FCC Part 74 Subpart H

EMI TEST REPORT

of

E.U.T. : Wireless Microphone Systems(Transmitter)

FCC ID. : M5X-MI808

MODEL : MI-808T

Working Frequency : 614MHz-806MHz

for

APPLICANT : MIPRO Electronics Co., Ltd.
ADDRESS : 814 Pei-Kang Road, Chia-Yi, Taiwan

Test Performed by

ELECTRONICS TESTING CENTER, TAIWAN
NO. 34, LIN 5, DING FU TSUN, LINKOU HSIANG
TAIPEI HSIEN, TAIWAN, R.O.C.

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Report Number : ET93R-05-046-04

TEST REPORT CERTIFICATION

Applicant : MIPRO Electronics Co., Ltd..
814 Pei-Kang Road, Chia-Yi, Taiwan

Manufacturer : MIPRO Electronics Co., Ltd..
814 Pei-Kang Road, Chia-Yi, Taiwan

Description of EUT :

a) Type of EUT	: Wireless Microphone Systems (Transmitter)
b) Trade Name	: MIPRO
c) Model No.	: MI-808T
d) FCC ID	: M5X-MI808
e) Working Frequency	: 614MHz-806MHz
f) Power Supply	: I/P AC100-240V/50-60Hz, 1.2A O/P 12Vdc/0.5A

Regulation Applied : FCC Rules and Regulations Part 74 Subpart H (2002)

I HEREBY CERTIFY THAT; The data shown in this report were made in accordance with the procedures given in ANSI C63.4 and the energy emitted by the device was founded to be within the limits applicable. I assume full responsibility for accuracy and completeness of these data.

Issued Date : Jul. 01, 2004

Test Engineer : Tien Lu Liao
(Tien Lu Liao)

Approve & Authorized Signer : Will Yauo
Will Yauo, Manager
EMC Dept. II of ELECTRONICS
TESTING CENTER, TAIWAN

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1. GENERAL INFORMATION

1.1 Product Description

a) Type of EUT	: Wireless Microphone Systems(Transmitter)
b) Trade Name	: MIPRO
c) Model No.	: MI-808T
d) FCC ID	: M5X-MI808
e) Working Frequency	: 614MHz-806MHz
f) Power Supply	: I/P AC100-240V/50-60Hz, 1.2A O/P 12Vdc/0.5A

1.2 Characteristics of Device:

1. Operating Frequency: 614MHz -806MHz
2. Switching Bandwitch: 24MHz
3. Frequency Generation: Phase Locked Loop (PLL) technique
4. Channel grid: 25KHz
5. Modulation: Stereo FM working on the pilot tone principle.
6. Pilot Tone Deviation: ±4KHz
7. RF Output Power (50 OHMS LOAD): 250mW
8. Spurious Emission: <4nW
9. Nominal Deviation: ±40KHz
10. Audio Frequency Range: 50~15,000Hz
11. Headphone Output: 6.3mm stereo jack, adjustable
12. Load Impedance Of Headphone Output: =16O
13. Current Consumption: Approx. 480mA at Hi output power
14. Antenna Output: TNC socket. 50O

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in chapter 13 of ANSI C63.4. and section 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, and 2.1055 of Part 2 of CFR 47

1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the roof top of Building at No. 34, Lin 5, Ding Fu Tsun, Linkou Hsiang, Taipei Hsien, Taiwan, R.O.C.

This site has been fully described in a report submitted to your office, and accepted in a letter dated Feb. 10, 2000.

2. REQUIREMENTS OF PROVISIONS

2.1 Definition

Intentional radiator:
A device that intentionally generates and emits radio frequency energy by radiation or induction.

2.2 Frequencies Available

According to sec. 74.802 of Part 74, the following frequencies are available for low power auxiliary station :

Frequencies (MHz)

26.100-26.480	455.000-456.000
54.000-72.000	470.000-488.000
76.000-88.000	488.000-494.000
161.625-161.775	614.000-806.000
174.000-216.000	450.000-451.000
944.000-952.000	

2.3 Requirements for Radio Equipment on Certification

(1) RF Output Power

For transmitters, the power output shall be measured at the RF output terminals.

(2) Modulation Characteristics

For Voice Modulated Communication Equipment, a curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted.

(3) Occupied Bandwidth

For radiotelephone transmitter, other than single sideband or indenpent sideband transmitter, when modulateed by a 2.5kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation.

(4) Spurious Emissions at Antenna Terminals

The radio frequency voltage or power generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminal when properly loaded with a suitable artificial antenna.

(5) Field Strength of Spurious Emissions

Measurements shall be made to detect spurious emission that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal condition of installation and operation.

(6) Frequencies Tolerance

a) The frequency stability shall be measured with variation of ambient temperature.
b) The frequency stability shall be measured with variation of primary supply voltage.

2.4 Labeling Requirement

Each equipment for which a type acceptance application is filed on or after May 1,1981, shall bear an identification plate or label pursuant to §2.925（Identification of equipment） and § 2.926（FCC identifier）.

3. OUTPUT POWER MEASUREMENT

3.1 Provision Applicable

According to §74.861(e)(1)(ii), the output power shall not exceed 250 milliwatts.

3.2 Measurement Procedure

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 1 GHz respectively, adjusting the input voltage to produce the maximum power as measured in chapter 3.
2. Adjust the analyzer for each frequency measured in chapter 6 on a 1 MHz frequency span and 1MHz resolution bandwidth.
3. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0◦ to 360 ◦ , and record the highest value indicated on spectrum analyzer as reference value.
4. Repeat step 3 until all frequencies need to be measured were complete.
5. Repeat step 4 with search antenna in vertical polarized orientations.
6. Replace the EUT with a tuned dipole antenna (horn antenna for above 1 GHz) relative to each frequency in horizontally polarized orientation and as the same polarized orientation with search antenna. Connect the tuned dipole antenna to a standard signal generator (SG) via a low loss cable. Power on the SG and tune the right frequency in measuring as well as set SG at a appreciated output level. Rise and lower the search antenna to get the highest value on spectrum analyzer, and then hold this position. Adjust the SG output to get a identical value derived from step 3 on spectrum analyzer. Record this value for result calculated.
7. Repeat step 6 until all frequencies need to be measured were complete.
8. Repeat step 7 with both dipole antenna (horn antenna for above 1 GHz) and search antenna in vertical polarized orientations.

Figure 2 : Frequencies measured below 1 GHz configuration

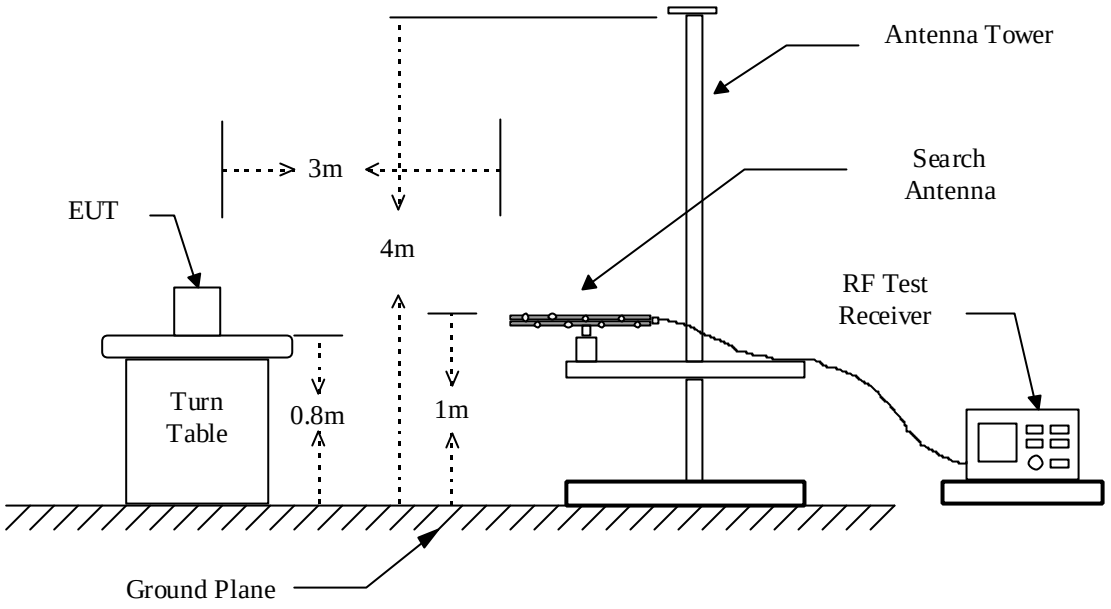
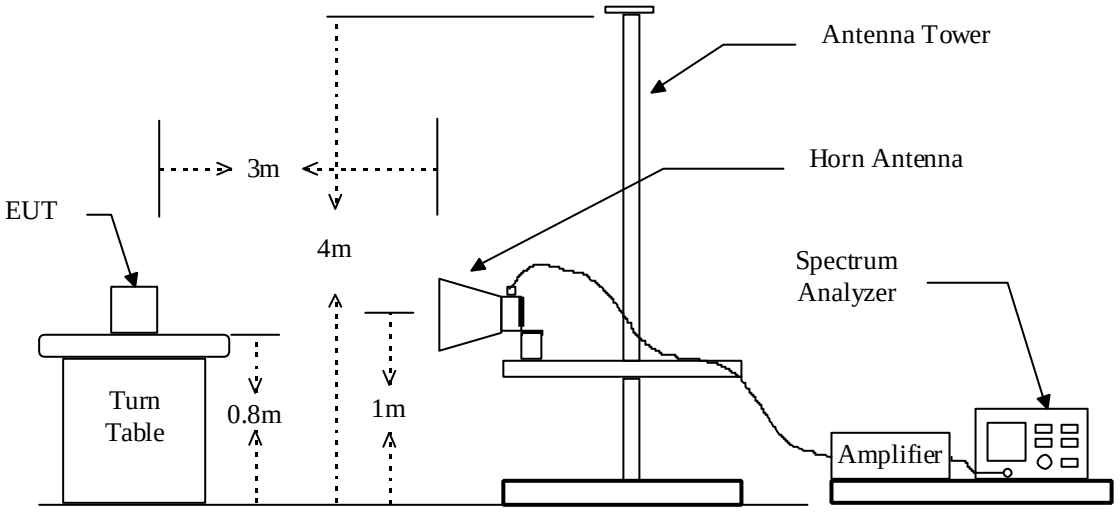


