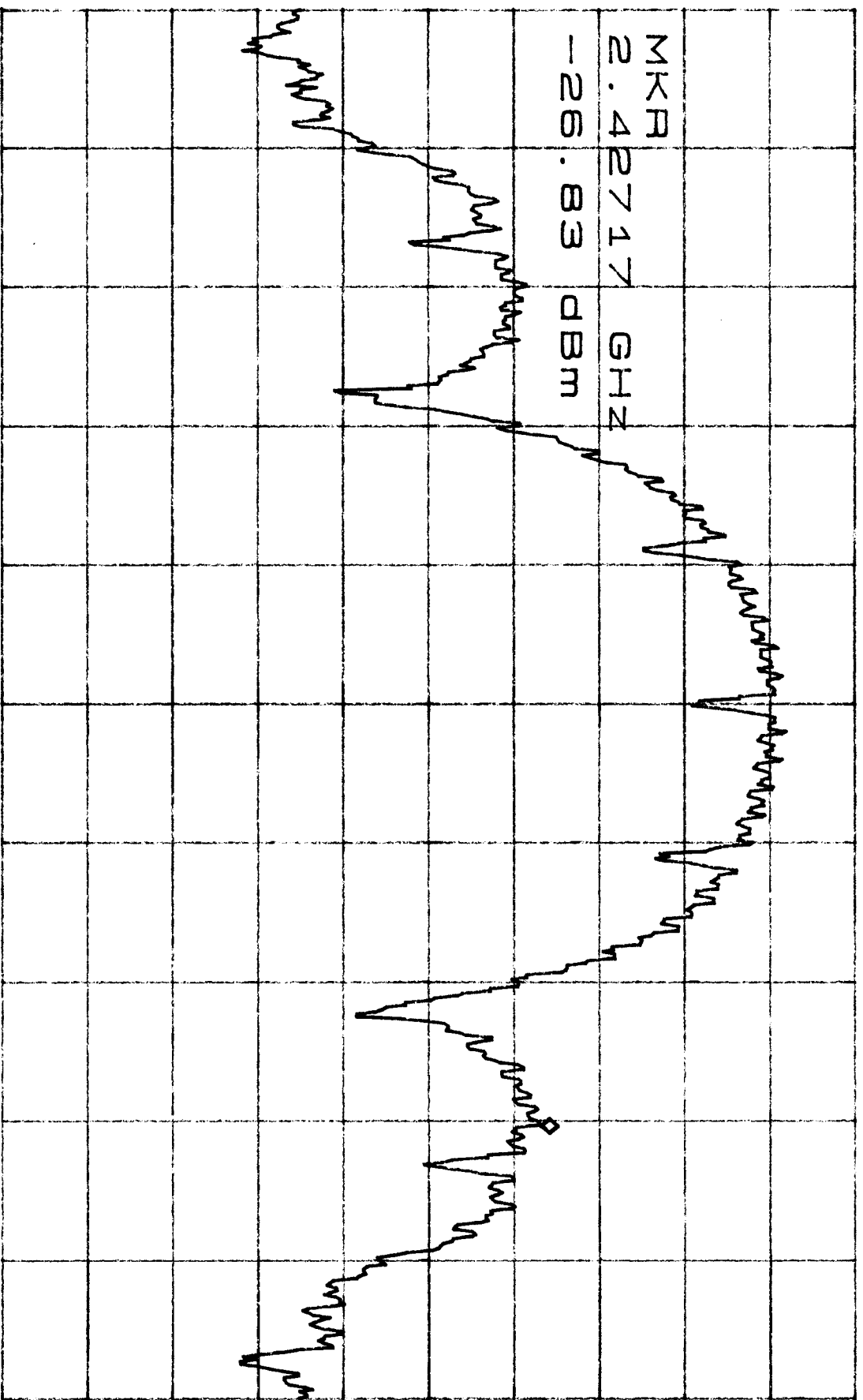
CENTER 2.41200GHz  
\*RBW 100kHz \*VBW 1.0MHz

