9.4 Measurement Data

Test Date : Feb. 17, 2003 Temperature : 19 ℃ Humidity: 63 %

a) Lower Band Edge : maximum value is –49.33 dBm that is attenuated more than 20 dB
b) Upper Band Edge : maximum value is –31.50 dBm that is attenuated more than 20 dB

Note : 1. Please see appendix 4 for Plotted Data
2. The expanded uncertainty of the 100 kHz bandwidth of band edges tests is 2dB.

10 POWER DENSITY MEASUREMENT

10.1 Standard Applicable

According to 15.247(d), for direct sequence systems, the transmitted power density averaged over any 1 second interval shall not be greater than 8 dBm in any 3 kHz bandwidth within these bands.

10.2 Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4 without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set EUT to any one measured frequency within its operating range and make sure the instrument is operated in its linear range.
3. Adjust the center frequency of spectrum analyzer on highest level appearing on spectral display within a 300 kHz frequency span.
4. Set the spectrum analyzer on a 3 kHz resolution bandwidth and 300 kHz video bandwidth as well as max. hold function.
5. Repeat above procedures until all measured frequencies were complete.

10.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
Spectrum Analyzer	Hewlett-Packard	8564E	04/14/2003
Attenuator	Weinschel Engineering	1	N/A
Plotter	Hewlett-Packard	7440A	N/A

10.4 Measurement Data

Test Date : Feb. 17, 2003 Temperature : 19 ℃ Humidity: 63 %

a) Channel 01 : Maximun Power Density of 3 kHz Bandwidth is –5.00dBm
b) Channel 06 : Maximun Power Density of 3 kHz Bandwidth is –5.00dBm
c) Channel 11 : Maximun Power Density of 3 kHz Bandwidth is –6.17dBm

Note : 1. Please see appendix 5 for Plotted Data
2. The expanded uncertainty of the power density tests is 2dB.

Appendix 1 : Ploted Datas of Power Line Conducted Emissions

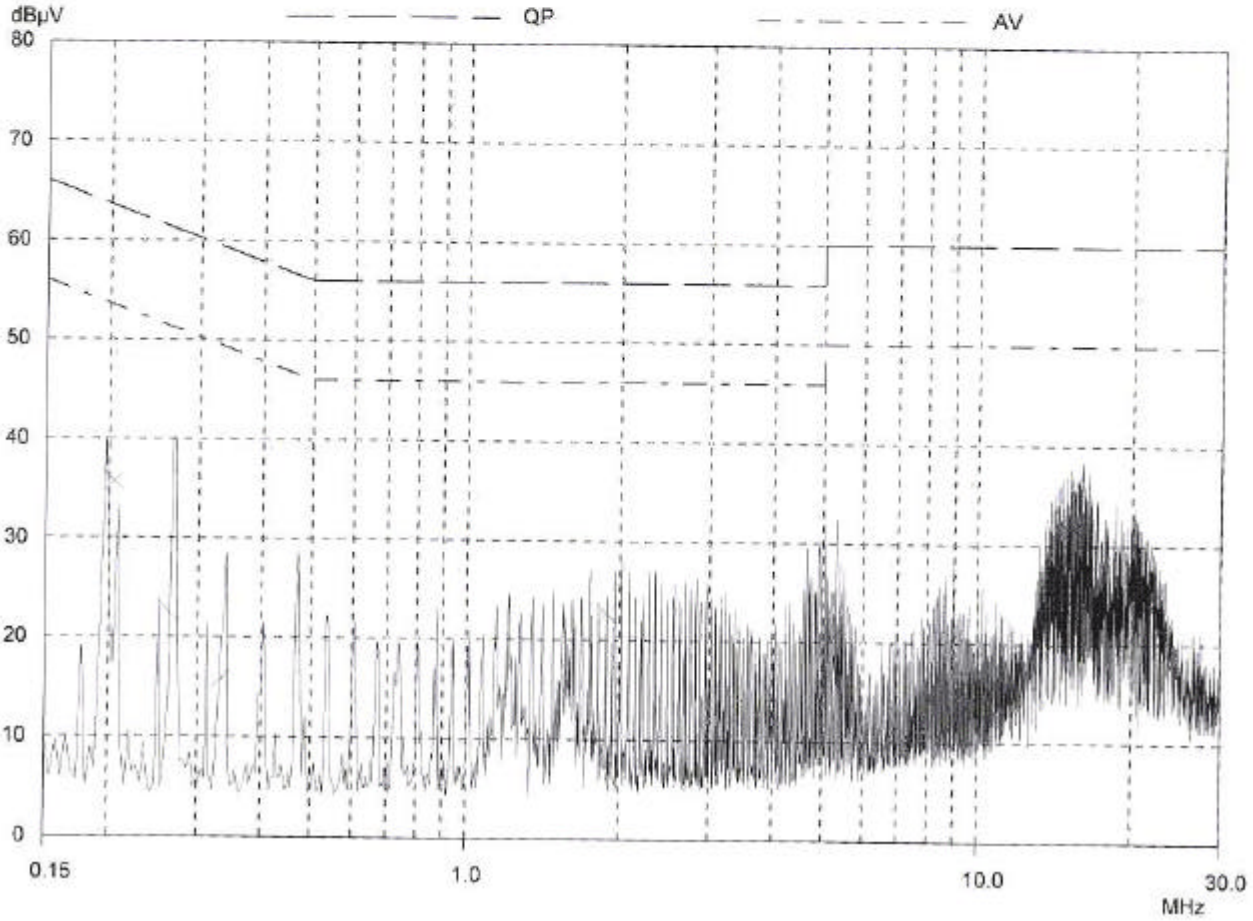
CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: CH1
Operator:
Test Spec:
Comment:
N

Final Measurement:

Detector:	X QP
Meas Time:	1sec
Peaks:	8
Acc Margin:	25 dB

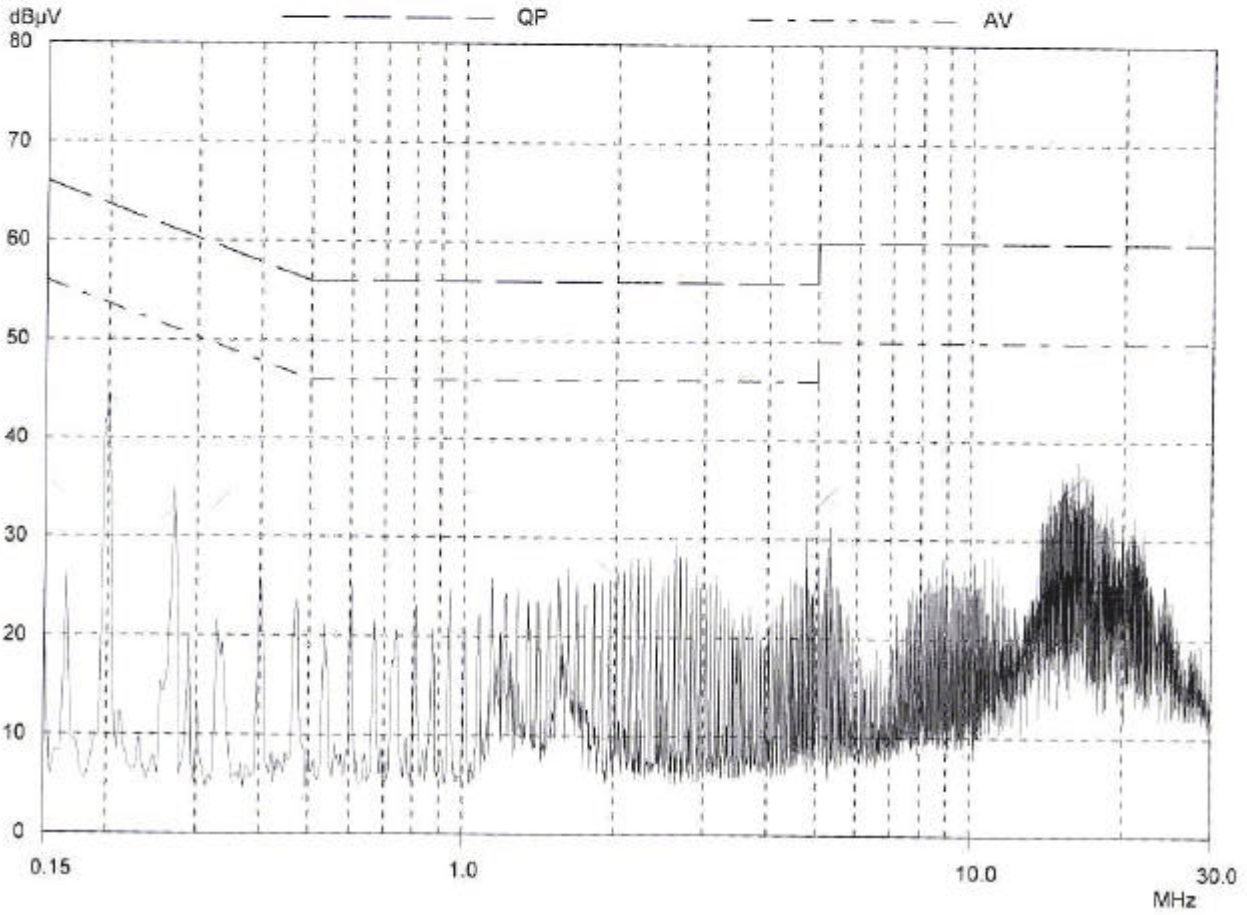


CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: CH1
Operator:
Test Spec:
Comment:
L1