Figure 1 : Frequencies measured above 1 GHz configuration



3.3 Test Data

A. Conducted Measurement

a. Channel Low

Operated mode : 614.4739MHz Test Date : Jun. 11, 2004
Temperature : 23 ℃ Humidity : 63 %

Frequency (MHz)	Meter Reading (dBm)	Attenuator (dB)	Cable Loss (dB)	Result (dBm)	Output Power (mW)	Limit (mW)
614.4739	-16.55	40	0.5	23.95	248.31	250.0

b. Channel Mid

Operated mode : 741.2544MHz Test Date : Jun. 11, 2004
Temperature : 23 ℃ Humidity : 63 %

Frequency (MHz)	Meter Reading (dBm)	Attenuator (dB)	Cable Loss (dB)	Result (dBm)	Output Power (mW)	Limit (mW)
741.2544	-16.77	40	0.7	23.93	247.17	250.0

c. Channel High

Operated mode : 805.4733MHz Test Date : Jun. 11, 2004
Temperature : 23 ℃ Humidity : 63 %

Frequency (MHz)	Meter Reading (dBm)	Attenuator (dB)	Cable Loss (dB)	Result (dBm)	Output Power (mW)	Limit (mW)
805.4733	-16.90	40	0.8	23.90	245.47	250.0

Please see appendix 2 for potted data

B. ERP

a. Channel Low

Operated mode : 614.4737MHz Test Date : Jun. 11, 2004
Temperature : 23 ℃ Humidity : 63 %

Frequency (MHz)	Meter Reading (dB μ V/m)	SG Reading (dBm)	Cable Loss (dB)	Result (dBm)	Output Power (mW)	Limit (dBm)	Limit (mW)
614.4737	96.5	26.1	2.2	23.9	245.47	24.0	250.0

b. Channel Mid

Operated mode : 741.2541MHz Test Date : Jun. 11, 2004
Temperature : 23 ℃ Humidity : 63 %

Frequency (MHz)	Meter Reading (dB μ V/m)	SG Reading (dBm)	Cable Loss (dB)	Result (dBm)	Output Power (mW)	Limit (dBm)	Limit (mW)
741.2541	96.35	26.35	2.5	23.85	242.66	24.0	250.0

c. Channel High

Operated mode : 805.4730MHz Test Date : Jun. 11, 2004
Temperature : 23 ℃ Humidity : 63 %

Frequency (MHz)	Meter Reading (dB μ V/m)	SG Reading (dBm)	Cable Loss (dB)	Result (dBm)	Output Power (mW)	Limit (dBm)	Limit (mW)
805.4730	94.0	26.40	2.6	23.8	239.88	24.0	250.0

Note: For measured frequency below 1GHz, a tuned dipole antenna is used.

3.4 Result Calculation

Result calculation is as following :

Result = SG Reading + Cable Loss + Antenna Gain Corrected

Antenna Gain Corrected : is used for antenna other than dipole to convert radiated power to ERP.

$$mW = \log^{-1}[\frac{Result(dBm)}{10}]$$

3.5 Test Equipment

Equipment	Manufacturer	Model No.	Next Cal. Date
EMI Test Receiver	R&S	ESBI	05/31/2005
Plotter	HP	7440A	N/A
Bi-conical Antenna	EMCO	3110B	12/22/2004
Log-periodic Antenna	EMCO	3146	12/22/2004
Horn Antenna	EMCO	3115	03/17/2005
Test Receiver	R&S	ESVS 30	08/09/2004
Spectrum Analyzer	R&S	FSP	05/31/2005
Pre-amplifier	HP	8449B	06/30/2004
Pre-amplifier	HP	8447D	02/18/2005
Attenuator	Weinschel	1	08/21/2004

4. MODULATION CHARACTERISTICS

4.1 Provisions Applicable

According to §2.1047 (a), for Voice Modulated Communication Equipment, the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be measured.

4.2 Measurement Method

A) Frequency response of audio circuits

1. Position the EUT as shown in figure 3.

2. Vary the modulating frequency from 100 Hz to 5000 Hz with varying the input voltage from 0V to maximum permitted input voltage, and observe the change in output.

B) Modulation Limit

1. Position the EUT as shown in figure 3, adjust the audio input frequency to 100 Hz and the input level from 0V to maximum permitted input voltage with recording each carrier frequency deviation responding to respective input level.

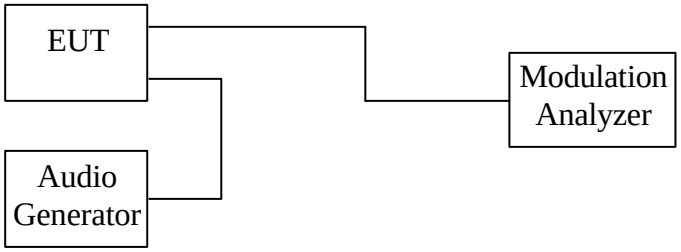
2. Repeat step 1 with changing the input frequency for 200, 500, 1000, 3000, and 5000 Hz in sequence.

C) Frequency response of all circuits

1. Position the EUT as shown in figure 3.

2. Vary the modulating frequency from 100 Hz to 15000 Hz with constant input voltage (derived from 5.4(a) of this test report), and observe the change in output.