SPAN 50.00MHz  
SWP 50ms

ATTEN 20dB  
RL 10.0dBm

10dB/

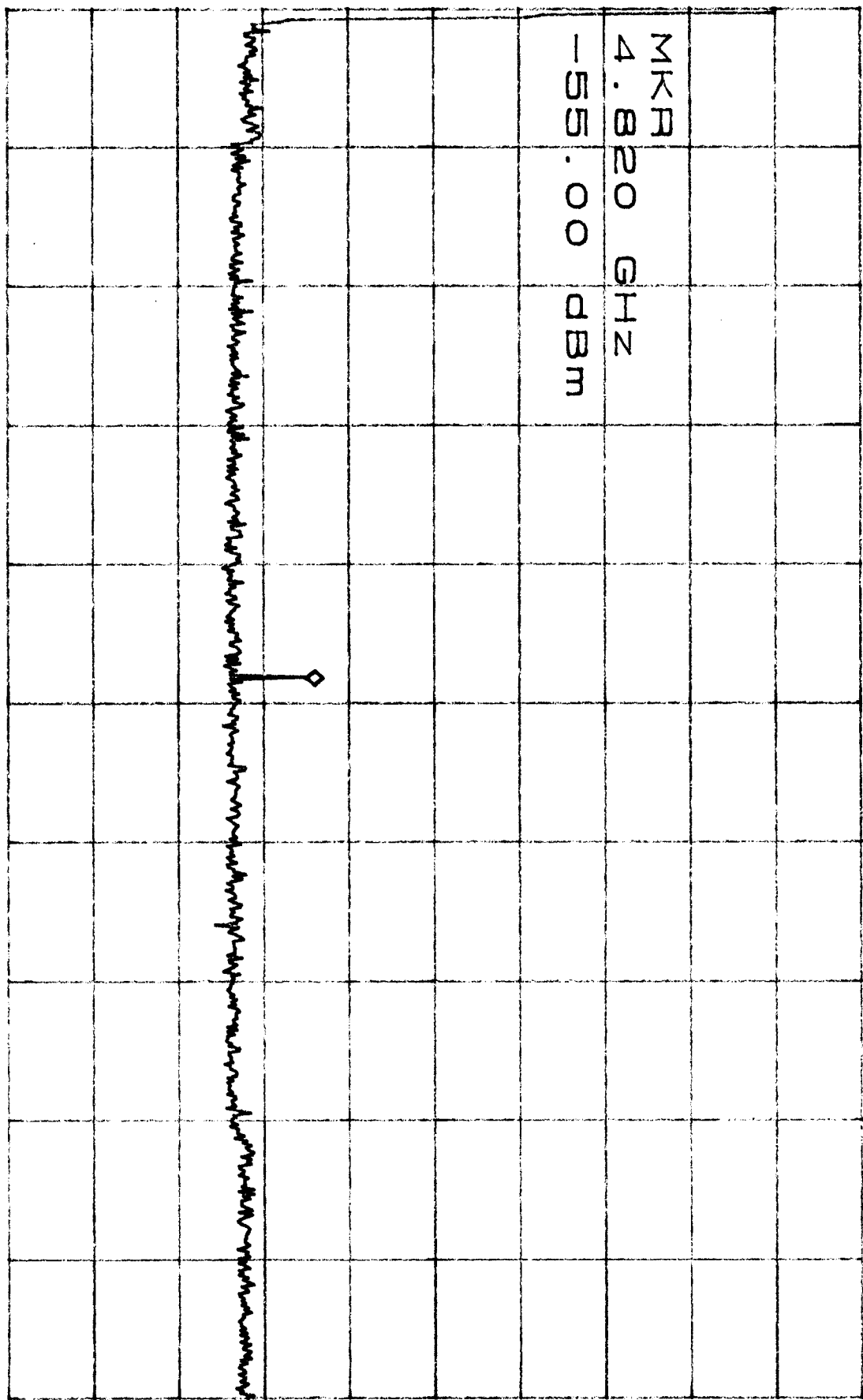
MKP -26.83dBm  
2.42717GHz



CENTER 2.41200GHz SPAN 50.00MHz  
\*RBW 100kHz \*VBW 1.0MHz SWP 50ms

ATTEN 20dB  
PL 10.00dB

MARK 155.00dB  
10dB / 4.820GHz

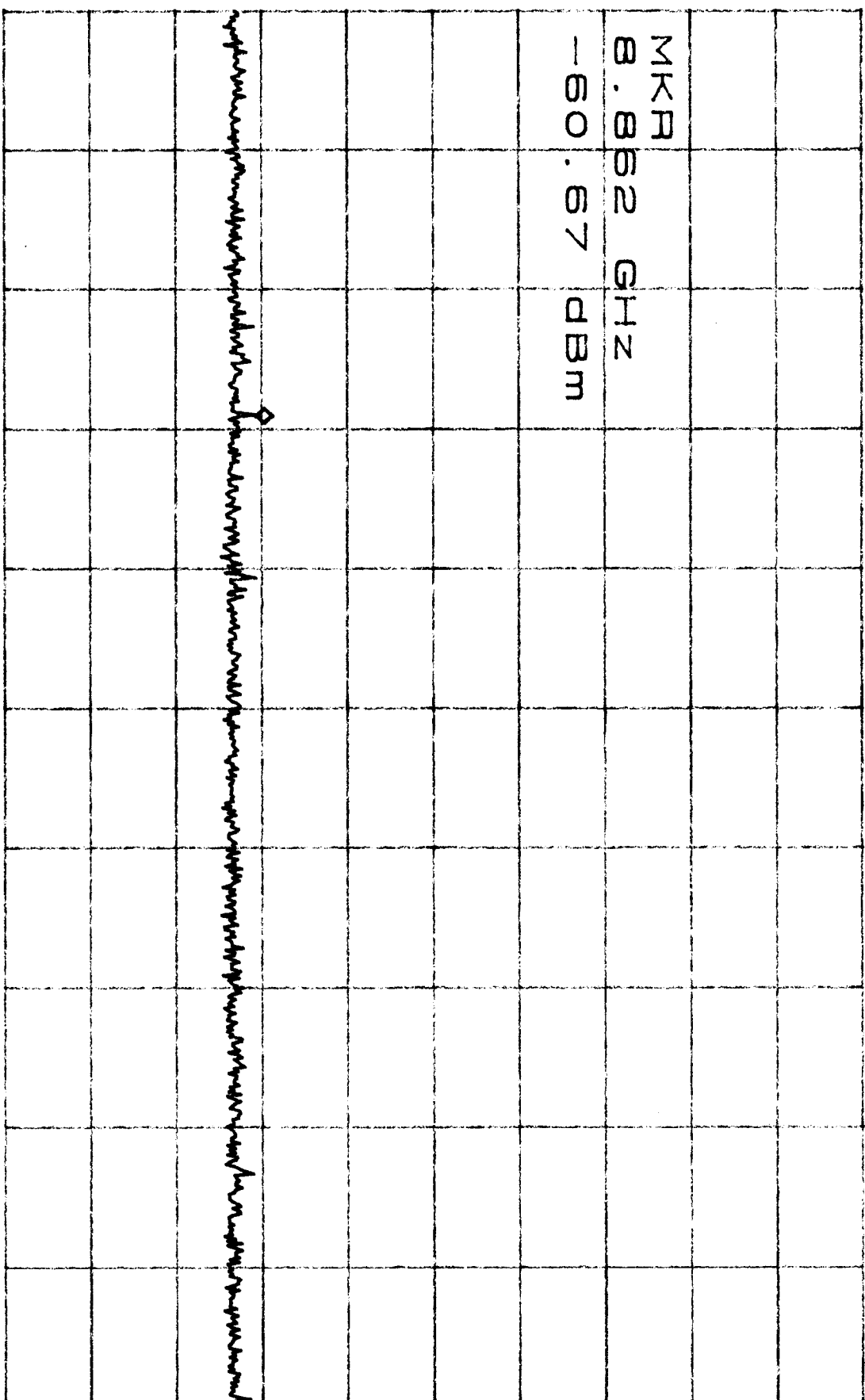


START 2.412GHz      STOP 7.412GHz  
\*RBW 100kHz      \*VBW 1.0MHz      SWP 1.3sec

ATTEN 20dB  
FL 10.0dBm

10dB/

MKT -60.67dBm  
8.862GHz



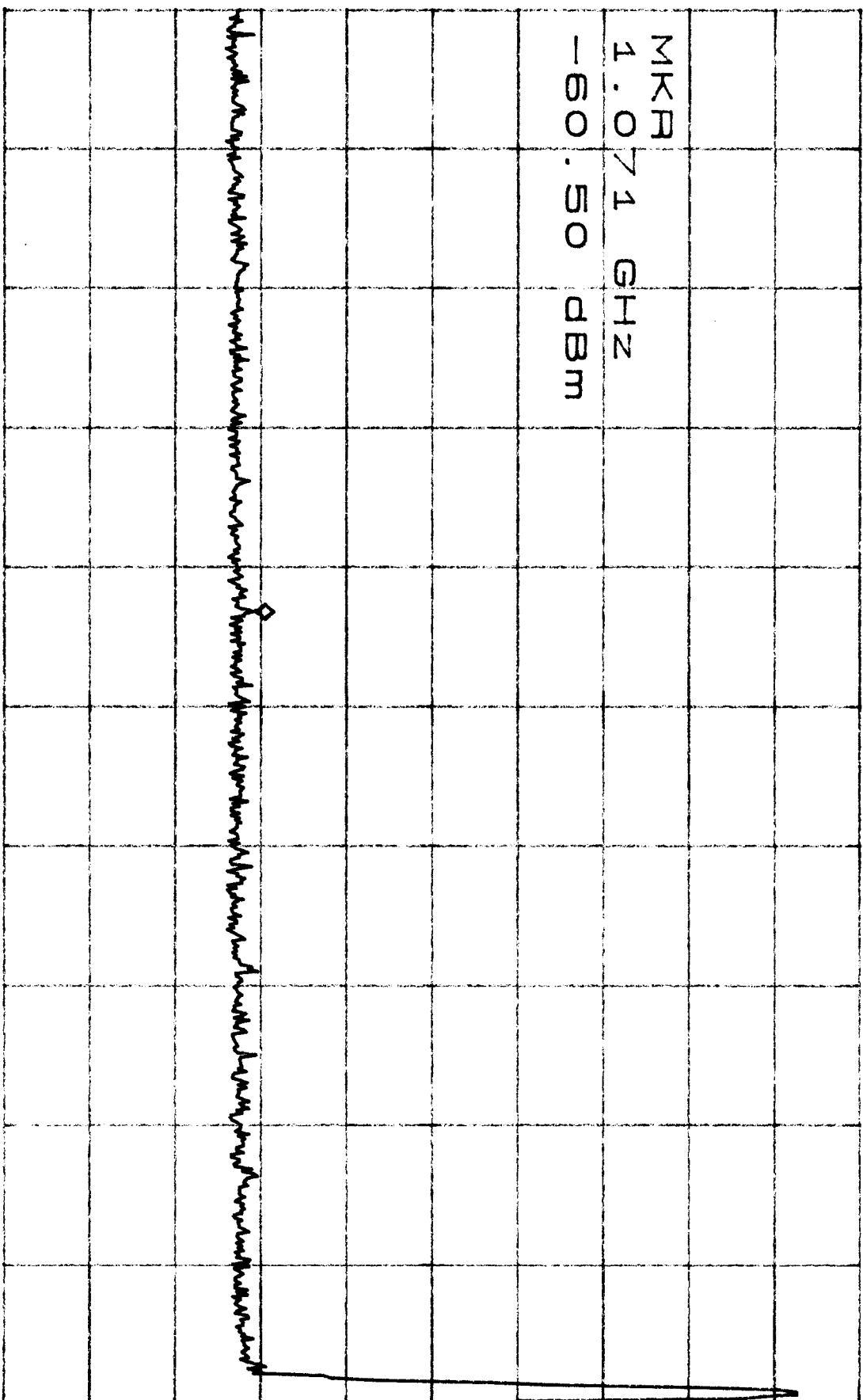
START 7.412GHz  
\*RBW 100KHz \*VBW 1.0MHz