Final Measurement:	Detector:	X QP
	Meas Time:	1sec
	Peaks:	8
	Acc Margin:	25 dB

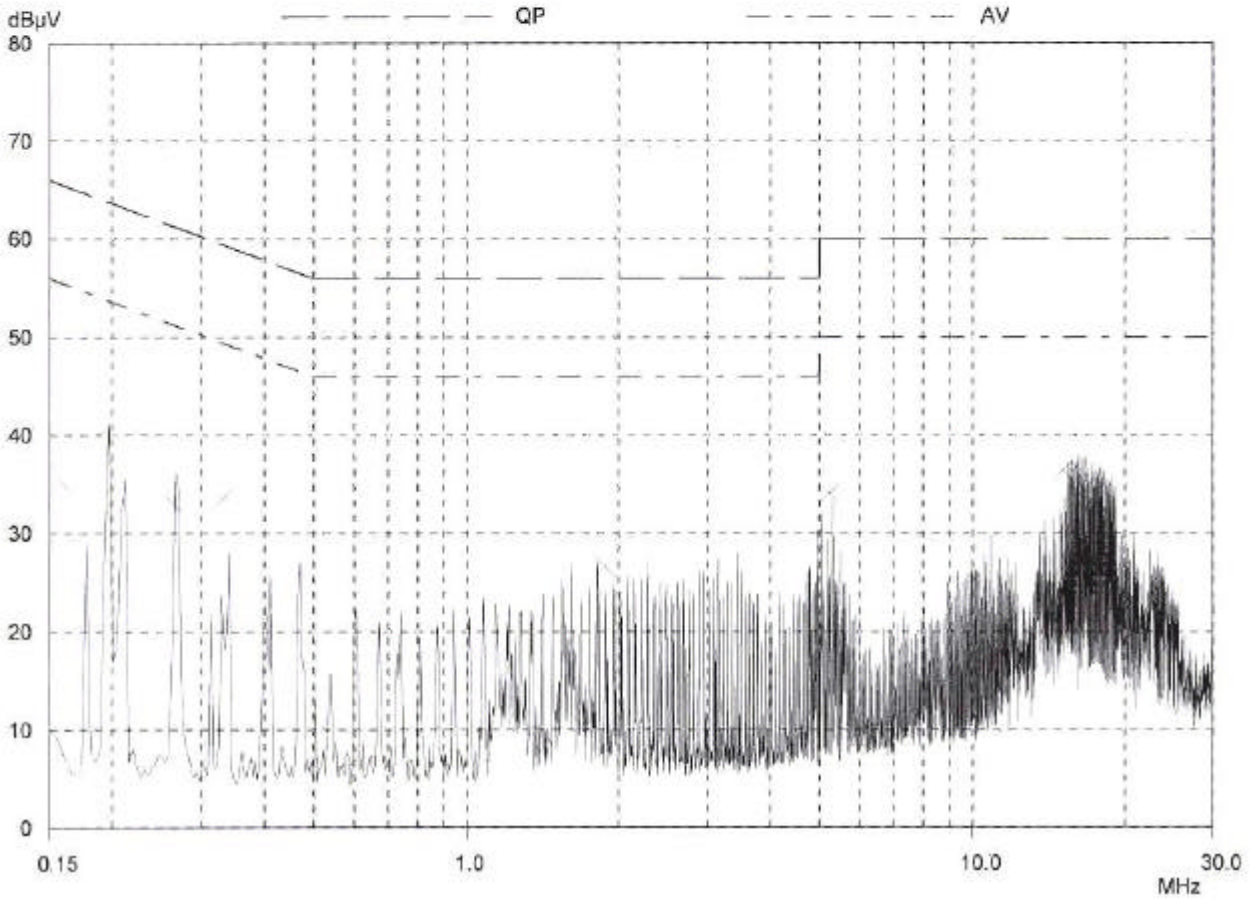


CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: CH6
Operator:
Test Spec:
Comment:
N

Final Measurement:	Detector:	X QP
	Meas Time:	1sec
	Peaks:	8
	Acc Margin:	25 dB

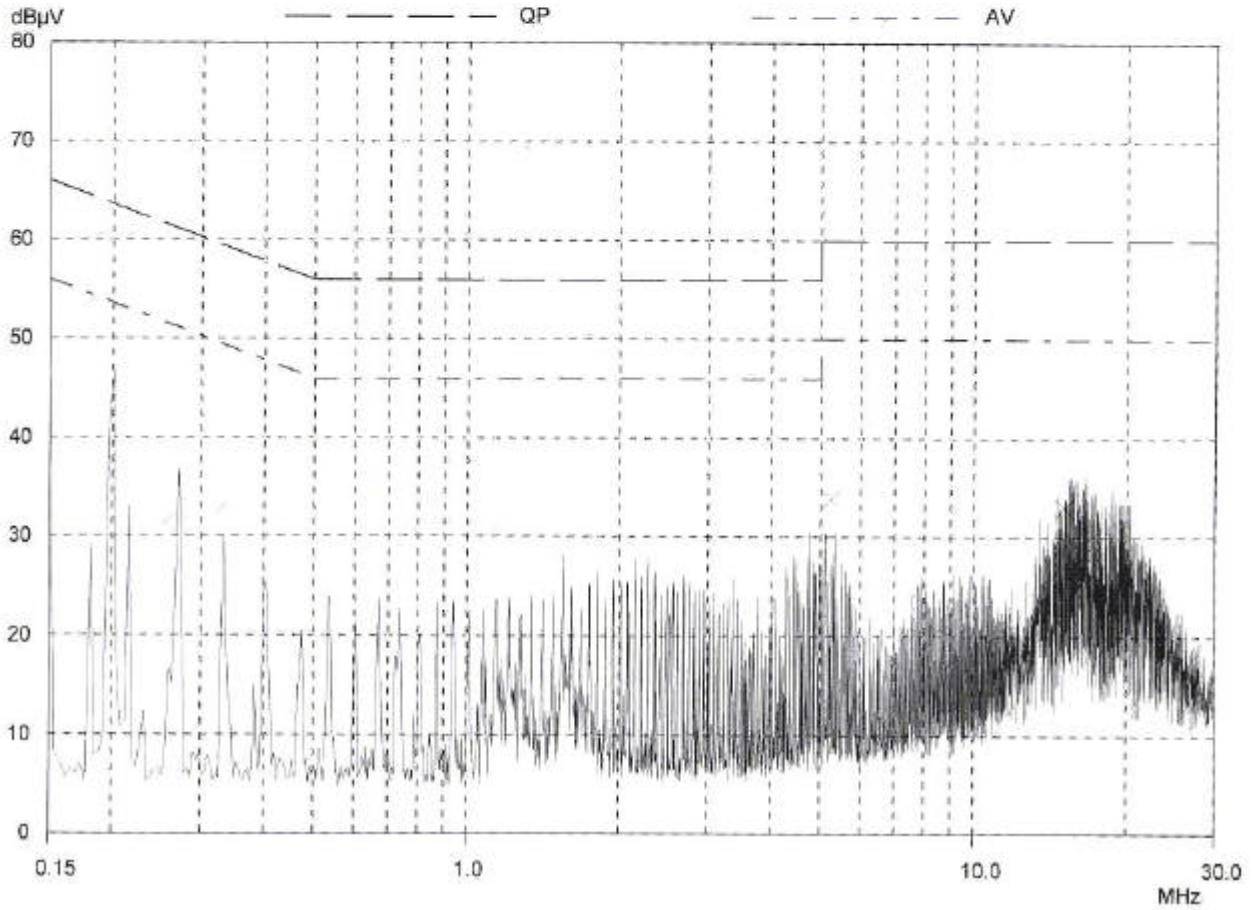


CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: CH6
Operator:
Test Spec:
Comment:
L1

Final Measurement:	Detector:	X QP
	Meas Time:	1sec
	Peaks:	8
	Acc Margin:	25 dB



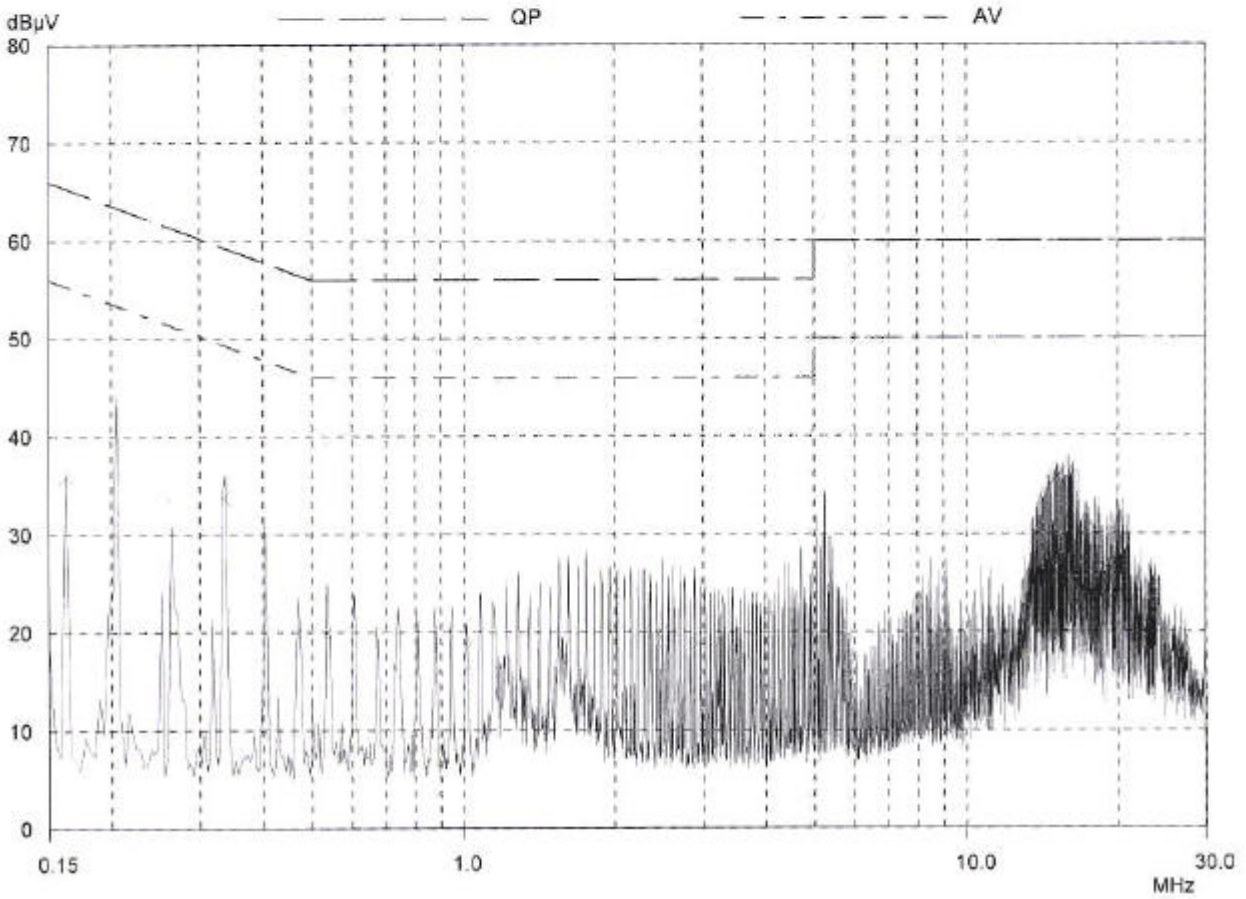
CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: CH11
Operator:
Test Spec:
Comment:
N