Figure 3 : Modulation characteristic measurement configuration

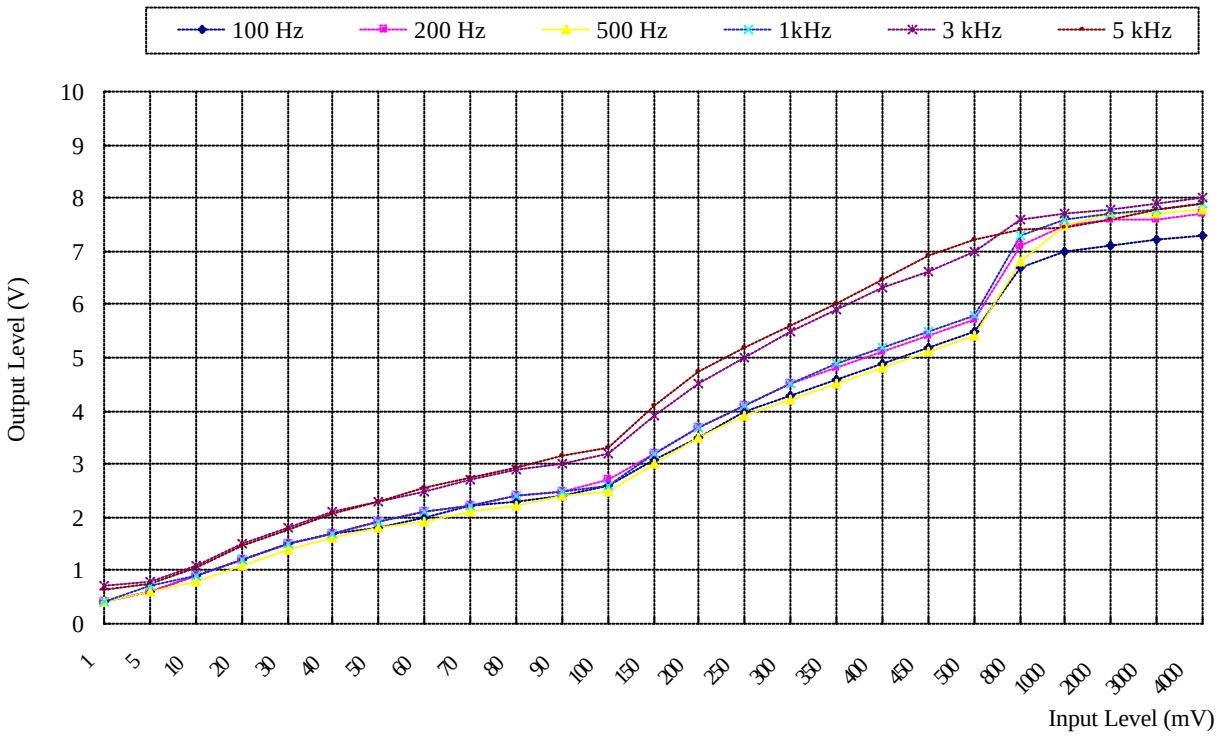


4.3 Measurement Instrument

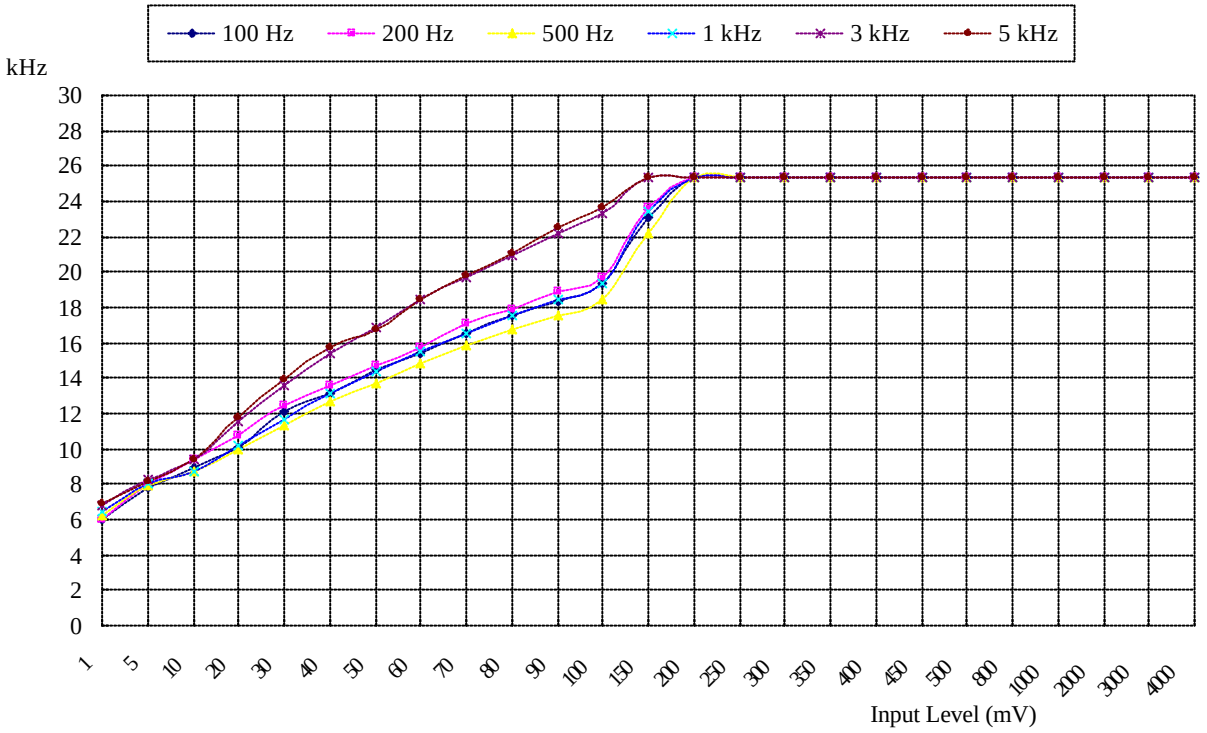
Equipment	Manufacturer	Model No.	Next Cal. Date
Radio Communications Test Set	IFR	2955B	06/01/2005
Oscillscope	Lecroy	9350A	06/01/2005

4.4 Measurement Result

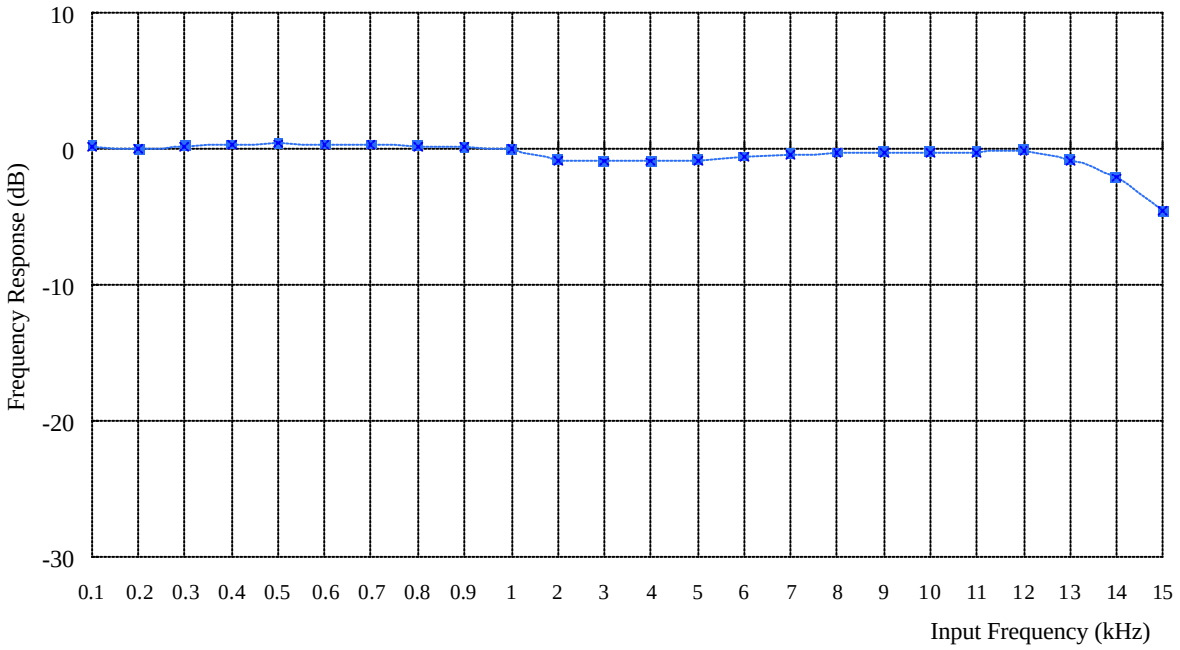
A). Frequency response



B). Modulation Limit



C). Frequency response of all circuits



5. OCCUPIED BANDWIDTH OF EMISSION

5.1 Provisions Applicable

According to §2.1049 (c)(1), For radiotelephone transmitter, other than single sideband or indenpent sideband transmitter, when modulateed by a 2.5kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation.
According to §74.861(e)(5), the frequency emission bandwidth shall not exceed 200 kHz.

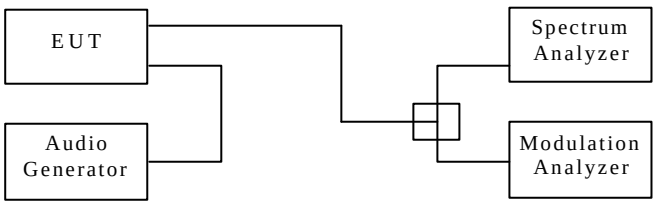
5.2 Measurement Method

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, and Install new batteries in the EUT. Turn on the EUT ant set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.

3. Apply a 2.5 kHz modulation signal to EUT and measure the frequencies of the modulated signal from the EUT where it is the specified number of dB below the reference level set in step 2. This is the occupied bandwidth specified.

