



***Blank Page***

***Don't Forget To Delete Me!***

PK #57

6.9

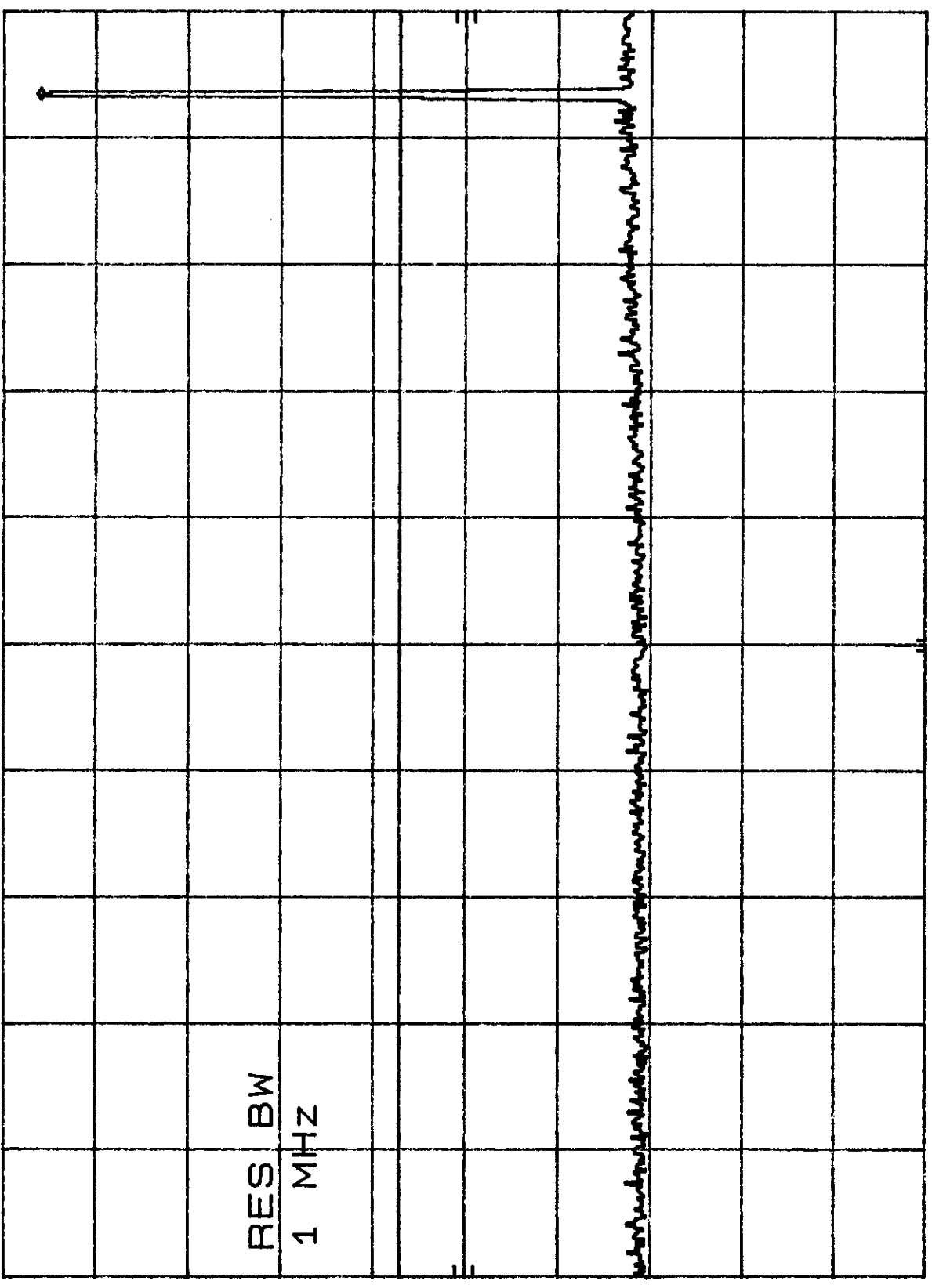
WJ SPURIOUS  
REF 30.0 dBm  
MKR 1.870 GHz  
26.00 dBm