Final Measurement:

Detector:	X QP
Meas Time:	1sec
Peaks:	8
Acc Margin:	25 dB

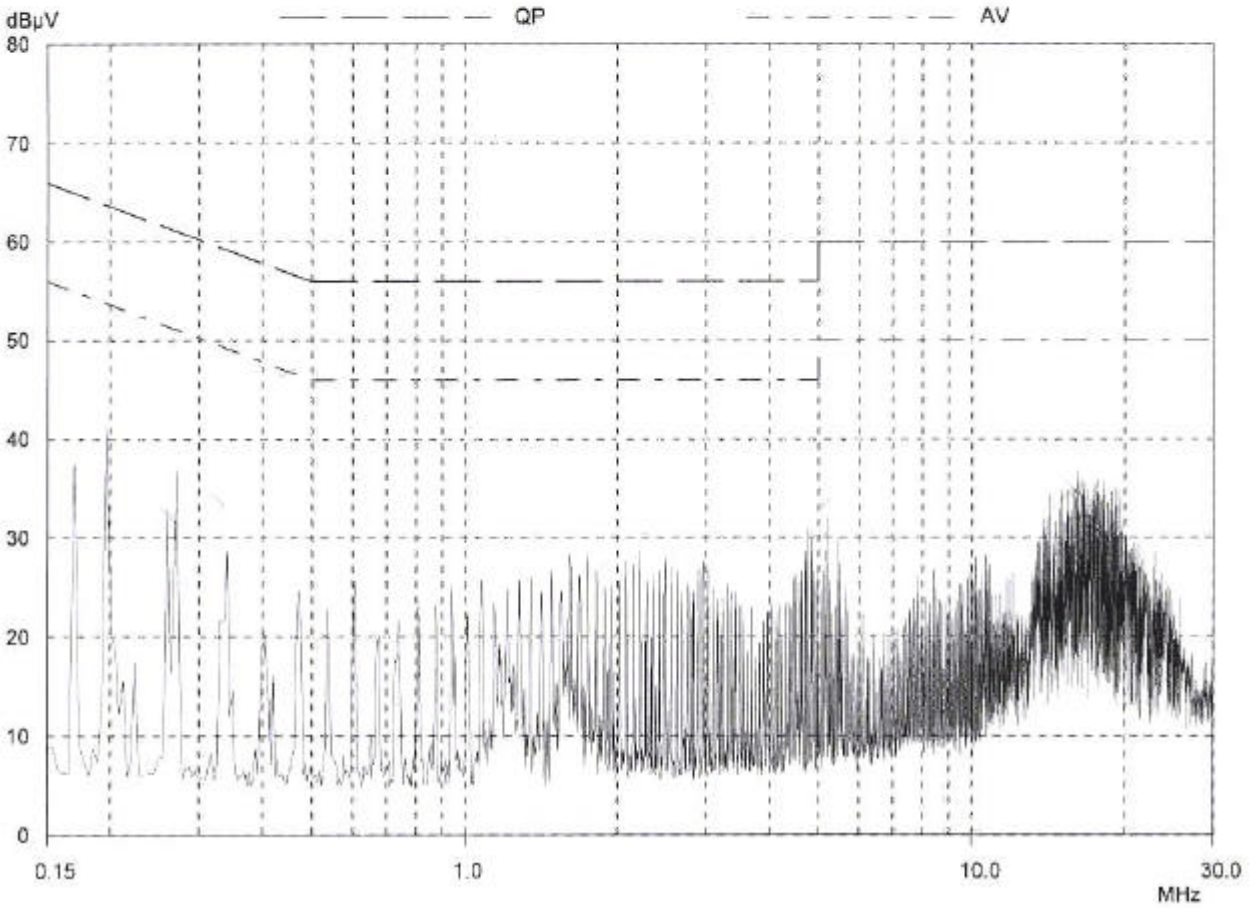


CONDUCTION EMISSION TEST

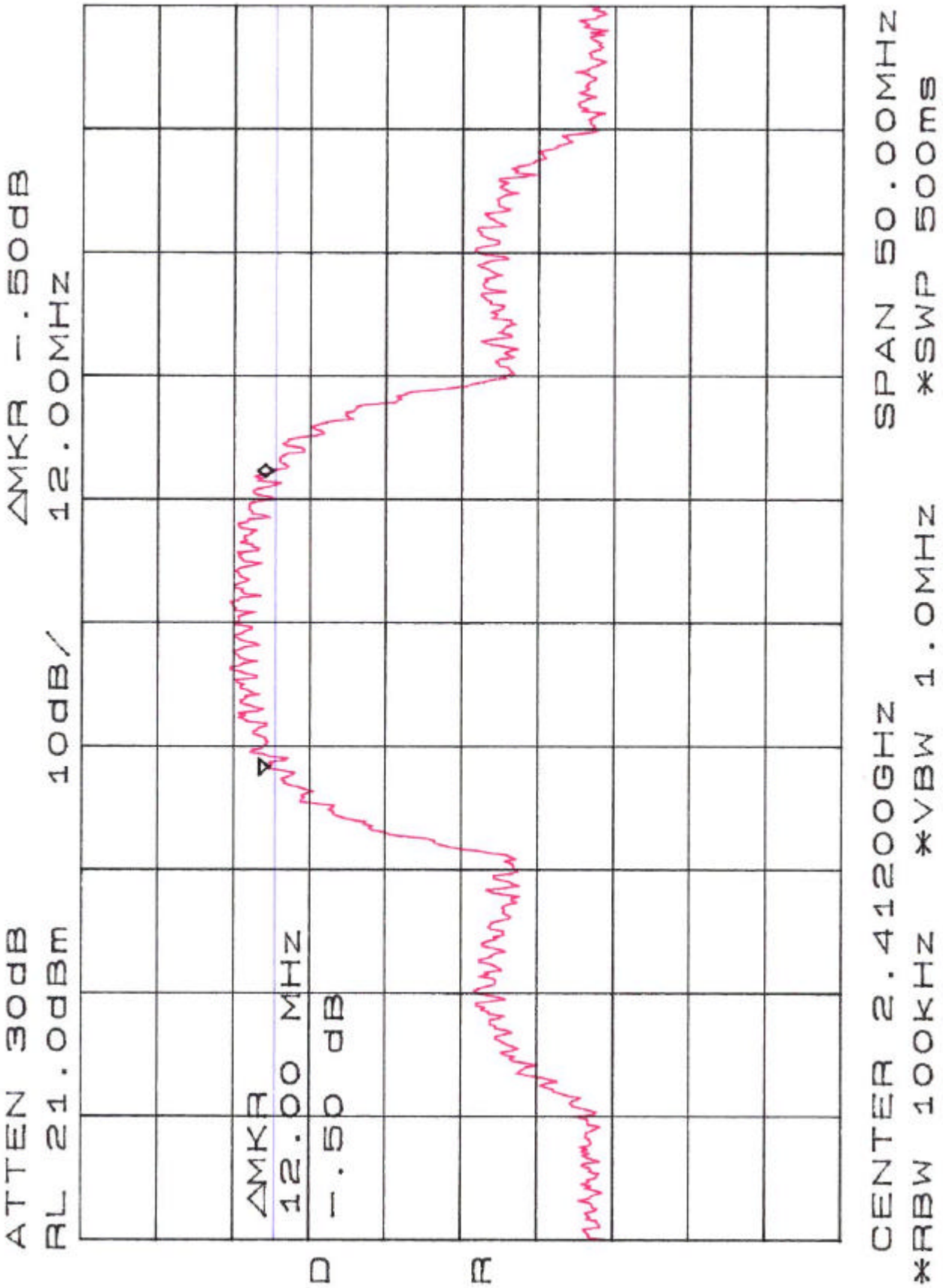
Peak Value

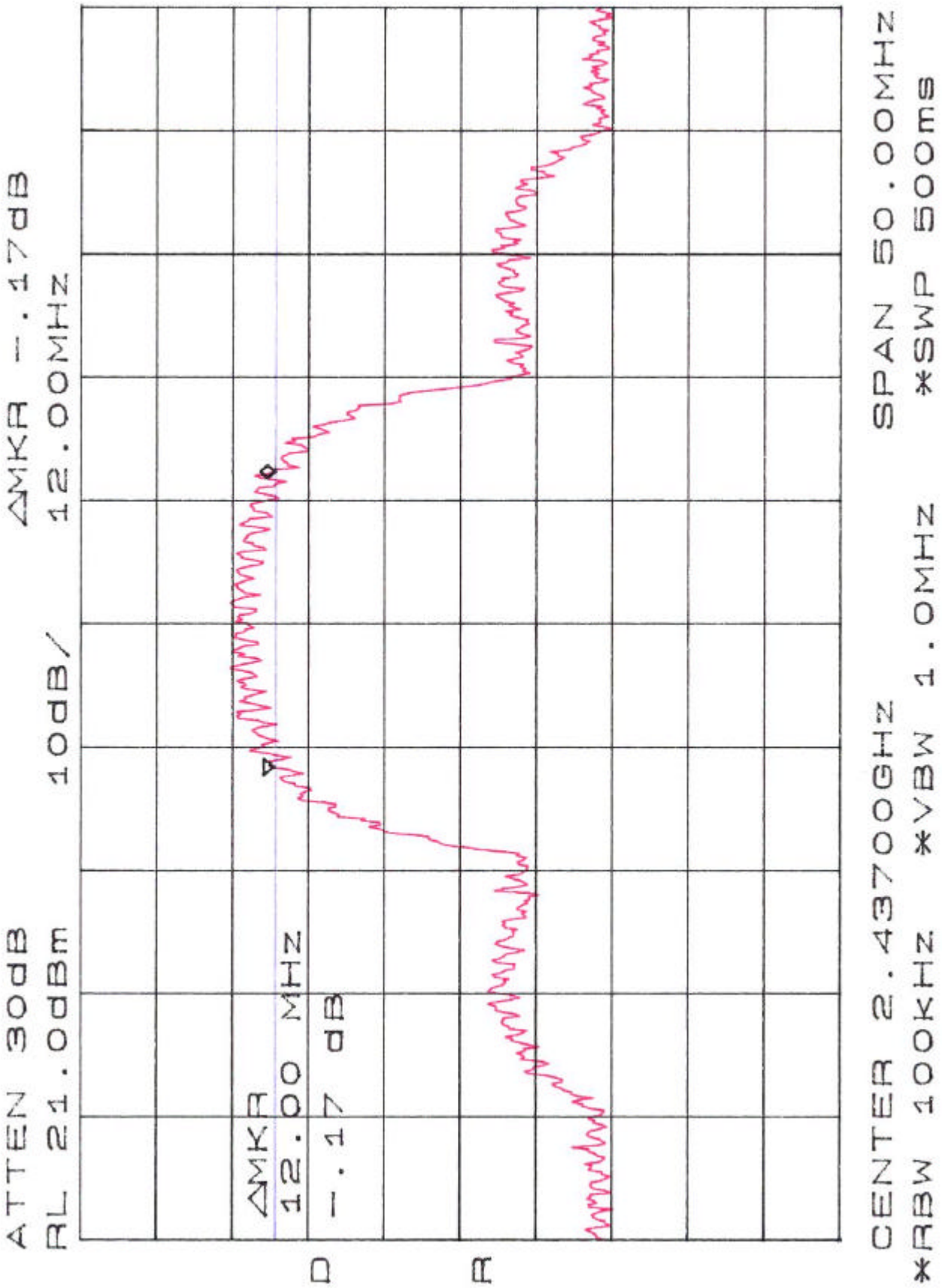
EUT:
Manuf:
Op Cond: CH11
Operator:
Test Spec:
Comment:
L1