Figure 4 : Occupied bandwidth measurement configuration



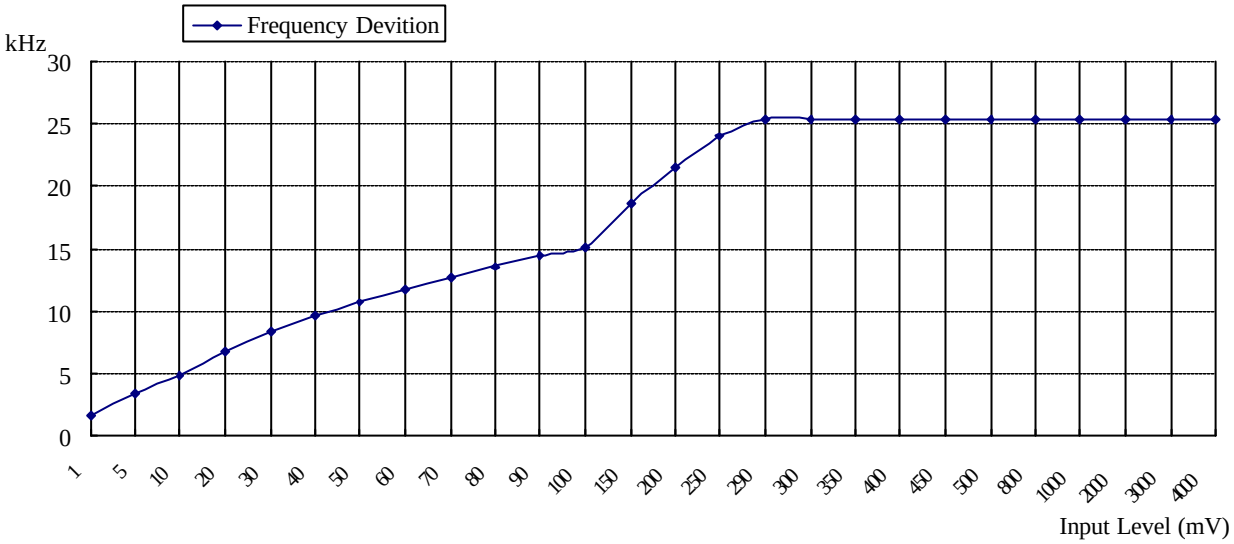
5.3 Occupied Bandwidth Test Equipment

Equipment	Manufacturer	Model No.	Next Cal. Date
Radio Communications Test Set	IFR	2955B	06/01/2005
Spectrum Analyzer	R&S	ESBI	05/31/2005
EMC Analyzer	Agilent	E7405A	07/01/2004
Plotter	Hewlett-Packard	7440A	N/A

5.4 Bandwidth Measured

5.4.1 Input Level Derived

Input Audio Frequency : 2.5 kHz, Sine Wave



The Level input to produce 50% modulation is 145 mV, therefore the magnitude 16 dB greater than it is 913.5 mV.

5.4.2 Occupied Bandwidth Plotted

The Channel Low 26 dB Bandwidth is 125.700KHz.
The Channel Mid 26 dB Bandwidth is 125.700KHz.
The Channel High 26 dB Bandwidth is 125.700KHz.

Please see appendix 3 for plotted data.

6. FIELD STRENGTH OF EMISSION

6.1 Provisions Applicable

According to §2.1053, measurements shall be made to detect spurious emission that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal condition of installation and operation. Information submitted shall include the relative radiated power of spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from a halfwave dipole antenna.

According to §74.861(e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the follwing sceedule:

(i) on any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB.

(ii) on any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB.

(iii) on any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth shall be attenuated below the unmodulated carrier by at least 43 plus 10 Log(output power in watts) dB.

6.2 Measurement Procedure

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 1 GHz respectively, adjusting the input voltage to produce the maximum power as measured in chapter 3.
2. Adjust the analyzer for each frequency measured in chapter 6 on a 1 MHz frequency span and 1MHz resolution bandwidth.
3. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0◦ to 360 ◦ , and record the highest value indicated on spectrum analyzer as reference value.
4. Repeat step 3 until all frequencies need to be measured were complete.
5. Repeat step 4 with search antenna in vertical polarized orientations.
6. Replace the EUT with a tuned dipole antenna (horn antenna for above 1 GHz) relative to each frequency in horizontally polarized orientation and as the same polarized orientation with search antenna. Connect the tuned dipole antenna to a standard signal generator (SG) via a low loss cable. Power on the SG and tune the right frequency in measuring as well as set SG at a appreciated output level. Rise and lower the search antenna to get the highest value on spectrum analyzer, and then hold this position. Adjust the SG output to get a identical value derived from step 3 on spectrum analyzer. Record this value for result calculated.

7. Repeat step 6 until all frequencies need to be measured were complete.
8. Repeat step 7 with both dipole antenna (horn antenna for above 1 GHz) and search antenna in vertical polarized orientations.

6.3 Measuring Instrument

Equipment	Manufacturer	Model No.	Next Cal. Date
RF Test Receiver	Rohde & Schwarz	ESVS 30	08/09/2004
Spectrum Analyzer	R&S	FSP	05/31/2005
Horn Antenna	EMCO	3115	03/17/2005
Log periodic Antenna	EMCO	3146	12/22/2004
Biconical Antenna	EMCO	3110B	12/22/2004
Preamplifier	Hewlett-Packard	8449B	06/30/2005
Preamplifier	Hewlett-Packard	8447D	02/18/2005
EMC Analyzer	Agilent	E7405A	07/01/2004
Bilog Antenna	Schaffner	CBL6111C	01/15/2005
Attenuator	Weinschel	1	N/A
Tunable Bandreject Filter	K ε L	033F8	N/A

Measuring instrument setup in frequency band measured is as following :

Frequency Band (MHz)	Instrument	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	Spectrum Analyzer	Peak	100 kHz	100 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz

6.4 Measuring Data

A. Conducted Measurement

a. Channel Low

Operated mode : 614.4739MHz Test Date : Jun. 11, 2004
Temperature : 23℃ Humidity : 63%

Unmodulated carrier output power is 23.95 dBm , or 248.31 mW (ERP).

The limit of spurious or harmonics is calculated as following :

23.95-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV)	Attenuator (dBm)	Cable Loss (dB)	Result (dBm)	Limit (dBm)	Margin (dB)
1228.9478	-57.30	---	1.3	-56.0	-13.0	-43.0
1843.4217	---	---	1.3	---	-13.0	---
2457.8956	---	---	1.8	---	-13.0	---
3072.3695	---	---	1.8	---	-13.0	---
3686.8434	---	---	2.2	---	-13.0	---
4301.3173	---	---	2.2	---	-13.0	---
4915.7912	---	---	2.2	---	-13.0	---
5530.2651	---	---	2.6	---	-13.0	---
6144.7390	---	---	2.6	---	-13.0	---

Note :

1. Remark "---" means that the emission level is too weak to be detected.
2. Result calculation is as following :

Result = Reading + Cable Loss + Attenuation of Attenuator

b. Channel Mid

Operated mode : 741.2544MHz Test Date : Jun. 11, 2004
Temperature : 23℃ Humidity : 63%

Unmodulated carrier output power is 23.93 dBm , or 247.17 mW (ERP).
The limit of spurious or harmonics is calculated as following :
23.93-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV)	Attenuator (dBm)	Cable Loss (dB)	Result (dBm)	Limit (dBm)	Margin (dB)
1482.5088	-58.80	---	1.3	-57.5	-13.0	-44.5
2223.7632	---	---	1.8	---	-13.0	---
2965.0176	---	---	1.8	---	-13.0	---
3706.2720	---	---	2.2	---	-13.0	---
4447.5264	---	---	2.2	---	-13.0	---
5188.7808	---	---	2.2	---	-13.0	---
5930.0352	---	---	2.6	---	-13.0	---
6671.2896	---	---	2.6	---	-13.0	---
7412.5440	---	---	2.9	---	-13.0	---

Note :
1. Remark "---" means that the emission level is too weak to be detected.
2. Result calculation is as following :
Result = Reading + Cable Loss + Attenuation of Attenuator

c. Channel High

Operated mode : 805.4733MHz Test Date : Jun. 11, 2004
Temperature : 23℃ Humidity : 63%

Unmodulated carrier output power is 23.90 dBm , or 245.47 mW (ERP).
The limit of spurious or harmonics is calculated as following :
23.90-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV)	Attenuator (dBm)	Cable Loss (dB)	Result (dBm)	Limit (dBm)	Margin (dB)
1610.9466	-58.10	---	1.3	-56.8	-13.0	-43.8
2416.4199	---	---	1.8	---	-13.0	---
3221.8932	---	---	1.8	---	-13.0	---
4027.3665	---	---	2.2	---	-13.0	---
4832.8398	---	---	2.2	---	-13.0	---
5638.3131	---	---	2.6	---	-13.0	---
6443.7864	---	---	2.6	---	-13.0	---
7249.2597	---	---	2.6	---	-13.0	---
8054.7330	---	---	2.9	---	-13.0	---

Note :
1. Remark "---" means that the emission level is too weak to be detected.
2. Result calculation is as following :
Result = Reading + Cable Loss + Attenuation of Attenuator

d. Other Emission

Operated mode : Other Emission Test Date : Jun. 11, 2004
Temperature : 23℃ Humidity : 63%

Unmodulated carrier output power is 23.90 dBm , or 245.47 mW (ERP).