ATTEN 40 dB

RES BW  
1 MHz

DL  
-13.0  
dBm

10 dB/



START 30 MHz  
RES BW 1 MHz  
STOP 2.00 GHz  
SWP 49.3 msec

VBW 1 MHz

#57

OK #57

57

WJ SPURIOUS

MKR 18.72 GHz  
-22.80 dBm

ATTEN 40 dB

REF 30.0 dBm

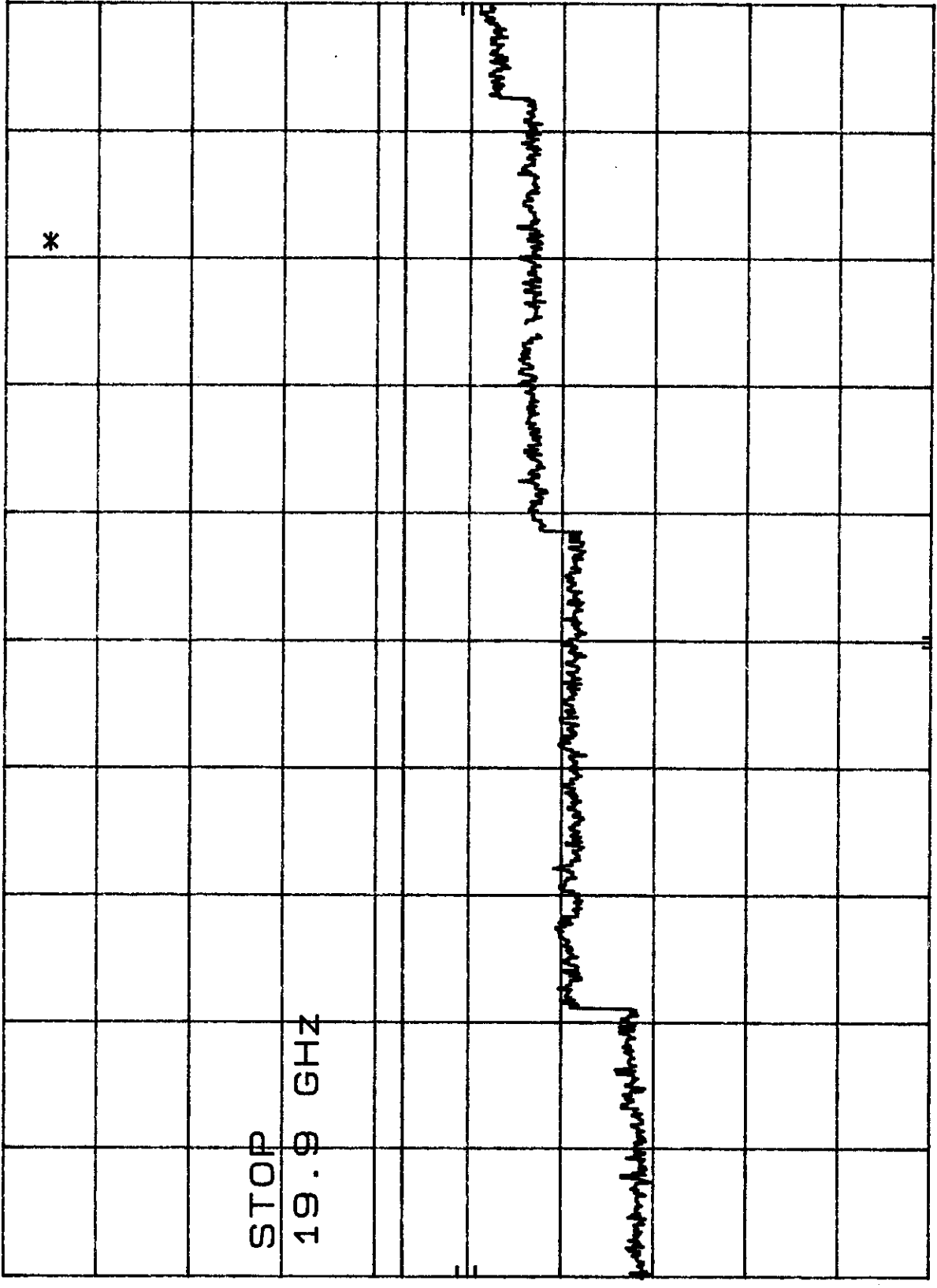
hp

10 dB/

STOP

19.9 GHz

DL  
-13.0  
dBm



START 2.0 GHz

STOP 19.9 GHz  
SWP 448 msec

VBW 1 MHz

RES BW 1 MHz

#57

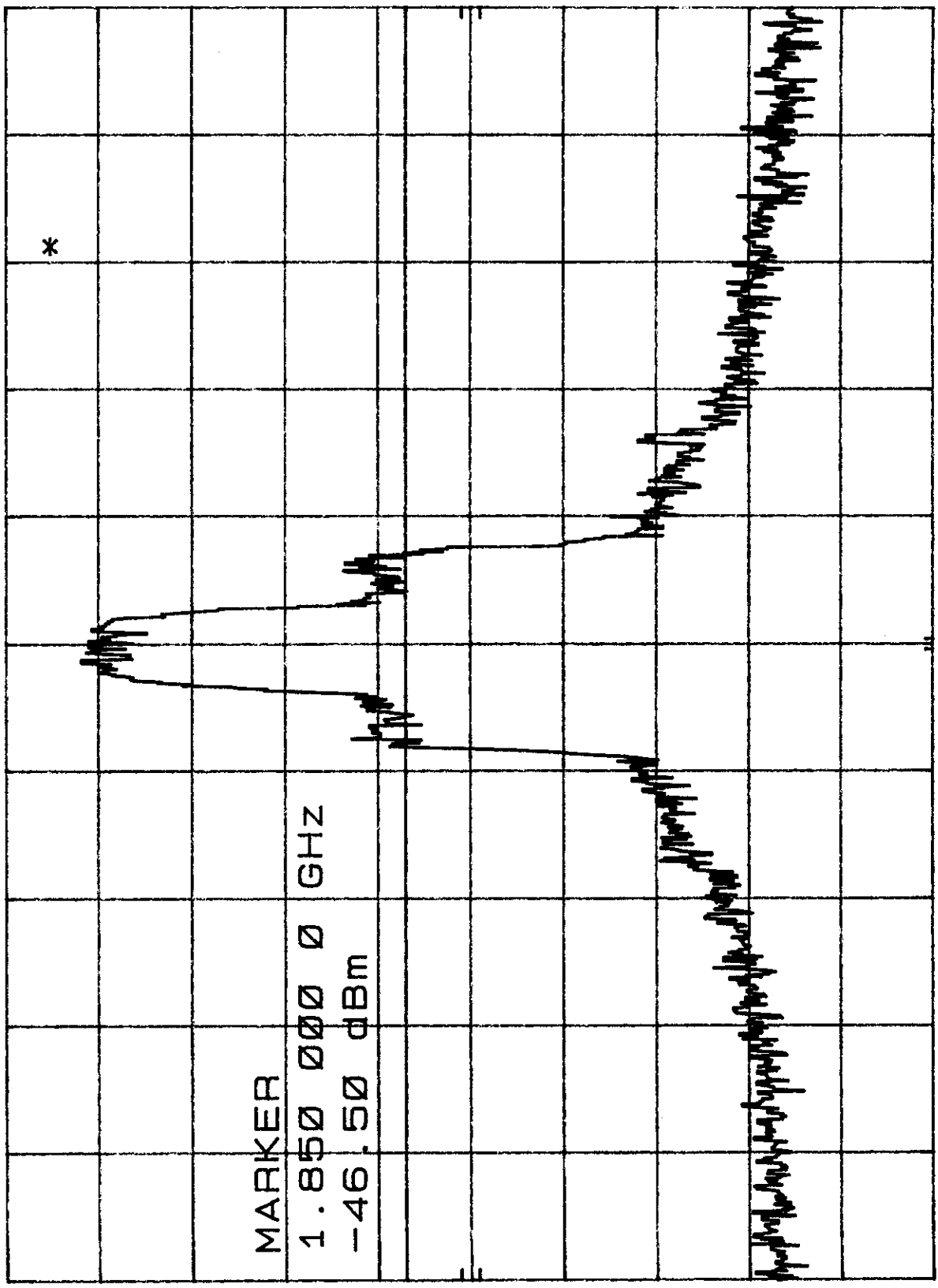
#58

58

hp WJ BANDEDGES REF 30.0 dBm ATTN 40 dB MKR 1.850 000 0 GHZ -46.50 dBm

10 dB/

DL  
-13.0  
dBm  
MARKER  
1.850 000 0 GHZ  
-46.50 dBm



CENTER 1.850 100 GHZ RES BW 1 KHZ VBW 1 MHZ SPAN 500 KHZ SWP 1.50 sec

#58

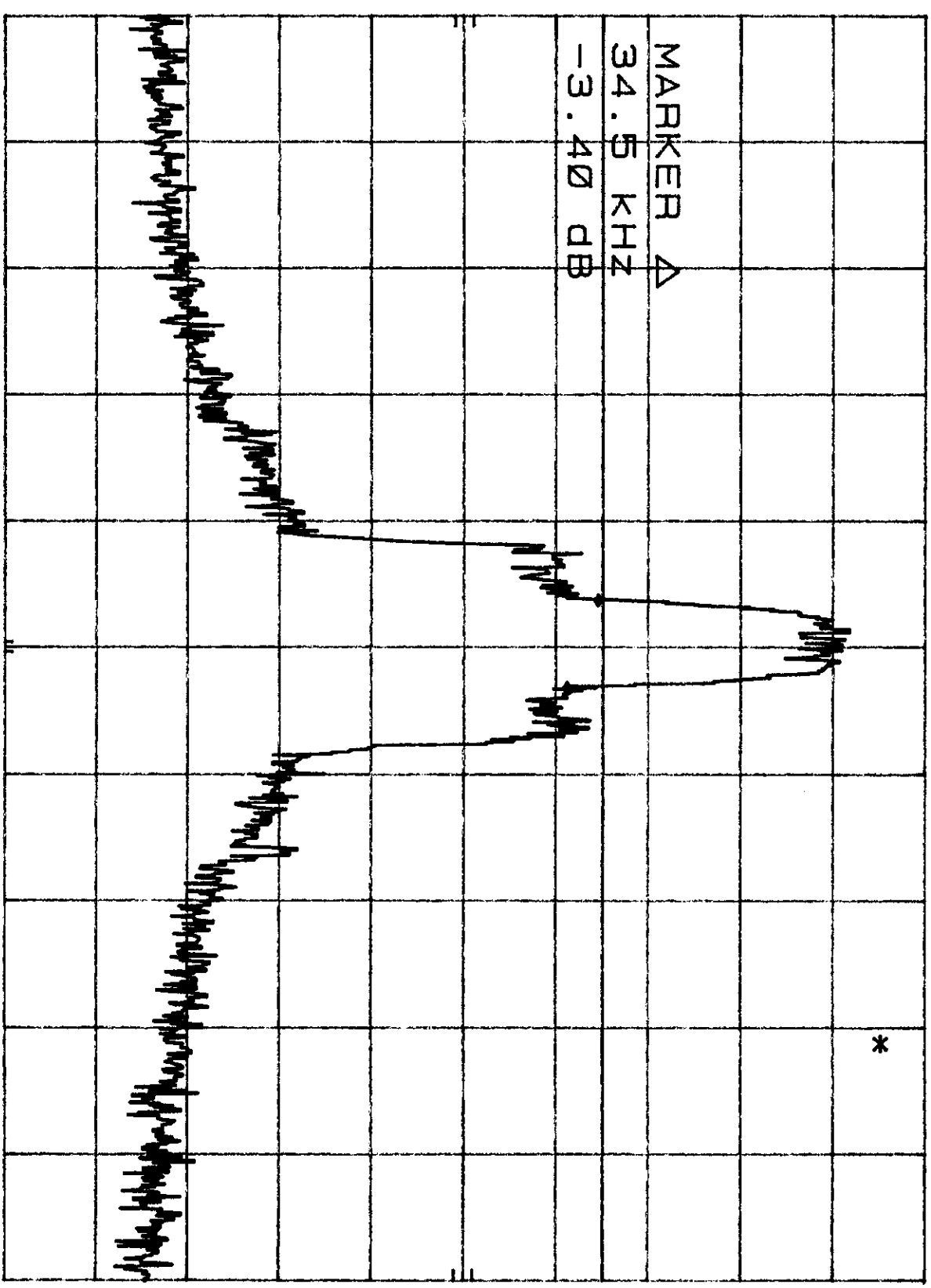
WJ BANDWIDTH  
hp REF 30.0 dBm 10 dB/

ATTEN 40 dB

MKR Δ 34.5 KHZ  
-3.40 dB

DL  
-4.9  
dBm

MARKER Δ  
34.5 KHZ  
-3.40 dB



CENTER 1.850 100 GHZ  
RES BW 1 KHZ

VBW 1 MHZ

SPAN 500 KHZ  
SVP 1.50 sec

#59

60

HP

WJ SPURIOUS

REF 30.0 dBm

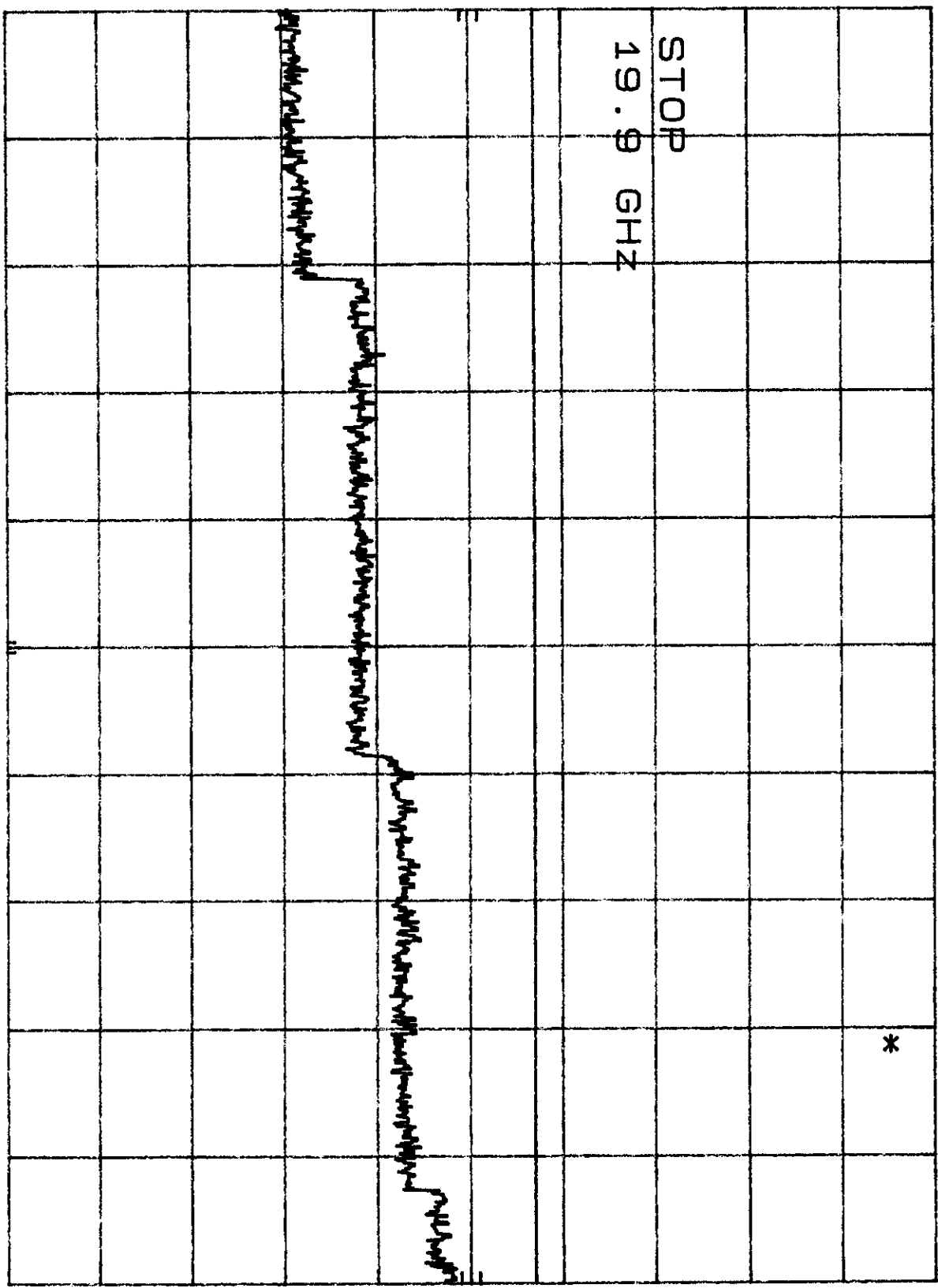
ATTEN 40 dB

#60

PK

10 dB/

DL  
-13.0  
dBm



STOP

19.9 GHz

\*

START 2.0 GHz

RES BW 1 MHz

VBW 1 MHz

SWP 448 msec

STOP 19.9 GHz

#60

60

#60 PK

WJ SPURIOUS

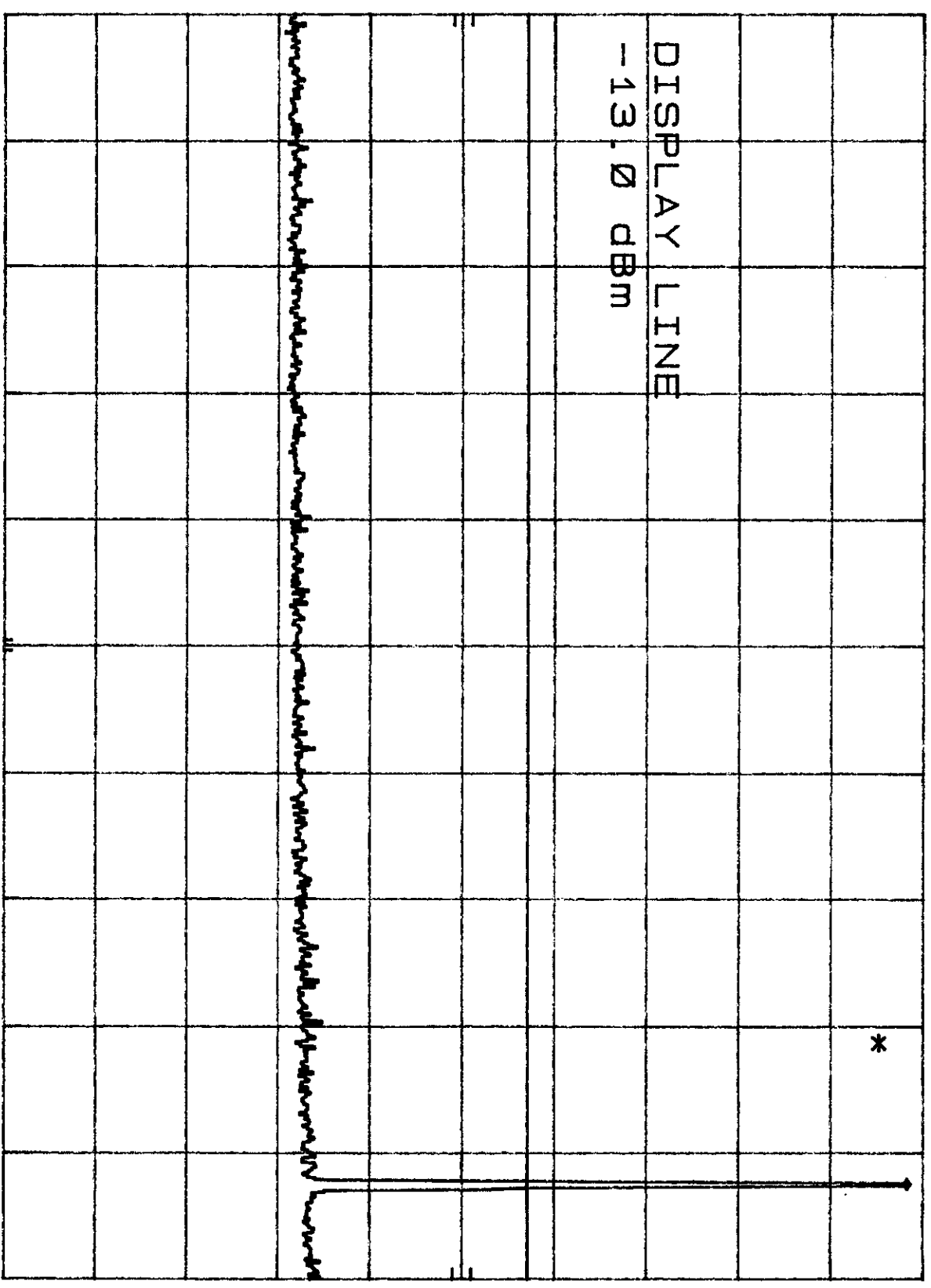
REF 30.0 dBm

ATTEN 40 dB

MKR 1.850 GHz  
28.30 dBm

10 dB/

DL  
-13.0  
dBm



START 30 MHz  
RES BW 1 MHz  
VBW 1 MHz  
STOP 2.00 GHz  
SWP 49.3 msec

#60

61

#61

PK

WB BANDEDGES

MKR 1.865 000 0 GHZ

REF 30.0 dBm

ATTEN 40 dB

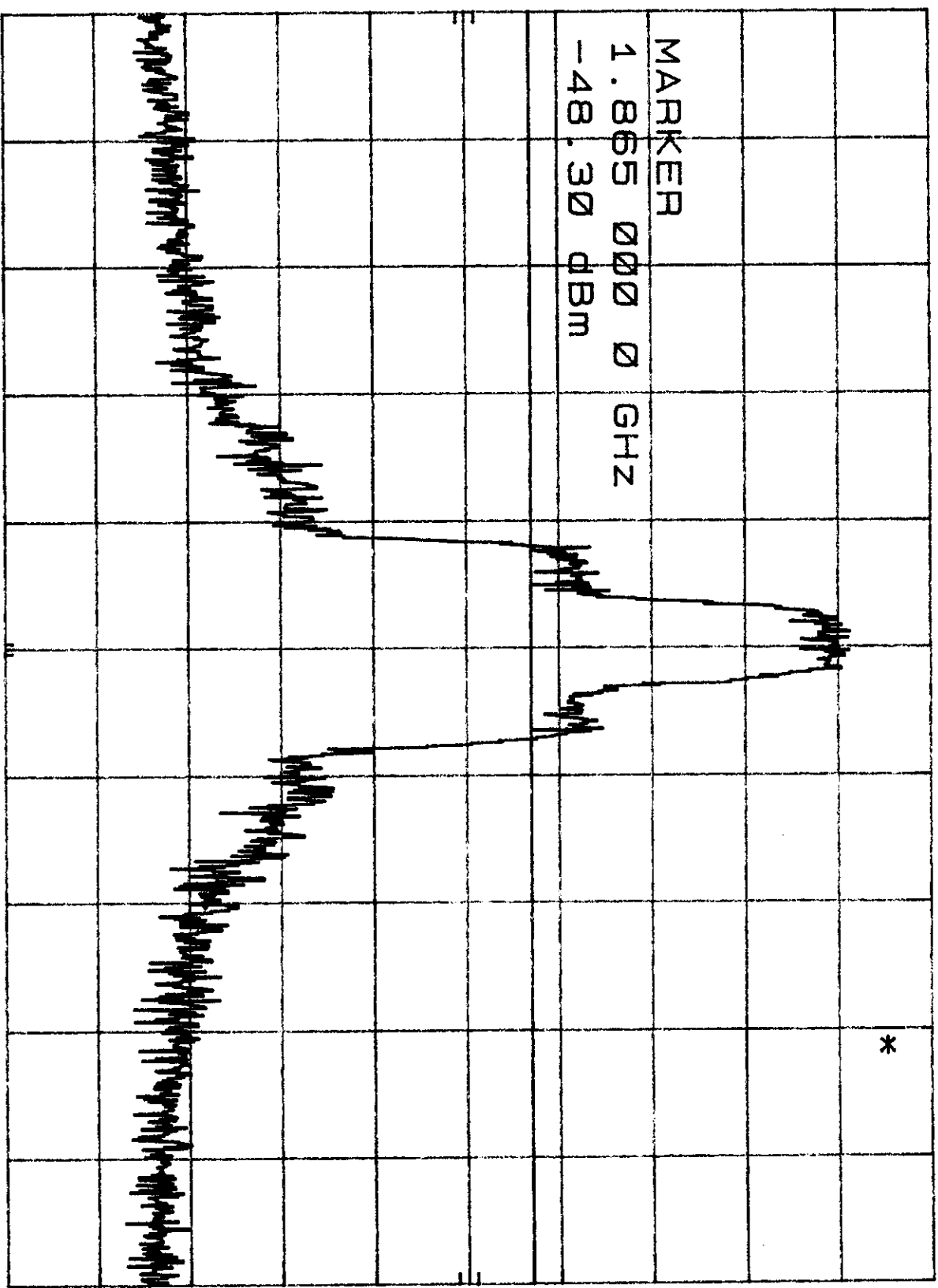
-48.30 dBm

hp

10 dB/

DL  
-13.0  
dBm

MARKER  
1.865 000 0 GHZ  
-48.30 dBm



CENTER 1.864 900 GHZ  
RES BW 1 KHZ

VBW 1 MHZ

SPAN 500 KHZ  
SWP 1.50 sec

#61



WB BANDEDGES