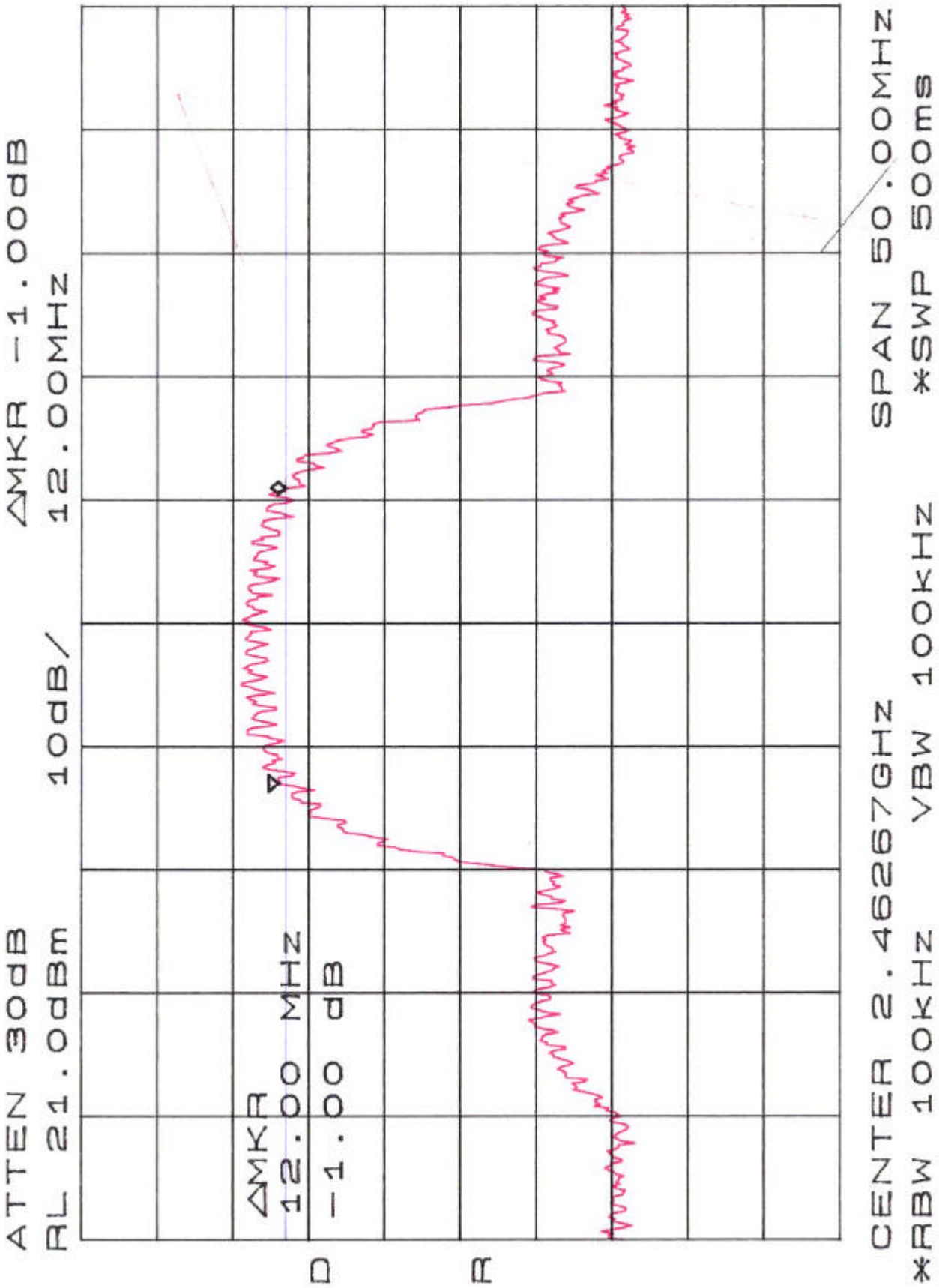
Final Measurement:	Detector:	X QP
	Meas Time:	1sec
	Peaks:	8
	Acc Margin:	25 dB



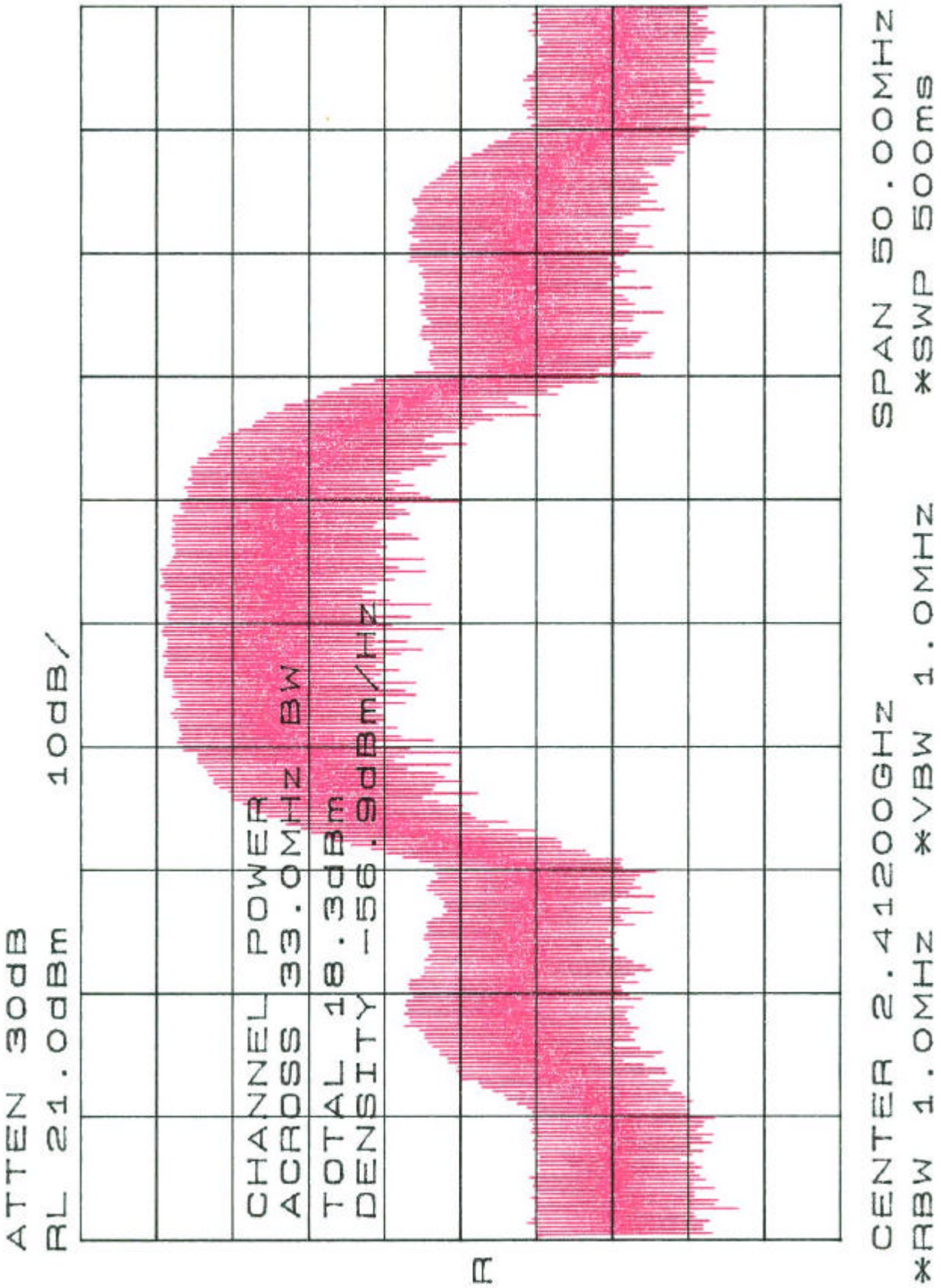
Appendix 2 : Ploted Datas of Emissions Bandwidth