STOP 12.412GHz  
SWP 1.3sec

ATTEN 20dB  
RL 10.0dBm

10dB/

MKR -60.50dBm  
1.071GHz



START 30MHz

STOP 2.442GHz

\*RBW 100kHz

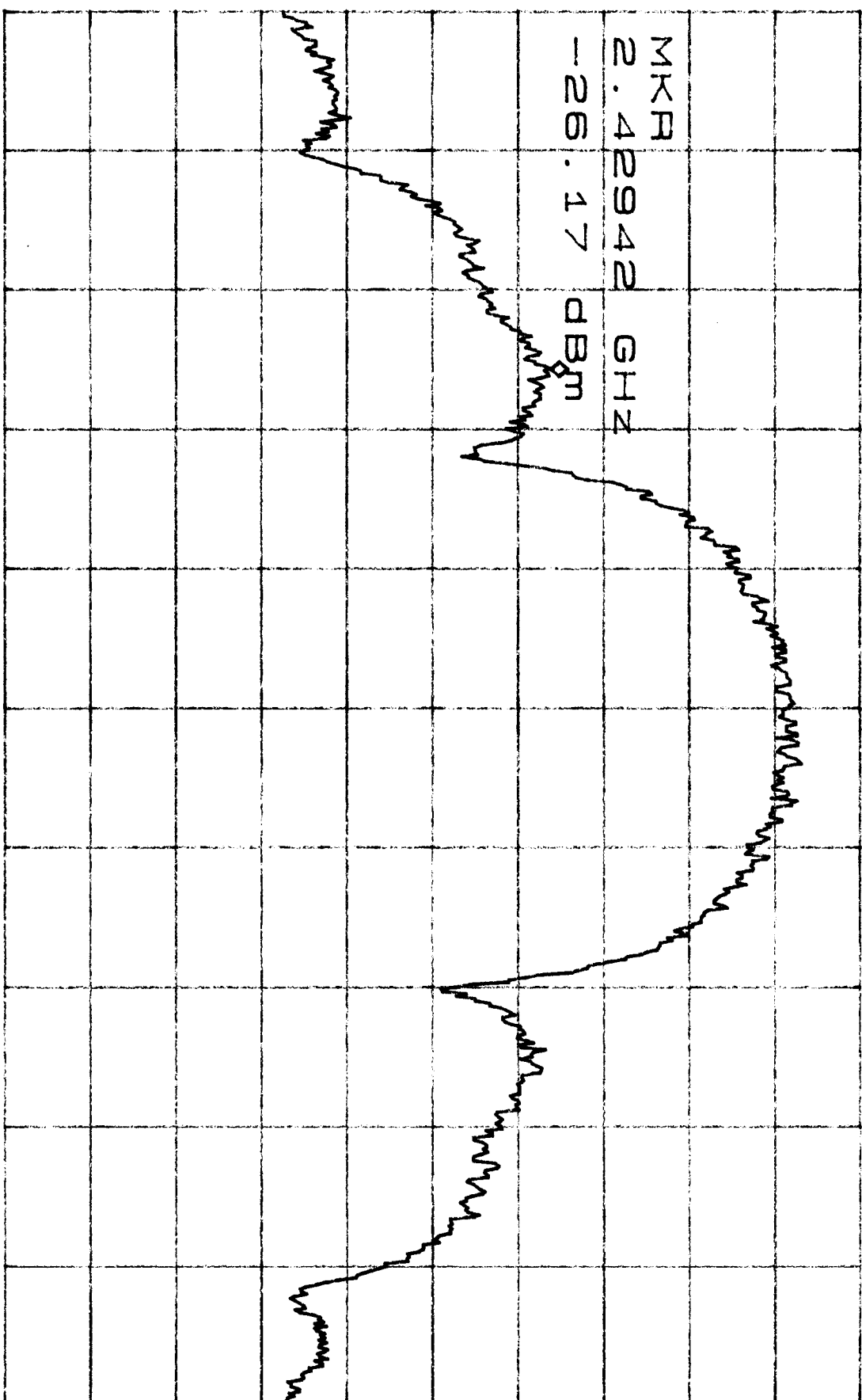
\*VBW 1.0MHz

SWP 610ms

ATTEN 20dB  
RL 10.0dBm

10dB/

MARK -26.17dBm  
2.42942GHz

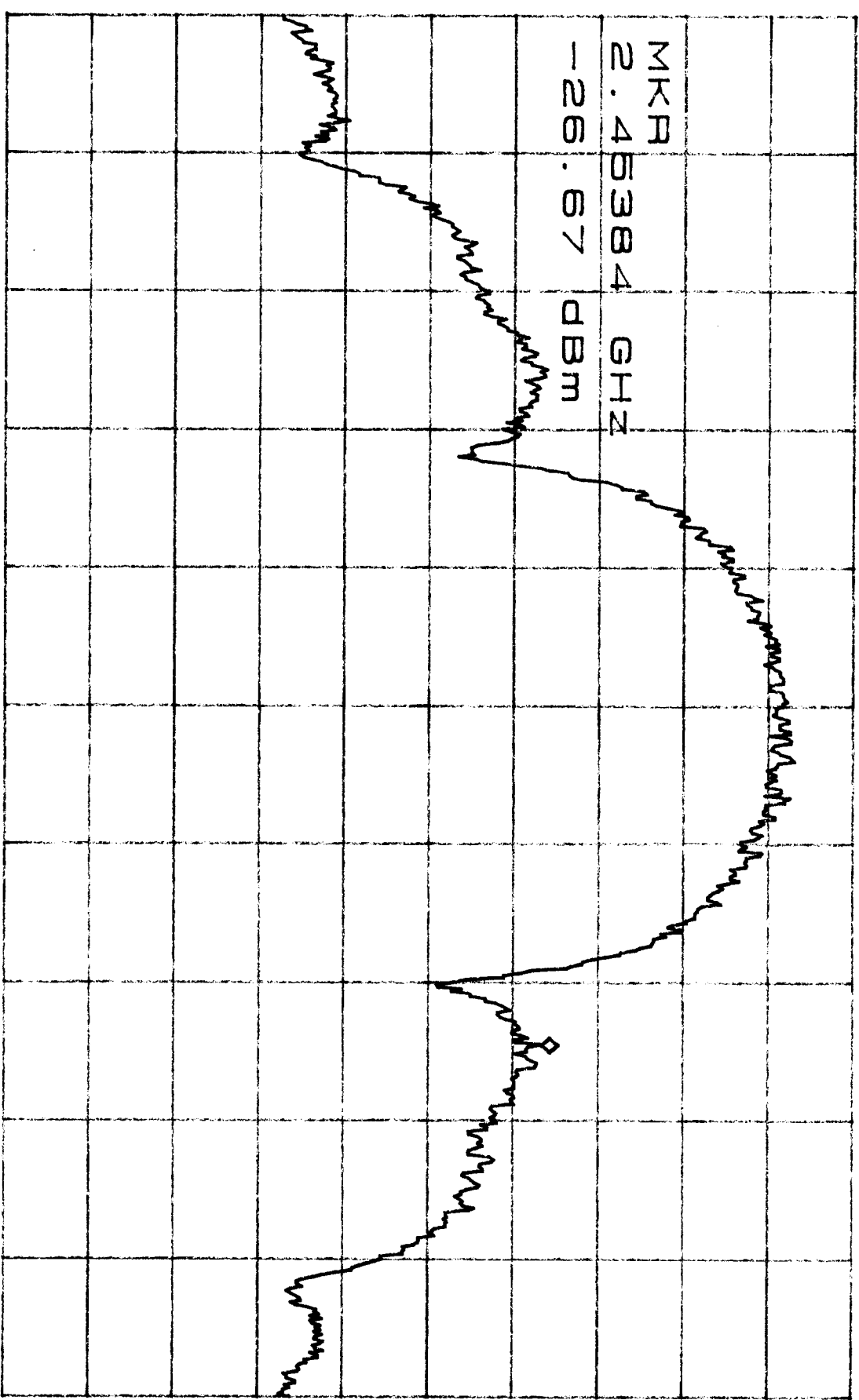


CENTER 2.44159GHz  
\*RBW 100kHz \*VBW 1.0MHz

SPAN 50.00MHz  
SWP 50ms

ATTEN 20dB  
RL 10.0dBm

MKT -26.67dBm  
2.45384GHz

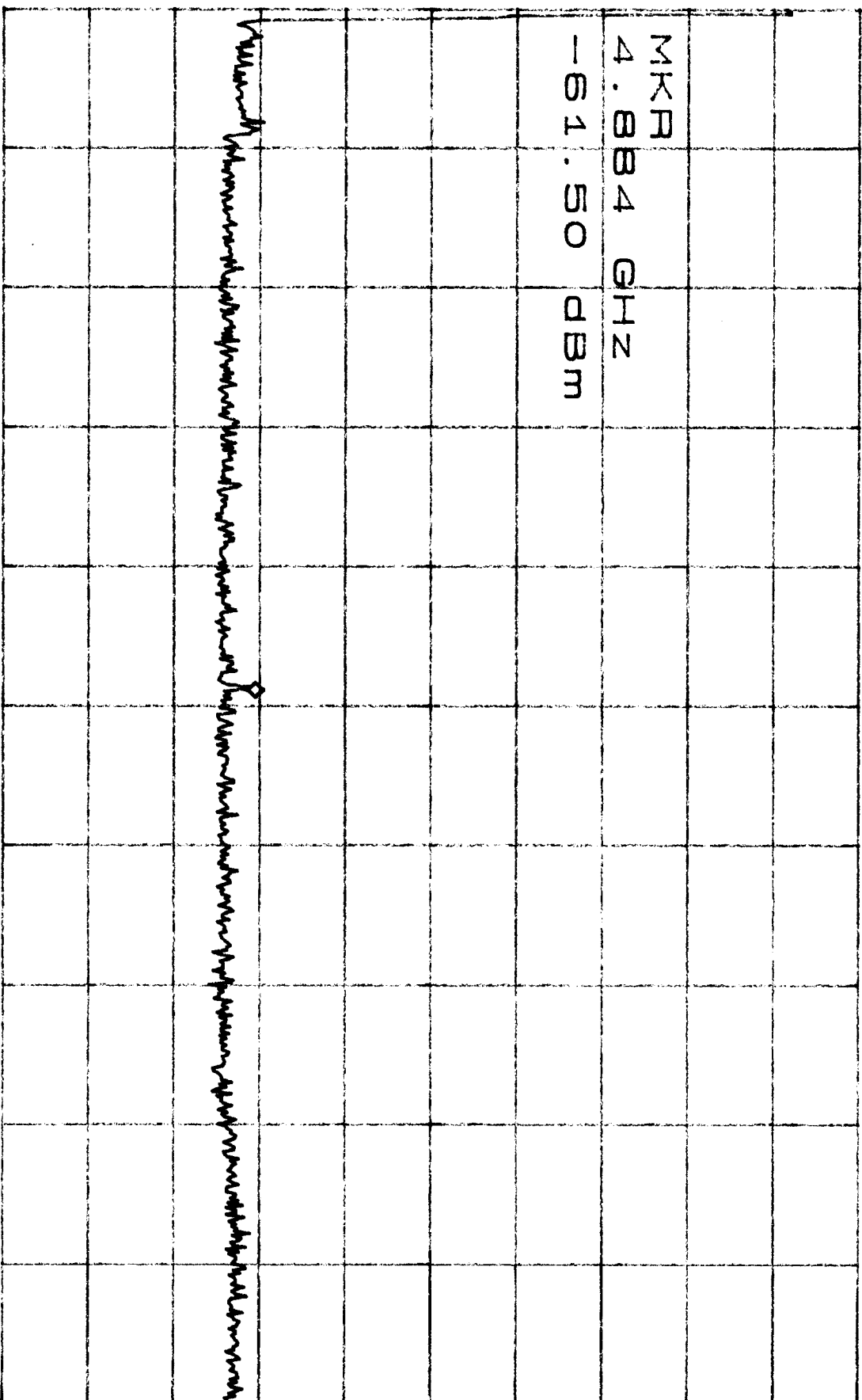


CENTER 2.44159GHz SPAN 50.00MHz  
\*RBW 100kHz \*VBW 1.0MHz SMP 50ms

ATTEN 20dB  
RL 10.0dBm

10dB/

MARK -61.50dBm  
4.884GHz



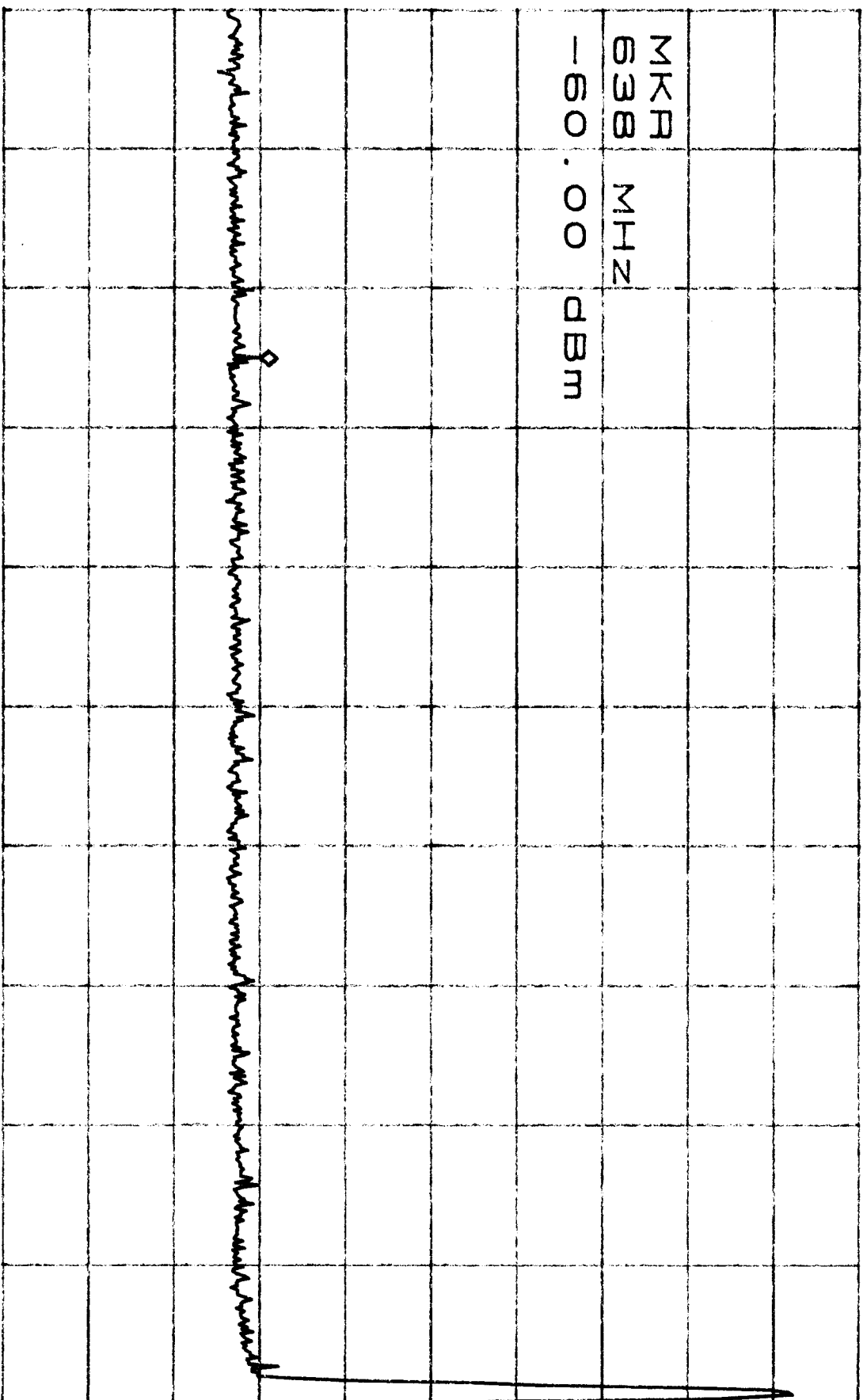
START 2.442GHz  
\*RBW 100KHz \*VBW 1.0MHz