62

MKR 1.865 000 0 GHZ

#62 PK

REF 30.0 dBm

ATTEN 40 dB

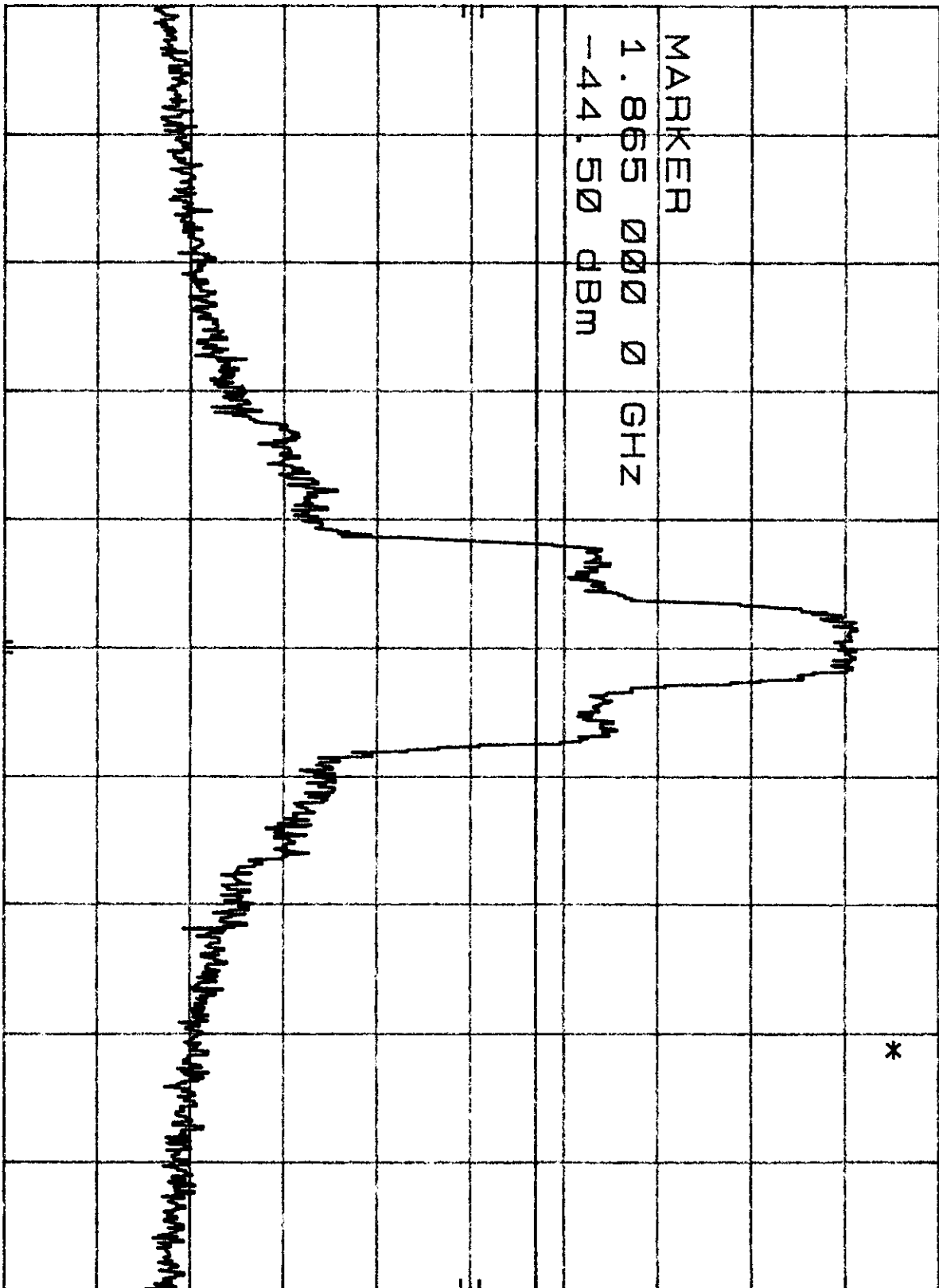
-44.50 dBm

10 dB/

DL  
-13.0  
dBm

MARKER

1.865 000 0 GHZ  
-44.50 dBm



CENTER 1.865 100 GHZ

RES BW 1 KHZ

VBW 1 MHZ

SPAN 500 KHZ  
SWP 1.50 sec

#62

WB BANDEDGES  
REF 30.0 dBm

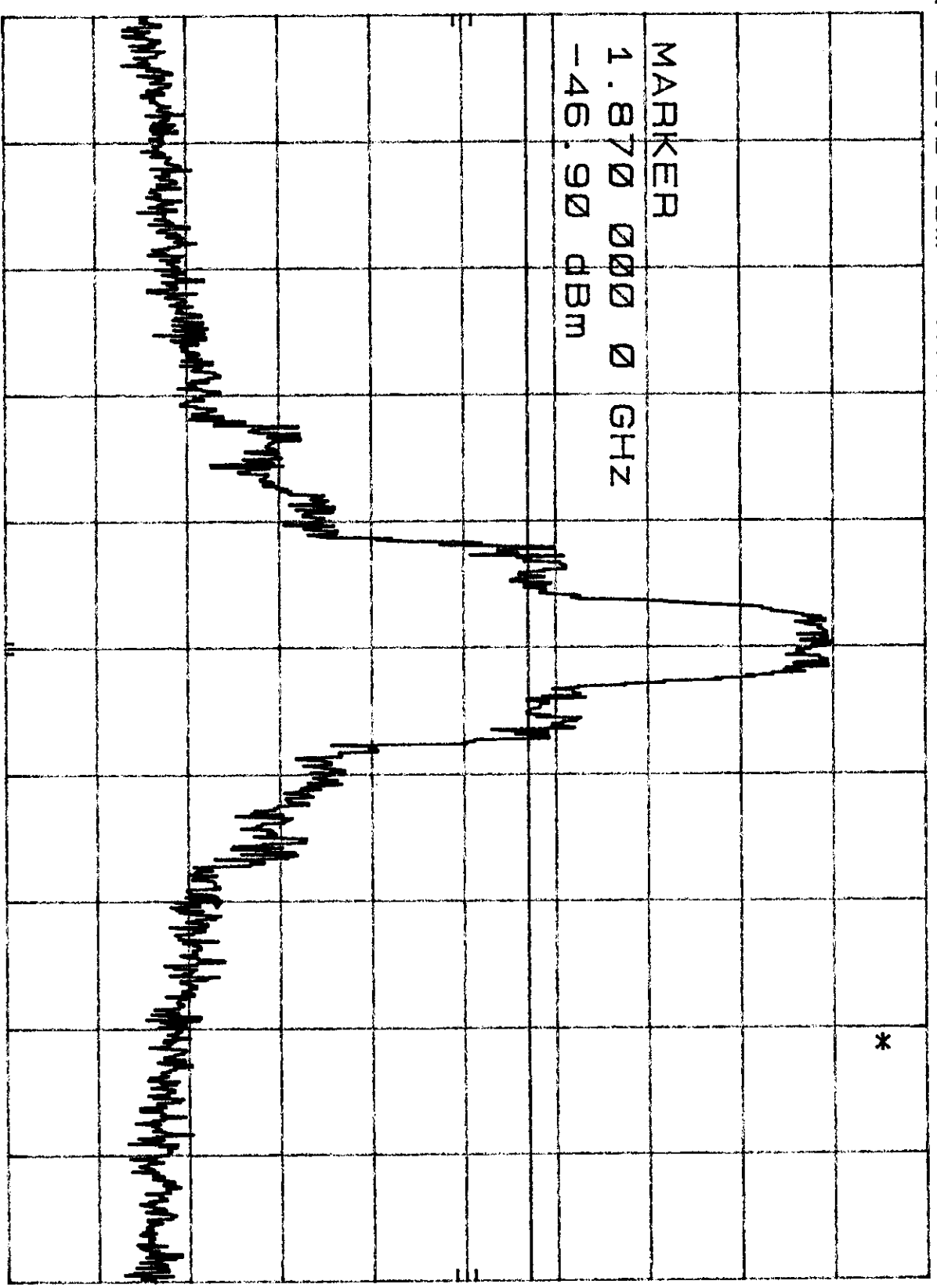
ATTEN 40 dB

MKR 1.870 000 0 GHz  
-46.90 dBm

10 dB/

DL  
-13.0  
dBm

MARKER  
1.870 000 0 GHz  
-46.90 dBm



CENTER 1.869 900 GHz  
RES BW 1 KHZ

VBW 1 MHZ

SPAN 500 KHZ  
SWP 1.50 sec

#63

#63  
PK

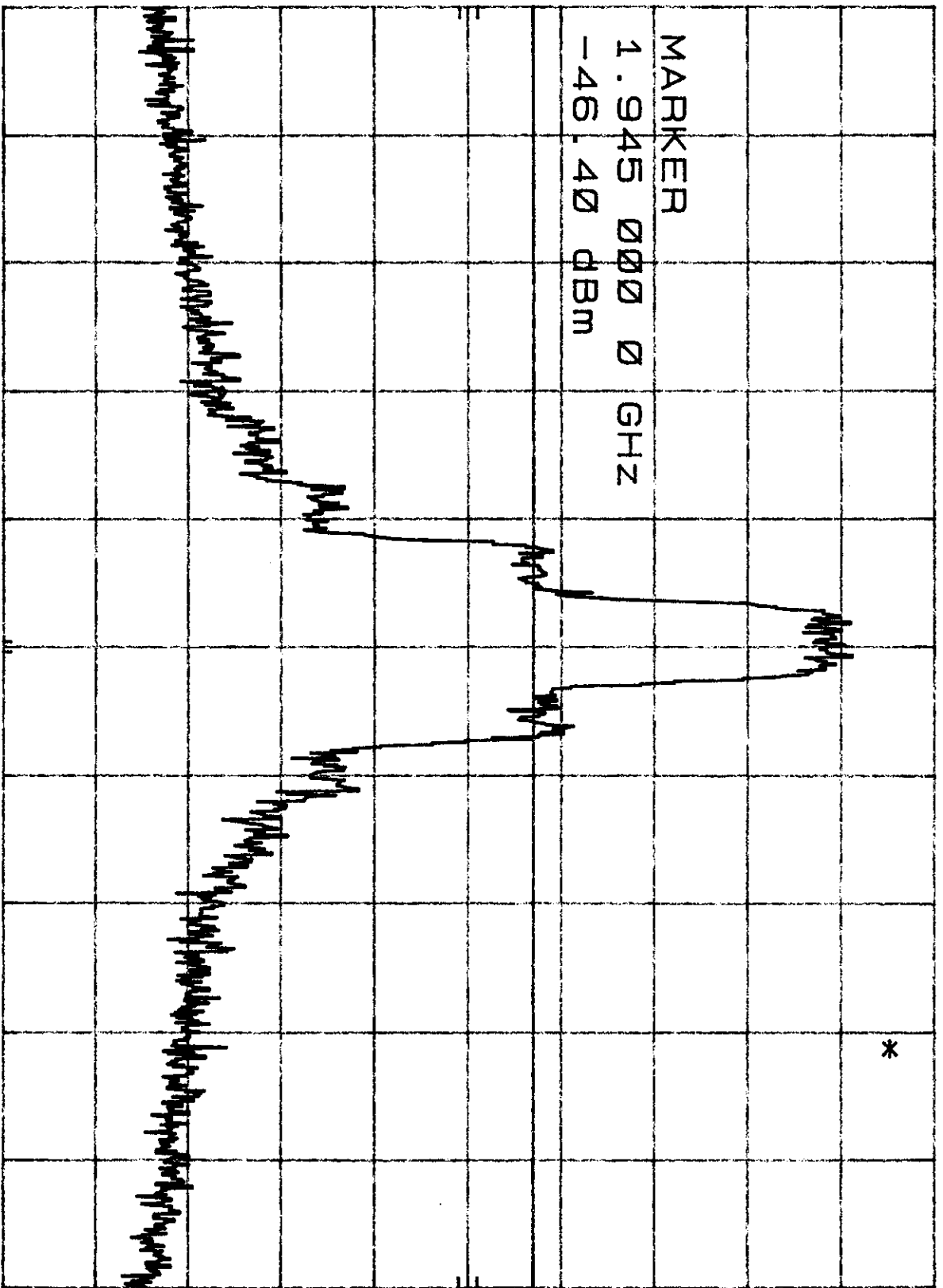
WB BANDEDGES  
REF 30.0 dBm  
10 dB/

ATTEN 40 dB

MKR 1.945 000 0 GHz  
-46.40 dBm

DL  
-13.0  
dBm

MARKER  
1.945 000 0 GHz  
-46.40 dBm



CENTER 1.945 100 GHz  
RES BW 1 KHZ

VBW 1 MHZ

SPAN 500 KHZ  
SWP 1.50 sec

#65

#65 PK

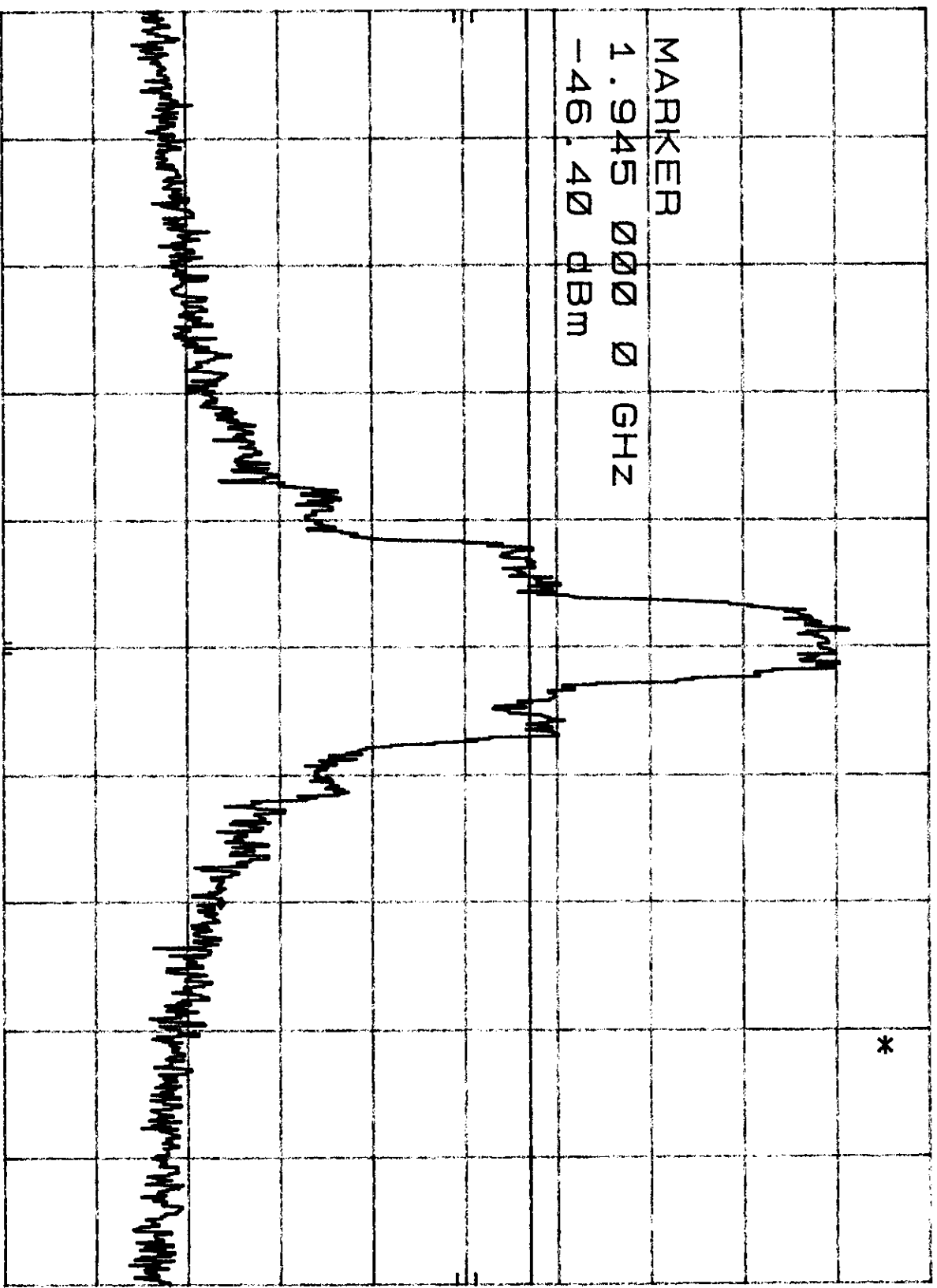
66

#66 PK

WB BANDEDGES  
REF 30.0 dBm  
ATTEN 40 dB  
MKR 1.945 000 0 GHz  
-46.40 dBm

10 dB/

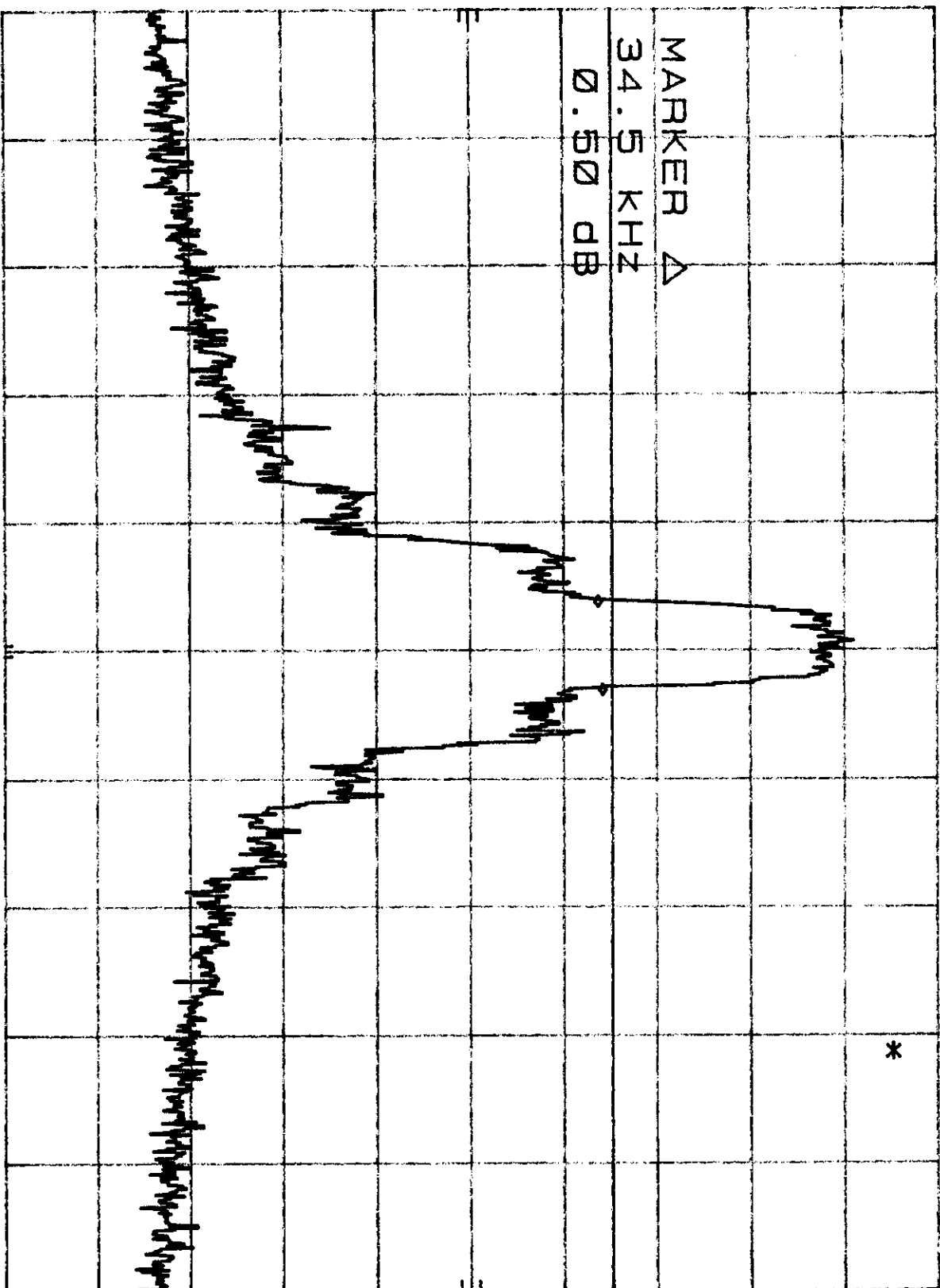
DL  
-13.0  
dBm



CENTER 1.944 900 GHz  
RES BW 1 KHZ  
VBW 1 MHZ  
SPAN 500 KHZ  
SWP 1.50 sec  
#66

MKR  $\Delta$  34.5 KHz  
0.50 dB

DL  
-4.8  
dbm



SPAN 500 KHZ  
SWP 1.50 sec

#6

WJ SPURIOUS

REF 30.0 dBm

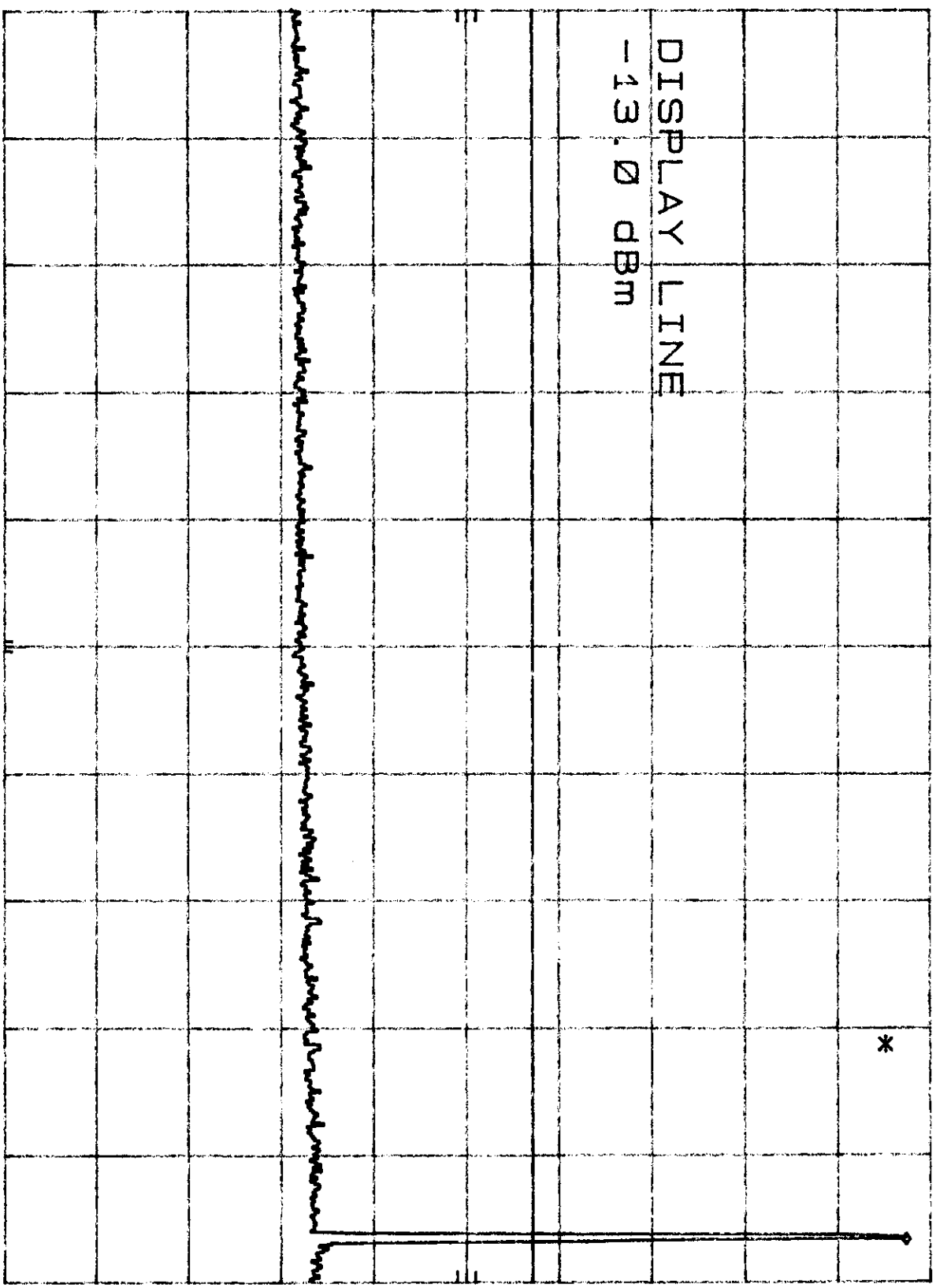
ATTEN 40 dB

MKR 1.933 GHz

27.40 dBm

10 dB/

DL  
-13.0  
dBm



START 30 MHz

RES BW 1 MHz

VBW 1 MHz

SWP 49.3 msec

STOP 2.00 GHz

#68

68

#68

PK

68

PK

WJ SPURIOUS

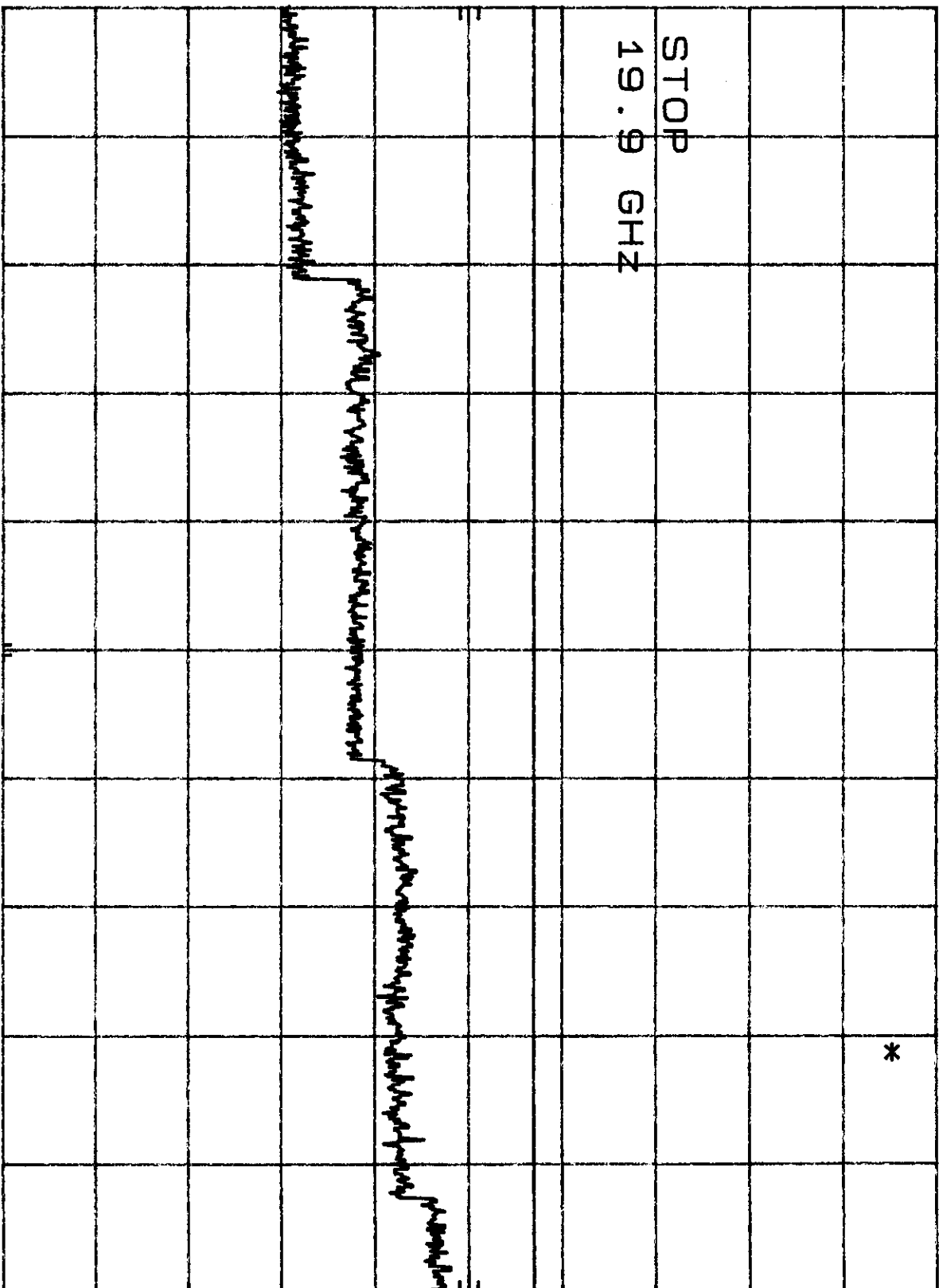
REF 30.0 DBM

ATTEN 40 DB

#68

HP  
10 dB/

DL  
-13.0  
dBm



STOP

19.9 GHz

\*

START 2.0 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 19.9 GHz  
SWP 448 msec