The limit of spurious or harmonics is calculated as following :

23.90-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV)	Attenuator (dBm)	Cable Loss (dB)	Result (dBm)	Limit (dBm)	Margin (dB)
30.00	---	---	0.1	---	-13.0	---
50.00	---	---	0.2	---	-13.0	---
80.00	---	---	0.6	---	-13.0	---
150.00	---	---	1.0	---	-13.0	---
250.00	---	---	1.3	---	-13.0	---
350.00	---	---	1.5	---	-13.0	---
500.00	---	---	2.0	---	-13.0	---
800.00	---	---	2.6	---	-13.0	---

Note :

1. Remark "---" means that the emission level is too weak to be detected.
2. Result calculation is as following :

Result = Reading + Cable Loss + Attenuation of Attenuator

B. ERP

a. Channel Low

Operated mode : 614.4737MHz Test Date : Jun. 11, 2004
Temperature : 23℃ Humidity : 63%

Unmodulated carrier output power is 23.90 dBm , or 245.47 mW (ERP).
The limit of spurious or harmonics is calculated as following :

23.90-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV) H	V	SG Reading (dBm) H	V	Antenna Gain	Cable Loss (dB)	Result (dBm) H	V	Limit (dBm)	Margin (dB)
1228.9474	---	54.0	---	-58.2	6.4-2.0	1.3	---	-55.1	-13.0	-42.1
1843.4211	---	---	---	---	9.3-2.0	1.3	---	---	-13.0	---
2457.8948	---	---	---	---	9.2-2.0	1.8	---	---	-13.0	---
3072.3685	---	---	---	---	9.7-2.0	1.8	---	---	-13.0	---
3686.8422	---	---	---	---	9.6-2.0	2.2	---	---	-13.0	---
4301.3159	---	---	---	---	10.3-2.0	2.2	---	---	-13.0	---
4915.7896	---	---	---	---	10.9-2.0	2.2	---	---	-13.0	---
5530.2633	---	---	---	---	10.9-2.0	2.6	---	---	-13.0	---
6144.7370	---	---	---	---	12.0-2.0	2.6	---	---	-13.0	---

Note :

1. Remark "---" means that the emission level is too weak to be detected.
2. For measured frequency below 1GHz, a tuned dipole antenna is used.
3. Result calculation is as following :

   Result = SG Reading + Cable Loss + Antenna Gain Corrected

   Antenna Gain Corrected : is used for antenna other than dipole to convert radiated power to ERP.
4. Spurious or harmonics above 1 GHz is too low to be detected or attenuated more than 60 dB from limit value.

b. Channel Mid

Operated mode : 741.2541MHz Test Date : Jun. 11, 2004
Temperature : 23℃ Humidity : 63%

Unmodulated carrier output power is 23.85 dBm , or 242.66 mW (ERP).
The limit of spurious or harmonics is calculated as following :

23.85-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV) H	V	SG Reading (dBm) H	V	Antenna Gain	Cable Loss (dB)	Result (dBm) H	V	Limit (dBm)	Margin (dB)
1482.5082	---	54.60	---	-57.1	9.1-2.0	1.3	---	-51.3	-13.0	-38.3
2223.7623	---	---	---	---	9.4-2.0	1.8	---	---	-13.0	---
2965.0164	---	---	---	---	9.7-2.0	1.8	---	---	-13.0	---
3706.2705	---	---	---	---	9.6-2.0	2.2	---	---	-13.0	---
4447.5246	---	---	---	---	10.6-2.0	2.2	---	---	-13.0	---
5188.7787	---	---	---	---	10.9-2.0	2.2	---	---	-13.0	---
5930.0328	---	---	---	---	11.7-2.0	2.6	---	---	-13.0	---
6671.2869	---	---	---	---	12.0-2.0	2.6	---	---	-13.0	---
7412.5410	---	---	---	---	11.5-2.0	2.9	---	---	-13.0	---

Note :

1. Remark "---" means that the emission level is too weak to be detected.
2. For measured frequency below 1GHz, a tuned dipole antenna is used.
3. Result calculation is as following :

   Result = SG Reading + Cable Loss + Antenna Gain Corrected

   Antenna Gain Corrected : is used for antenna other than dipole to convert radiated power to ERP.
4. Spurious or harmonics above 1 GHz is too low to be detected or attenuated more than 60 dB from limit value.

c. Channel High

Operated mode : 805.4730MHz Test Date : Jun. 11, 2004
Temperature : 23℃ Humidity : 63%

Unmodulated carrier output power is 23.8 dBm , or 239.88 mW (ERP).
The limit of spurious or harmonics is calculated as following :

23.8-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV) H	V	SG Reading (dBm) H	V	Antenna Gain	Cable Loss (dB)	Result (dBm) H	V	Limit (dBm)	Margin (dB)
1610.9460	---	53.6	---	-59.8	9.2-2.0	1.3	---	-53.9	-13.0	-40.9
2416.4190	---	---	---	---	9.3-2.0	1.8	---	---	-13.0	---
3221.8920	---	---	---	---	9.7-2.0	1.8	---	---	-13.0	---
4027.3650	---	---	---	---	9.5-2.0	2.2	---	---	-13.0	---
4832.8380	---	---	---	---	10.9-2.0	2.2	---	---	-13.0	---
5638.3110	---	---	---	---	11.1-2.0	2.6	---	---	-13.0	---
6443.7840	---	---	---	---	12.1-2.0	2.6	---	---	-13.0	---
7249.2570	---	---	---	---	11.6-2.0	2.6	---	---	-13.0	---
8054.7300	---	---	---	---	11.5-2.0	2.9	---	---	-13.0	---

Note :

1. Remark "---" means that the emission level is too weak to be detected.
2. For measured frequency below 1GHz, a tuned dipole antenna is used.
3. Result calculation is as following :

   Result = SG Reading + Cable Loss + Antenna Gain Corrected

   Antenna Gain Corrected : is used for antenna other than dipole to convert radiated power to ERP.
4. Spurious or harmonics above 1 GHz is too low to be detected or attenuated more than 60 dB from limit value.

d. Other Emission

Operated mode : Other Emission Test Date : Jun. 11, 2004
Temperature : 23℃ Humidity : 63%

Unmodulated carrier output power is 23.8 dBm , or 7.41 mW (ERP).

The limit of spurious or harmonics is calculated as following :

23.8-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV) H	V	SG Reading (dBm) H	V	Cable Loss (dB)	Result (dBm) H	V	Limit (dBm)	Margin (dB)
30.00	---	---	---	---	0.1	---	---	-13.0	---
50.00	---	---	---	---	0.2	---	---	-13.0	---
80.00	---	---	---	---	0.6	---	---	-13.0	---
150.00	---	---	---	---	1.0	---	---	-13.0	---
350.00	---	---	---	---	1.5	---	---	-13.0	---
500.00	---	---	---	---	2.0	---	---	-13.0	---
800.00	---	---	---	---	2.6	---	---	-13.0	---

Note :

1. Remark "---" means that the emission level is too weak to be detected.
2. For measured frequency below 1GHz, a tuned dipole antenna is used.
3. Result calculation is as following :

   Result = SG Reading + Cable Loss + Antenna Gain Corrected

   Antenna Gain Corrected : is used for antenna other than dipole to convert radiated power to ERP.

4. Spurious or harmonics above 1 GHz is too low to be detected or attenuated more than 60 dB from limit value.

C. Emission Mask Plots

Please see appendix 4 for plotted data

6.5 Radiated Measurement Photos

7. FREQUENCY STABILITY MEASUREMENT

7.1 Provisions Applicable

According to §2.1055 (a)(1), the frequency stability shall be measured with variation of ambient temperature from -30°C to +50°C centigrade, and according to §2.1055 (d)(2), the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point which is specified by the manufacturer.

According to §74.861(e)(4), the frequency tolerance of the transmitter shall be 0.005 percent.

7.2 Measurement Procedure

A) Frequency stability versus environmental temperature

1. Setup the configuration per figure 5 for frequencies measured at ambient temperature if it is within 15°C to 25°C. Otherwise, an environmental chamber set for a temperature of 20°C shall be used. Install new batteries in the EUT.