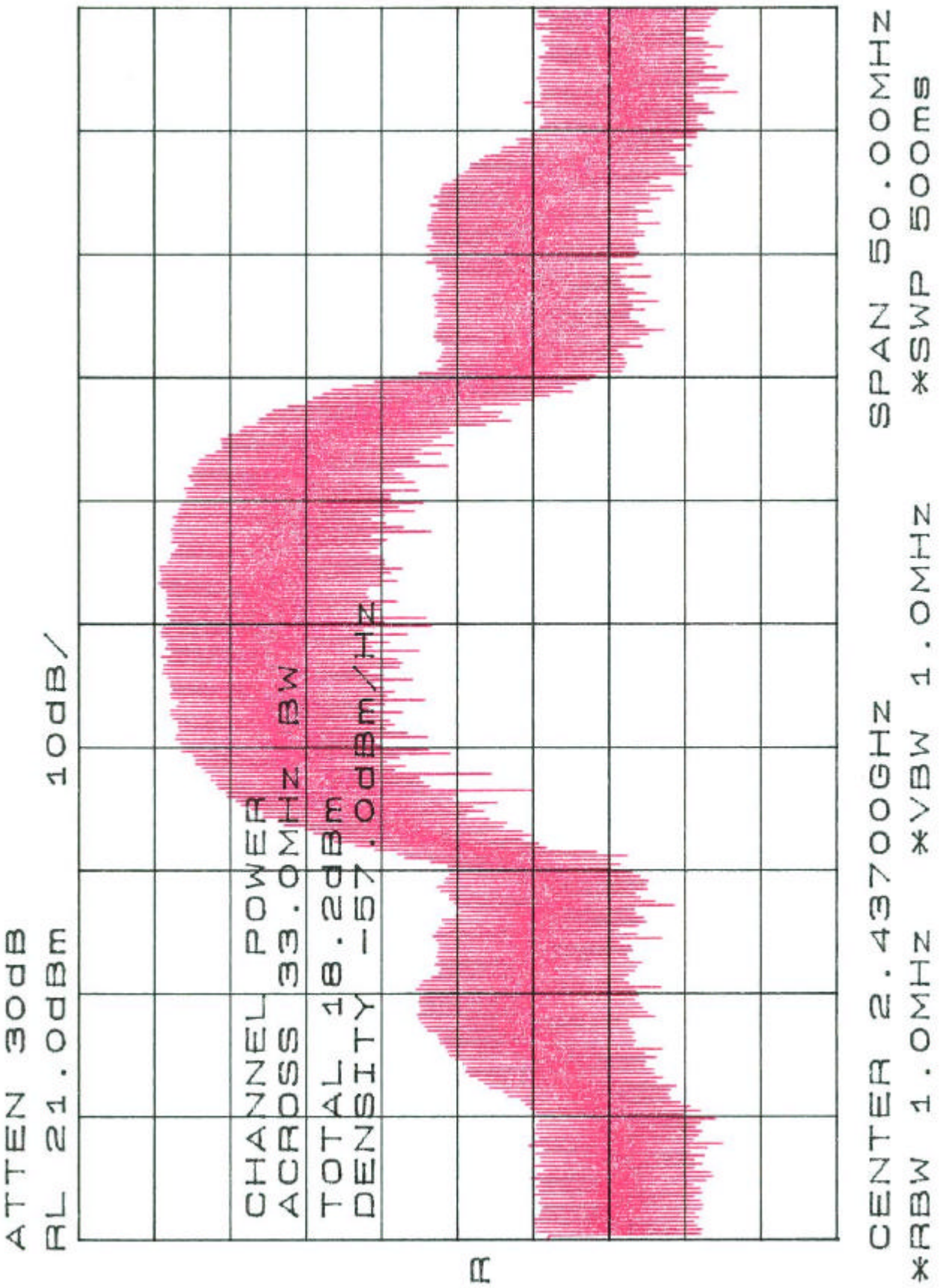

ATTEN 30dB
RL 21.0dBm
10dB/
ΔMKR -.50dB
12.00MHz
ΔMKR
12.00 MHz
-.50 dB
D
R
CENTER 2.41200GHz
*RBW 100kHz
*VBW 1.0MHz
SPAN 50.00MHz
*SWP 500ms

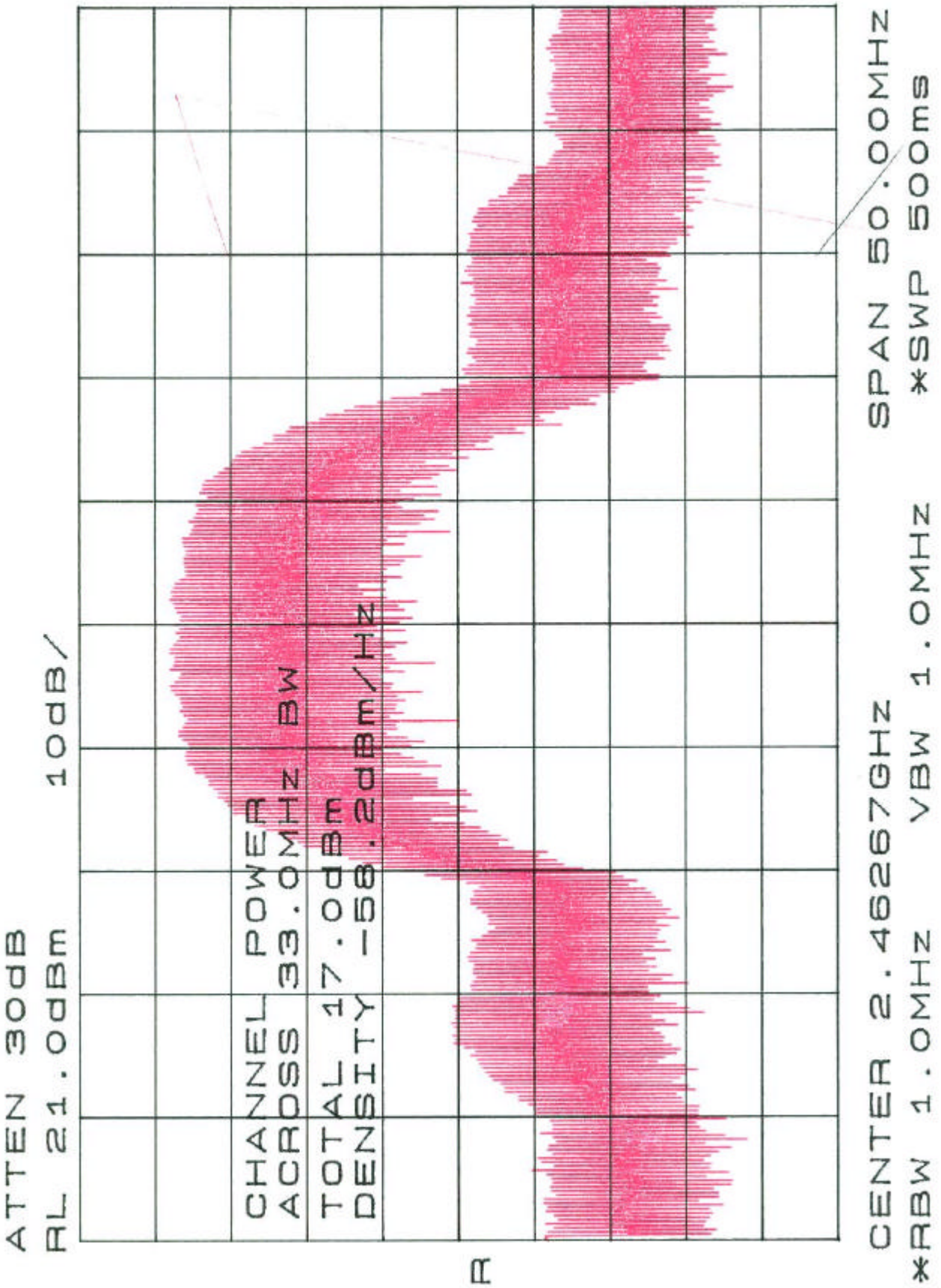

ATTEN 30dB
RL 21.0dBm
10dB/
ΔMKR -.17dB
12.00MHz
ΔMKR
12.00 MHz
-.17 dB
D
R
CENTER 2.437000GHz
*RBW 100kHz
*VBW 1.0MHz
SPAN 50.00MHz
*SWP 500ms


ATTEN 30dB
RL 21.0dBm
10dB/
ΔMKR -1.00dB
12.00MHz
ΔMKR
12.00 MHz
-1.00 dB
D
R
CENTER 2.46267GHz
*RBW 100kHz
VBW 100kHz
SPAN 50.00MHz
*SWP 500ms

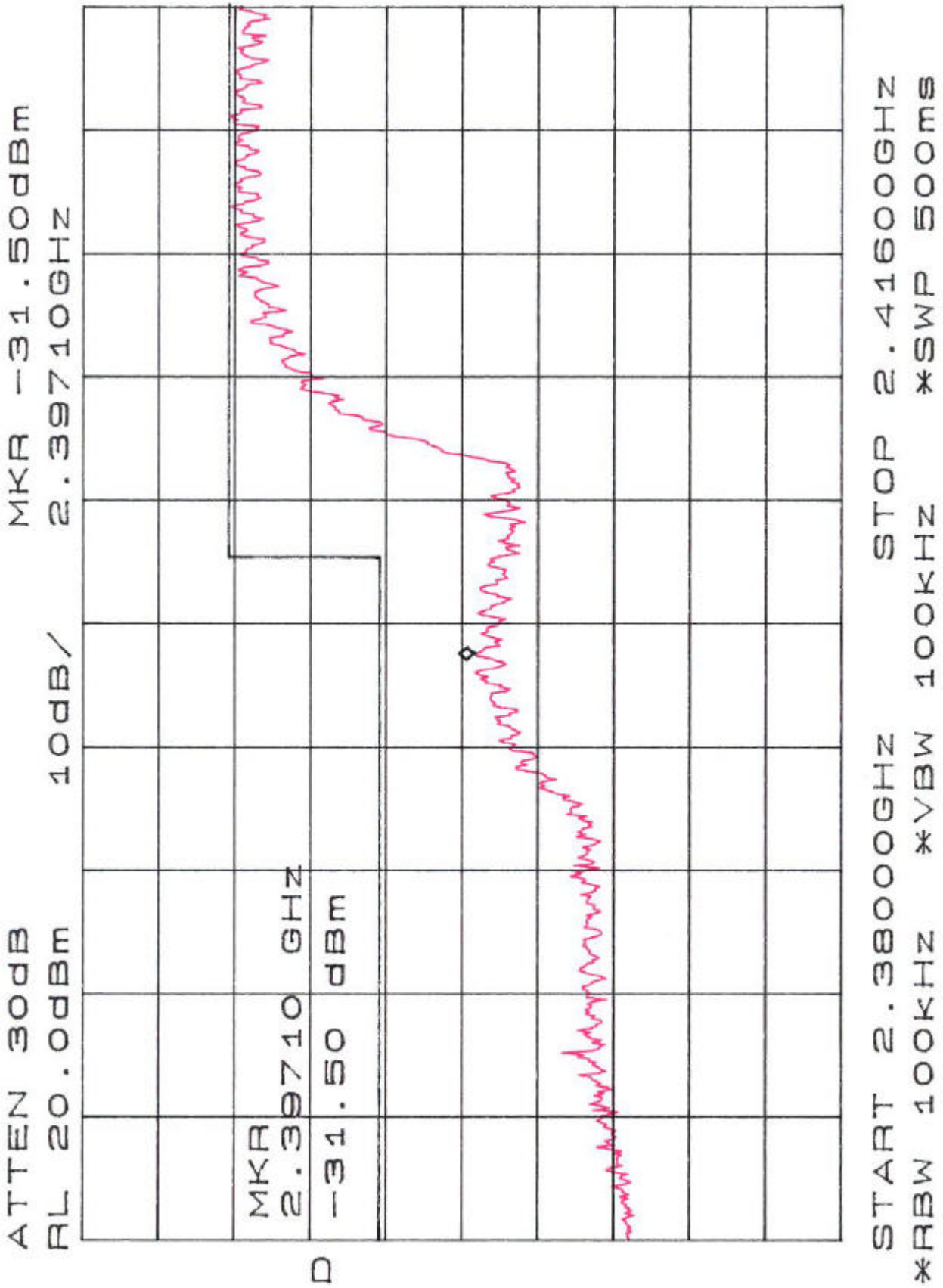
Appendix 3 : Ploted Datas of Output Peak Power