#68

WJ SPURIOUS  
hp REF 30.0 dBm ATTEN 40 dB

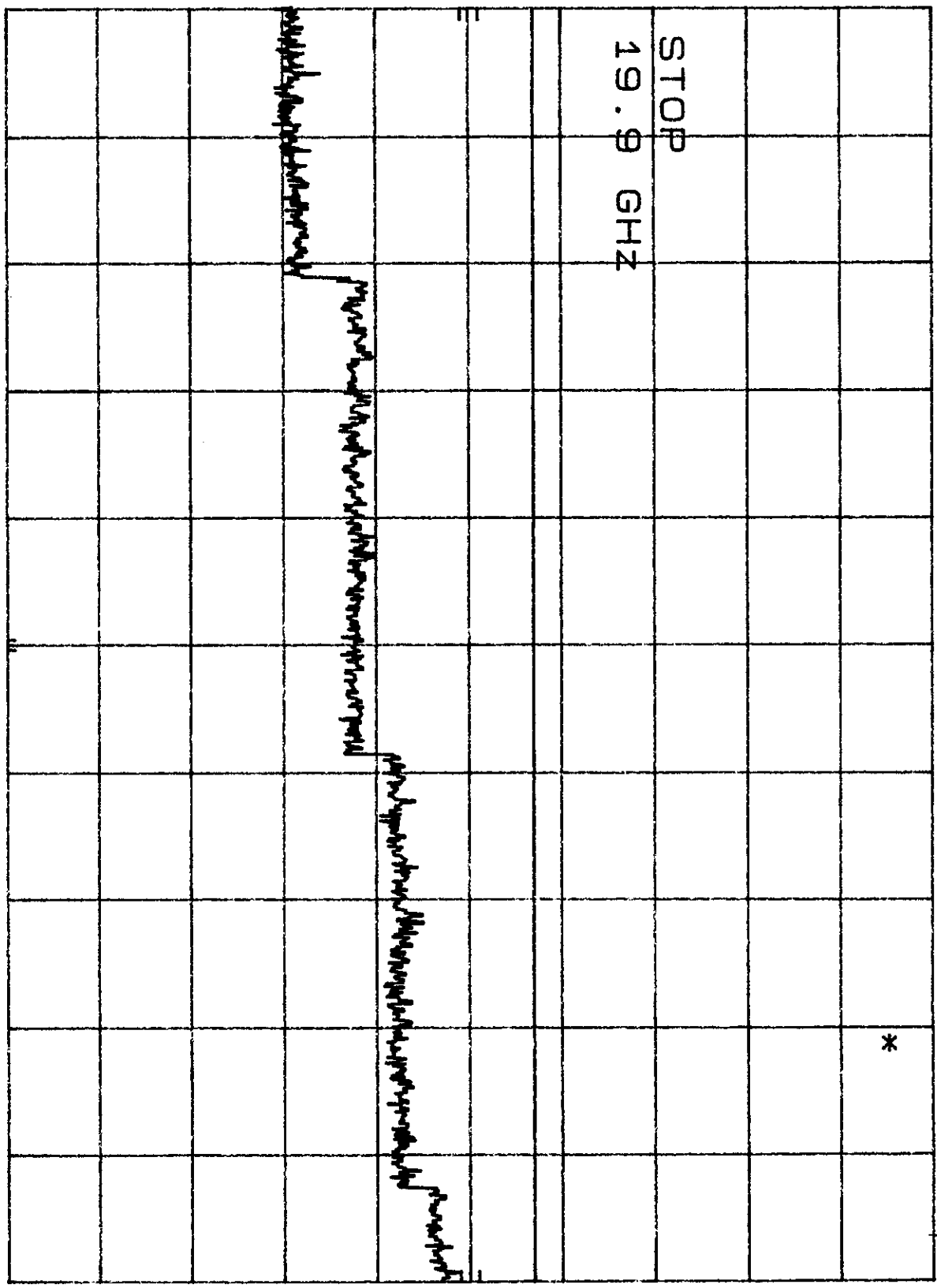
69

#69

PK

10 dB/

DL  
-13.0  
dBm



START 2.0 GHz RES BW 1 MHz VBW 1 MHz SWP 448 msec

#69



WJ SPURIOUS  
REF 30.0 dBm

ATTEN 40 dB

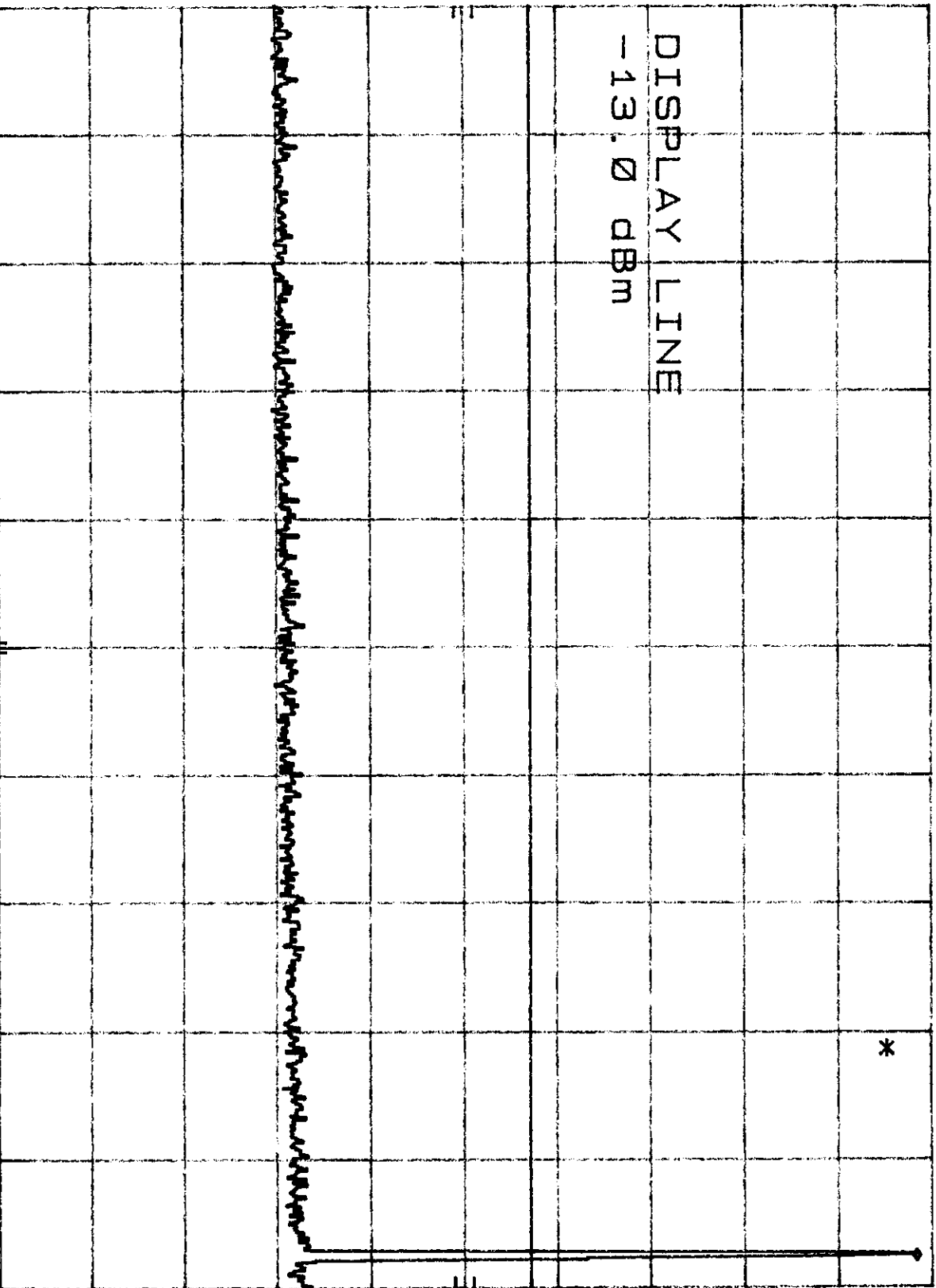
MKR 1.951 GHz  
28.40 dBm

67

#69  
PK

10 dB/  
HP

DL  
-13.0  
dBm



START 30 MHz  
RES BW 1 MHz  
VBW 1 MHz  
STOP 2.00 GHz  
SWP 49.3 msec

#69

h<sub>2</sub>

WJ SPURIOUS  
REF 30.0 dBm  
ATTEN 40 dB

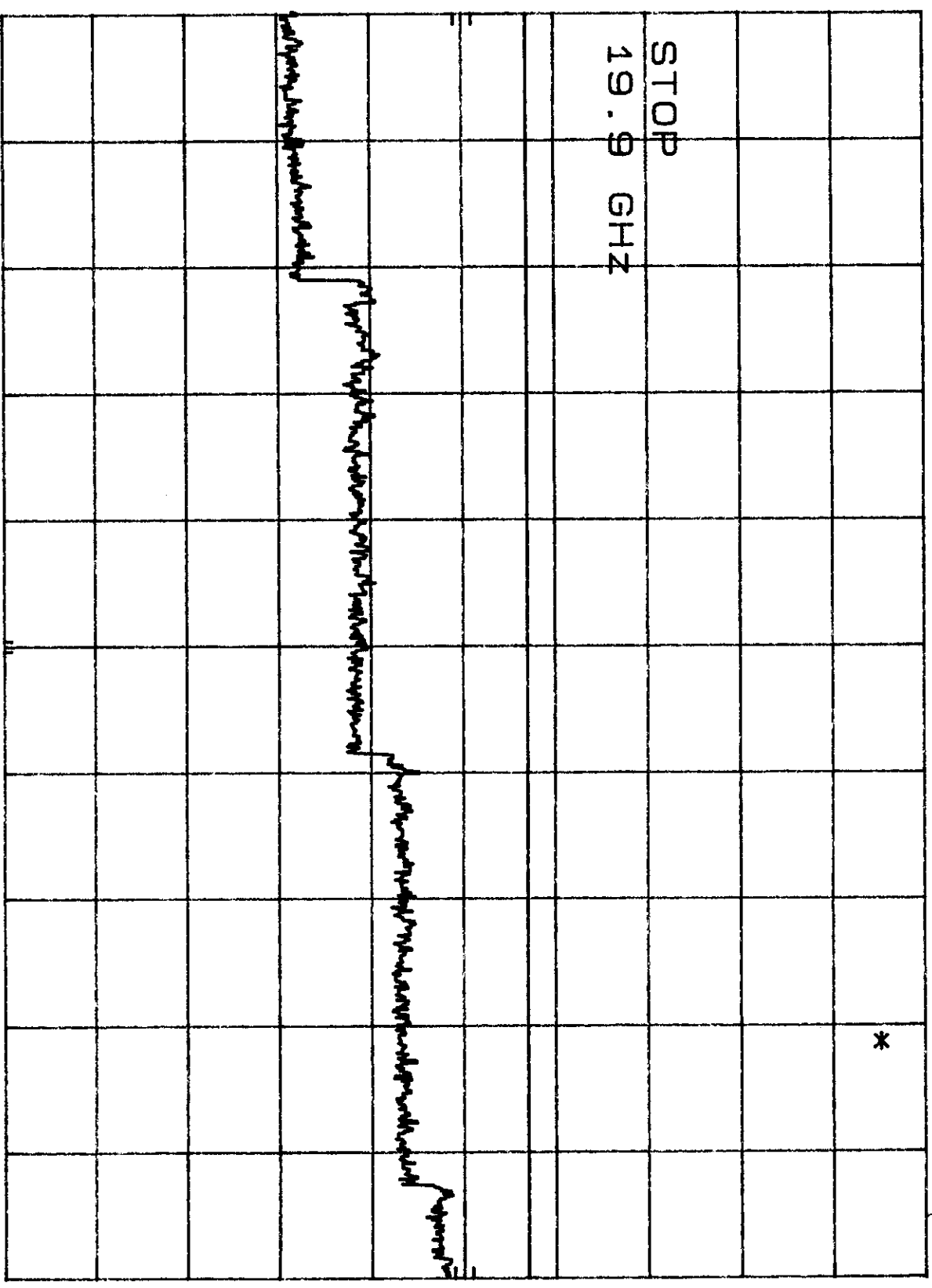
70

#70

PK

10 dB/

DL  
-13.0  
dBm



START 2.0 GHz  
RES BW 1 MHz  
VBW 1 MHz  
STOP 19.9 GHz  
SWP 448 msec

#70

70

#70 PK

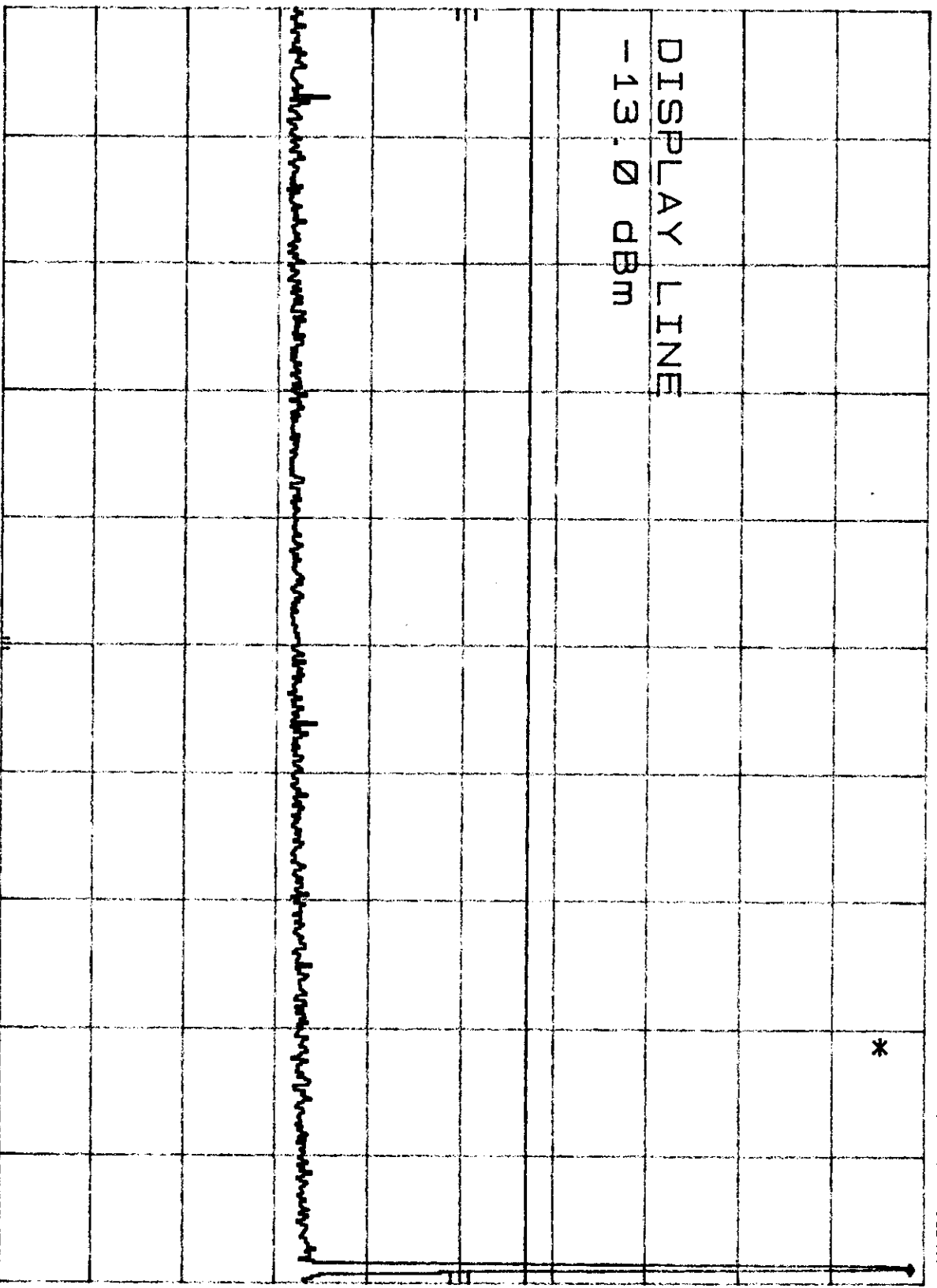
WJ SPURIOUS  
REF 30.0 dBm

ATTEN 40 dB

MKR 1.976 GHz  
28.60 dBm

10 dB/

DL  
-13.0  
dBm



START 30 MHz  
RES BW 1 MHz

VBW 1 MHz

STOP 2.00 GHz  
SWP 49.3 msec

#70

71

#71 PK

hp

WJ BANDWIDTH  
REF 30.0 dBm

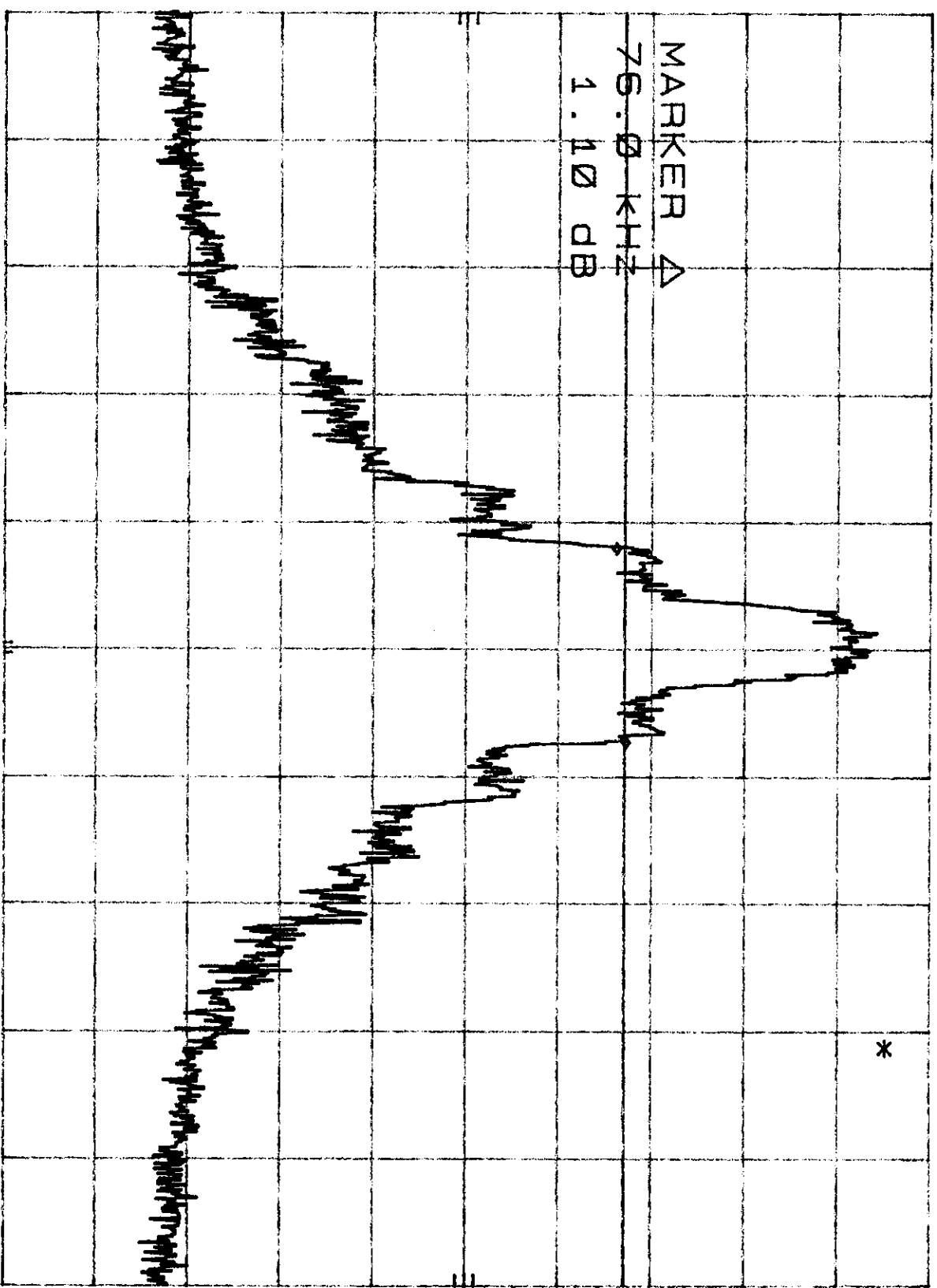
ATTEN 40 dB

MKR  $\Delta$  76.0 KHz  
1.10 dB

10 dB/

DL  
-2.9  
dBm

MARKER  $\Delta$   
76.0 KHz  
1.10 dB



CENTER 1.975 050 GHz  
RES BW 1 KHz

VBW 1 MHz

SPAN 500 KHz  
SWP 1.50 sec

#71

22

#72 PK

HP

WB BANDEDGES

REF 30.0 dBm

ATTEN 40 dB

MKR 1.930 000 0 GHz

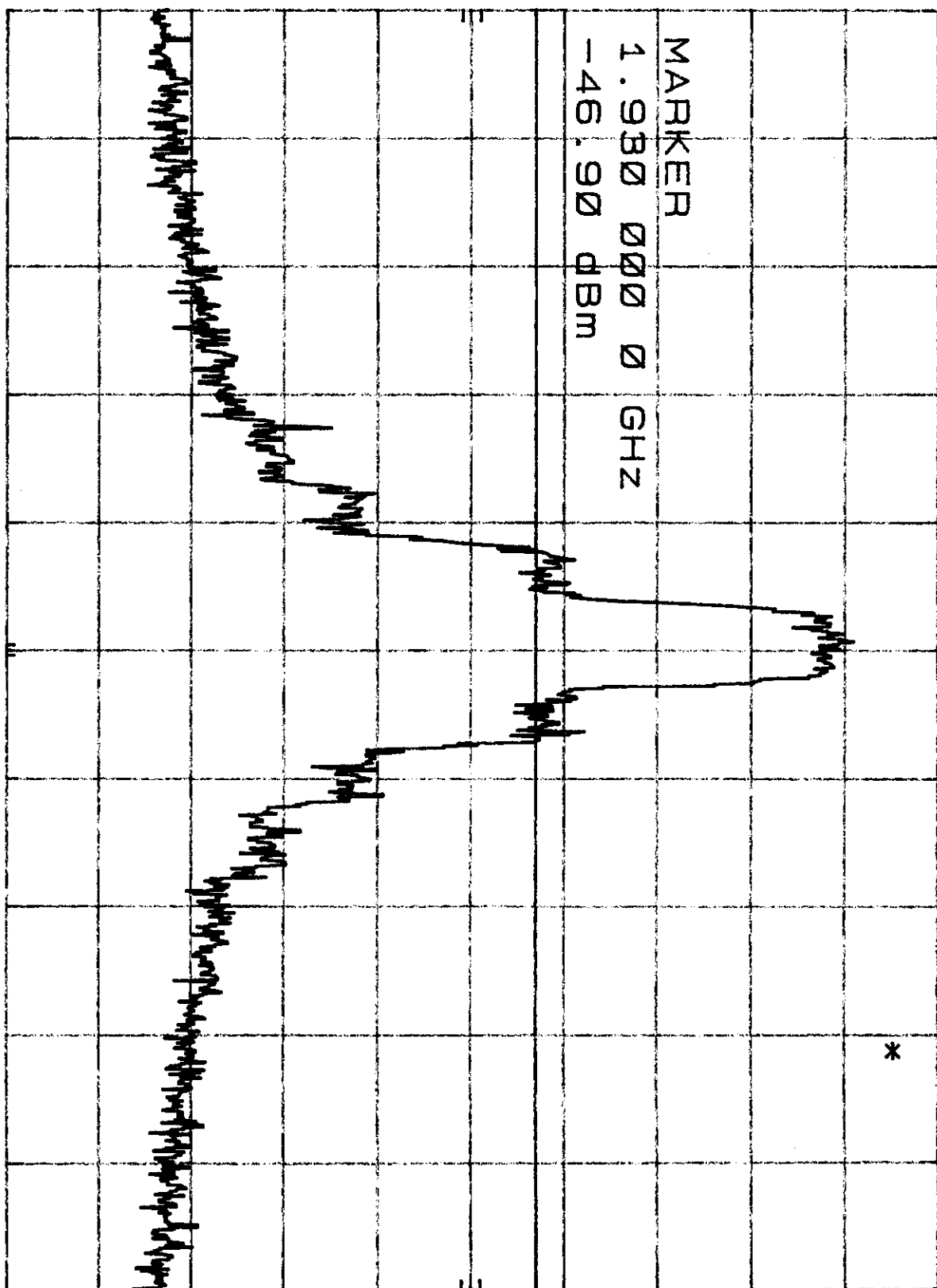
-46.90 dBm

10 dB/

DL  
-13.0  
dBm

MARKER

1.930 000 0 GHz  
-46.90 dBm



CENTER 1.930 100 GHz

RES BW 1 KHz

VBW 1 MHz

SPAN 500 KHz

SWP 1.50 sec

#72

73

#73

PK

WJ BANDEDGES  
7p REF 30.0 dBm

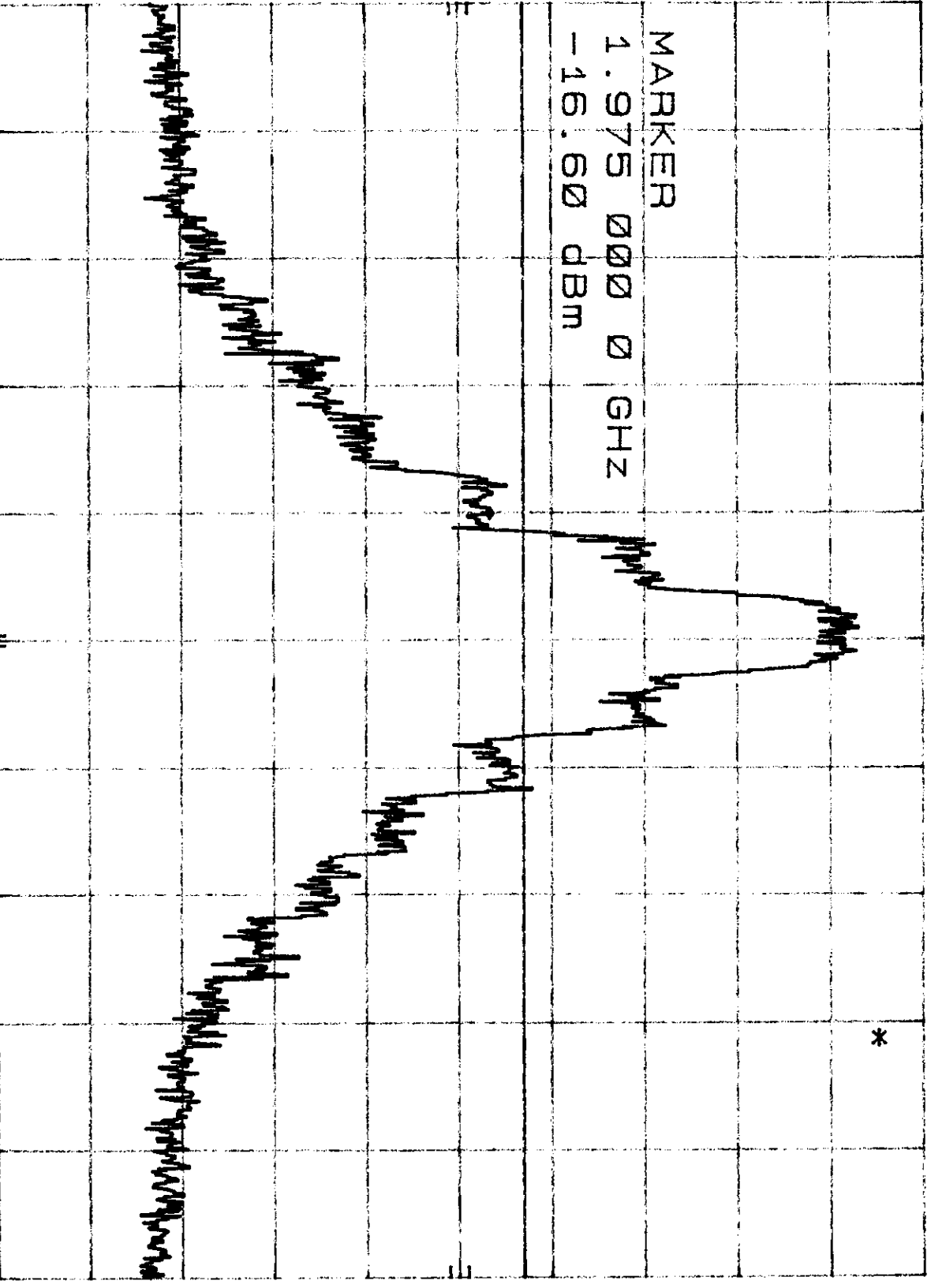
ATTEN 40 dB

MKR 1.975 000 0 GHz  
-16.60 dBm

10 dB/

DL  
-13.0  
dBm

MARKER  
1.975 000 0 GHz  
-16.60 dBm



CENTER 1.975 050 GHz  
RES BW 1 KHZ

VBW 1 MHz

SPAN 500 KHZ  
SWP 1.50 sec

#73

94

#74

hpa

WJ BANDEDGES  
REF 30.0 dBm

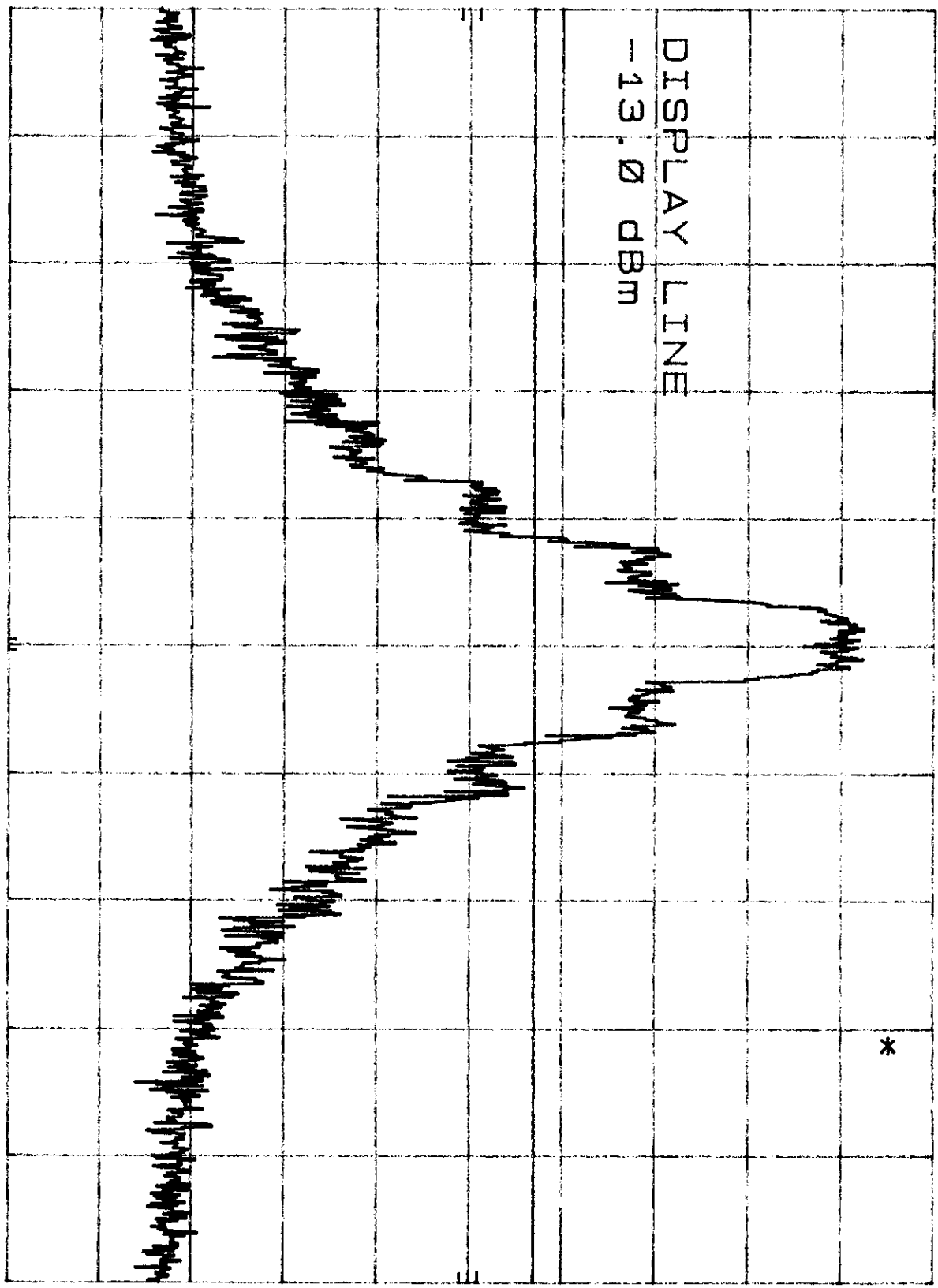
ATTEN 40 dB

MKR 1.990 000 0 GHz  
-18.90 dBm

10 dB/

DL  
-13.0  
dBm

DISPLAY LINE  
-13.0 dBm



CENTER 1.989 950 GHz  
RES BW 1 KHZ

VBW 1 MHZ

SPAN 500 KHZ  
SWP 1.50 sec

#74

HP

WJ BANDEDGES  
REF 30.0 dBm

ATTEN 40 dB

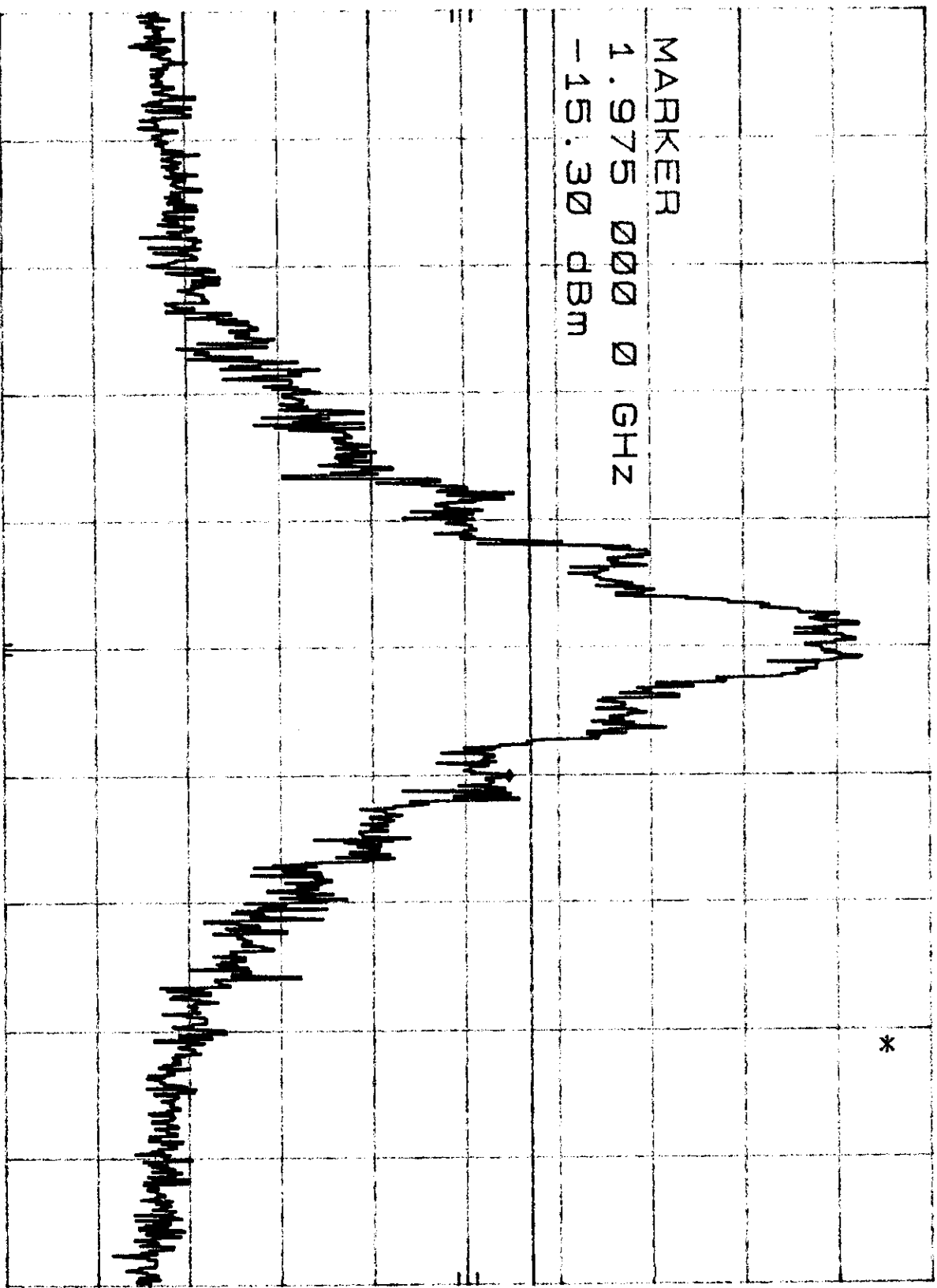
MR 1.975 000 0 GHz  
-15.30 dBm

10 dB/

DL  
-13.0  
dBm

MARKER

1.975 000 0 GHz  
-15.30 dBm



75

#75 PK

CENTER 1.974 950 GHz  
RES BW 1 KHZ

VBW 1 MHZ

SPAN 500 KHZ  
SWP 1.50 sec

#75



76

#76 PK

WJ BANDEDGES

REF 30.0 dBm

ATTEN 40 dB

MKR 1.970 000 0 GHz

-22.20 dBm

hpa

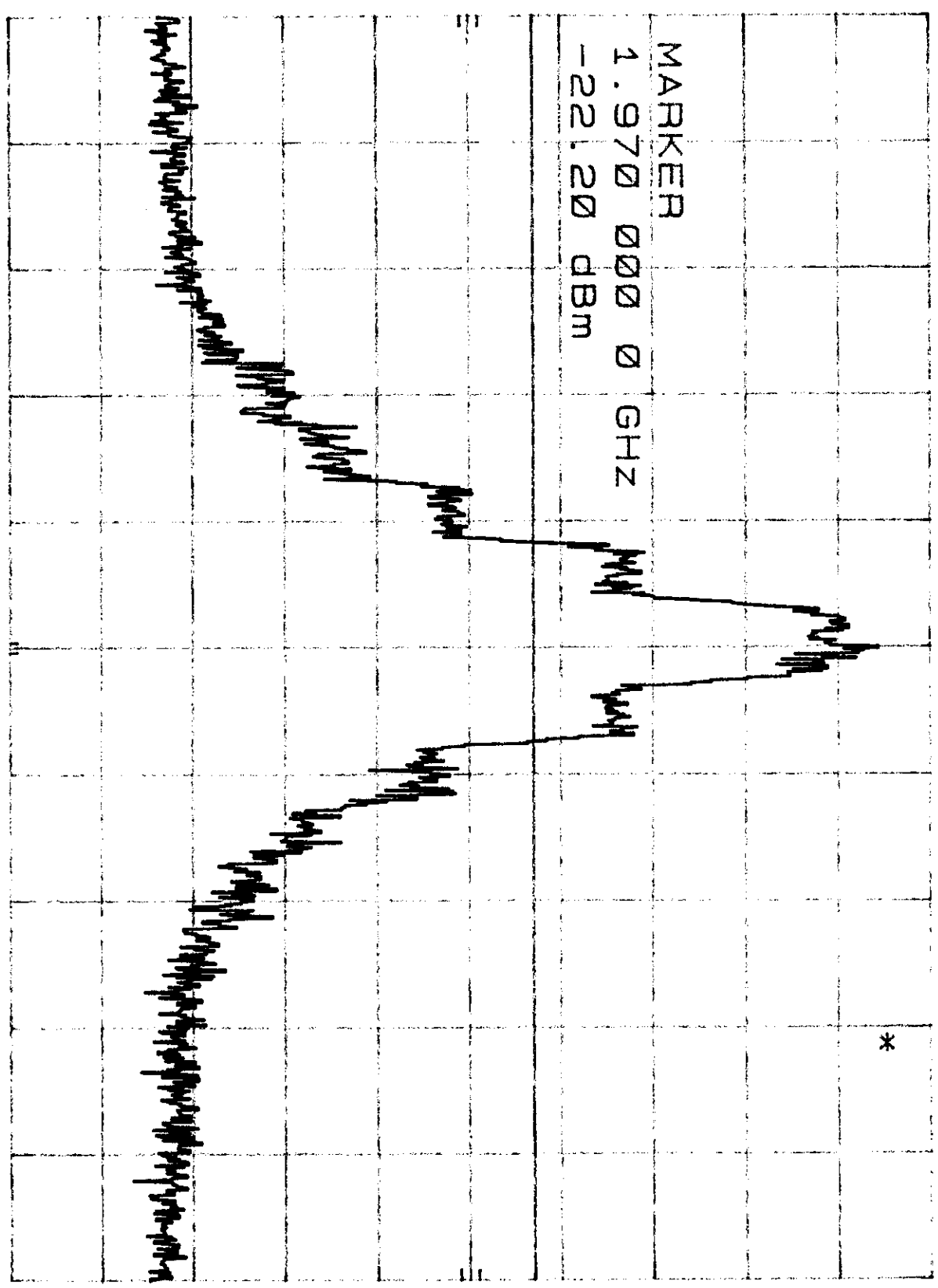
10 dB/

DL  
-13.0  
dBm

MARKER

1.970 000 0 GHz

-22.20 dBm



CENTER

1.970 050 GHz

RES BW 1 KHz

VBW 1 MHz

SPAN 500 KHz

SMP 1.50 sec

#76

WJ BANDEDGES  
REF 30.0 dBm

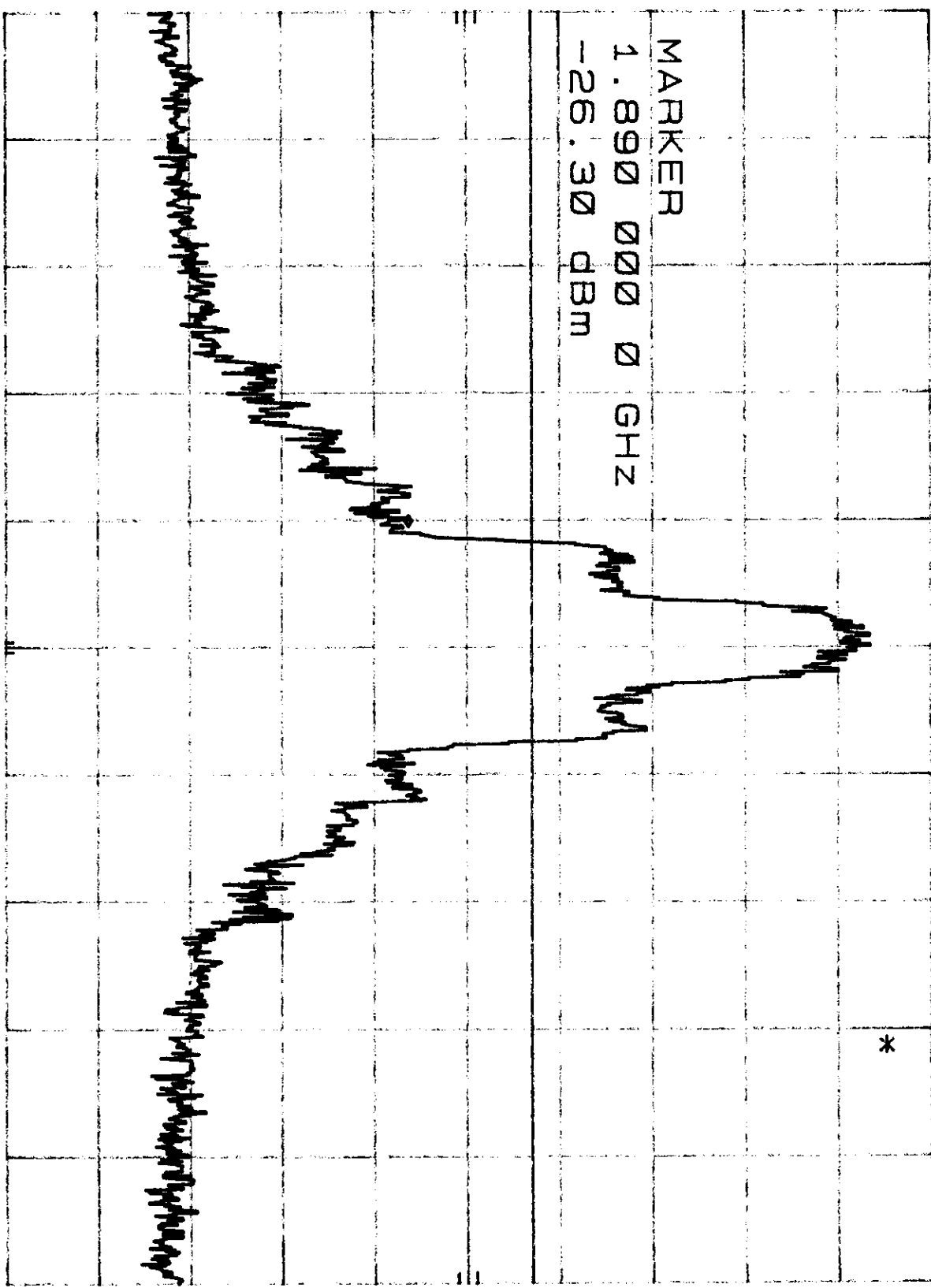
ATTEN 40 dB

MARK 1.890 000 0 GHz  
-26.30 dBm

10 dB/

DL  
-13.0  
dBm

MARKER  
1.890 000 0 GHz  