2. Turn on EUT and set SA center frequency to the right frequency needs to be measured. Then set SA RBW to 30 kHz, VBW to 100kHz and frequency span to 500 kHz. Record this frequency to be a reference.

3. Set the temperature of chamber to 50°C. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.

4. Repeat step 2 with a 10°C decreased per stage until the lowest temperature -30°C is measured, record all measurement frequencies.

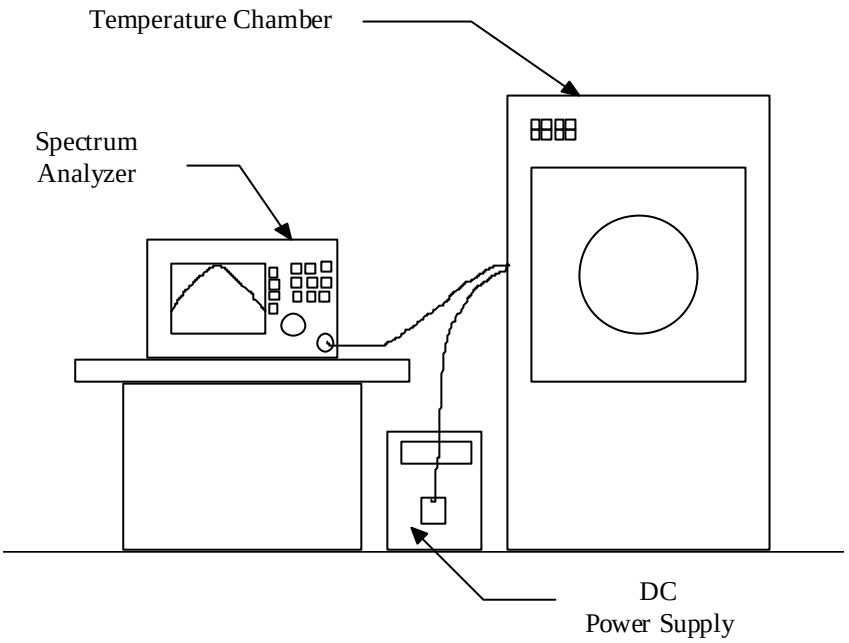
B) Frequency stability versus input voltage

1. Setup the configuration per figure 7 for frequencies measured at ambient temperature if it is within 15°C to 25°C. Otherwise, an environmental chamber set for a temperature of 20°C shall be used. Install new batteries in the EUT.

2. Set SA center frequency to the right frequency needs to be measured. Then set SA RBW to 30 kHz, VBW to 100kHz and frequency span to 500 kHz. Record this frequency to be a reference.

3. For battery operated only device, supply the EUT primary voltage at the battery operating end point which is specified by the manufacturer and record the frequency.

Figure 5 : Frequency stability measurement configuration



7.3 Measurement Instrument

Equipment	Manufacturer	Model No.	Next Cal. Date
Spectrum Analyzer	R&S	ESBI	05/31/2005
Temperature Chamber	Mallier	MCT-2X-M	10/22/2004
Frequency Converter	Board-Tech	BFA-200-70D	N/A

7.4 Measurement Data

A. Frequency stability versus enviroment tempture

Reference Frequency : 614.4739 MHz		Limit：0.005%					
Enviroment Tempture (℃)	Power Supplied (Vac)	Frequency measured with time elapsed					
		2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	102	614.4672	-0.00110	614.4871	0.00215	614.4561	-0.00289
	120	614.4928	0.00307	614.4798	0.00096	614.4962	0.00362
	138	614.4607	-0.00216	614.4892	0.00249	614.4877	0.00224
40	102	614.4708	-0.00051	614.4904	0.00269	614.4936	0.00320
	120	614.4674	-0.00106	614.4648	-0.00149	614.4715	-0.00039
	138	614.4933	0.00316	614.4945	0.00335	614.4769	0.00048
30	102	614.4926	0.00304	614.4514	-0.00365	614.4833	0.00154
	120	614.4968	0.00373	614.4568	-0.00279	614.4835	0.00156
	138	614.4932	0.00314	614.4865	0.00206	614.4609	-0.00212
20	102	614.4609	-0.00212	614.4850	0.00181	614.4583	-0.00254
	120	614.4772	0.00053	614.4719	-0.00032	614.4856	0.00191
	138	614.4657	-0.00133	614.4579	-0.00260	614.4751	0.00020
10	102	614.4623	-0.00190	614.4673	-0.00107	614.4937	0.00322
	120	614.4738	-0.00002	614.4973	0.00380	614.4866	0.00207
	138	614.4920	0.00294	614.4909	0.00276	614.4798	0.00095
0	102	614.4645	-0.00153	614.4529	-0.00342	614.4721	-0.00030
	120	614.4751	0.00019	614.4876	0.00222	614.4773	0.00055
	138	614.4600	-0.00225	614.4700	-0.00063	614.4504	-0.00382
-10	102	614.4562	-0.00289	614.4871	0.00215	614.4957	0.00354
	120	614.4563	-0.00286	614.4629	-0.00179	614.4769	0.00048
	138	614.4788	0.00080	614.4787	0.00079	614.4604	-0.00220
-20	102	614.4586	-0.00249	614.4788	0.00080	614.4608	-0.00213
	120	614.4765	0.00043	614.4603	-0.00221	614.4765	0.00043
	138	614.4762	0.00037	614.4820	0.00131	614.4947	0.00339
-30	102	614.4638	-0.00164	614.4923	0.00300	614.4608	-0.00214
	120	614.4874	0.00220	614.4509	-0.00375	614.4787	0.00079
	138	614.4676	-0.00102	614.4545	-0.00316	614.4547	-0.00312

B. Frequency stability versus enviroment tempture

Reference Frequency : 741.2544 MHz		Limit：0.005%					
Enviroment Tempture (℃)	Power Supplied (Vac)	Frequency measured with time elapsed					
		2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	102	741.2364	-0.00243	741.2729	0.00250	741.2343	-0.00271
	120	741.2497	-0.00063	741.2705	0.00217	741.2382	-0.00218
	138	741.2701	0.00212	741.2780	0.00318	741.2661	0.00158
40	102	741.2378	-0.00225	741.2628	0.00113	741.2326	-0.00295
	120	741.2440	-0.00141	741.2624	0.00108	741.2451	-0.00125
	138	741.2612	0.00092	741.2763	0.00296	741.2594	0.00068
30	102	741.2645	0.00136	741.2452	-0.00124	741.2354	-0.00257
	120	741.2331	-0.00287	741.2652	0.00145	741.2515	-0.00039
	138	741.2301	-0.00328	741.2434	-0.00149	741.2260	-0.00383
20	102	741.2439	-0.00142	741.2779	0.00316	741.2295	-0.00337
	120	741.2291	-0.00341	741.2455	-0.00121	741.2786	0.00326
	138	741.2715	0.00231	741.2372	-0.00232	741.2780	0.00318
10	102	741.2683	0.00187	741.2298	-0.00332	741.2806	0.00353
	120	741.2414	-0.00175	741.2403	-0.00190	741.2711	0.00225
	138	741.2420	-0.00167	741.2758	0.00289	741.2811	0.00360
0	102	741.2319	-0.00304	741.2373	-0.00231	741.2760	0.00291
	120	741.2652	0.00146	741.2274	-0.00365	741.2741	0.00266
	138	741.2630	0.00116	741.2613	0.00093	741.2602	0.00079
-10	102	741.2811	0.00360	741.2635	0.00122	741.2543	-0.00002
	120	741.2689	0.00196	741.2570	0.00035	741.2368	-0.00238
	138	741.2457	-0.00117	741.2703	0.00214	741.2647	0.00139
-20	102	741.2574	0.00040	741.2565	0.00029	741.2556	0.00016
	120	741.2642	0.00132	741.2356	-0.00253	741.2767	0.00301
	138	741.2507	-0.00050	741.2444	-0.00135	741.2351	-0.00260
-30	102	741.2640	0.00129	741.2478	-0.00089	741.2757	0.00288
	120	741.2262	-0.00380	741.2340	-0.00275	741.2750	0.00278
	138	741.2494	-0.00067	741.2603	0.00080	741.2461	-0.00112