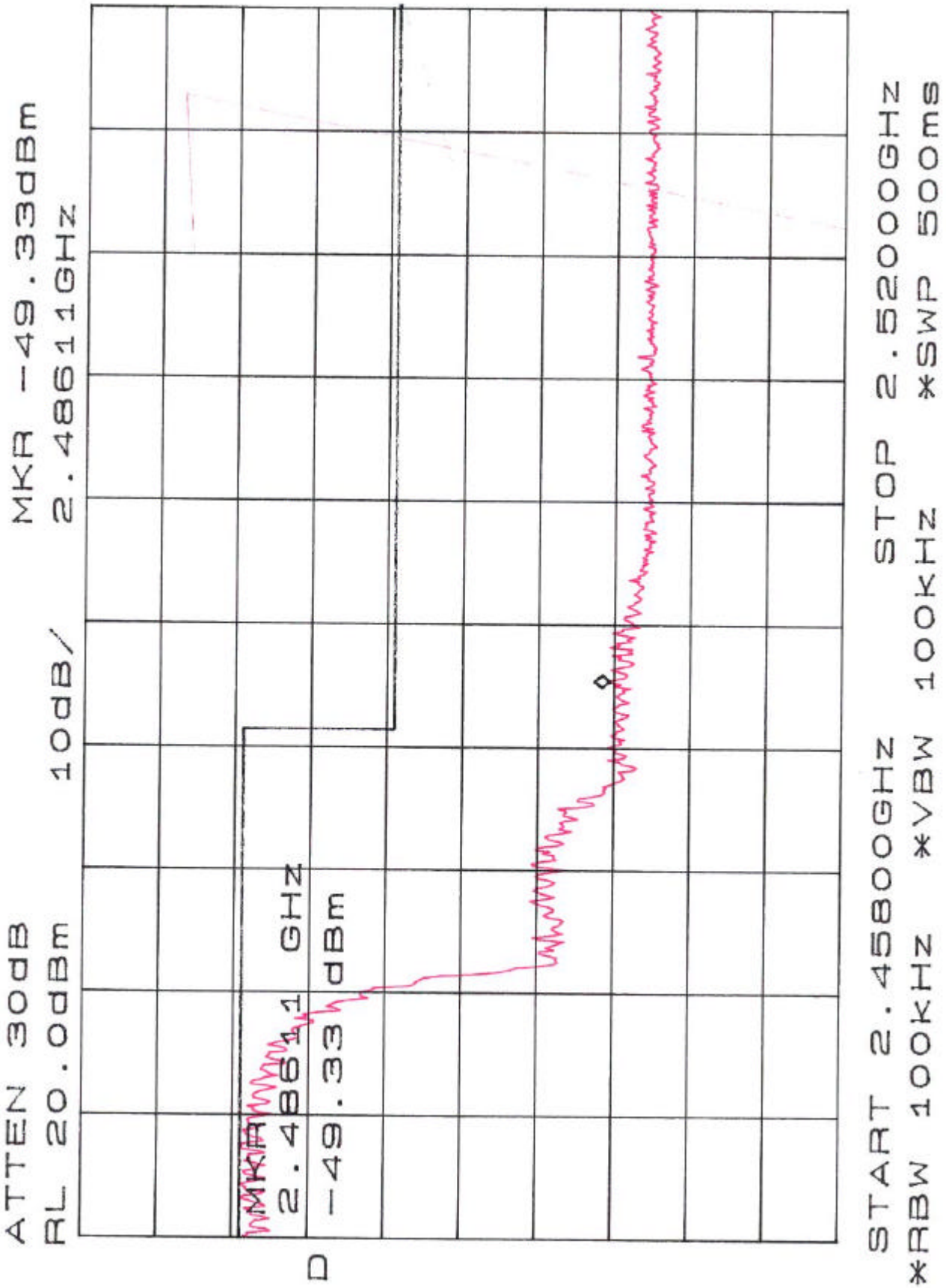

ATTEN 30dB
RL 21.0dBm 10dB/
CHANNEL POWER
ACROSS 33.0MHz BW
TOTAL 18.3dBm
DENSITY -156.9dBm/Hz
CENTER 2.4120GHz
*RBW 1.0MHz *VBW 1.0MHz
SPAN 50.00MHz
*SWP 500ms


ATTEN 30dB
RL 21.0dBm
10dB/
CHANNEL POWER
ACROSS 33.0MHZ BW
TOTAL 18.2dBm
DENSITY -57.0dBm/HZ
R
CENTER 2.437000GHZ
*RBW 1.0MHZ
*VBW 1.0MHZ
SPAN 50.00MHZ
*SWP 500S

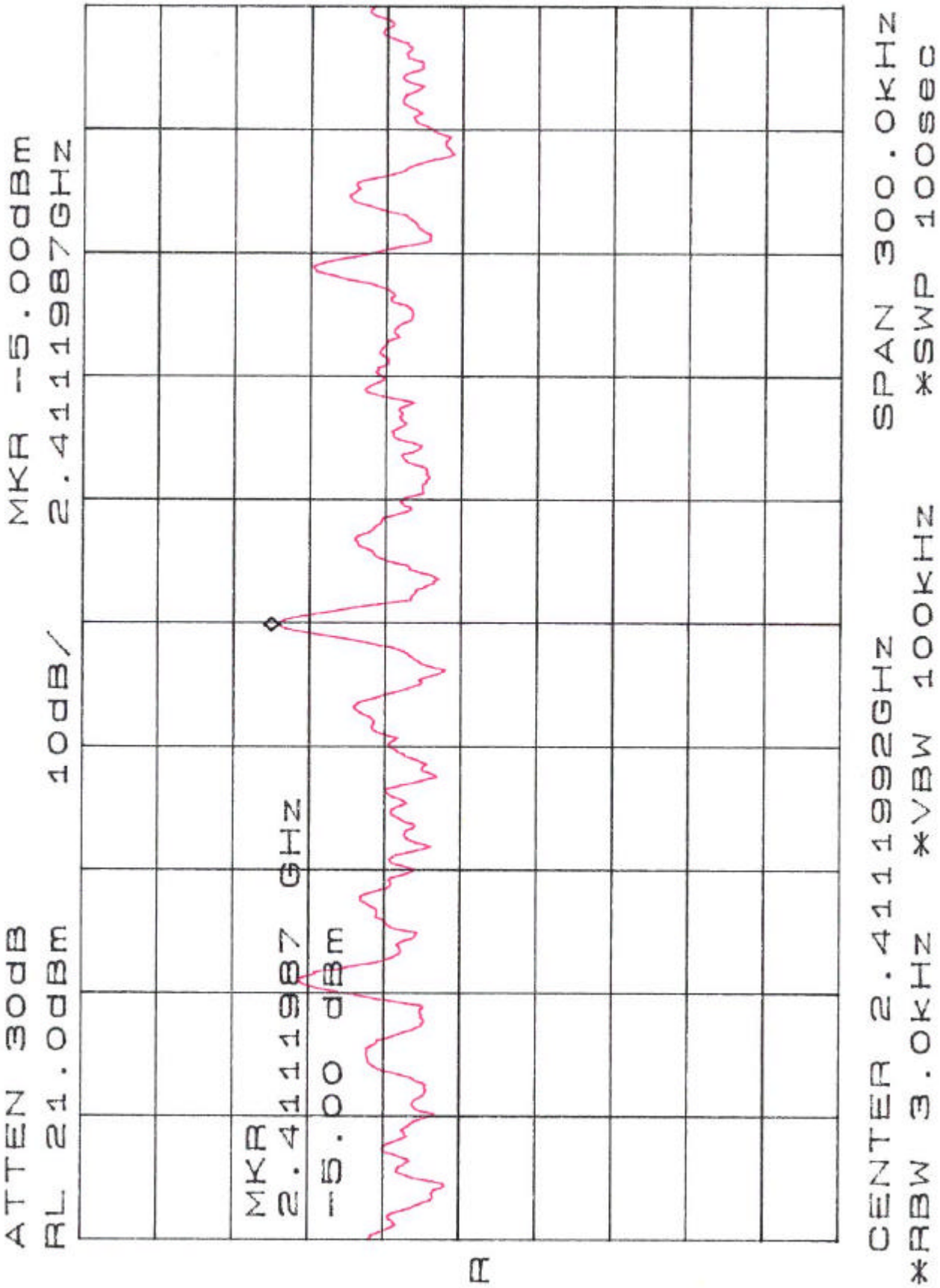

ATTEN 30dB
RL 21.0dBm
10dB/
CHANNEL POWER
ACROSS 33.0MHz BW
TOTAL 17.0dBm
DENSITY -56.2dBm/Hz
R
CENTER 2.46267GHz
*RBW 1.0MHz
VBW 1.0MHz
SPAN 50.00MHz
*SWP 500ms