-26.30 dBm



CENTER 1.890 050 GHz  
RES BW 1 KHz

VBW 1 MHz

SPAN 500 KHz  
SWP 1.50 sec

#77

HP

10 dB/

DL  
-13.0  
dBm

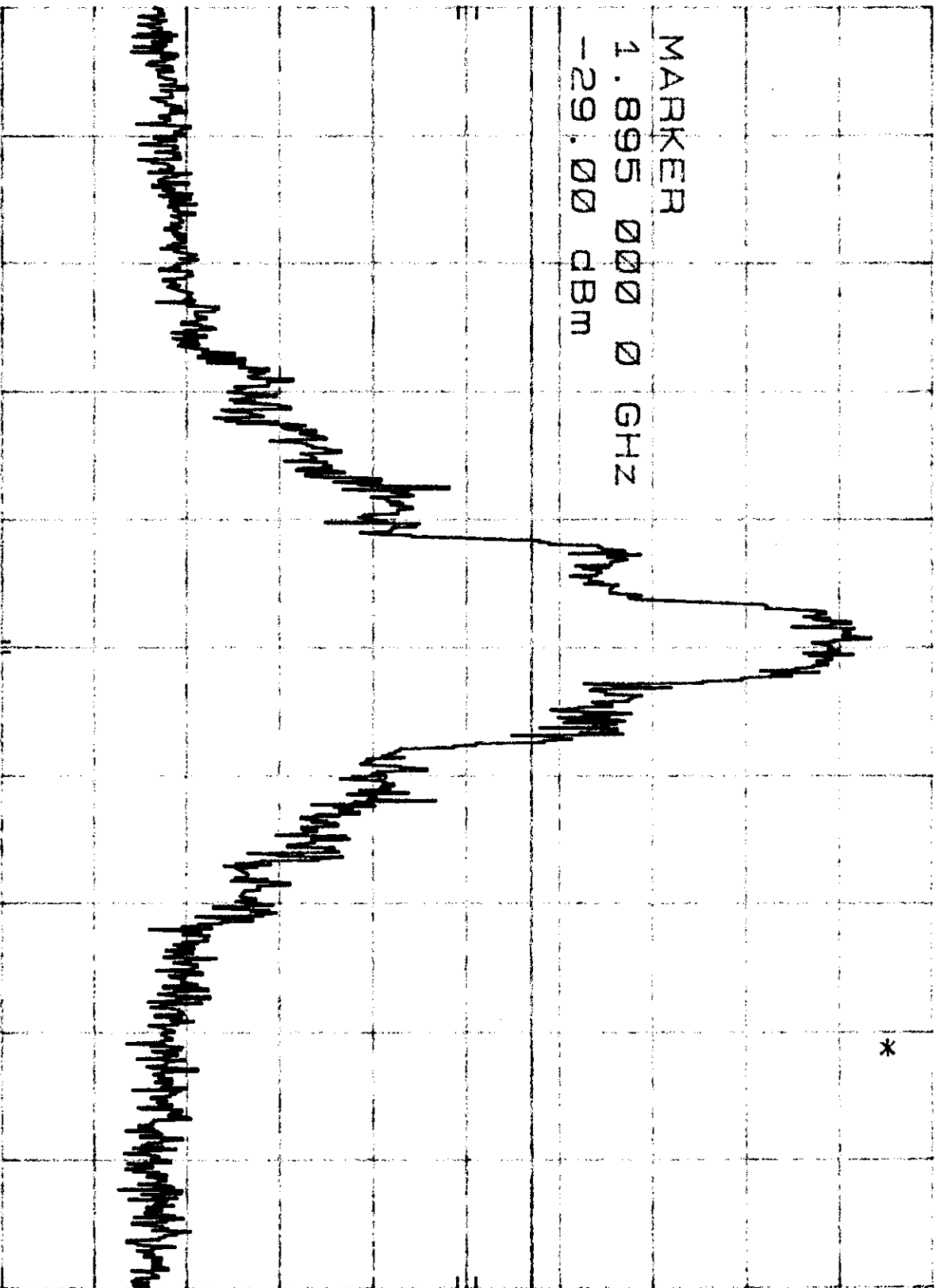
WJ BANDEDGES  
REF 30.0 dBm

ATTEN 40 dB

MKR 1.895 000 0 GHz  
-29.00 dBm

MARKER

1.895 000 0 GHz  
-29.00 dBm



CENTER 1.894 950 GHz  
RES BW 1 KHz

VBW 1 MHz

SPAN 500 KHz  
SWP 1.50 sec

#78

-78

#78 PK

WJ BANDEDGES  
REF 30.0 dBm

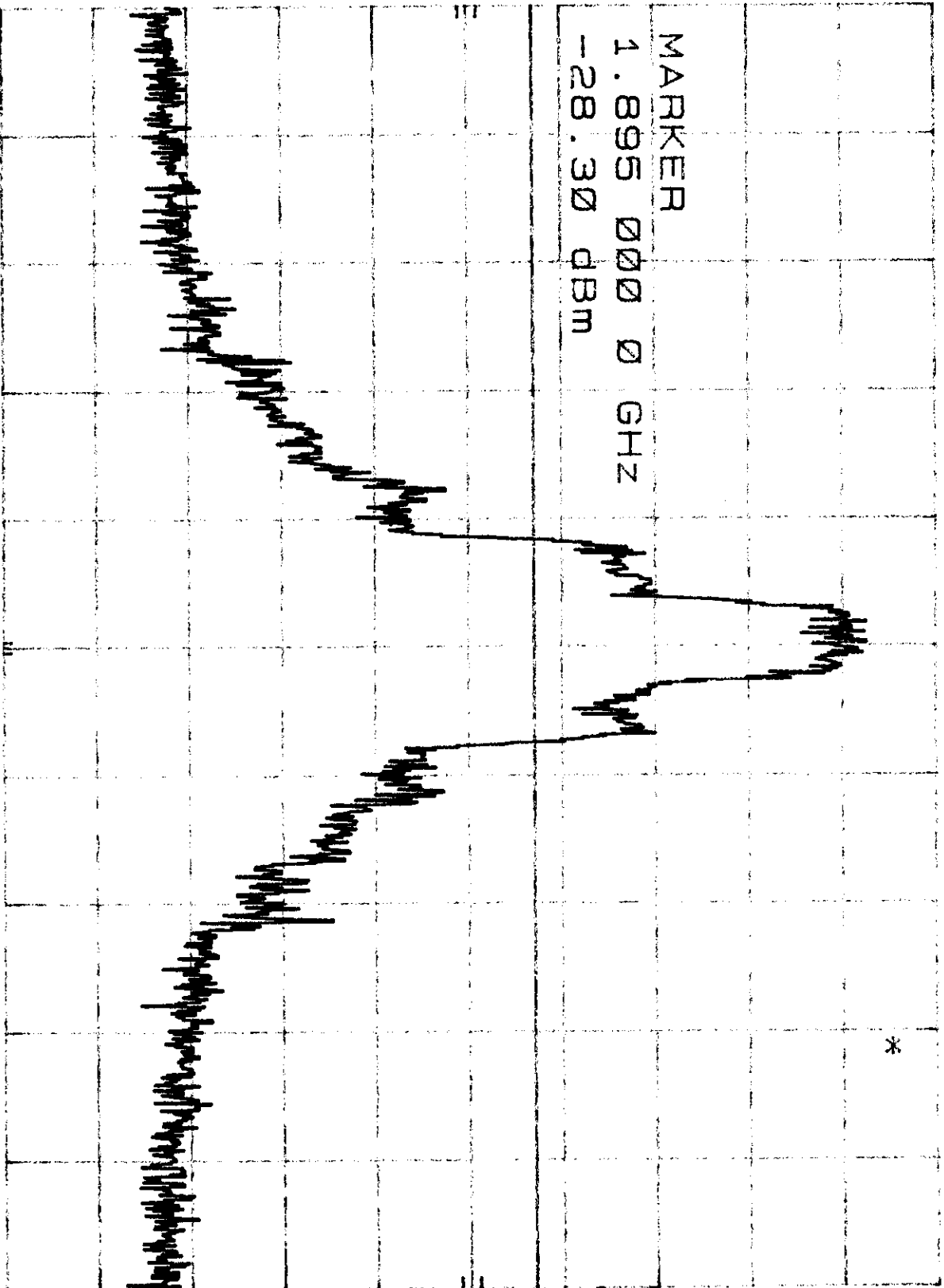
ATTEN 40 dB

MKR 1.895 000 0 GHz  
-28.30 dBm

HP  
10 dB/

DL  
-13.0  
dBm

MARKER  
1.895 000 0 GHz  
-28.30 dBm



CENTER 1.895 050 GHz  
RES BW 1 KHz

VBW 1 MHz

SPAN 500 kHz  
SWP 1.50 sec

79

#79  
PK

80

#80  
PK

WJ BANDEDGES

MKR 1.910 000 0 GHZ

REF 30.0 dBm

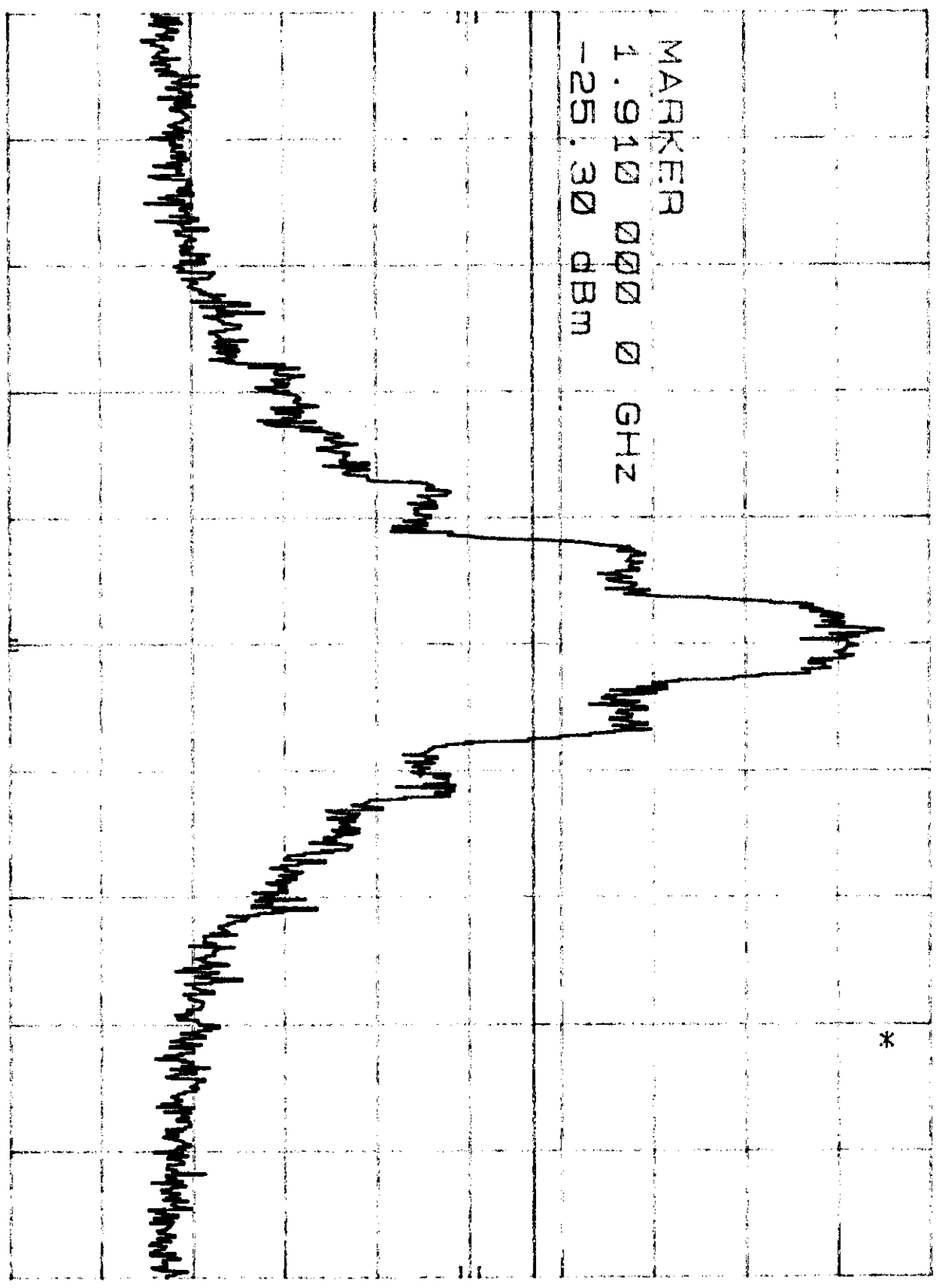
ATTEN 40 dB

-25.30 dBm

10 dB/

DL  
-13.0  
dBm

MARKER  
1.910 000 0 GHZ  
-25.30 dBm



CENTER 1.909 950 GHZ  
RES BW 1 KHZ  
VBW 1 MHZ  
SPAN 500 KHZ  
SWP 1.50 sec

#80

hpd

WJ BANDWIDTH  
REF 30.0 dBm

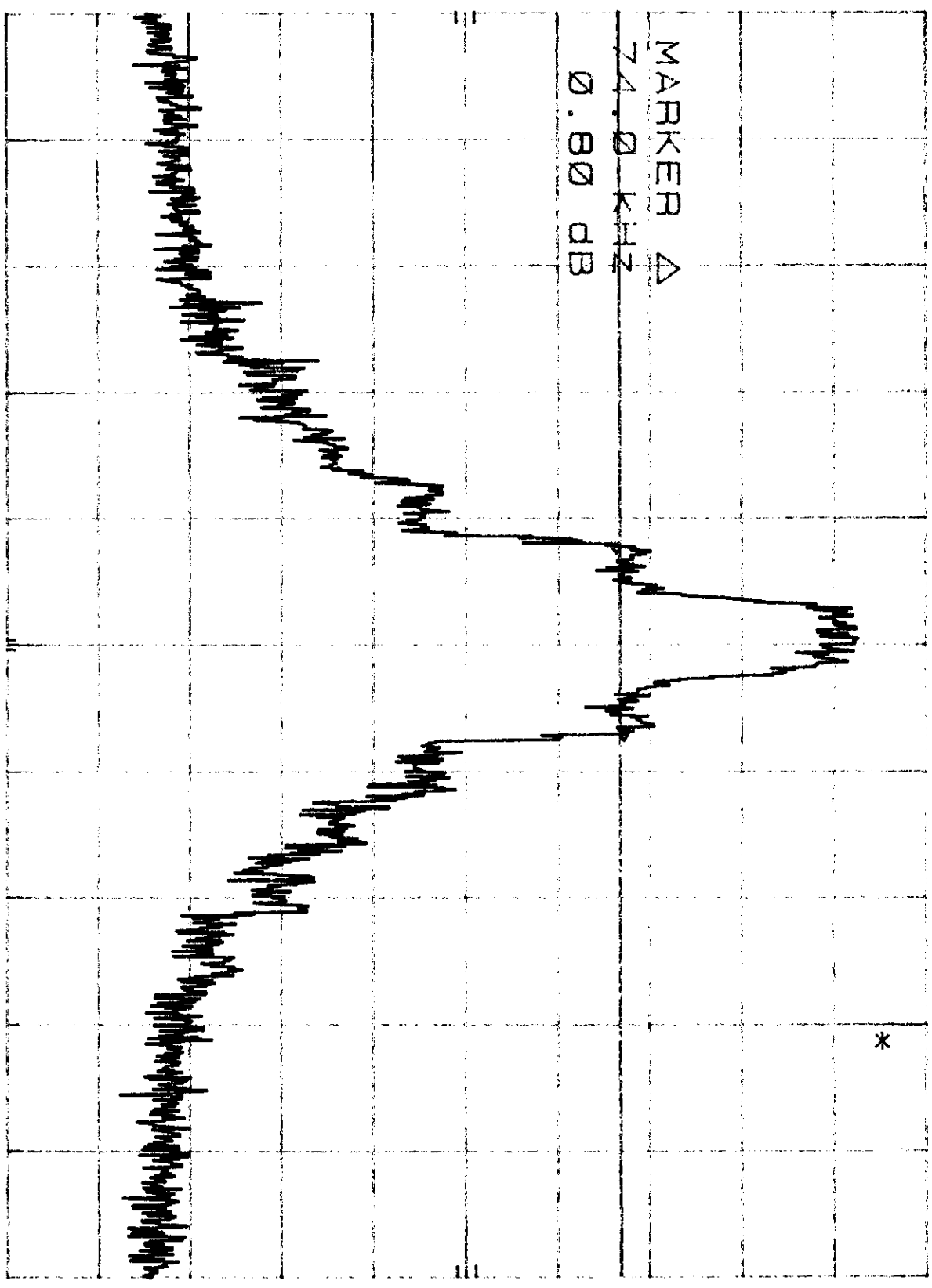
ATTEN 40 dB

MRK  $\Delta$  74.0 KHz  
0.80 dB

10 dB/

DL  
-3.3  
dBm

MARKER  $\Delta$   
74.0 KHz  
0.80 dB



CENTER 1.909 950 GHz  
RES BW 1 KHz

VBW 1 MHz

SPAN 500 KHz  
SWP 1.50 sec

#81

61

#81  
PK

82

#82 PK

WJ SPURIOUS

REF 30.0 dBm

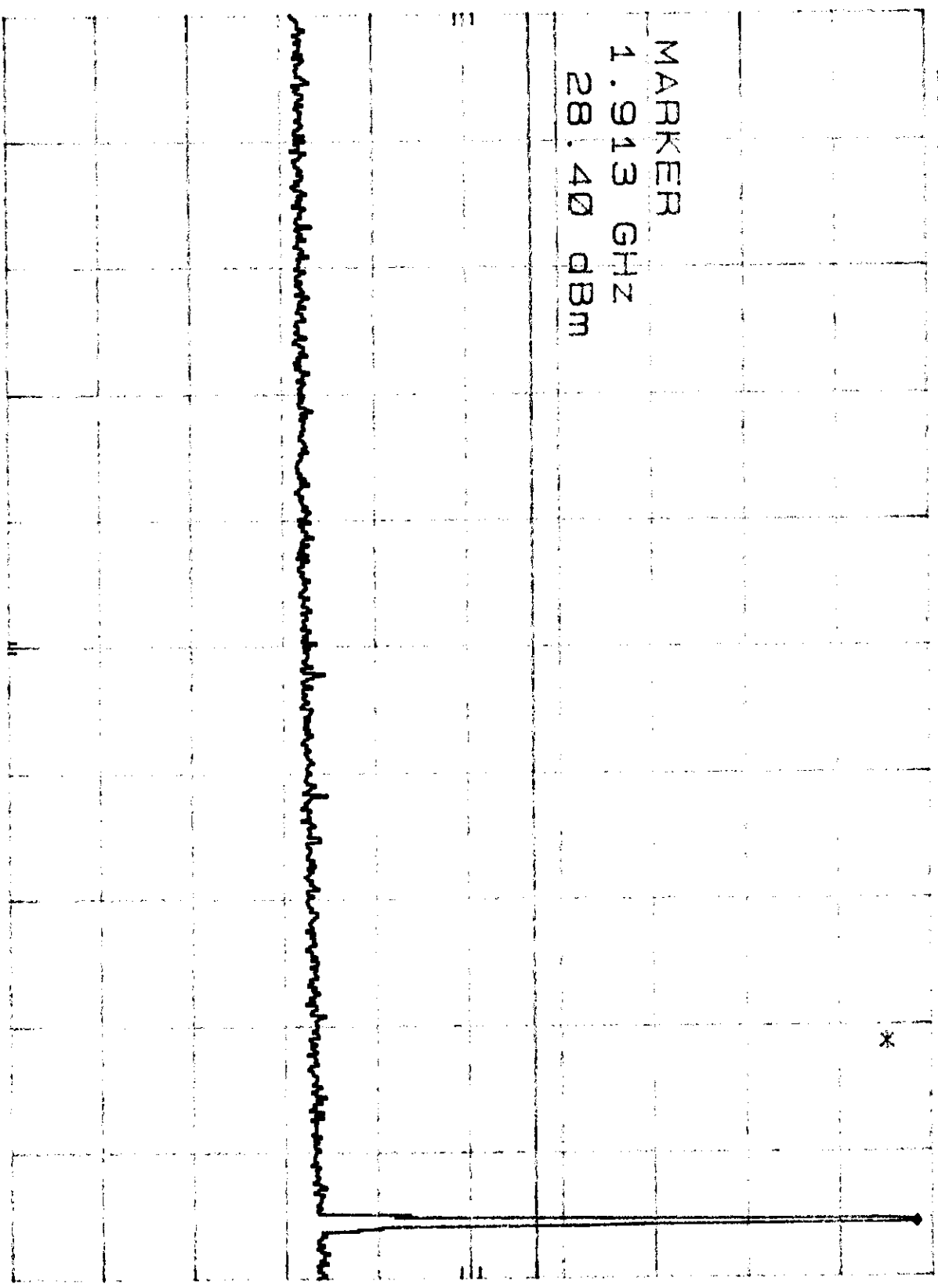
ATTEN 40 dB

MKR 1.913 GHz  
28.40 dBm

10 dB/

DL  
-13.0  
dBm

MARKER  
1.913 GHz  
28.40 dBm



START 30 MHz  
RES BW 1 MHz  
VBW 1 MHz

STOP 2.00 GHz  
SWP 49.3 msec

#82

WJ SPURIOUS

62

MKR 19.11 GHz

#82 PK

REF 30.0 dBm

ATTEN 40 dB

-22.90 dBm

10 dB/

\*

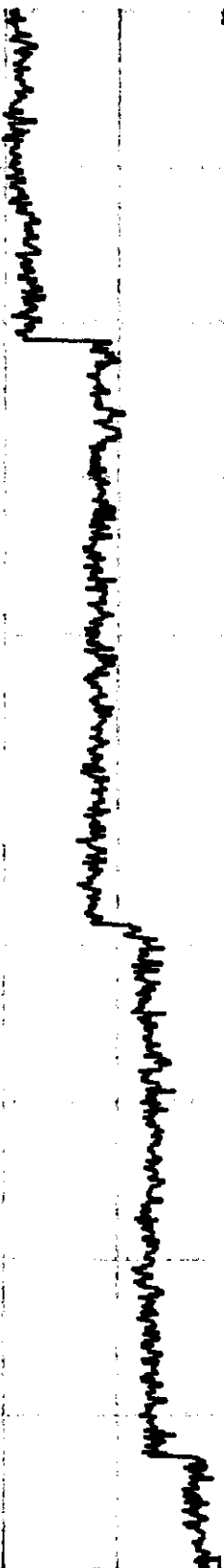
STOP

19.9 GHz

DL

-13.0

dBm



START 2.0 GHz

RES BW 1 MHz

VBW 1 MHz

SWP 448 msec

STOP 19.9 GHz

#182



93

#83

PK

WJ SPURIOUS

MKR 19.9 GHz

HP

REF 30.0 dBm

ATTEN 40 dB

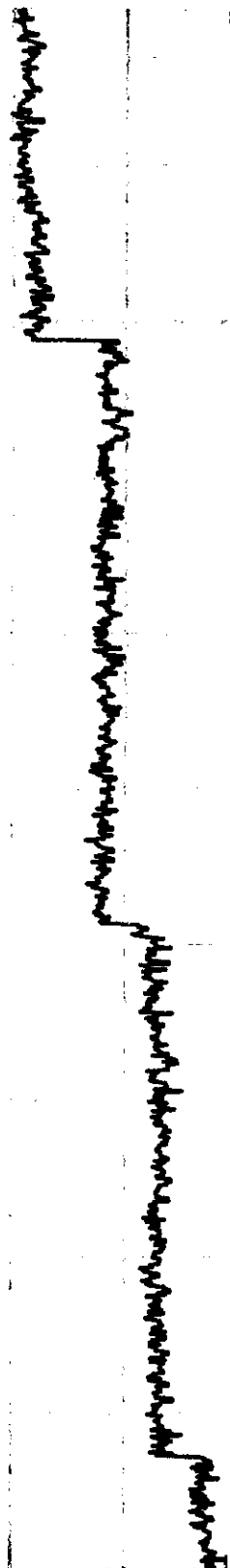
-22.90 dBm

10 dB/

\*

DL  
-13.0  
dBm

STOP  
19.9 GHz



START 2.0 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 19.9 GHz  
SWP 448 msec

#83

63

#83 ~~✓~~

WJ SPURIOUS

MKR 1.913 GHz

REF 30.0 dBm

ATTEN 40 dB

27.80 dBm

10 dB/

DL  
-13.0  
dBm

STOP  
2.00 GHz

\*

START 30 MHz  
RES BW 1 MHz  
VBW 1 MHz

STOP 2.00 GHz  
SWP 49.3 msec

#83

84

PK

WJ SPURIOUS

REF 30.0 dBm

ATTEN 40 dB

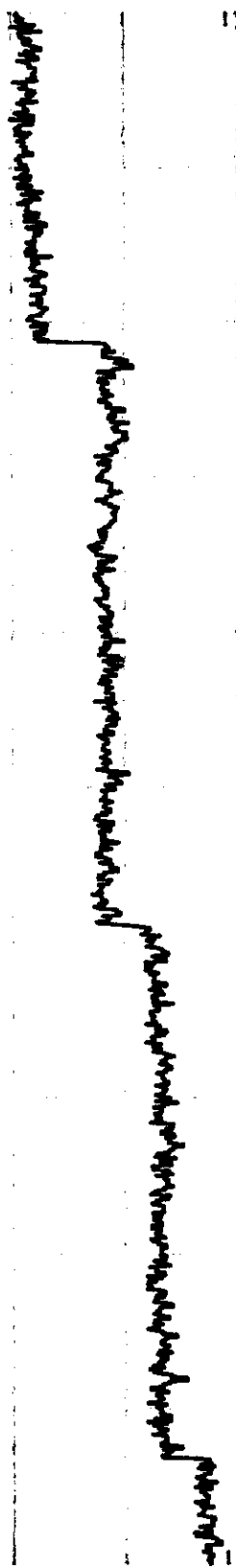
#84

HP

10 dB/

DL  
-13.0  
dBm

STOP  
19.8 GHz



START 2.0 GHz  
RES BW 1 MHz  
VBW 1 MHz  
STOP 19.8 GHz  
SMP 445 msec

#84

84

#84 PK

WJ SPURIOUS

REF 30.0 dBm

ATTEN 40 dB

MKR 1.852 GHz  
27.20 dBm

10 dB/

DL  
-13.0  
dBm

STOP  
2.00 GHz

*Analysis of the spectrum shows a significant spur at 2.00 GHz, which is the frequency of the stop band. The spur is approximately 13 dBm below the reference level.*