C. Frequency stability versus enviroment tempture

Reference Frequency : 805.4733 MHz		Limit：0.005%					
Enviroment Tempture (℃)	Power Supplied (Vac)	Frequency measured with time elapsed					
		2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	102	805.4440	-0.00364	805.4449	-0.00353	805.4528	-0.00255
	120	805.4850	0.00145	805.4856	0.00153	805.4939	0.00256
	138	805.4570	-0.00202	805.4628	-0.00130	805.4884	0.00187
40	102	805.4473	-0.00322	805.4438	-0.00367	805.4470	-0.00326
	120	805.5008	0.00341	805.4896	0.00203	805.5040	0.00381
	138	805.4443	-0.00360	805.4948	0.00266	805.4762	0.00036
30	102	805.4461	-0.00337	805.5016	0.00351	805.4980	0.00307
	120	805.4662	-0.00088	805.4433	-0.00372	805.5032	0.00372
	138	805.4567	-0.00206	805.4975	0.00300	805.4614	-0.00148
20	102	805.4477	-0.00317	805.4744	0.00014	805.4694	-0.00049
	120	805.4433	-0.00372	805.4571	-0.00201	805.4960	0.00282
	138	805.4478	-0.00317	805.4466	-0.00331	805.4597	-0.00168
10	102	805.4947	0.00266	805.4891	0.00197	805.4495	-0.00295
	120	805.4978	0.00304	805.4839	0.00132	805.5028	0.00366
	138	805.4564	-0.00210	805.5016	0.00351	805.4467	-0.00330
0	102	805.4893	0.00199	805.4813	0.00100	805.4974	0.00299
	120	805.4786	0.00066	805.4552	-0.00225	805.4918	0.00230
	138	805.5003	0.00335	805.4844	0.00138	805.4919	0.00231
-10	102	805.4910	0.00219	805.4788	0.00068	805.4787	0.00067
	120	805.4660	-0.00090	805.4520	-0.00265	805.4967	0.00291
	138	805.4613	-0.00149	805.4737	0.00005	805.4627	-0.00132
-20	102	805.4696	-0.00045	805.4658	-0.00093	805.4582	-0.00188
	120	805.4636	-0.00120	805.4921	0.00233	805.5004	0.00336
	138	805.4836	0.00127	805.4804	0.00088	805.4972	0.00297
-30	102	805.4689	-0.00055	805.4699	-0.00042	805.4771	0.00047
	120	805.4669	-0.00080	805.5009	0.00342	805.5008	0.00341
	138	805.4762	0.00036	805.4467	-0.00331	805.4846	0.00140

8 CONDUCTED EMISSION MEASUREMENT

8.1 Standard Applicable

For unintentional digital devices, Line Conducted Emission Limits are in accordance to § 15.107(a) .

8.2 Measurement Procedure

1. Setup the configuration per figure 2.

2. A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.

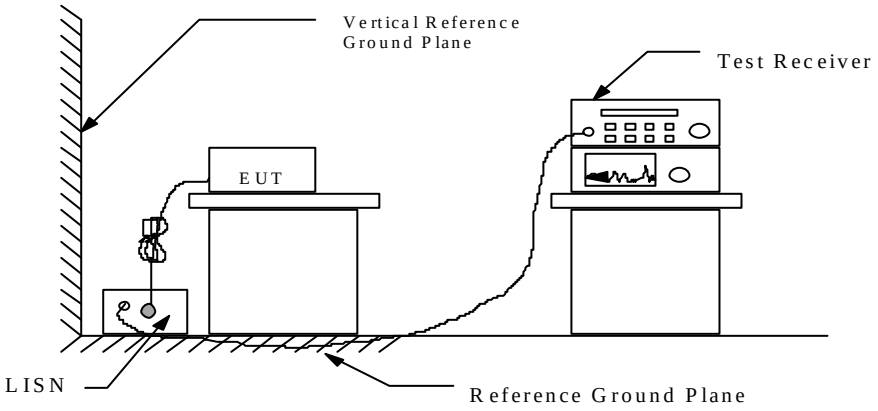
3. Record the 6 or 8 highest emissions relative to the limit.

4. Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.

5. Confirm the highest three emissions with variation of the EUT cable configuration and record the final data.

6. Repeat all above procedures on measuring each operation mode of EUT.

Figure 2 : Conducted emissions measurement configuration



8.3 Conducted Emission Data

1. Operation Mode : Channel Low

Test Date : Jun. 15, 2004 Temperature : 23°C Humidity: 58%

Freq.	**Meter Reading** (dBμV)				**Factor**	**Limit** (dBμV)		**Result** (dBμV)			
	Q.P Value		AVG. Value			Q.P	AVG.	Q.P Value		AVG. Value	
(MHz)	N	L1	N	L1	(dB)	Value	Value	N	L1	N	L1
0.2050	39.6	38.7	38.9	37.7	0.2	63.4	53.4	39.8	38.9	39.1	37.9
0.5120	41.7	41.3	40.9	40.4	0.3	56.0	46.0	42.0	41.6	41.2	40.7
0.7190	46.0	45.7	42.2	41.9	0.3	56.0	46.0	46.3	46.0	42.5	42.2
0.8200	41.9	41.3	41.0	40.2	0.3	56.0	46.0	42.2	41.6	41.3	40.5
0.9220	43.0	41.3	41.8	39.8	0.3	56.0	46.0	43.3	41.6	42.1	40.1
1.0270	42.6	42.3	41.9	41.4	0.3	56.0	46.0	42.9	42.6	42.2	41.7
1.2300	39.8	37.7	38.5	35.9	0.3	56.0	46.0	40.1	38.0	38.8	36.2
2.6680	33.5	27.5	31.2	22.0	0.5	56.0	46.0	34.0	28.0	31.7	22.5

Note :

1. The expanded uncertainty of the conducted emission tests is 2.45 dB.
2. Please see appendix 1 for Plotted Data.

2. Operation Mode : Channel Mid

Test Date : Jun. 15, 2004 Temperature : 23°C Humidity: 58%

Freq.	**Meter Reading (dBμV)**				**Factor**	**Limit (dBμV)**		**Result (dBμV)**			
	Q.P Value		AVG. Value			Q.P	AVG.	Q.P Value		AVG. Value	
(MHz)	N	L1	N	L1	(dB)	Value	Value	N	L1	N	L1
0.2010	39.6	38.0	38.4	36.8	0.2	63.6	53.6	39.8	38.2	38.6	37.0
0.5040	40.1	38.3	39.1	37.3	0.3	56.0	46.0	40.4	38.6	39.4	37.6
0.7070	45.7	43.5	41.8	39.5	0.3	56.0	46.0	46.0	43.8	42.1	39.8
0.8090	41.2	39.1	40.2	38.1	0.3	56.0	46.0	41.5	39.4	40.5	38.4
0.9060	39.4	28.2	36.6	26.3	0.3	56.0	46.0	39.7	28.5	36.9	26.6
1.0080	38.8	26.9	35.9	24.1	0.3	56.0	46.0	39.1	27.2	36.2	24.4
1.2110	37.4	24.6	34.5	21.3	0.3	56.0	46.0	37.7	24.9	34.8	21.6
2.4220	25.2	11.1	13.4	9.5	0.5	56.0	46.0	25.7	11.6	13.9	10.0

Note :

1. The expanded uncertainty of the conducted emission tests is 2.45 dB.
2. Please see appendix 1 for Plotted Data.

3. Operation Mode : Channel High

Test Date : Jun. 15, 2004 Temperature : 23°C Humidity: 58%

Freq.	**Meter Reading (dBμV)**				**Factor**	**Limit (dBμV)**		**Result (dBμV)**			
	Q.P Value		AVG. Value			Q.P	AVG.	Q.P Value		AVG. Value	
(MHz)	N	L1	N	L1	(dB)	Value	Value	N	L1	N	L1
0.2050	39.7	38.8	38.9	37.1	0.2	63.4	53.4	39.9	39.0	39.1	37.3
0.5120	41.7	41.8	41.1	40.8	0.3	56.0	46.0	42.0	42.1	41.4	41.1
0.7150	45.9	45.2	42.1	41.9	0.3	56.0	46.0	46.2	45.5	42.4	42.2
0.9180	43.0	40.9	41.8	38.1	0.3	56.0	46.0	43.3	41.2	42.1	38.4
1.0200	41.0	37.7	39.4	35.5	0.3	56.0	46.0	41.3	38.0	39.7	35.8
1.1210	38.4	33.9	36.4	31.7	0.3	56.0	46.0	38.7	34.2	36.7	32.0
2.5550	34.5	27.6	32.9	25.6	0.5	56.0	46.0	35.0	28.1	33.4	26.1

Note :

1. The expanded uncertainty of the conducted emission tests is 2.45 dB.
2. Please see appendix 1 for Plotted Data.

8.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

RESULT = READING + LISN FACTOR

Assume a receiver reading of 22.5 dBμV is obtained, and LISN Factor is 0.1 dB, then the total of field strength is 22.6 dBμV.