STOP 7.442GHz  
SWP 1.3sec

ATTEN 20dB  
RL 10.00dBm

10dB/

MARK -60.00dBm  
638MHz



START 30MHz  
\*RBW 100kHz

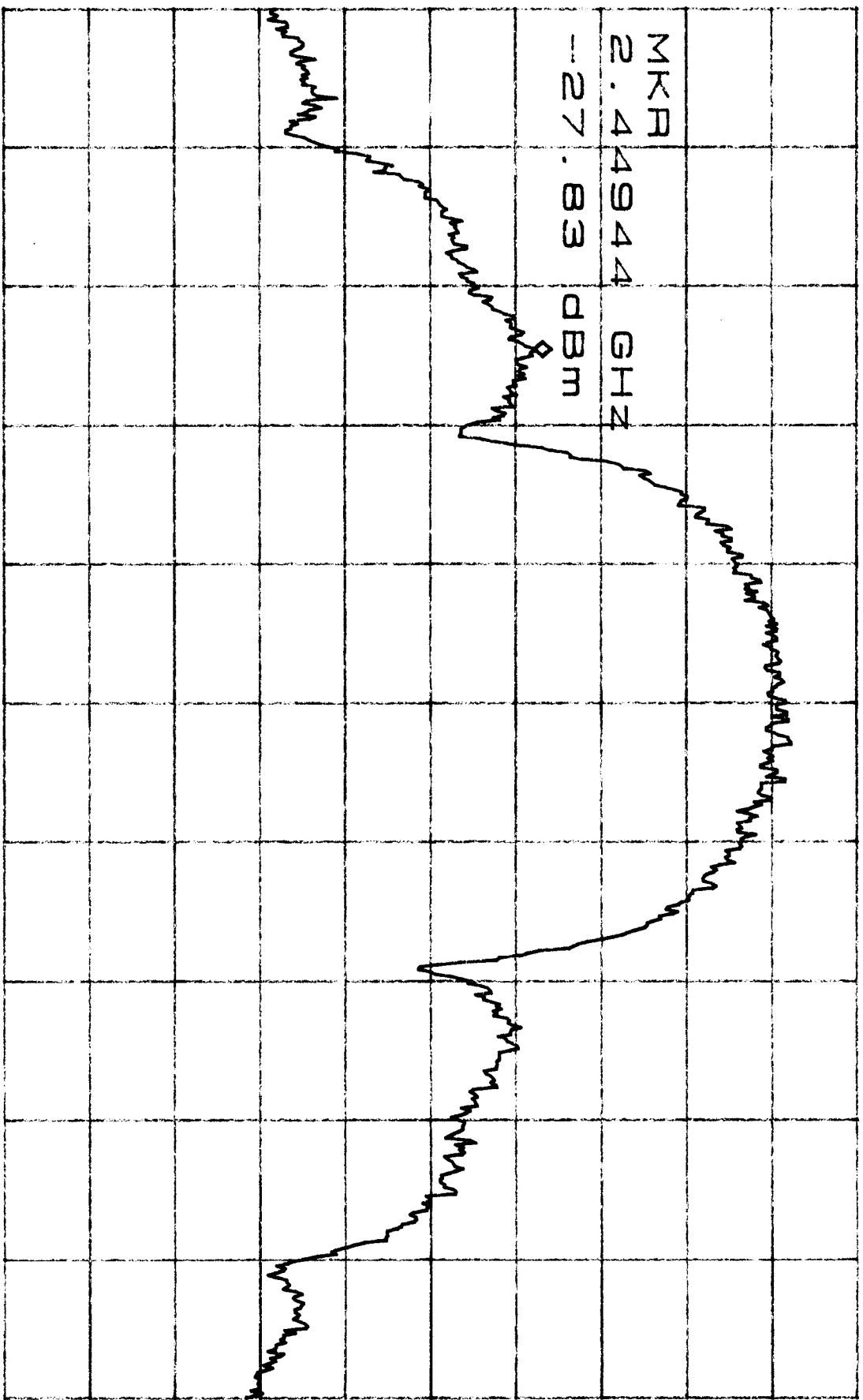
STOP 2.462GHz  
\*VBW 1.0MHz

SWP 610ms

ATTEN 20dB  
RL 10.0dBm

10dB/

MKT -27.83dBm  
2.44944GHz

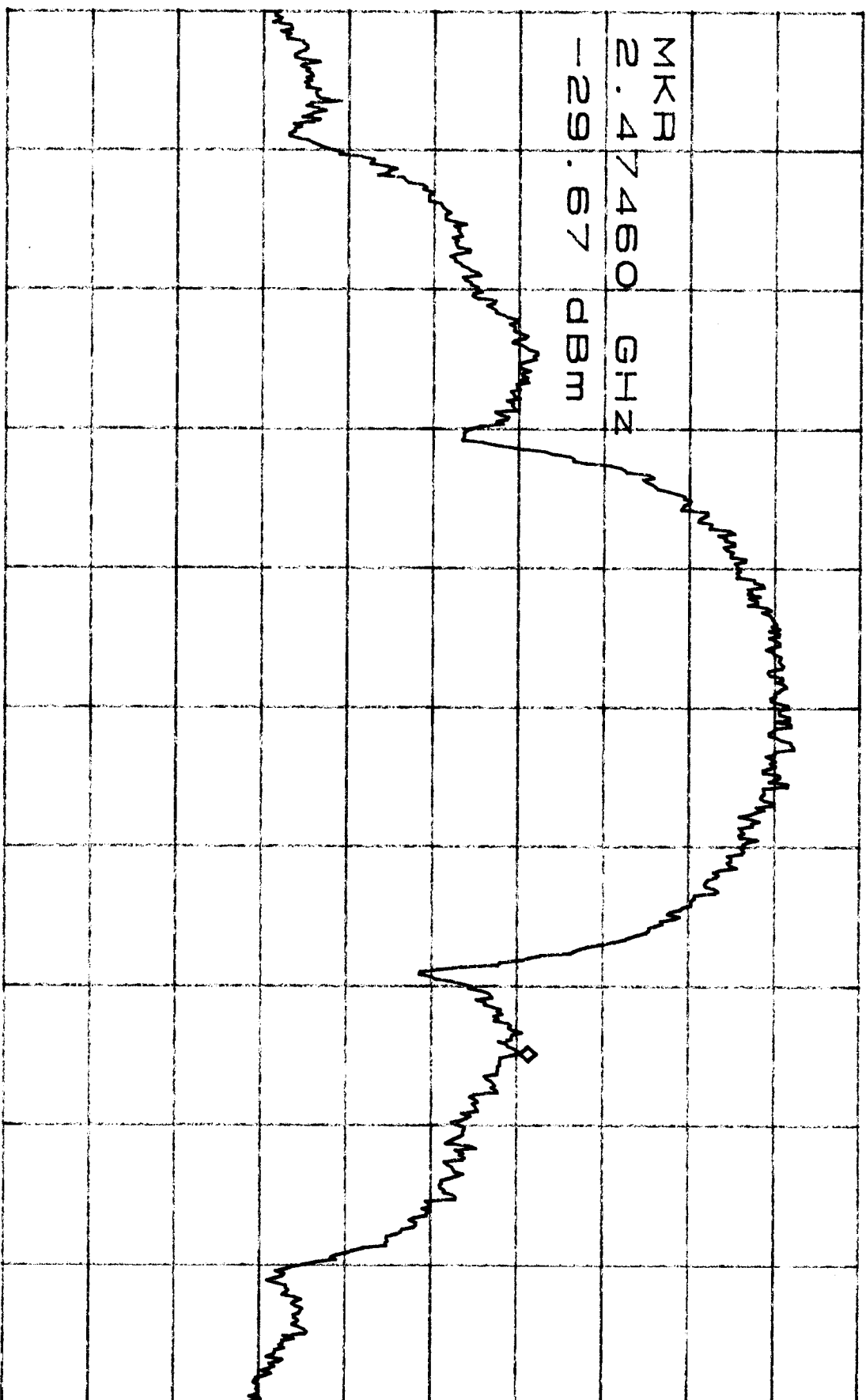


CENTER 2.46219GHz  
SPAN 50.00MHz  
\*RBW 100kHz \*VBW 1.0MHz  
SWP 50ms

ATTEN 20dB  
RL 10.0dBm

10dB/

NKT 129.67dBm  
2.47460GHz

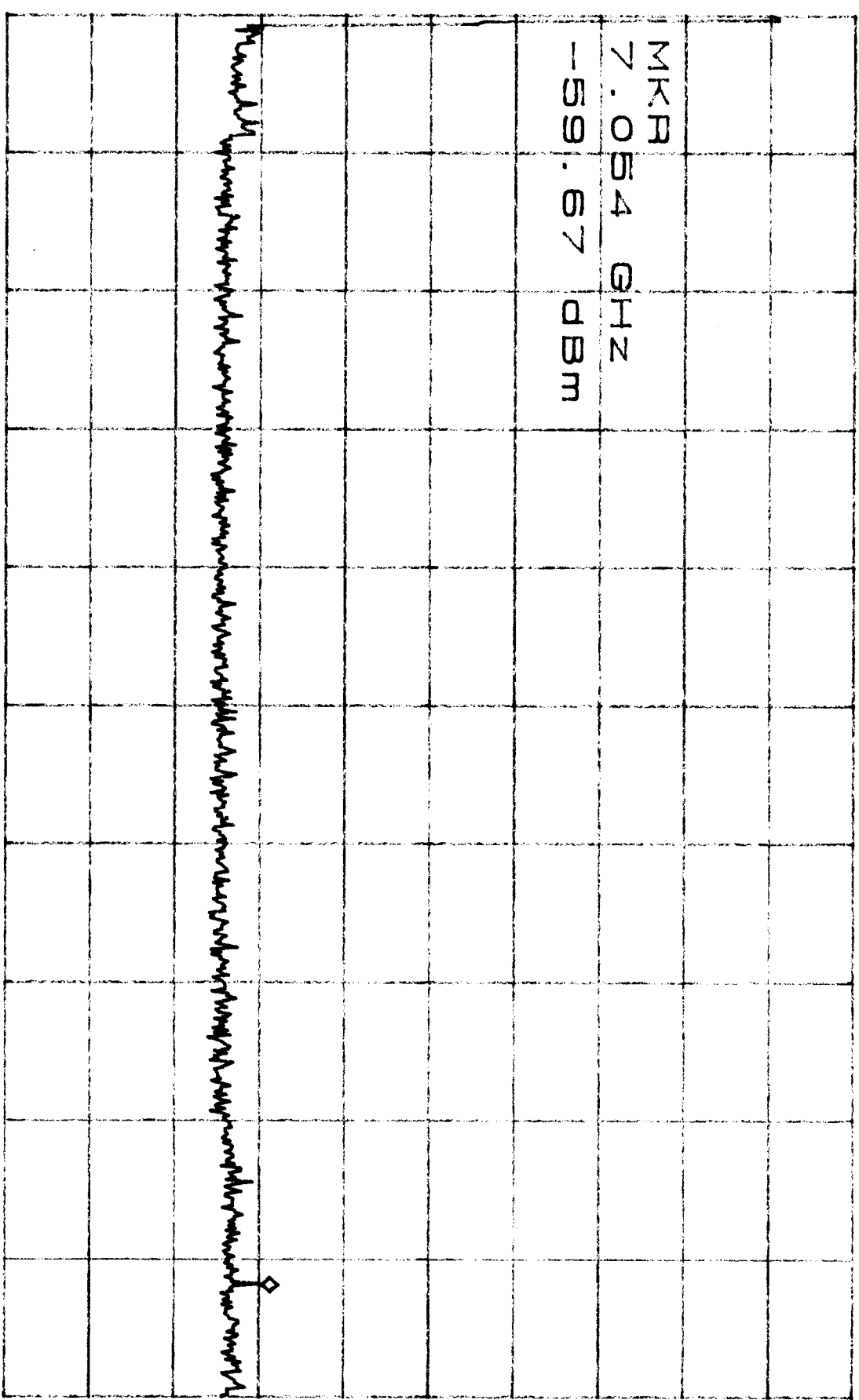