START 30 MHz  
RES BW 1 MHz  
VBW 1 MHz

STOP 2.00 GHz  
SWP 49.3 msec

#84

Q5

WJ BANDWIDTH

HP

REF 30.0 dBm

ATTEN 40 dB

MRK  $\Delta$  297 KHz

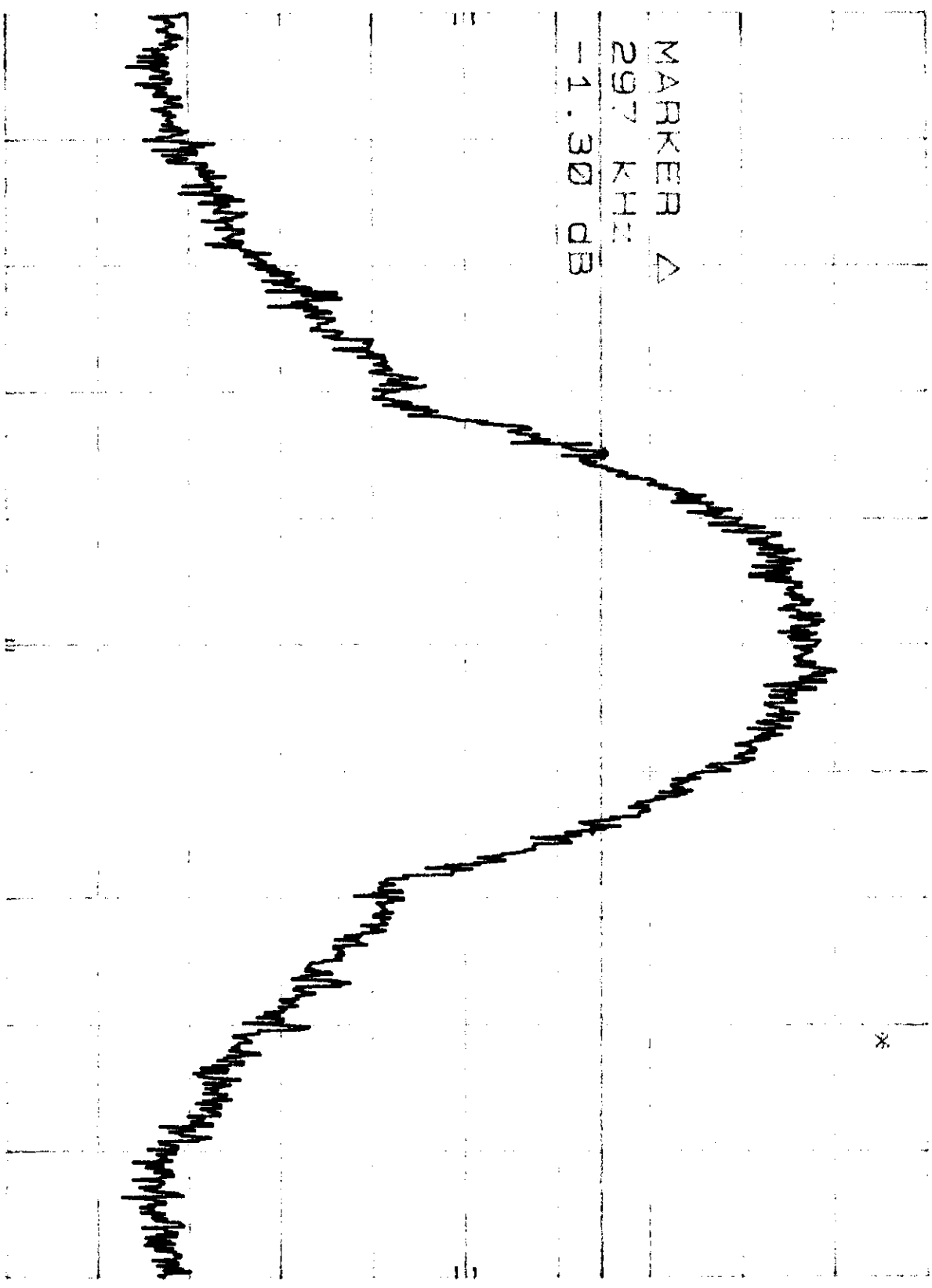
-1.30 dB

10 dB/

DL  
-5.3  
dBm

MARKER  $\Delta$   
297 KHz

-1.30 dB



#85 PK

CENTER 1.850 20 GHz

RES BW 3 KHz

VBW 1 MHz

SPAN 1.00 MHz  
SWP 300 msec

#85

92

#86  
PK

WJ BANDEDGES

REF 30.0 dBm

ATTEN 40 dB

MKR 1.850 000 GHz

-27.10 dBm

10 dB/

\*

MARKER

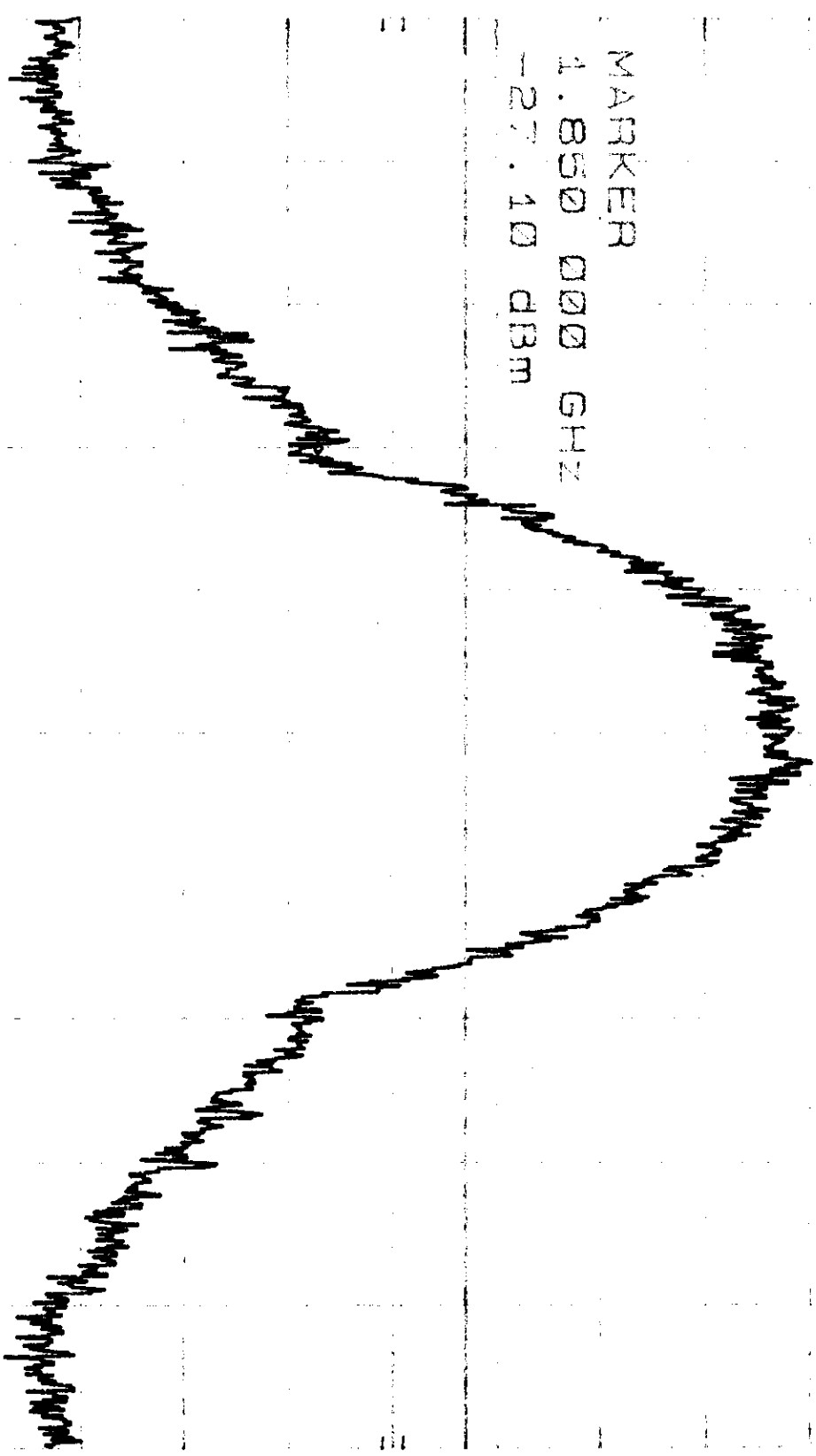
DL

1.850 000 GHz

-13.0

-27.10 dBm

03m



CENTER 1.850 20 GHz

RES BW 3 KHz

VBW 1 MHz

SPAN 1.00 MHz

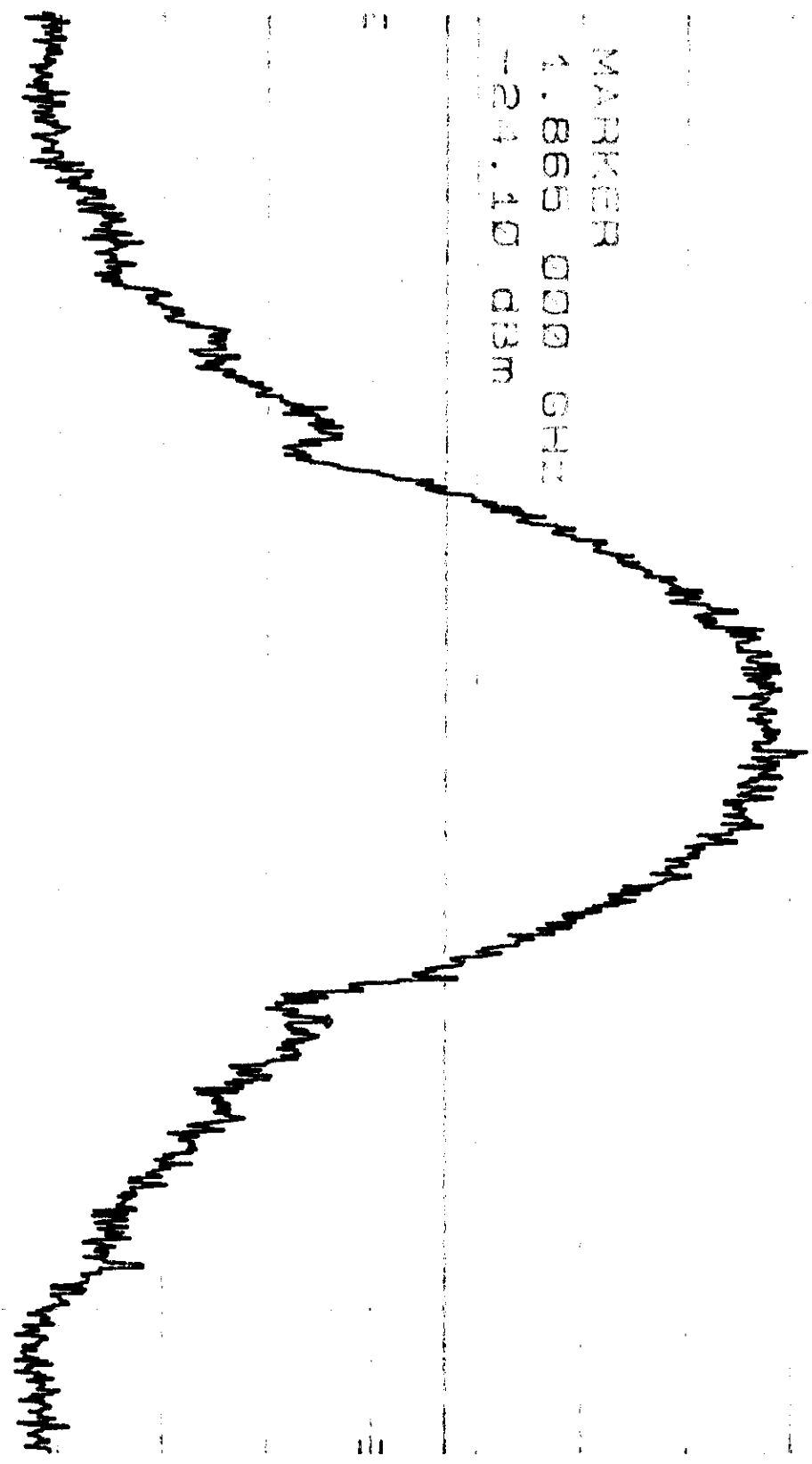
SMP 300 msec

#86

WJ BANDEDGES  
REF 30.0 dBm  
ATTEN 40 dB  
10 dBm

MARK 1.865 000 GHz  
-24.40 dBm

MARKER  
1.865 000 GHz  
-24.40 dBm  
DL  
-43.0 dBm



CENTER 1.865 80 GHz  
RES BW 3 KHz  
VBW 1 MHz  
SPAN 1.00 MHz  
SWP 300 msec

#87

88

#88 R

WJ BANDEDGES

MKR 1.865 000 GHz

REF 30.0 dBm

ATTEN 40 dB

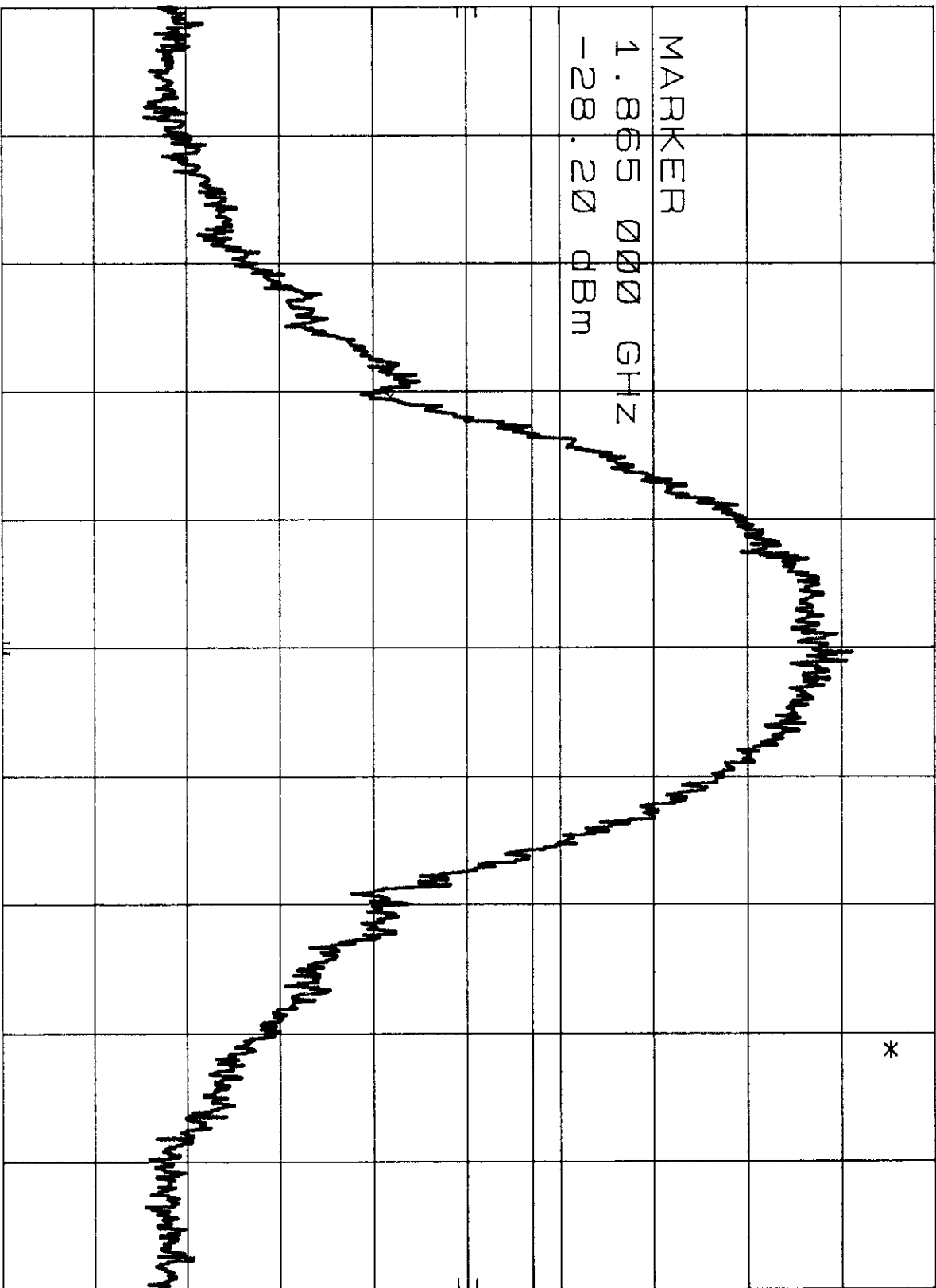
-28.20 dBm

HP

10 dB/

DL  
-13.0  
dBm

MARKER  
1.865 000 GHz  
-28.20 dBm



CENTER 1.865 20 GHz

RES BW 3 KHz

VBW 1 MHz

SPAN 1.00 MHz  
SWP 300 msec

#88



89

#89  
RK

WJ BANDEDGES  
HP REF 30.0 dBm

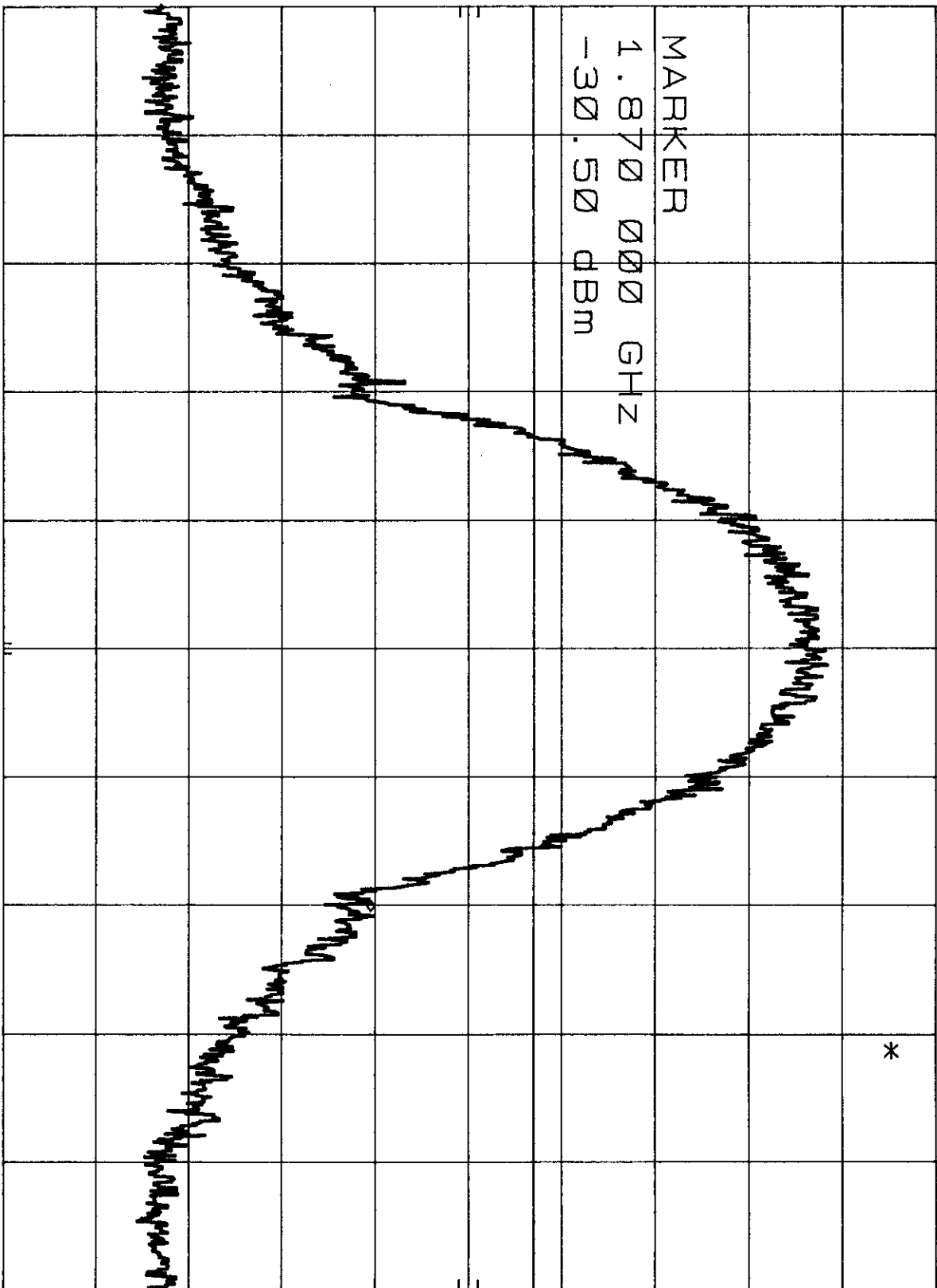
ATTEN 40 dB

MKR 1.870 000 GHz  
-30.50 dBm

10 dB/

DL  
-13.0  
dBm

MARKER  
1.870 000 GHz  
-30.50 dBm



CENTER 1.869 80 GHz  
RES BW 3 KHZ

VBW 1 MHZ

SPAN 1.00 MHZ  
SWP 300 msec

#89

WJ BANDEDGES  
REF 30.0 dBm

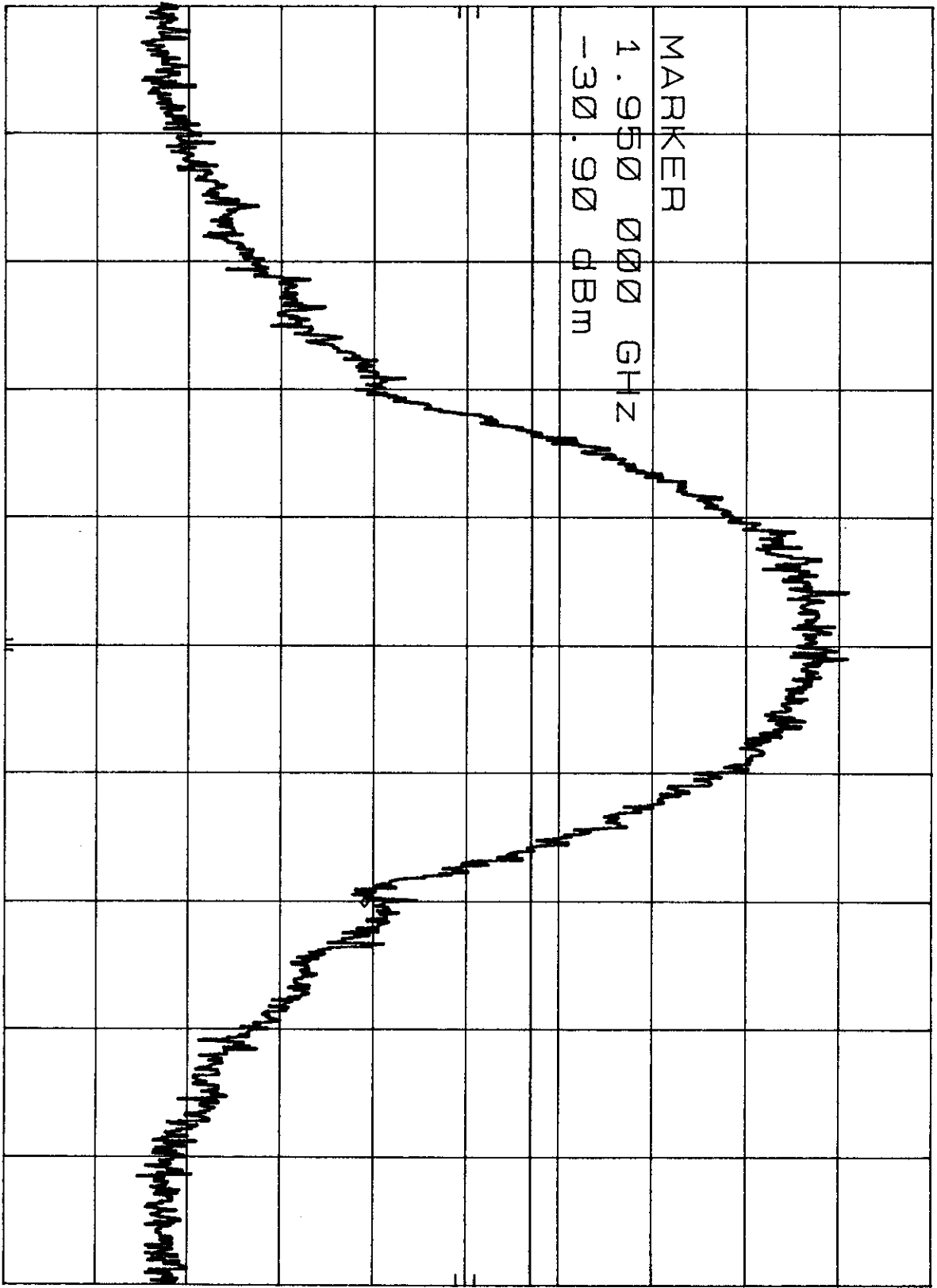
ATTEN 40 dB

MKR 1.950 000 GHz  
-30.90 dBm

10 dB/

DL  
-13.0  
dBm

MARKER  
1.950 000 GHz  
-30.90 dBm



CENTER 1.949 80 GHz  
RES BW 3 KHz  
VBW 1 MHz  
SPAN 1.00 MHz  
SWP 300 msec

#90

WJ BANDEDGES  
h<sub>p</sub> REF 30.0 dBm

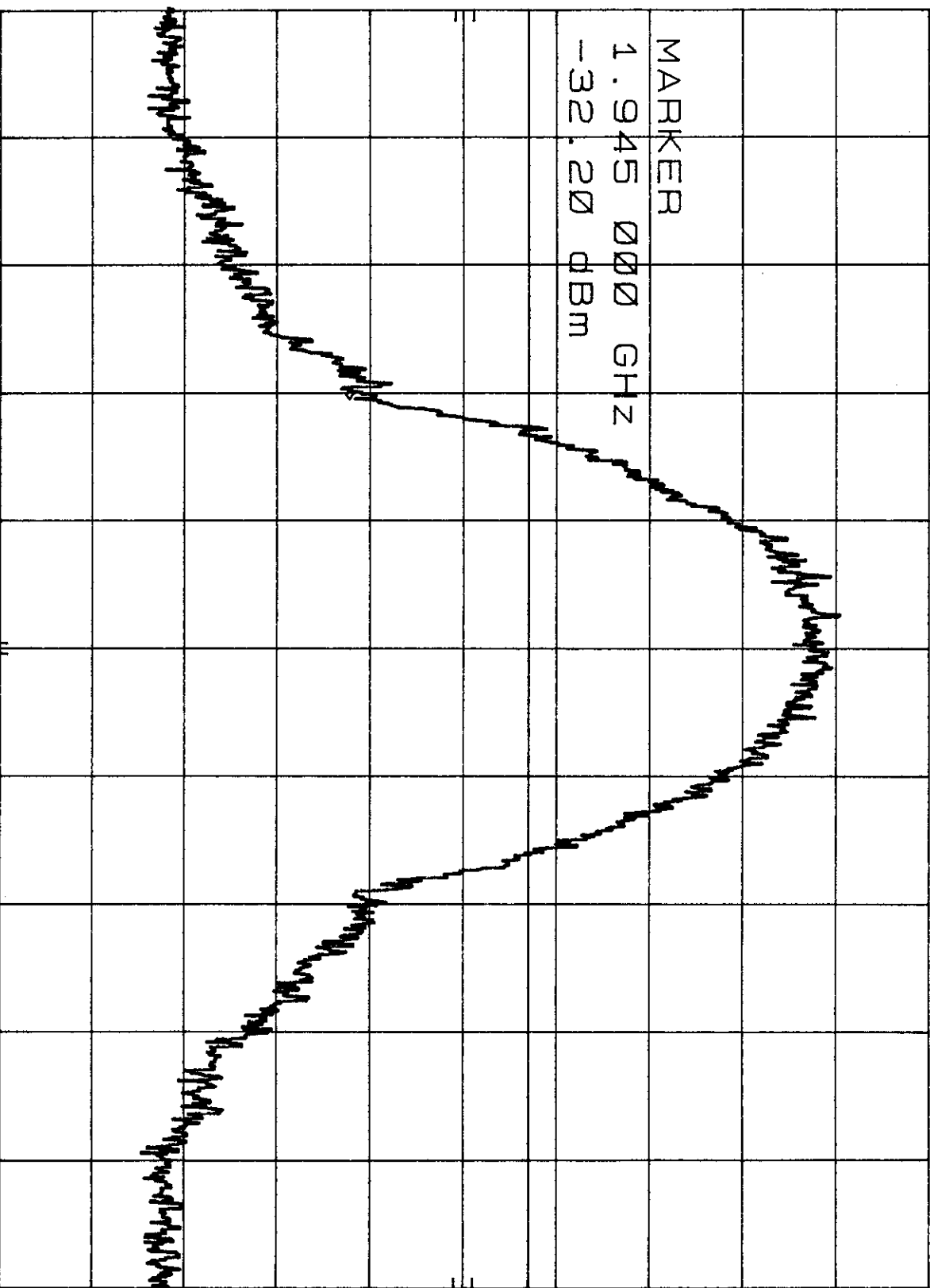
ATTEN 40 dB

MKR 1.945 000 GHz  
-32.20 dBm

#91  
PK

10 dB/

DL  
-13.0  
dBm



CENTER 1.945 20 GHz  
RES BW 3 KHZ

VBW 1 MHZ

SPAN 1.00 MHZ  
SWP 300 msec

#91

WJ BANDEDGES  
hp REF 30.0 dBm

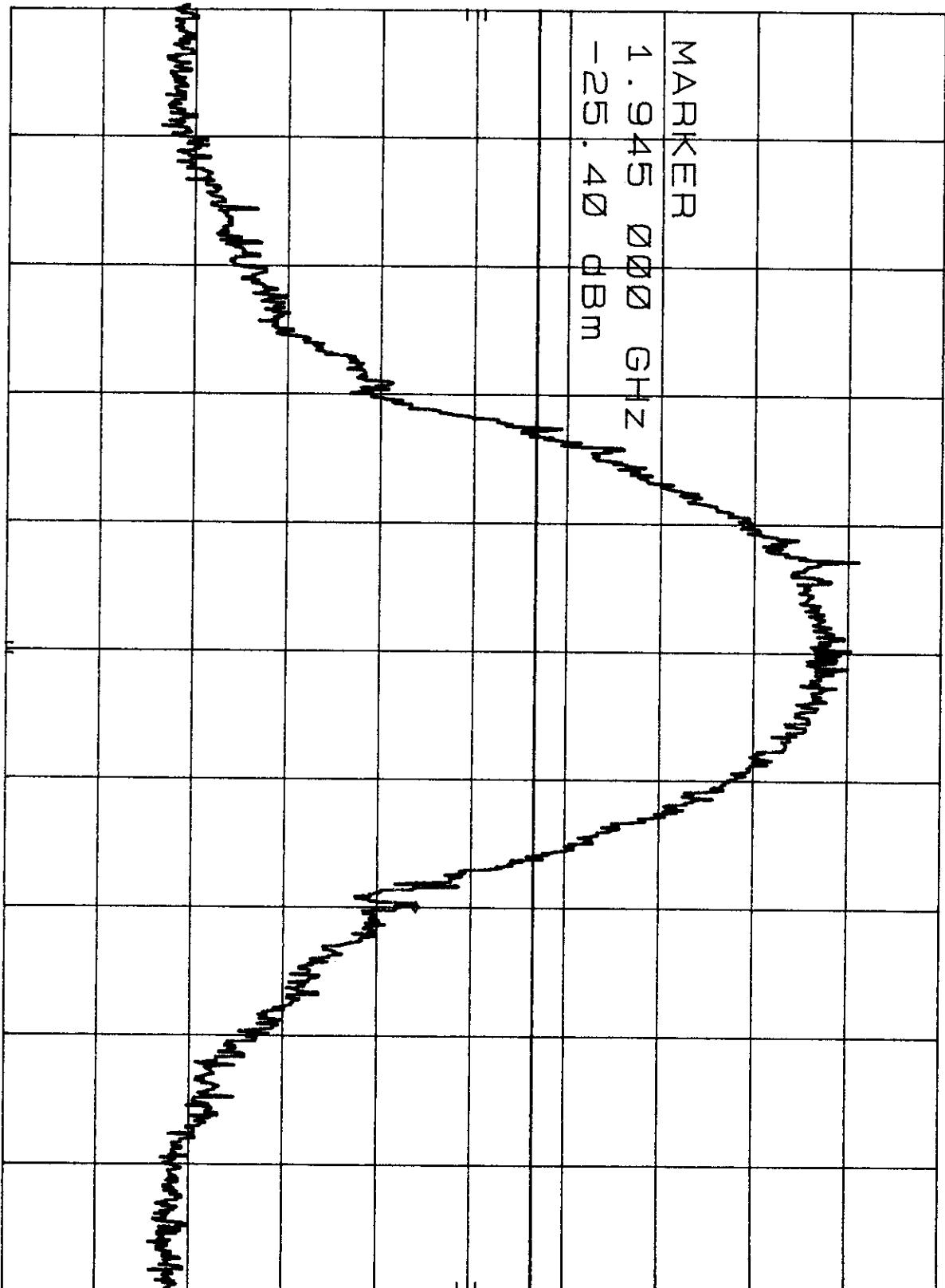
ATTEN 40 dB

MKR 1.945 000 GHz  
-25.40 dBm

#92 PK

10 dB/

DL  
-13.0  
dBm



CENTER 1.944 80 GHz

RES BW 3 KHz

VBW 1 MHz

SPAN 1.00 MHz  
SWP 300 msec

#92

#92  
PK

WJ BANDEDGES

REF 30.0 dBm

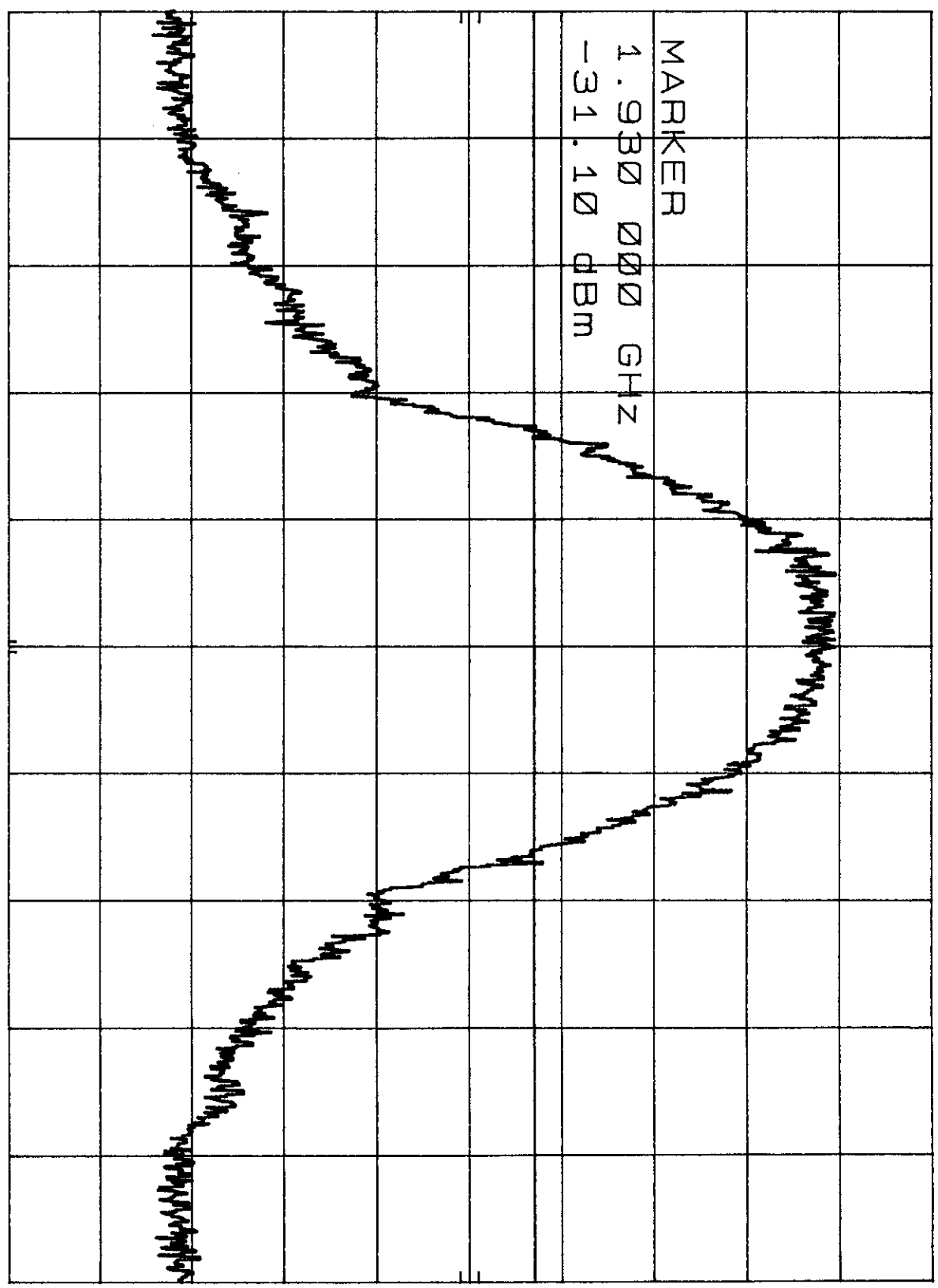
ATTEN 40 dB

MKR 1.930 000 GHz  
-31.10 dBm

10 dB/  
h<sub>p</sub>

DL  
-13.0  
dBm

MARKER  
1.930 000 GHz  
-31.10 dBm



CENTER 1.930 20 GHz  
RES BW 3 KHz  
VBW 1 MHz  
SPAN 1.00 MHz  
SWP 300 msec

#92

3

#93  
PK

WJ BANDWIDTH

MKR  $\Delta$  295 KHZ

REF 30.0 dBm

ATTEN 40 dB

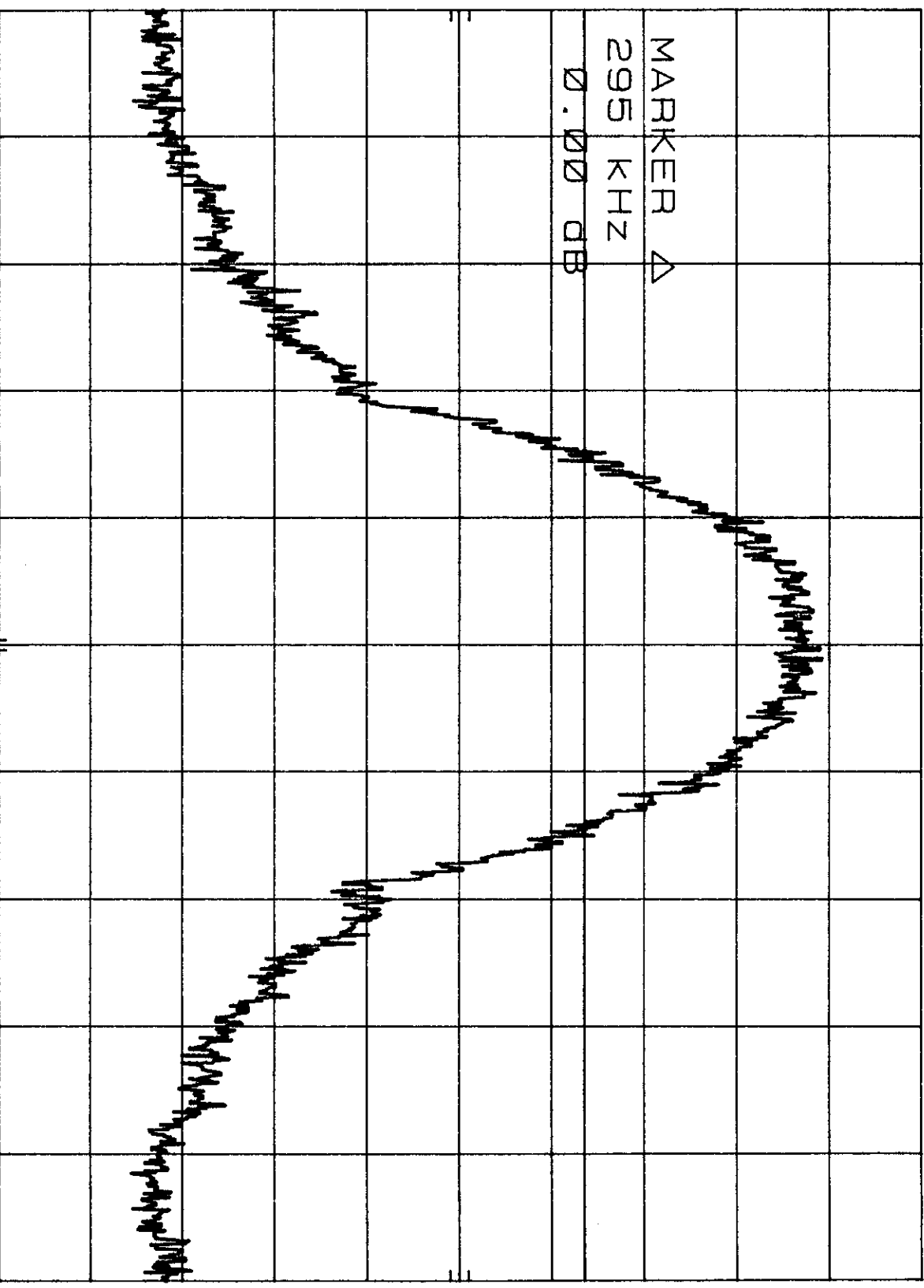
0.00 dB

HP

10 dB/

DL  
-6.5  
dBm

MARKER  $\Delta$   
295 KHZ  
0.00 dB



CENTER 1.930 20 GHZ  
RES BW 3 KHZ

VBW 1 MHZ

SPAN 1.00 MHZ  
SWP 300 msec

#93

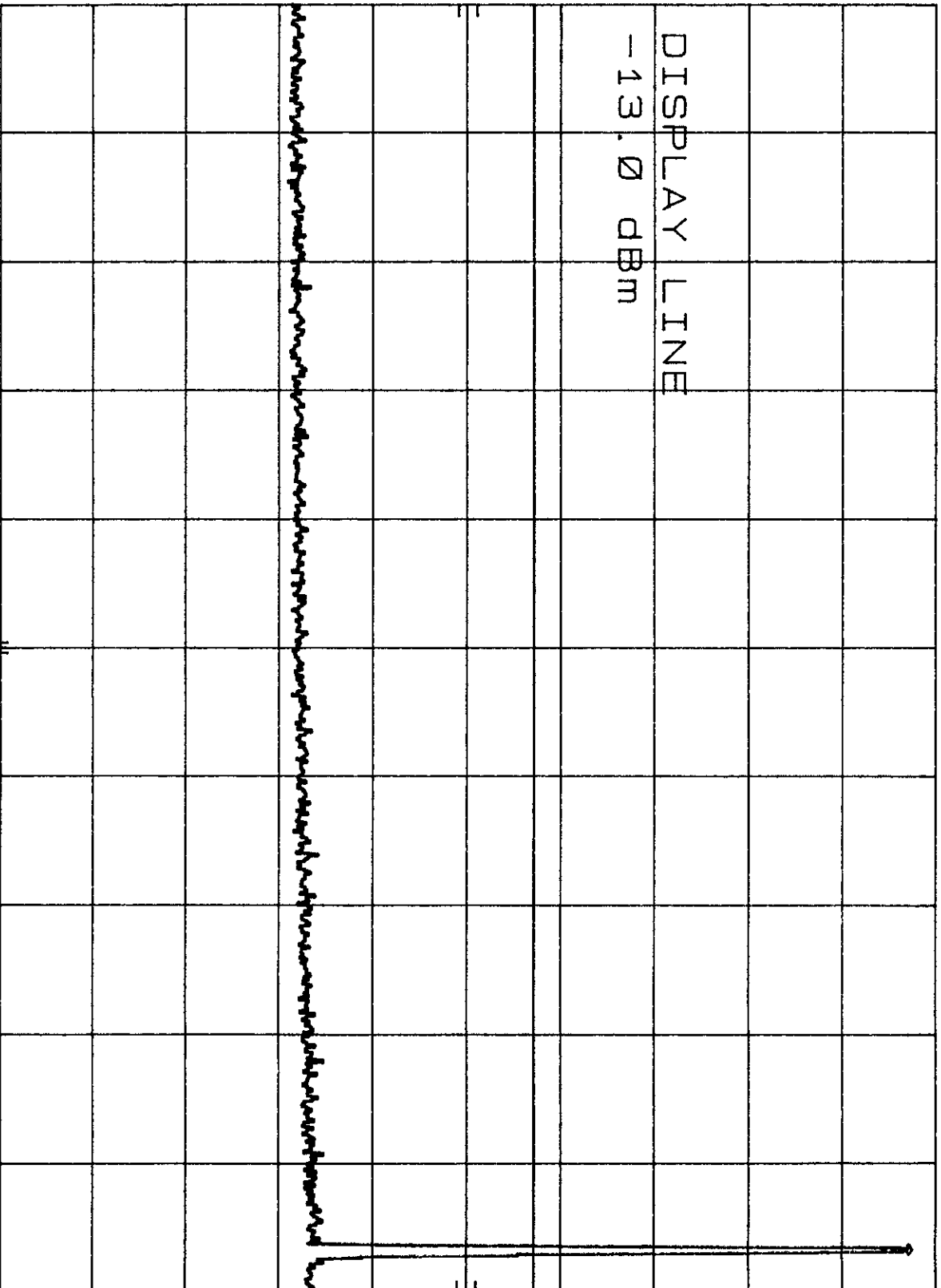
WJ SPURIOUS  
REF 30.0 dBm

ATTEN 40 dB

MKR 1.933 GHz  
27.20 dBm

HP  
10 dB/

DL  
-13.0  
dBm



START 30 MHz

RES BW 1 MHz

VBW 1 MHz

STOP 2.00 GHz  
SWP 49.3 msec

#94

PK

hp

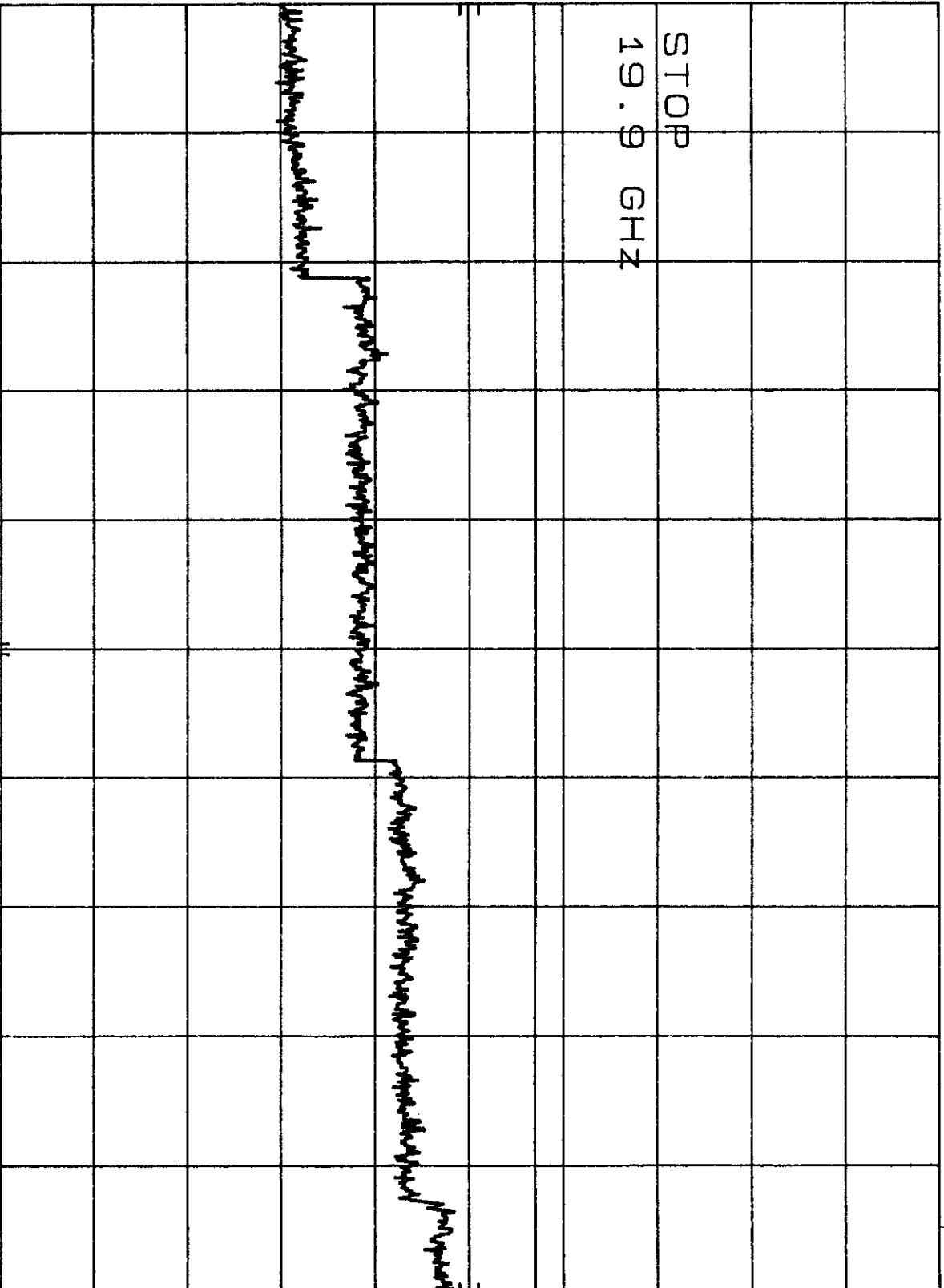
WJ SPURIOUS  
REF 30.0 dBm

ATTEN 40 dB

#94  
PK

10 dB/

DL  
-13.0  
dBm



START 2.0 GHz

RES BW 1 MHz

VBW 1 MHz

STOP 19.9 GHz  
SWP 448 msec

#94



hp

WJ SPURIOUS  
REF 30.0 dBm

ATTEN 40 dB

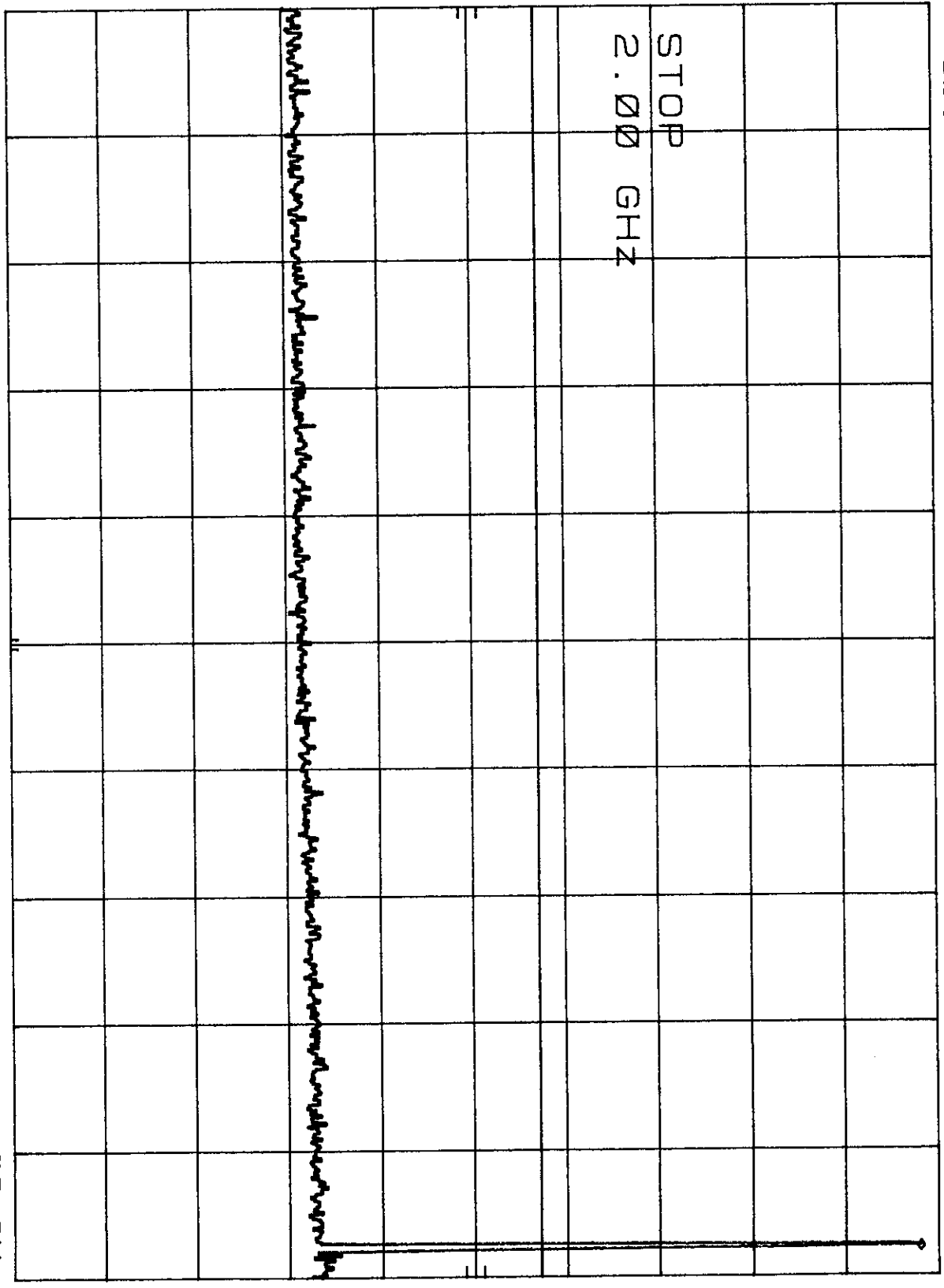
MKR 1.953 GHz  
28.10 dBm

#95  
PK

10 dB/

DL  
-13.0  
dBm

STOP  
2.00 GHz



START 30 MHz  
RES BW 1 MHz  
VBW 1 MHz  
STOP 2.00 GHz  
SWP 49.3 msec

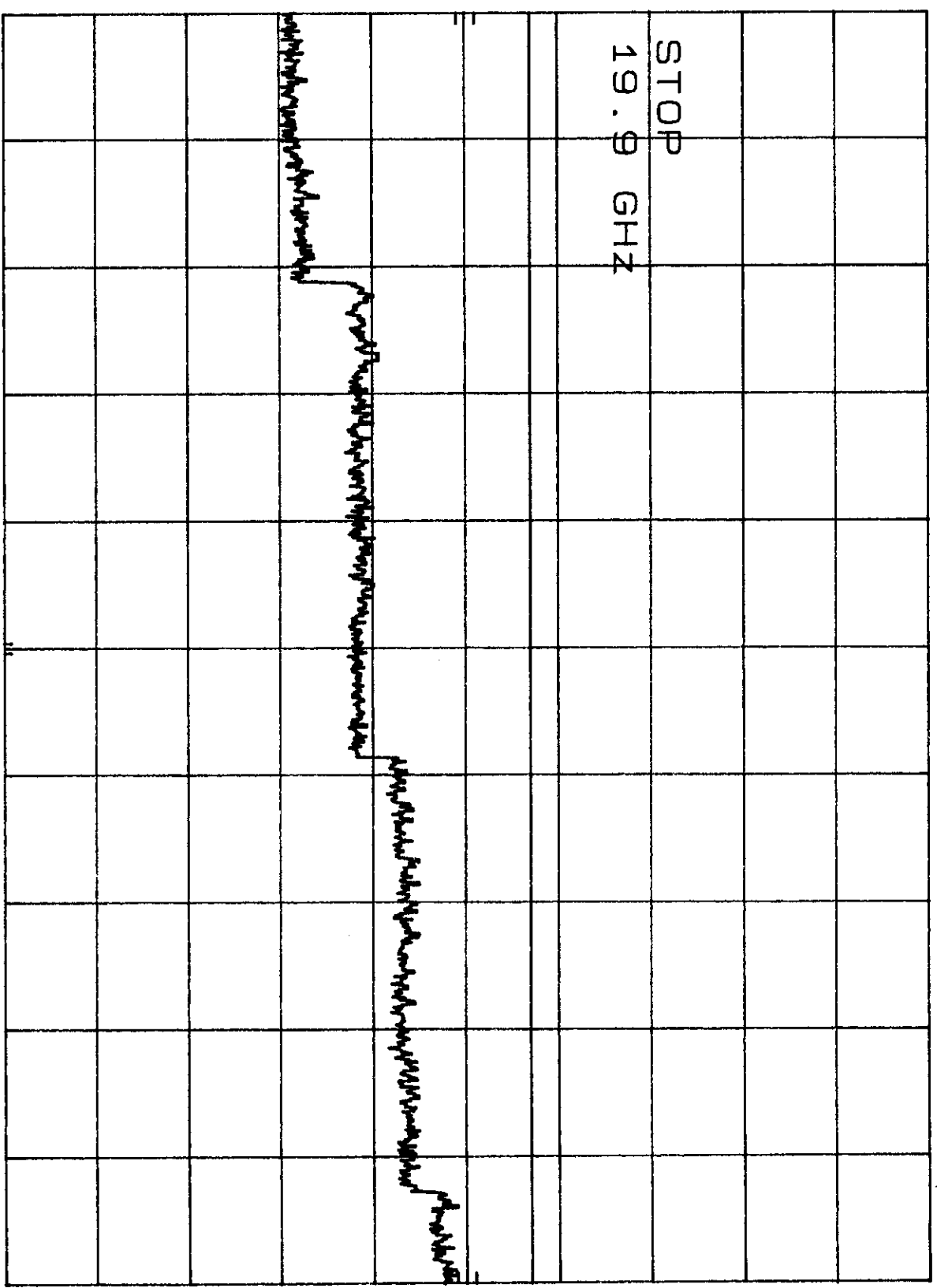
#95

WJ SPURIOUS  
REF 30.0 dBm ATTEN 40 dB

hp

10 dB/

DL  