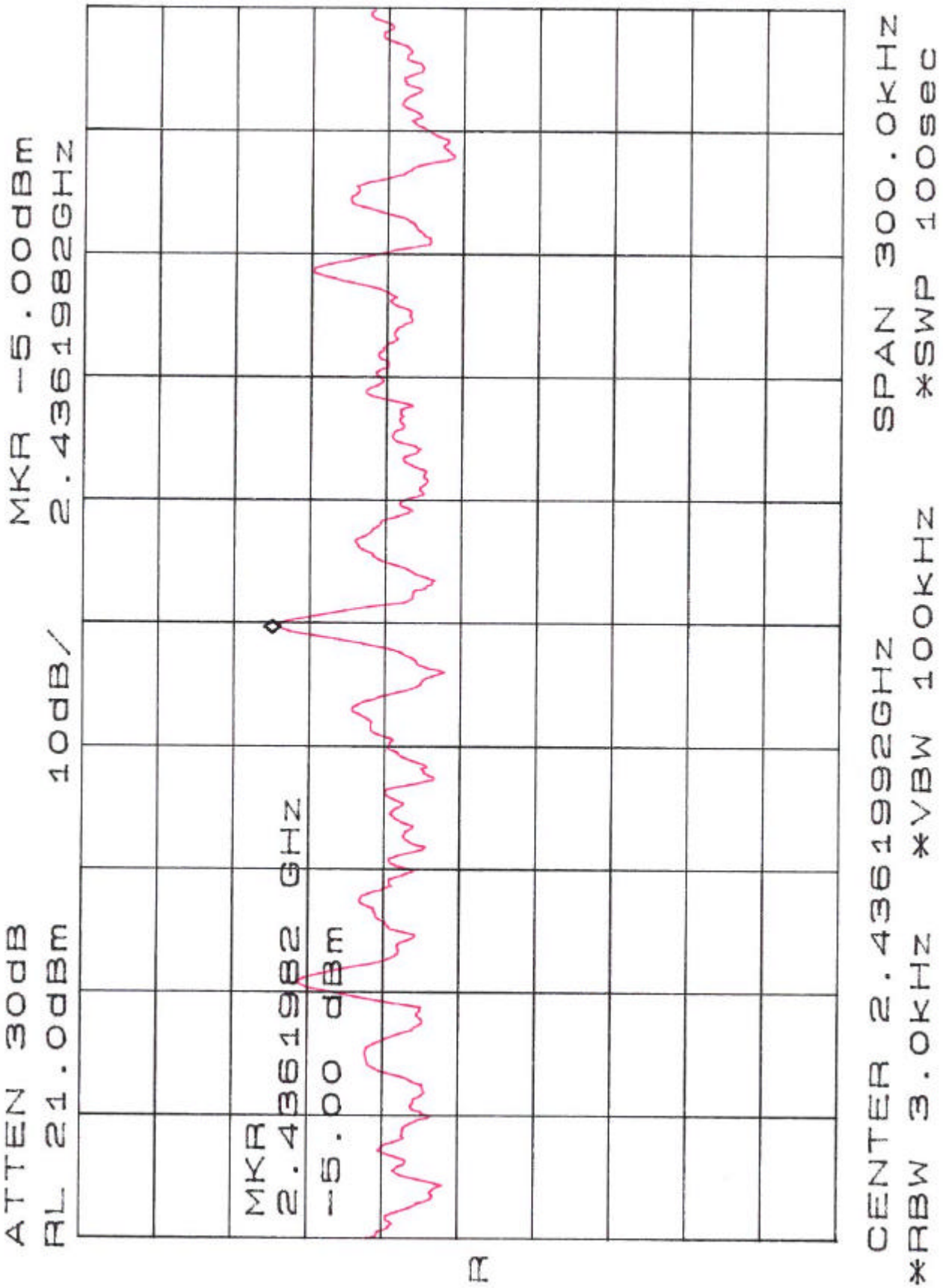
Appendix 4 : Ploted Datas of Band Edge Emission

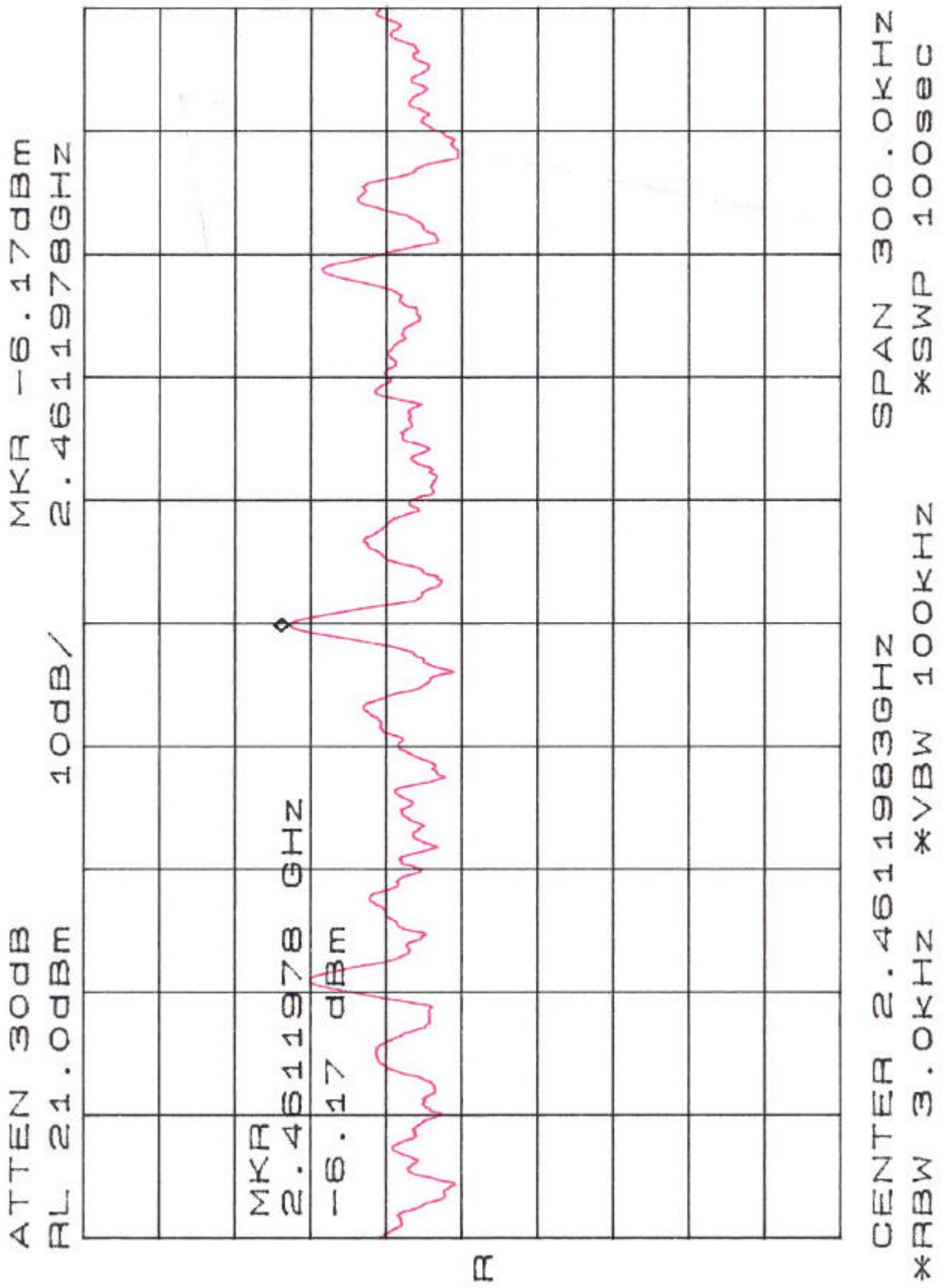

ATTEN 30dB
RL 20.0dBm
10dB/
MKR -31.50dBm
2.39710GHz
MKR
2.39710 GHz
-31.50 dBm
D
START 2.38000GHz
*RBW 100KHz
*VBW 100KHz
STOP 2.41600GHz
*SWP 500ms


ATTEN 30dB
RL 20.0dBm
10dB/
MKR -49.33dBm
2.48611GHz
MKR
2.48611 GHZ
-49.33 dBm
D
START 2.45800GHz
*RBW 100KHz
*VBW 100KHz
STOP 2.52000GHz
*SWP 500ms

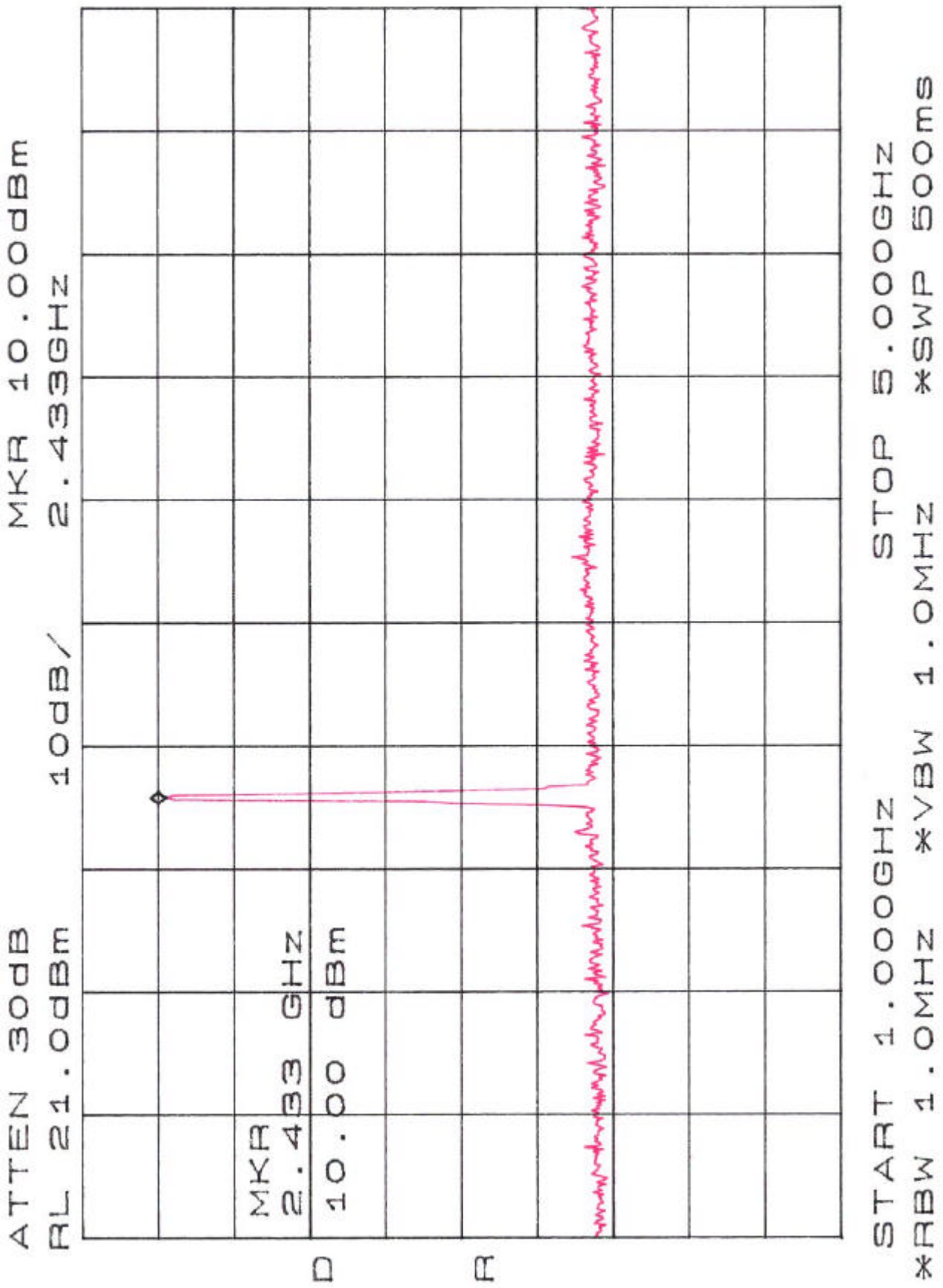
Appendix 5 : Ploted Datas of Power Density