CENTER 2.46219GHz  
\*RBW 100KHz \*VBW 1.0MHz

SPAN 50.00MHz  
SWP 50ms

ATTEN 20dB  
RL 10.0dBm

MKP -59.67dBm  
7.054GHz

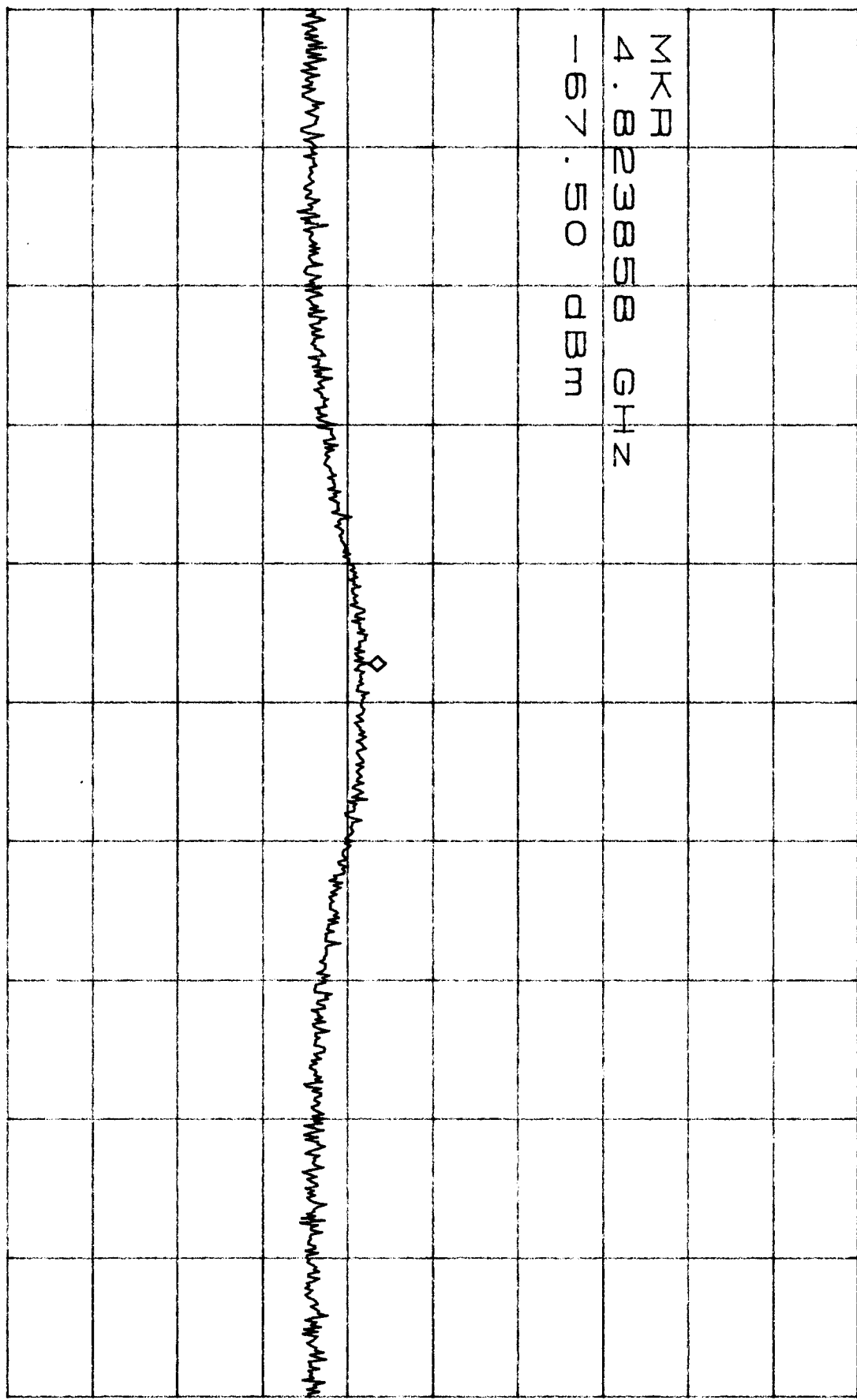


START 2.462GHz STOP 7.462GHz  
\*RBW 100kHz \*VBW 1.0MHz SWP 1.3sec

# **Appendix B**

## **Radiated Spurious Emission Plots**

\*ATTEN 0dB  
RL -10.0dBm  
10dB/  
MKR -67.50dBm  
4.823858GHz



CENTER 4.824000GHz  
SPAN 5.000MHz  
\*RBW 1.0MHz \*VBW 1.0MHz  
SWP 50ms