-13.0  
dBm



START 2.0 GHz

RES BW 1 MHz

VBW 1 MHz

SMP 448 msec

STOP 19.9 GHz

#95

#77/

#95 PK

99

#98 PK

HP

WJ BANDEDGES  
REF 30.0 dBm

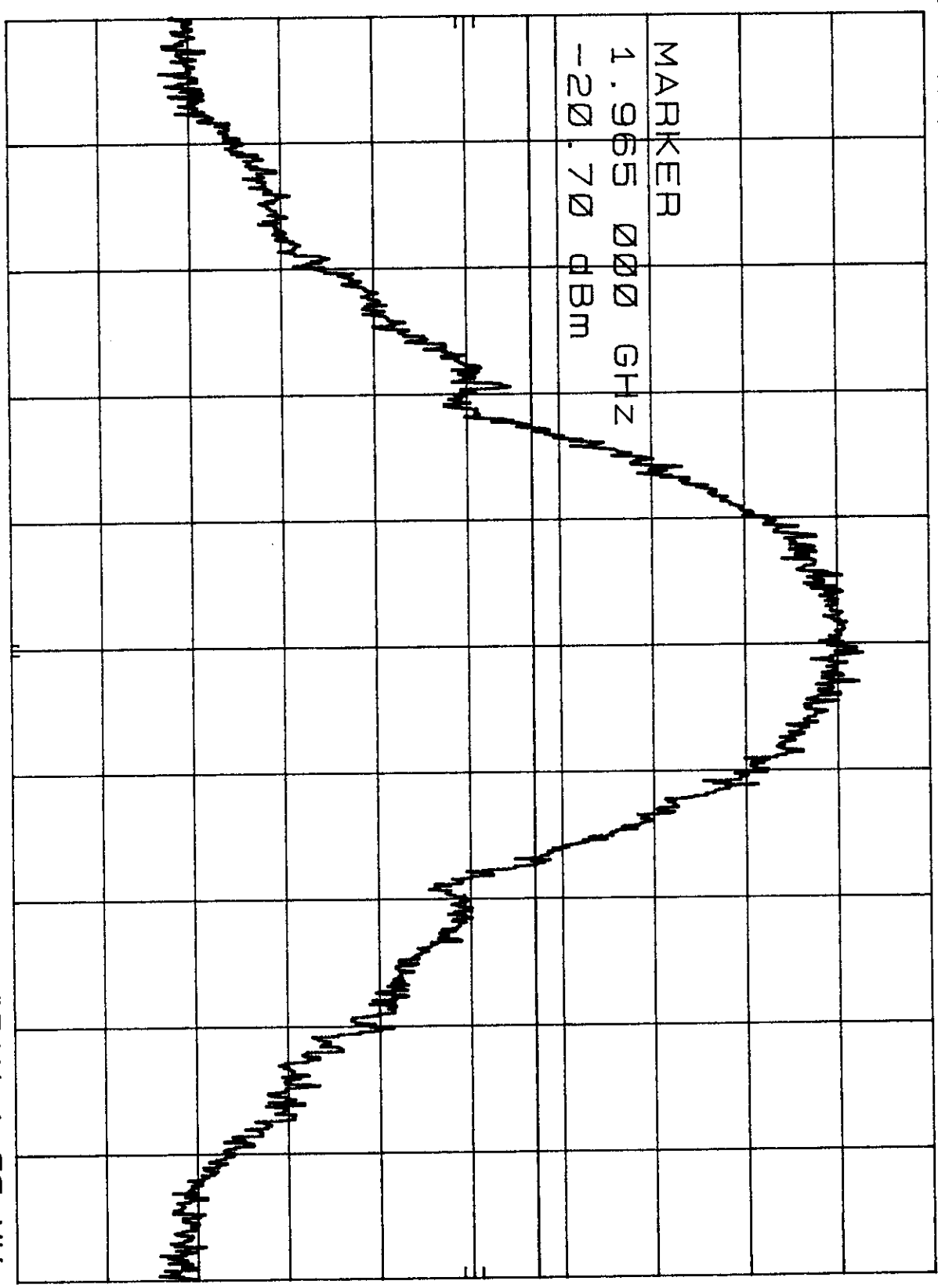
ATTEN 40 dB

MKR 1.965 000 GHz  
-20.70 dBm

10 dB/

DL  
-13.0  
dBm

MARKER  
1.965 000 GHz  
-20.70 dBm



CENTER 1.964 80 GHz  
RES BW 3 KHz

VBW 1 MHz

SPAN 1.00 MHz  
SWP 300 msec

#98

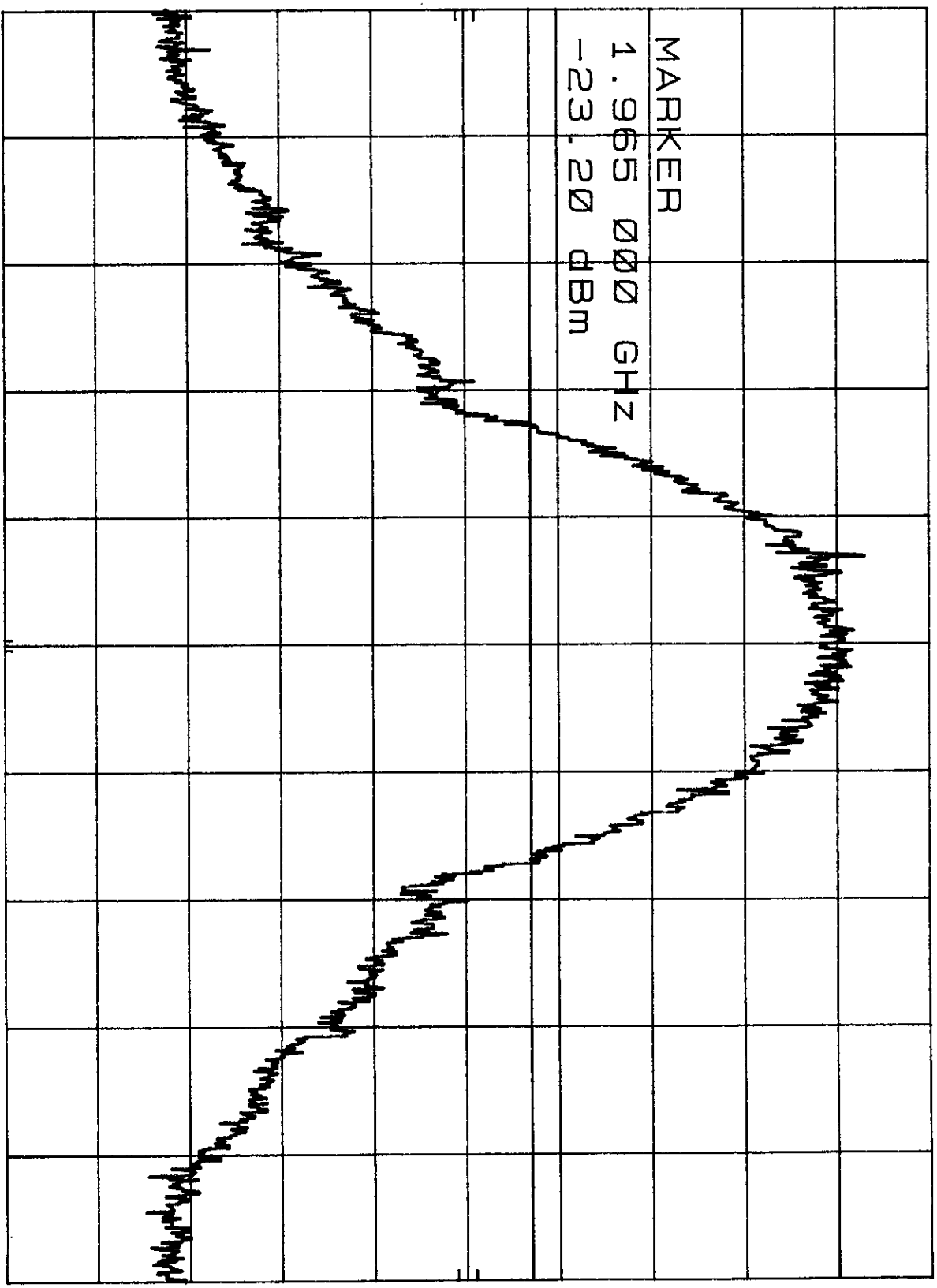
WJ BANDEDGES

ATTEN 40 dB

MR 1.965 000 GHz  
-23.20 dBm

hp  
10 dB/

DL  
-13.0  
dBm



CENTER 1.965 20 GHz  
RES BW 3 KHz

VBW 1 MHz

SPAN 1.00 MHz  
SWP 300 msec

#99

HP

10 dB/

DL  
-13.0  
dBm

WJ BANDEDGES  
REF 30.0 dBm

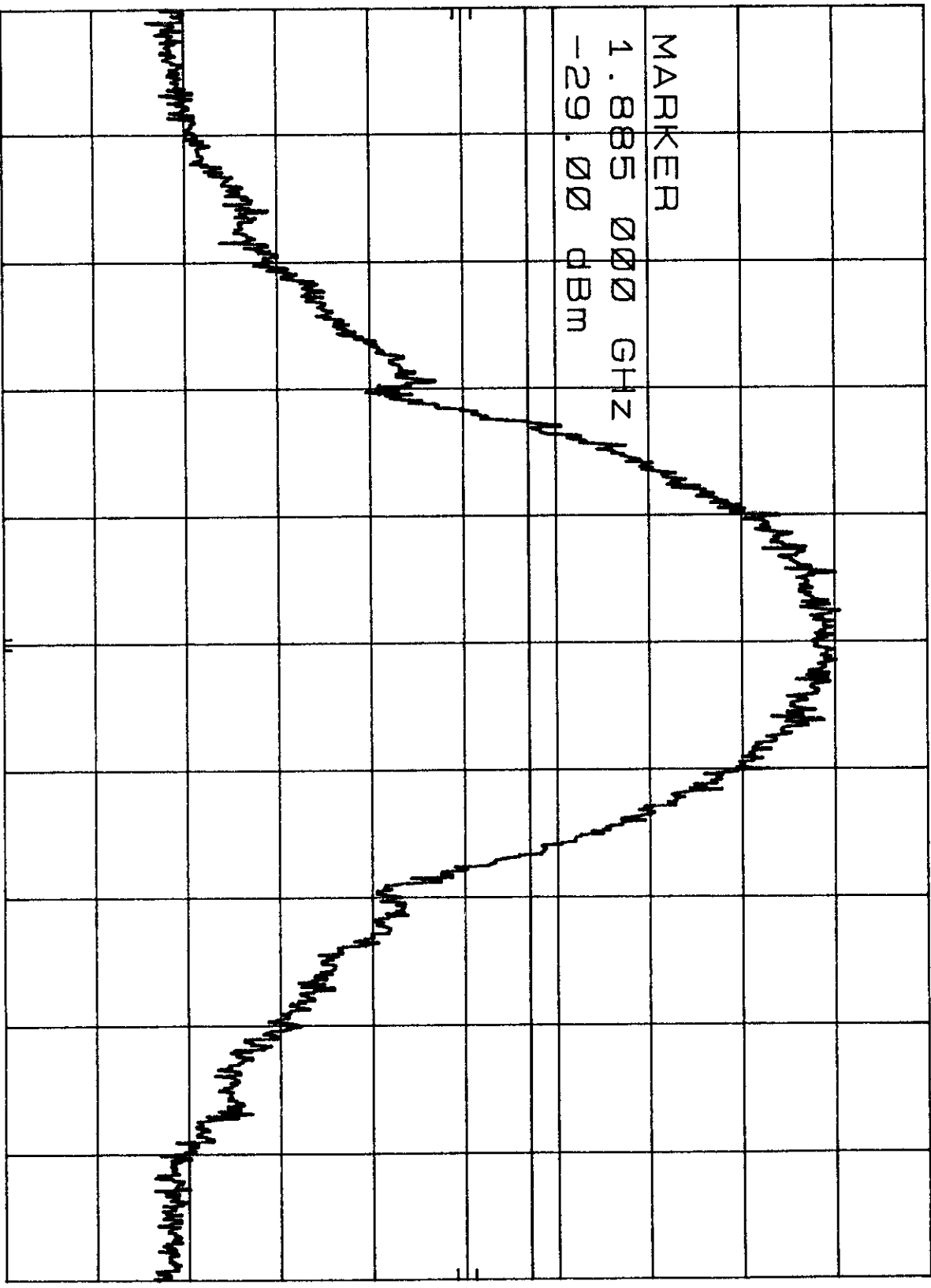
ATTEN 40 dB

MKR 1.885 000 GHz  
-29.00 dBm

#102 PK

MARKER

1.885 000 GHz  
-29.00 dBm



CENTER 1.885 20 GHz  
RES BW 3 KHz

VBW 1 MHz

SPAN 1.00 MHz  
SWP 300 msec

#102

h<sub>p</sub>

10 dB/

WJ BANDEDGES  
REF 30.0 dBm

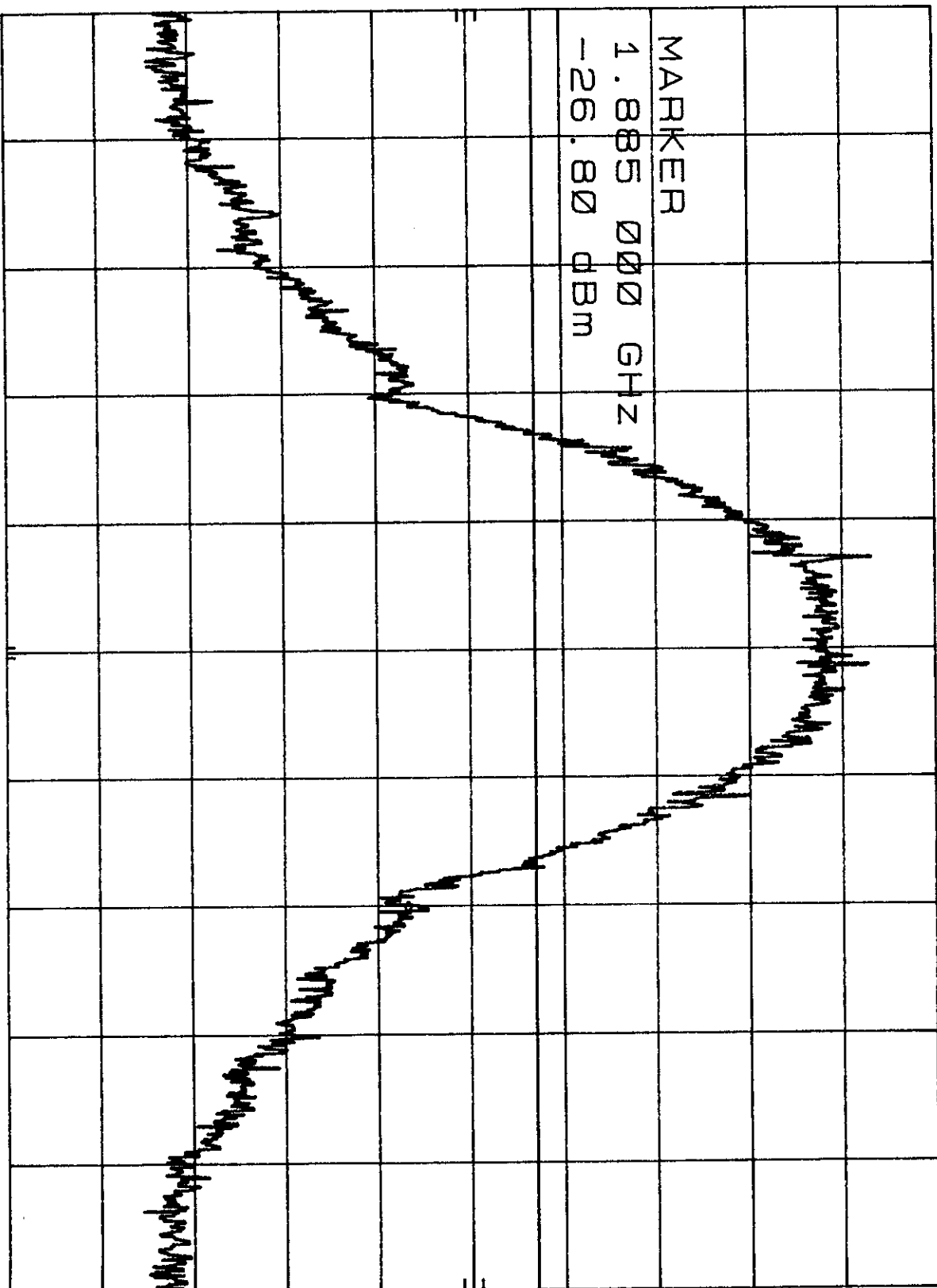
ATTEN 40 dB

MKR 1.885 000 GHz  
-26.80 dBm

#103  
PK

DL  
-13.0  
dBm

MARKER  
1.885 000 GHz  
-26.80 dBm



CENTER 1.884 80 GHz  
RES BW 3 KHz

VBW 1 MHz

SPAN 1.00 MHz  
SWP 300 msec

#103

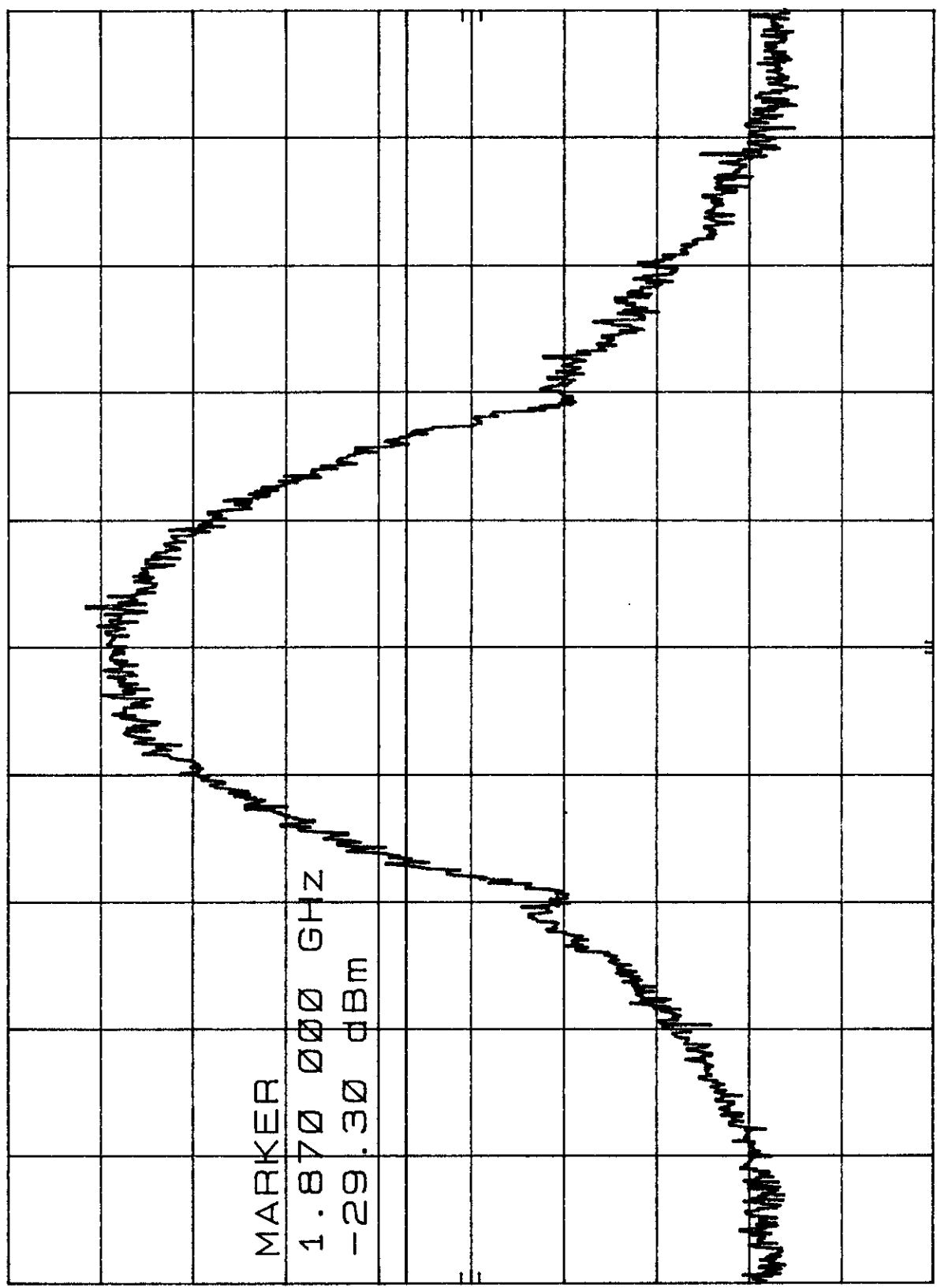
WJ BANDEDGES  
REF 30.0 dBm  
ATTEN 40 dB  
MKR 1.870 000 GHz  
-29.30 dBm

hp

10 dB/

MARKER  
1.870 000 GHz  
-29.30 dBm

DL  
-13.0  
dBm



CENTER 1.870 20 GHz  
RES BW 3 kHz  
SPAN 1.00 MHz  
SWP 300 msec  
VBW 1 MHz

#104  
#100  
#100

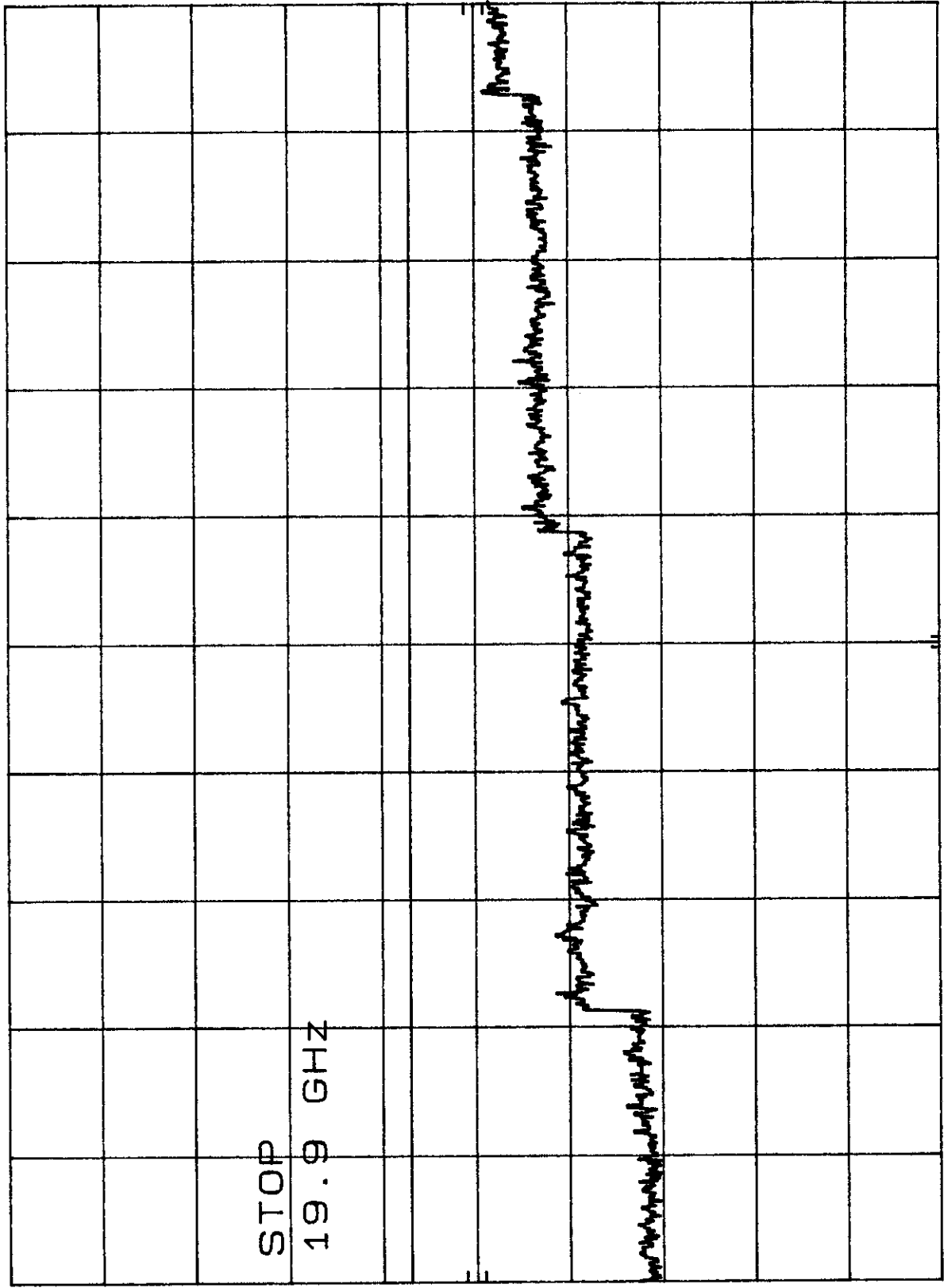
PK #106

156

WJ SPURIOUS  
hp REF 30.0 dBm ATTN 40 dB

10 dB/

STOP  
19.9 GHz  
DL  
-13.0  
dBm



START 2.0 GHz RES BW 1 MHz VBW 1 MHz STOP 19.9 GHz SWP 448 msec

#106

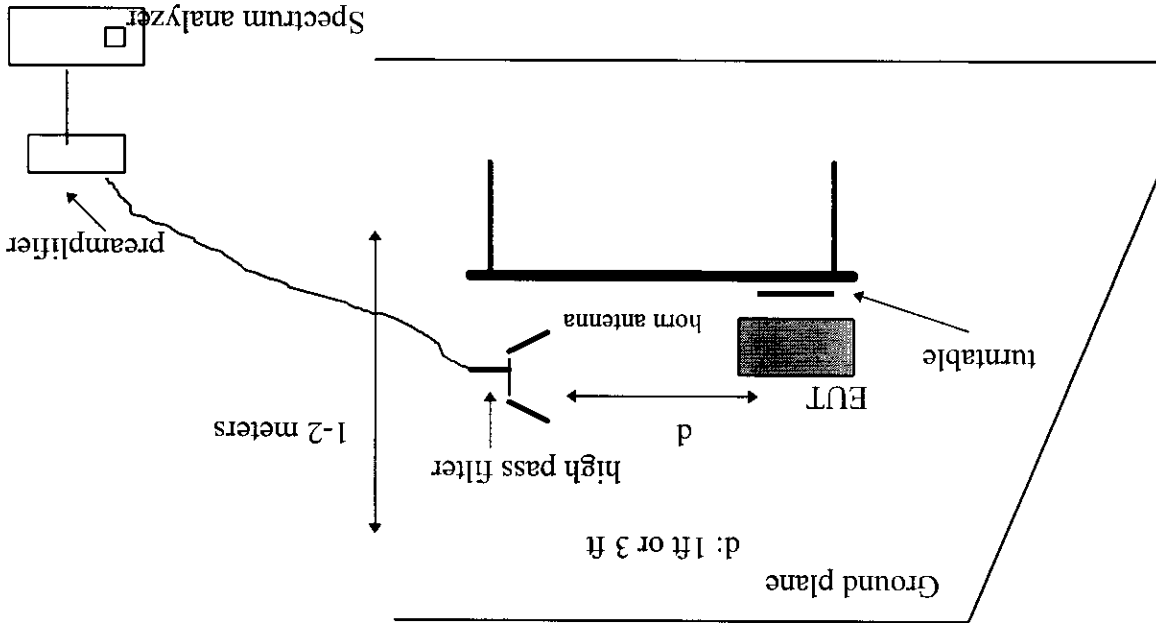


## Section 2.993 Measurement Required: Field Strength of Spurious and Harmonic Radiation

### Measurement Equipment Used:

HP 8563E Spectrum Analyzer  
HP 8449 B Preamplifier, 1-26 GHz  
ARA DRG-118/A Double Ridged Horn antenna, 1 - 18 GHz  
QIM "The Workhorse" low loss cable, 9 ft (loss: 0.85 dB/ft@ 26 GHz)

### Test Set-Up



### Minimum Requirement

The magnitude of each spurious and harmonic emission detected as being radiated from the EUT must be at a level more than  $43 + 10 \log(\text{mean output power, watts})$  dB below the mean power output ( = -13 dBm).

Resultant radiated field at 3 m from -13 dBm source feeding isotropic antenna: 82.4 dBuV/m

### Test Method

The antenna output port of the EUT was terminated with a 50 ohm shielded termination. With the transmitter operating at full power, the EUT was rotated 360° and the search antenna was raised and lowered in both polarities, all in an attempt to maximize the levels of the received emission for each harmonic and spurious emission up to 10 fo.

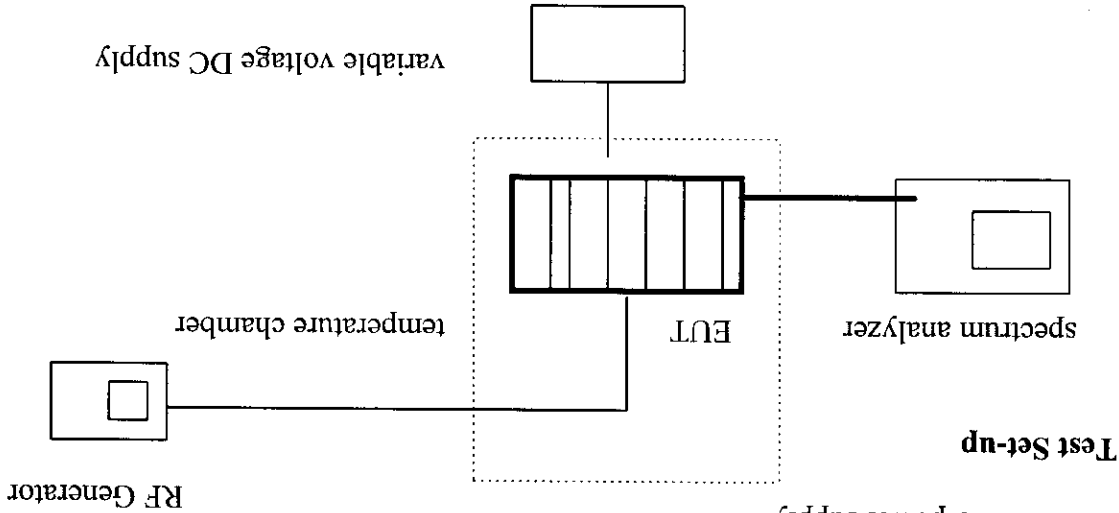
### Test Results

Corrected field strength readings extrapolated to 3m: more than 20 dB below limit.

## Section 9.295 Measurement Required: Frequency Stability

### Measurement Equipment Used:

HP 8563E Spectrum Analyzer  
 QIM "The Workhorse" low loss cable, 9 ft (loss: 0.85 dB/ft @ 26 GHz)  
 Variable DC power supply



**Section 24.235 :** States Frequency stability shall be sufficient to ensure that fundamental emission stays within the authorized frequency block.

### Test Method

Temperature: Vary the ambient temperature from -30 to +50°C, in 10 degree increments, allowing the EUT to stabilize at each temperature.  
 Primary Supply Voltage: Vary the supply voltage from 85% to 115% of the nominal operating voltage with EUT at 20°C.