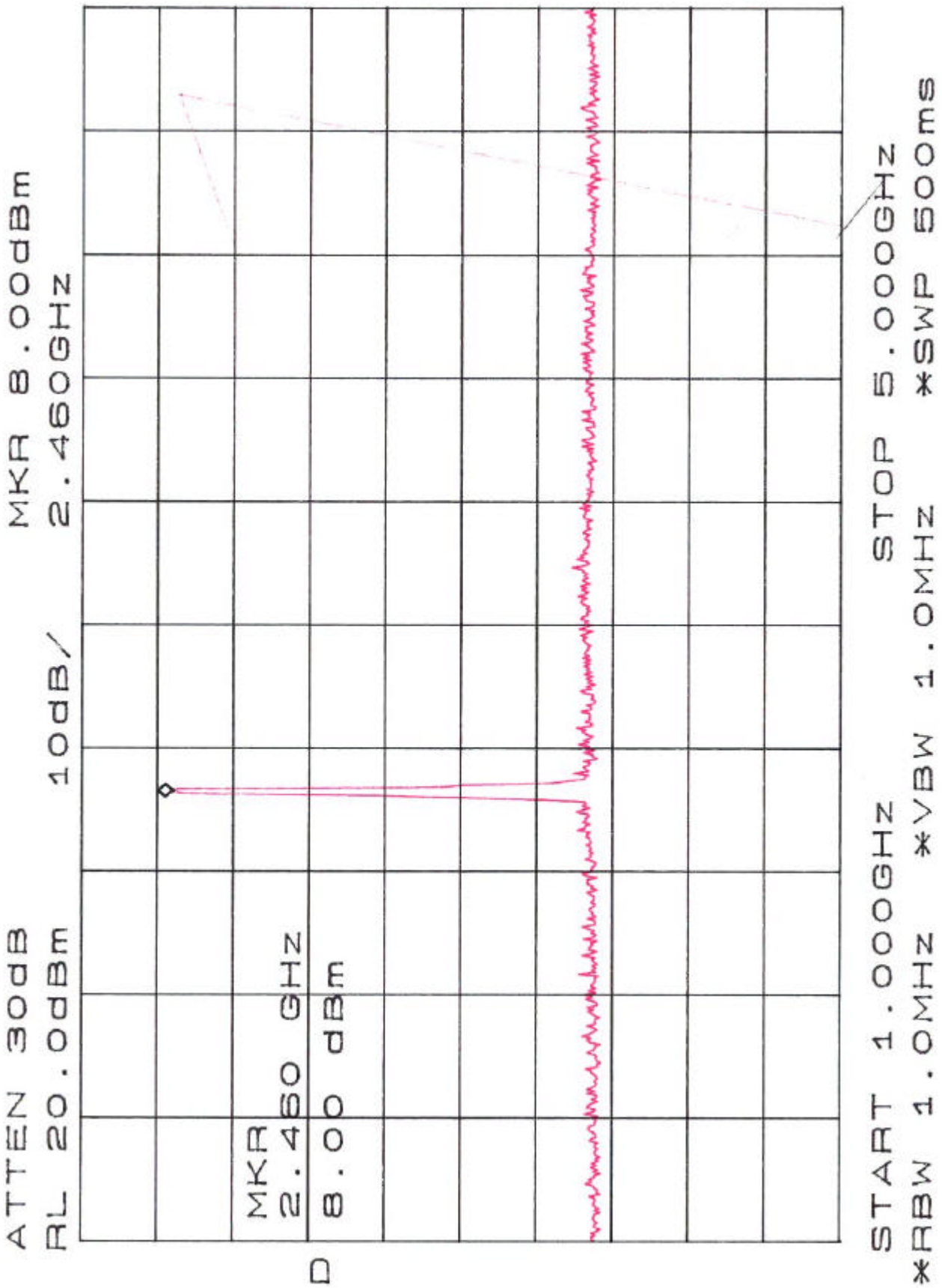

ATTEN 30dB
RL 21.0dBm
10dB/
MKR -5.00dBm
2.411987GHz
MKR
2.411987 GHz
-5.00 dBm
A
CENTER 2.411992GHz
*RBW 3.0kHz
*VBW 100kHz
SPAN 300.0kHz
*SWP 100sec

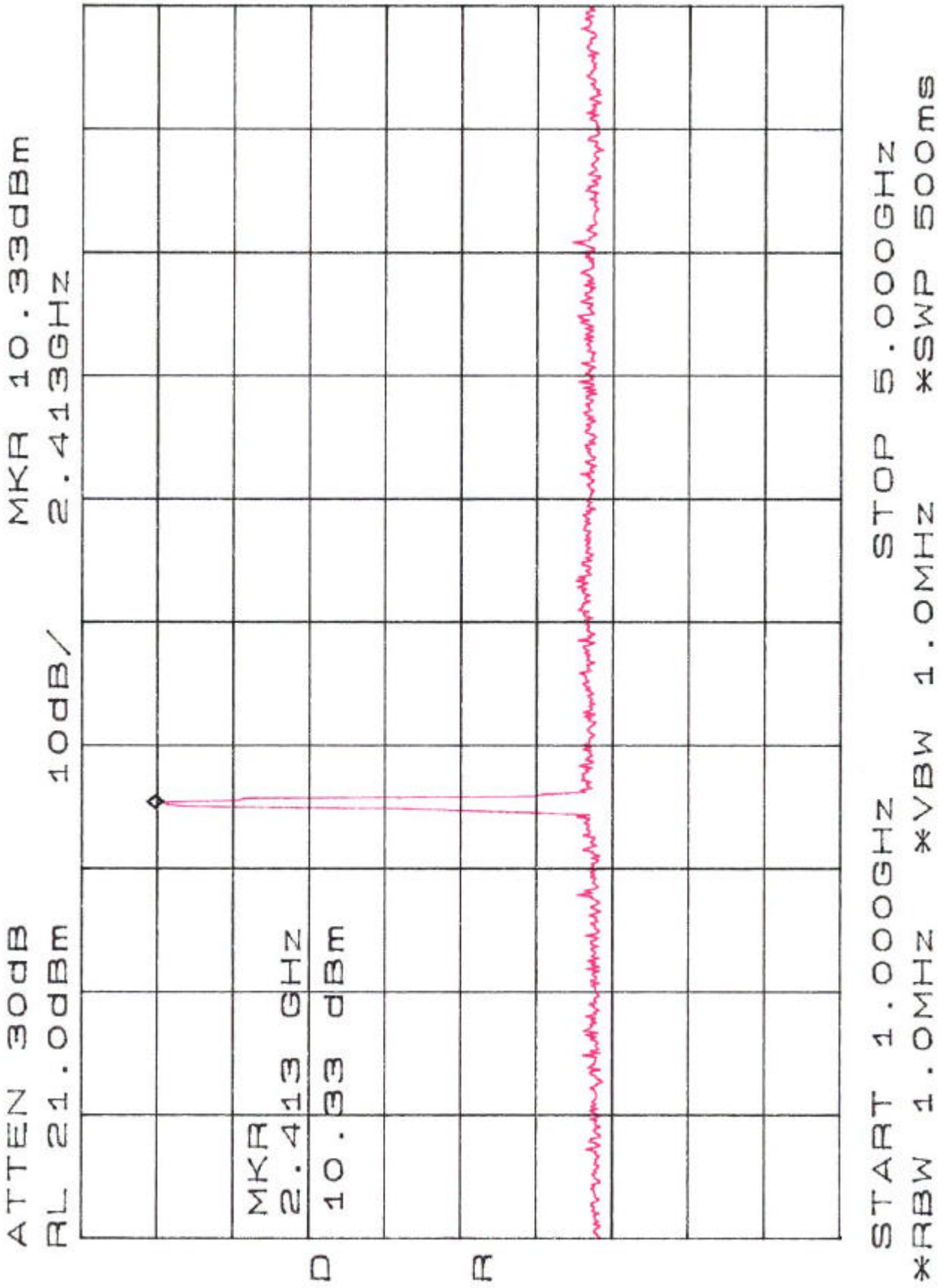

ATTEN 30dB
RL 21.0dBm
10dB/
MKR -5.00dBm
2.436198 2GHz
MKR
2.436198 2 GHz
-5.00 dBm
CENTER 2.436198 2GHz
*RBW 3.0kHz
*VBW 100kHz
SPAN 300.0kHz
*SWP 100sec


ATTEN 30dB
RL 21.0dBm
10dB/
MKR -6.17dBm
2.4611978GHz
MKR
2.4611978 GHz
-6.17 dBm
R
CENTER 2.4611983GHz
*RBW 3.0kHz
*VBW 100kHz
SPAN 300.0kHz
*SWP 100sec

Appendix 6 : Spurious Emission At Antenna Terminal


ATTEN 30dB
RL 21.0dBm
10dB/
MKR 10.00dBm
2.433GHz
MKR
2.433 GHz
10.00 dBm
D
R
START 1.000GHz
*RBW 1.0MHz
*VBW 1.0MHz
STOP 5.000GHz
*SWP 50ms


ATTEN 30dB
RL 20.0dBm
10dB/
MKR 8.00dBm
2.460GHz
MKR
2.460 GHz
8.00 dBm
D
START 1.000GHz
*RBW 1.0MHz
*VBW 1.0MHz
STOP 5.000GHz
*SWP 500ms


ATTEN 30dB
RL 21.0dBm
10dB/
MKR 10.33dBm
2.413GHz
MKR
2.413 GHz
10.33 dBm
D
R
START 1.000GHz
*RBW 1.0MHz
*VBW 1.0MHz
STOP 5.000GHz
*SWP 500ms