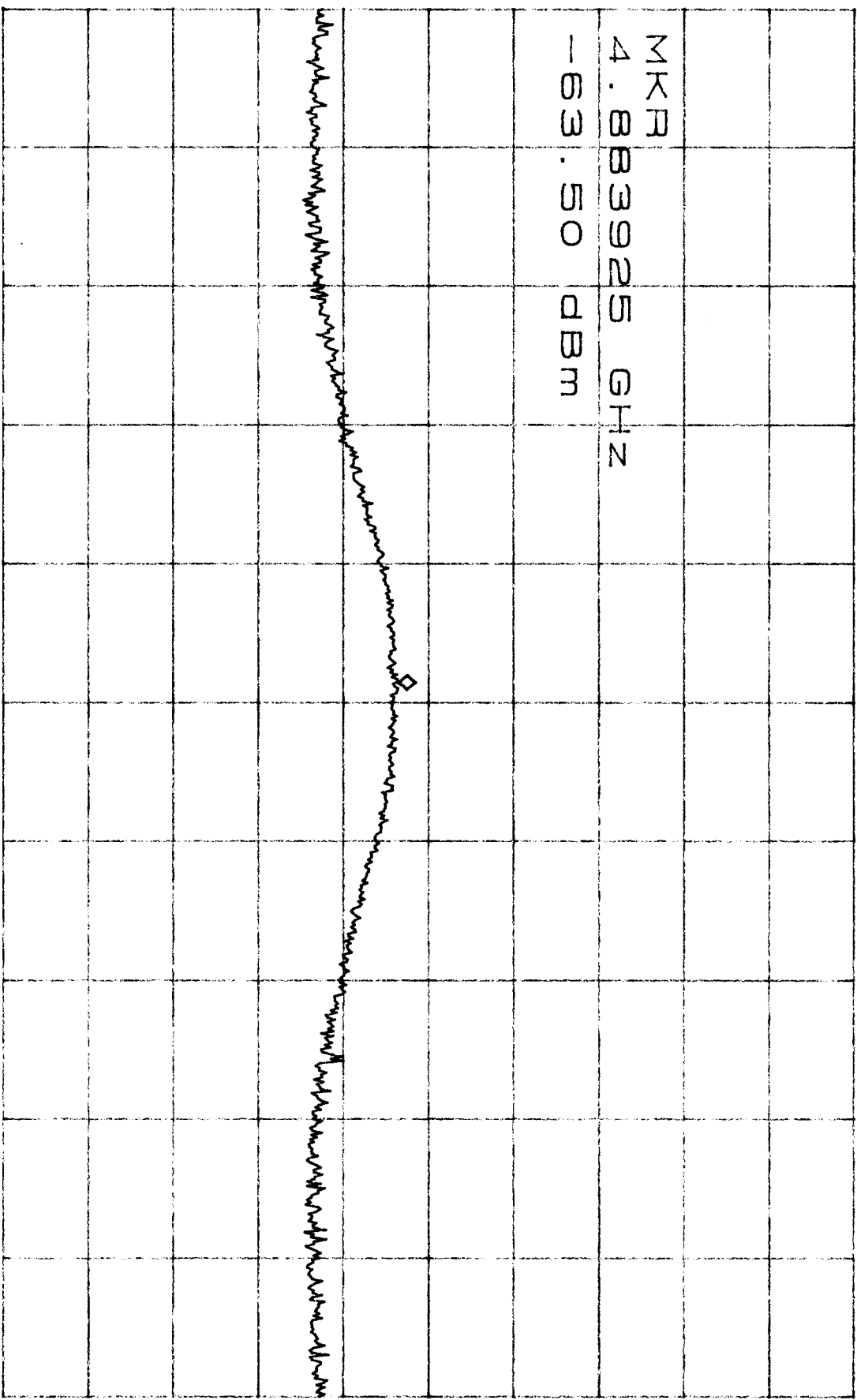
\*ATTEN 0dB

RL -10.0dBm

10dB/

4.883925GHz

MKII -63.50dBm



CENTER 4.884000GHz

SPAN 5.000MHz

\*RBW 1.0MHz

\*VBW 1.0MHz

SWP 50ms

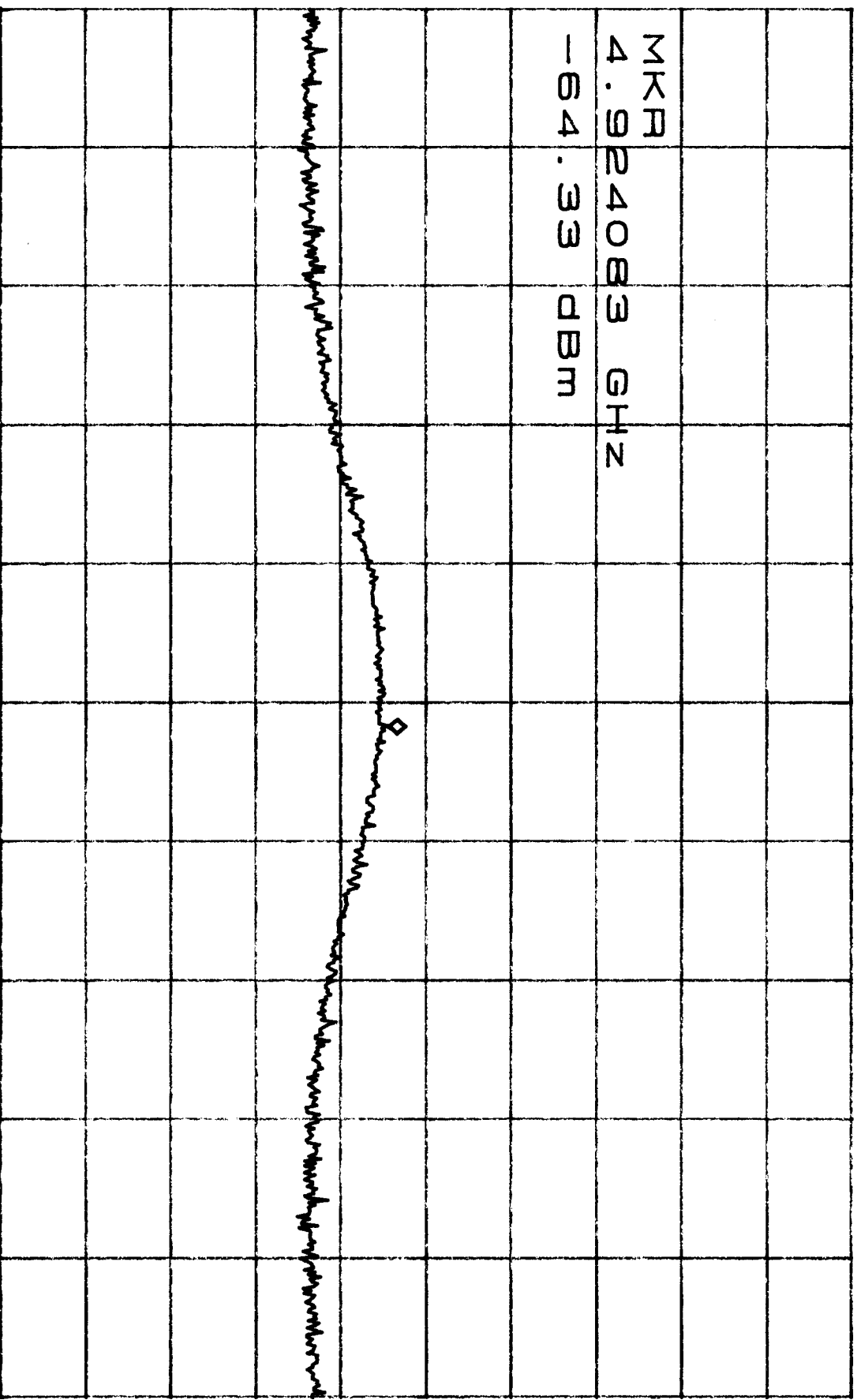
\*ATTEN 0dB

MKR -64.33dBm

RL -10.0dBm

10dB/

4.924083GHz



CENTER 4.924000GHz SPAN 5.000MHz  
\*RBW 1.0MHz \*VBW 1.0MHz SWP 50ms

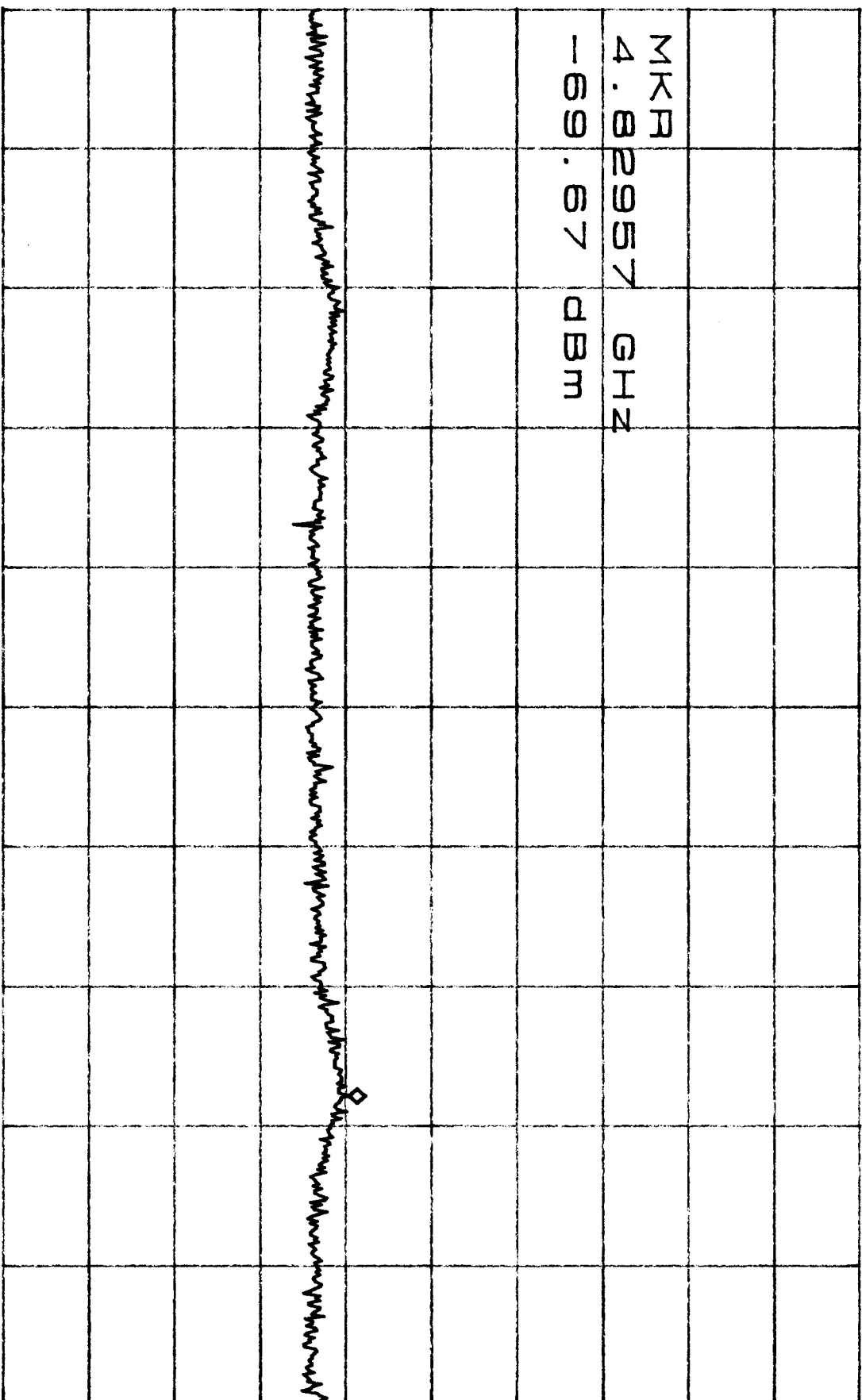
\*ATTEN 0dB

MARK -69.67dBm

RL -10.0dBm

10dB/

4.82957GHz



CENTER 4.82400GHz