### Test Procedure :

At each frequency the MKR function of the analyzer was activated and a marker was placed where the emission mask intersected the bandedge frequency of the adjacent frequency block. During frequency stability test, if the operating frequency drifted towards band edge, the marker would appear to "crawl" up the emission mask. Amplitude level at the marker ( bandedge indicator) must remain below the -13dBm limit line.

Test Results

Tests were performed at :

| Temp                                                | Block A/CW |          |          | Block B/CW |          | Block C/CW |  |
|-----------------------------------------------------|------------|----------|----------|------------|----------|------------|--|
|                                                     | FWD/1930   | REV/1850 | FWD/1950 | REV/1870   | FWD/1975 | REV/1895   |  |
|                                                     | Duration   |          |          |            |          |            |  |
| -30                                                 | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| -20                                                 | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| -10                                                 | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| 0                                                   | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| 10 min                                              | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| 10 min                                              | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| 20 min                                              | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| 30 min                                              | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| 40 min                                              | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| 50 min                                              | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| Voltage                                             |            |          |          |            |          |            |  |
| 115%                                                | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| 85%                                                 | .00013     | .00013   | .00013   | .00013     | .00013   | .00013     |  |
| Direct connect analyzer to signal generator 0.00013 |            |          |          |            |          |            |  |
| Voltage from 102V to 138V                           |            |          |          |            |          |            |  |

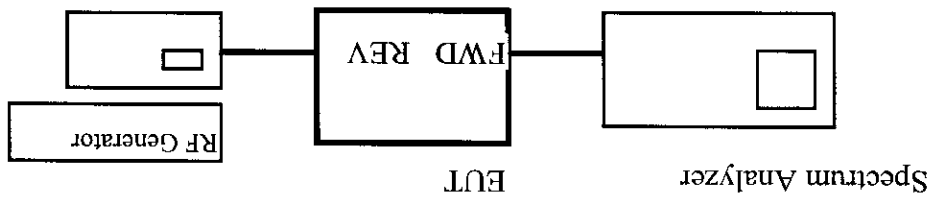
For both temperature Vs frequency and voltage Vs frequency stability tests, no discernible drift of the emission mask was detected.

## Section 24.232: RF Power Output

### Measurement Equipment Used:

HP 8563E Spectrum Analyzer  
 QIM "The Workhorse" low loss cable, 9 ft (loss: 0.85 dB/ft @ 26 GHz)

### Test Setup:



### Test Method

RF output power was measured with Spectrum Analyzer ( Set to 3MHZ RES BW)

#### For CDMA

Power In : -45dBm

Power Out: 23 dBm, for both FWD and REV channels.

#### For TDMA and GSM

Power In: -38dBm

Power Out: 28dBm, for both FWD and REV channels.

## Section 1.1307 Routine Environmental Evaluation

The R1910-1 repeater total power output is much less than 2000W ERP and therefore routine evaluation is NOT required for RF exposure to personnel.