SPAN 20.00MHz

\*RBW 1.0MHz

\*VBW 1.0MHz

SWP 50ms

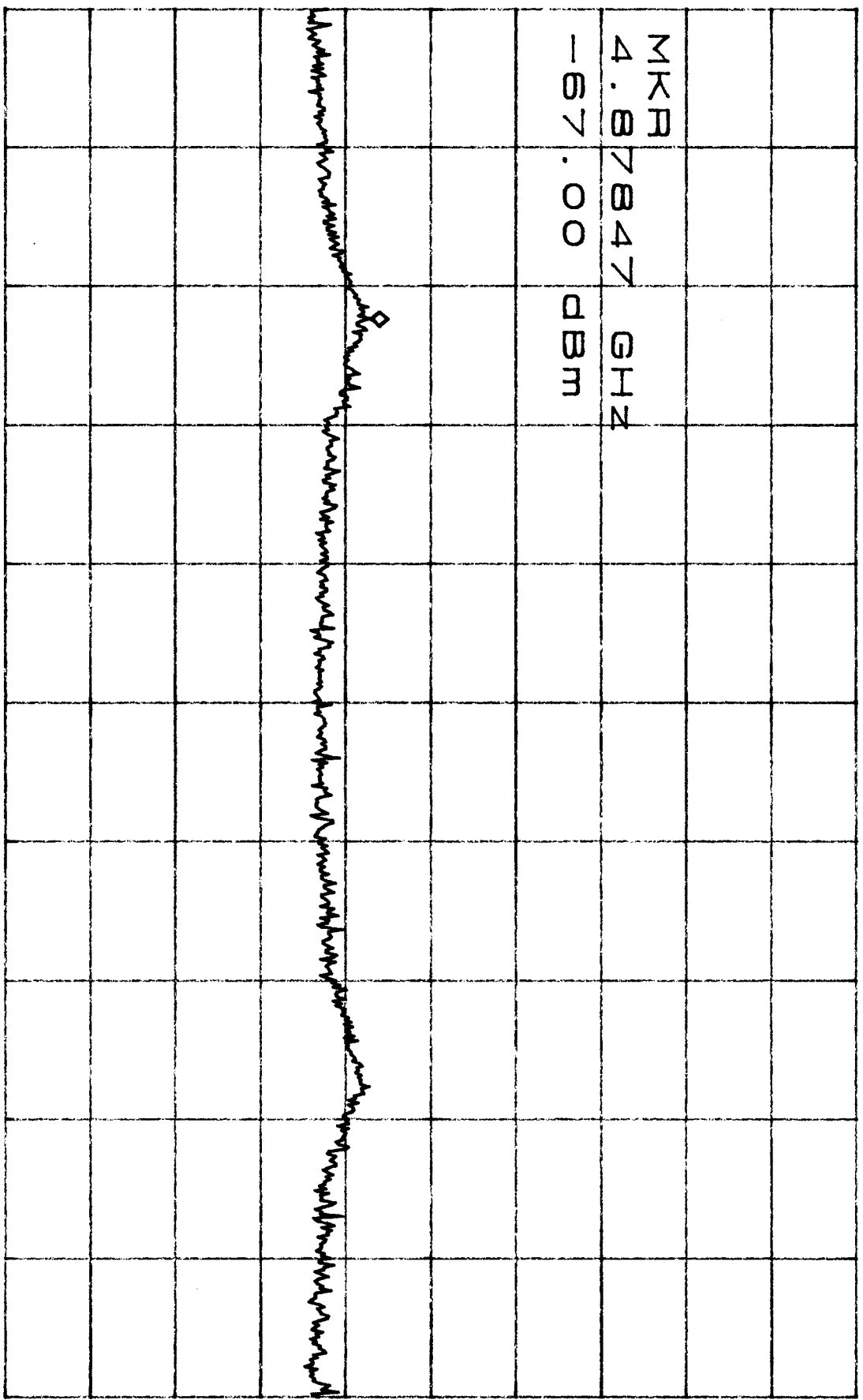
\*ATTEN 0dB

MKP -67.00dBm

RL -10.0dBm

10dB/

4.87847GHz



CENTER 4.88400GHz

SPAN 20.00MHz

\*RBW 1.0MHz

\*VBW 1.0MHz

SWP 50ms

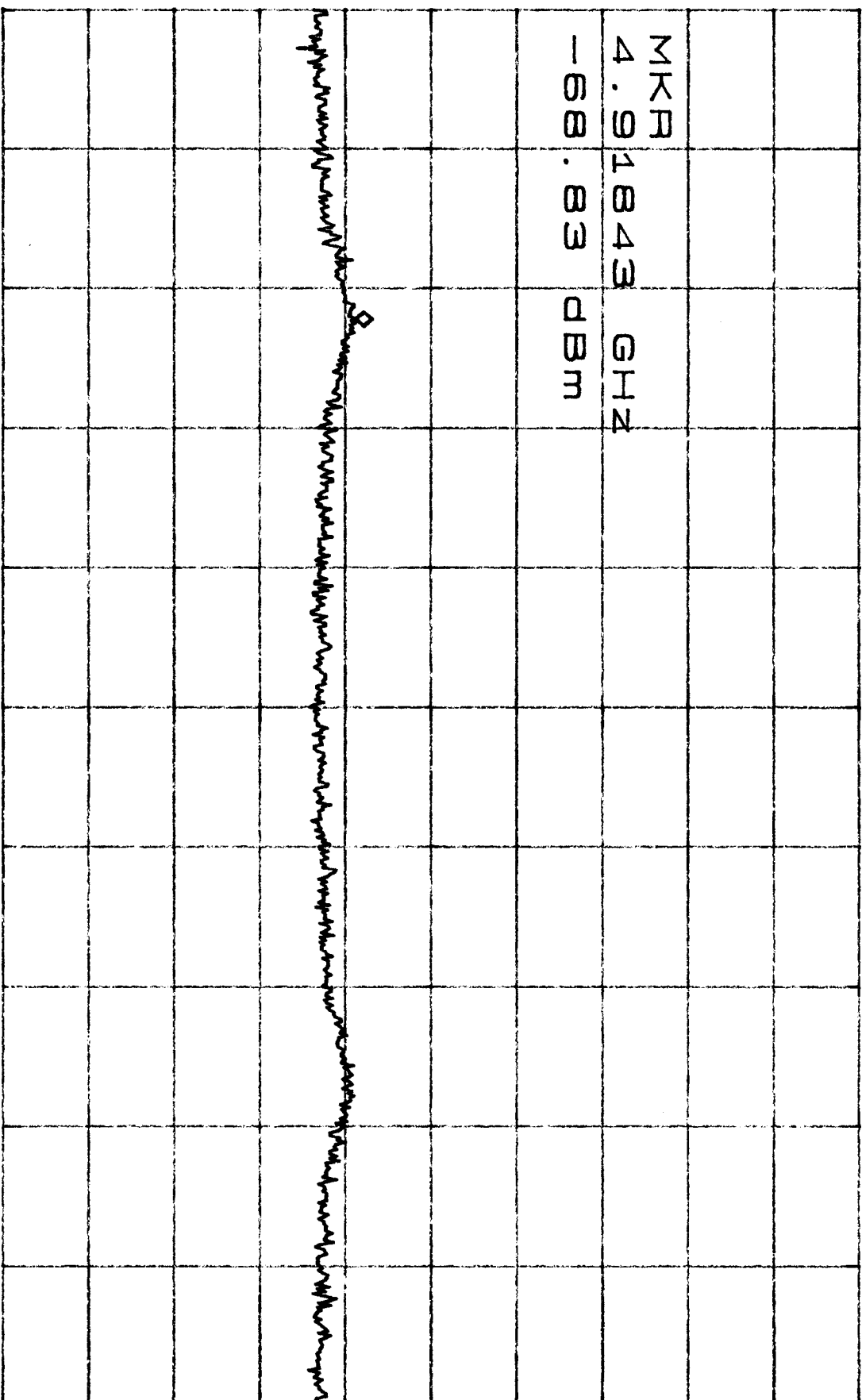
\*ATTEN 0dB

NKP -68.83dBm

RL -10.0dBm

10dB/

4.91843GHz



CENTER 4.92400GHz

SPAN 20.00MHz

\*RBW 1.0MHz

\*VBW 1.0MHz

SWP 50ms

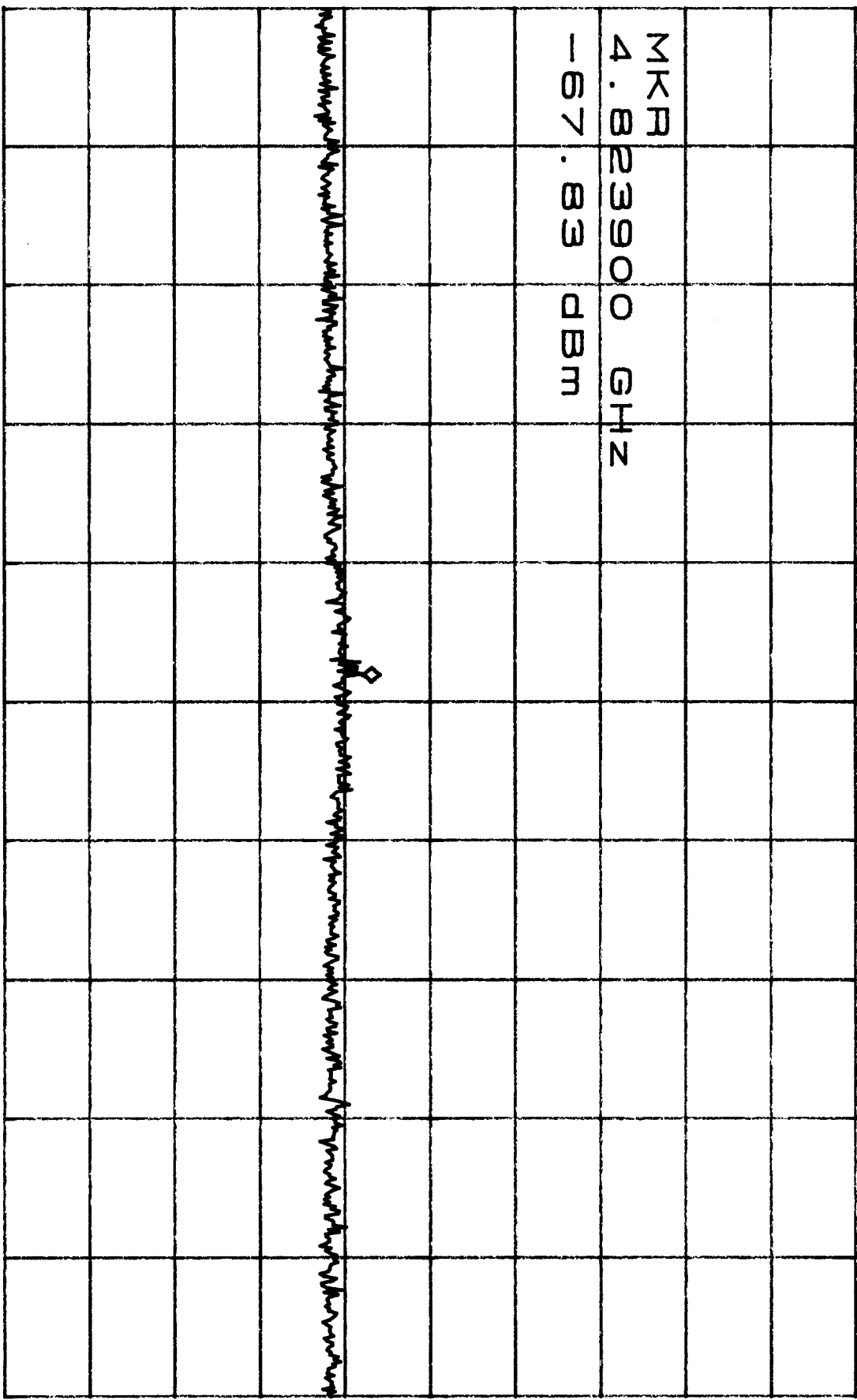
\*ATTEN 0dB

MARK -67.83dBm

FIL -10.0dBm

10dB/

4.823900GHz



CENTER 4.824000GHz

SPAN 5.000MHz

\*RBW 1.0MHz

\*VBW 1.0MHz

SWP 50ms

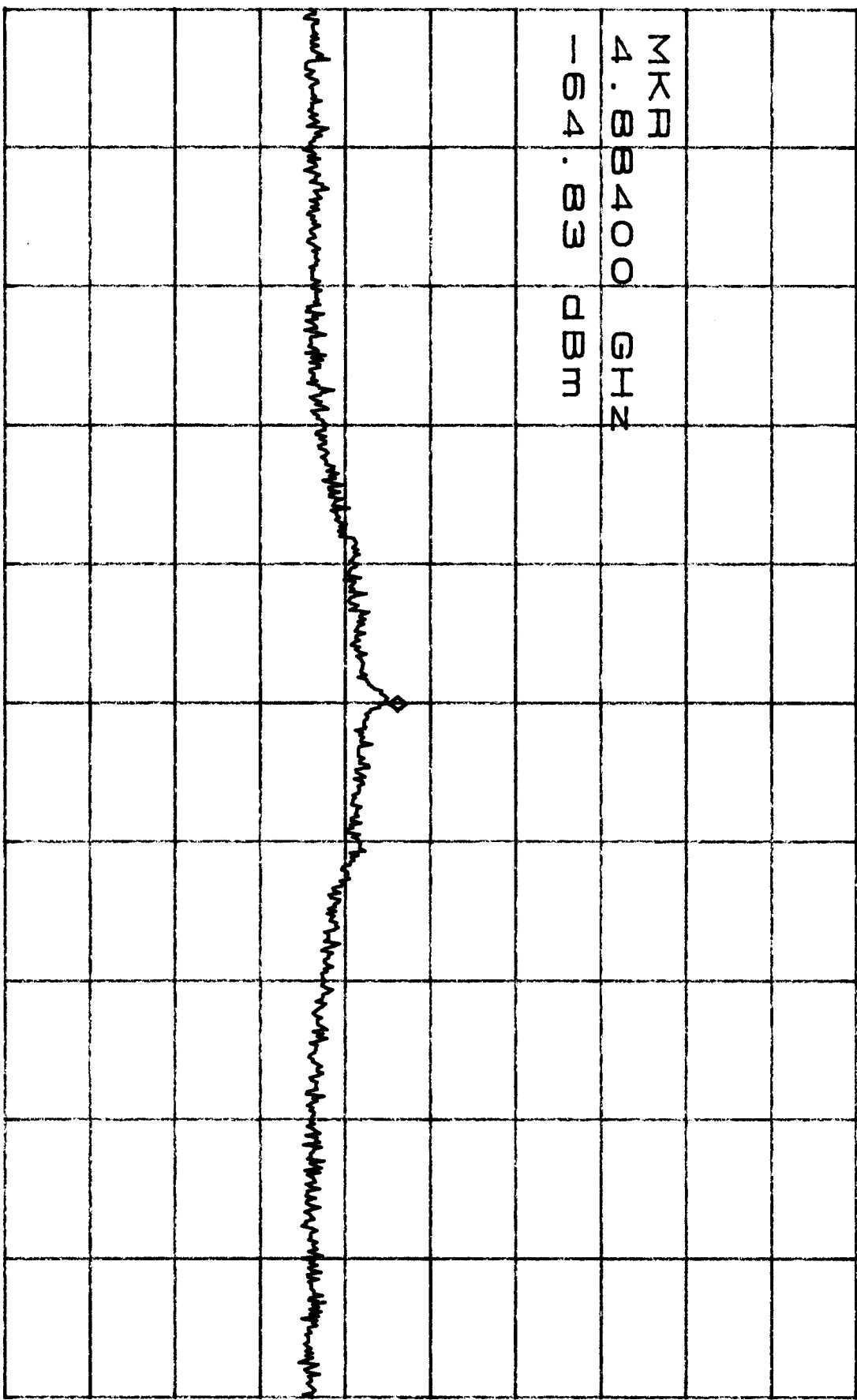
\*ATTEN 0dB

NK 164.83dBm

FL -10.0dBm

10dB/

4.88400GHz



CENTER 4.88400GHz

SPAN 50.00MHz

\*RBW 1.0MHz

\*VBW 1.0MHz

SWP 50ms

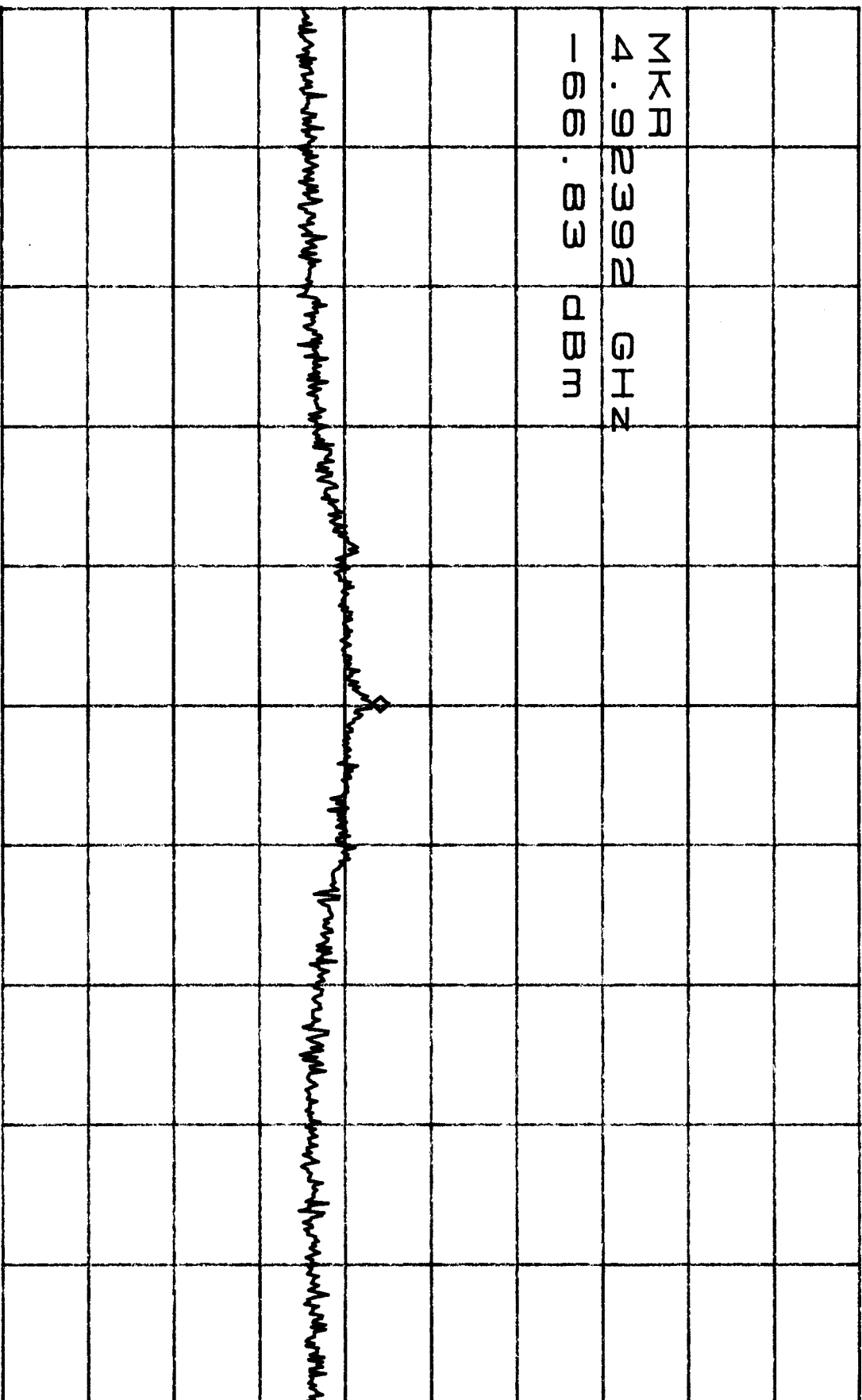
\*ATTEN 0dB

MARK -66.83dBm

RL -10.0dBm

10dB/

4.92392GHz



CENTER 4.92400GHz

SPAN 50.00MHz

\*RBW 1.0MHz

\*VBW 1.0MHz

SWP 50ms