RESULT = 22.5 + 0.1 = 22.6 dBμV
Level in μV = Common Antilogarithm[(22.6 dBμV)/20]
= 13.48 μV

8.5 Conducted Measurement Equipment

The following test equipment are used during the conducted test .

Equipment	Manufacturer	Model No.	Serial No.	Nest Cal. Date
EMI Test Receiver	Rohde and Schwarz	ESCS30	830986/026	11/28/2004
Line Impedance Stabilization network	Rohde and Schwarz	ESH2-Z5	881362/009	09/20/2004
Line Impedance Stabilization network	Kyoritsu	KNW-407	8-823-6	12/24/2004
Shielded Room	Riken	----	----	N/A
Monitor	IBM	E54	----	N/A
Printer	HP	LASERJET 1000	----	N/A
Computer	ACER	Veriton 7500G	----	N/A

Note: The standards used to perform this calibration are traceable to NML/ROC and NIST/USA.

8.6 Photos of Conduction Measuring Setup

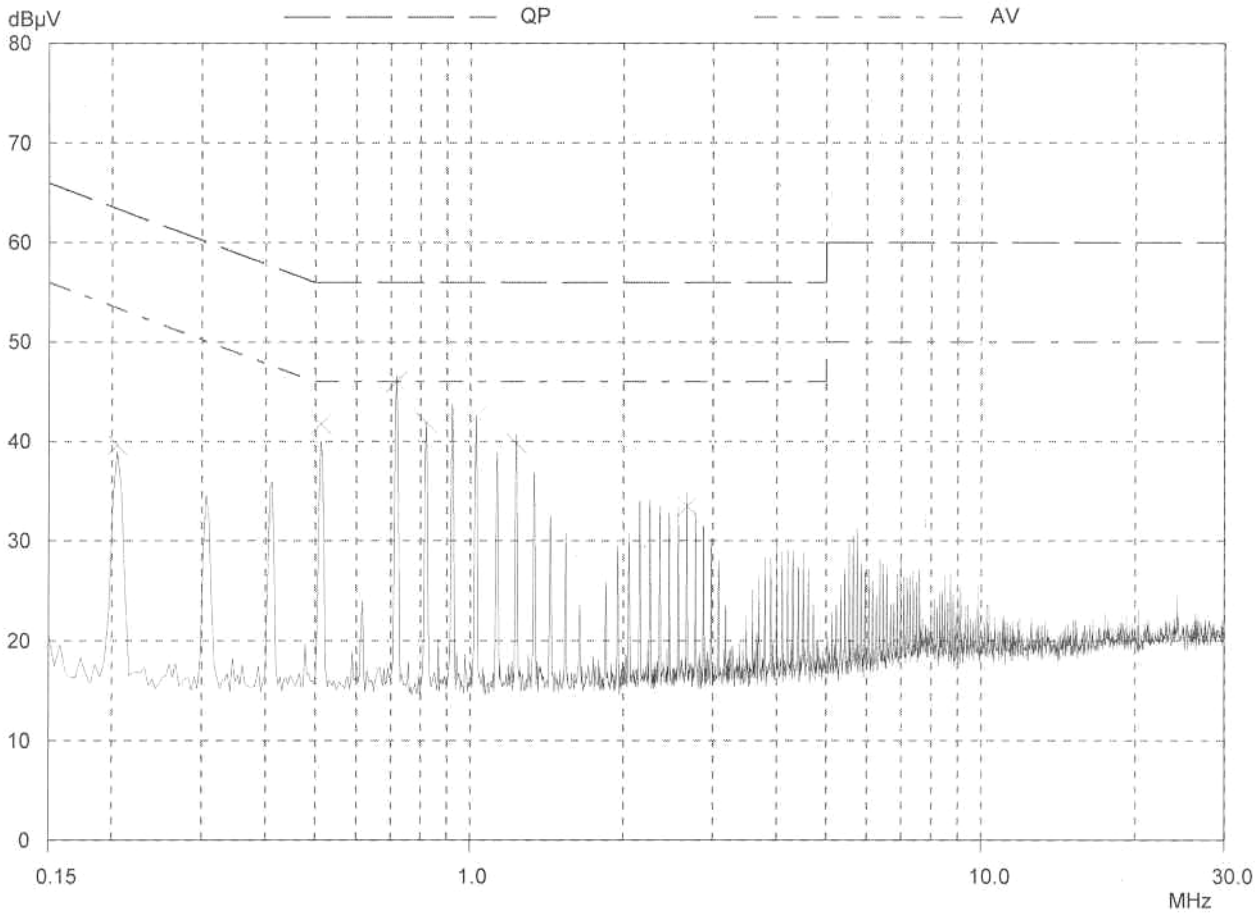
APPENDIX 1 : PLOTTED DATA FOR CONDUCTED EMISSION

CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: Channel Low
Operator:
Test Spec:
Comment:
N

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

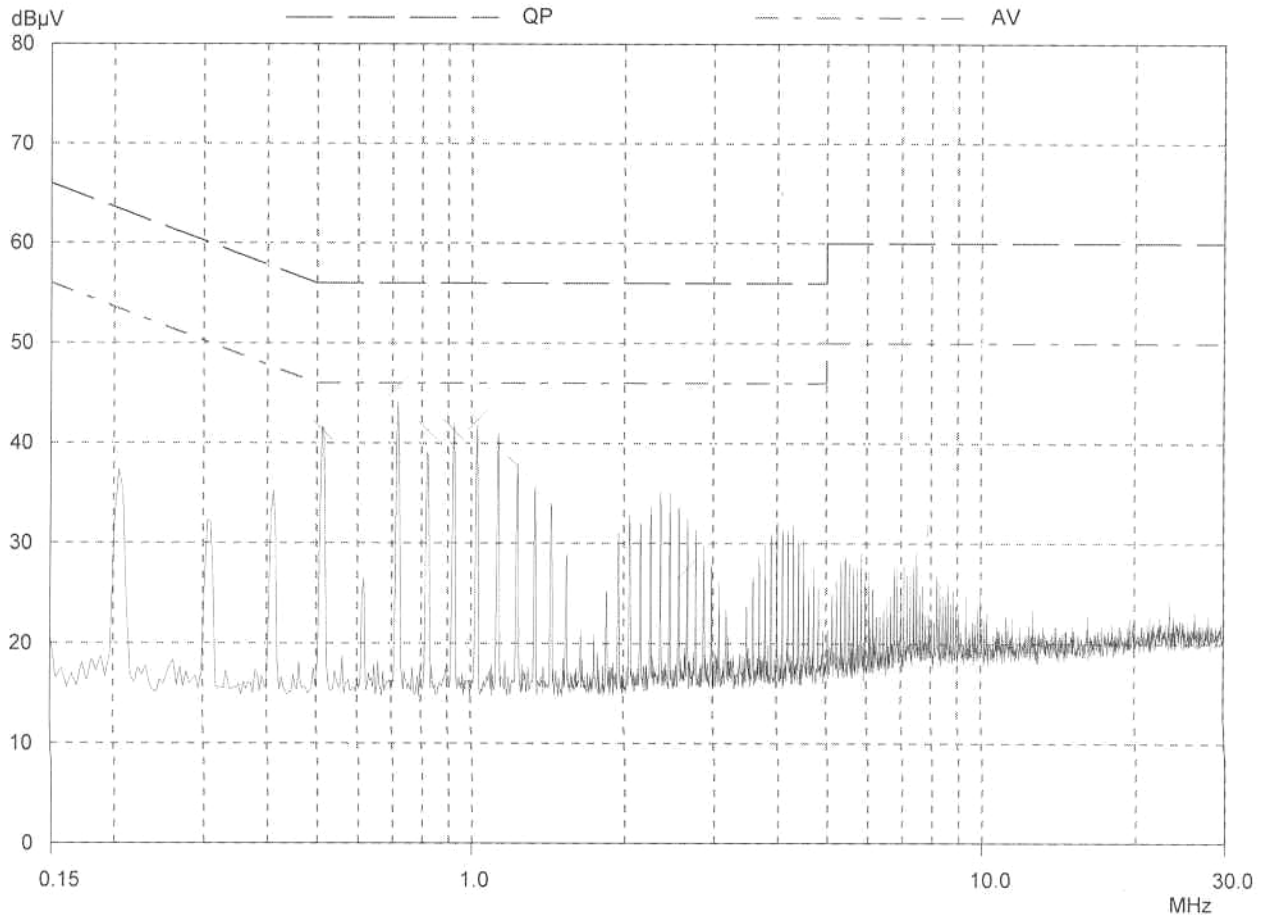


CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: Channel Low
Operator:
Test Spec:
Comment:
L1

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

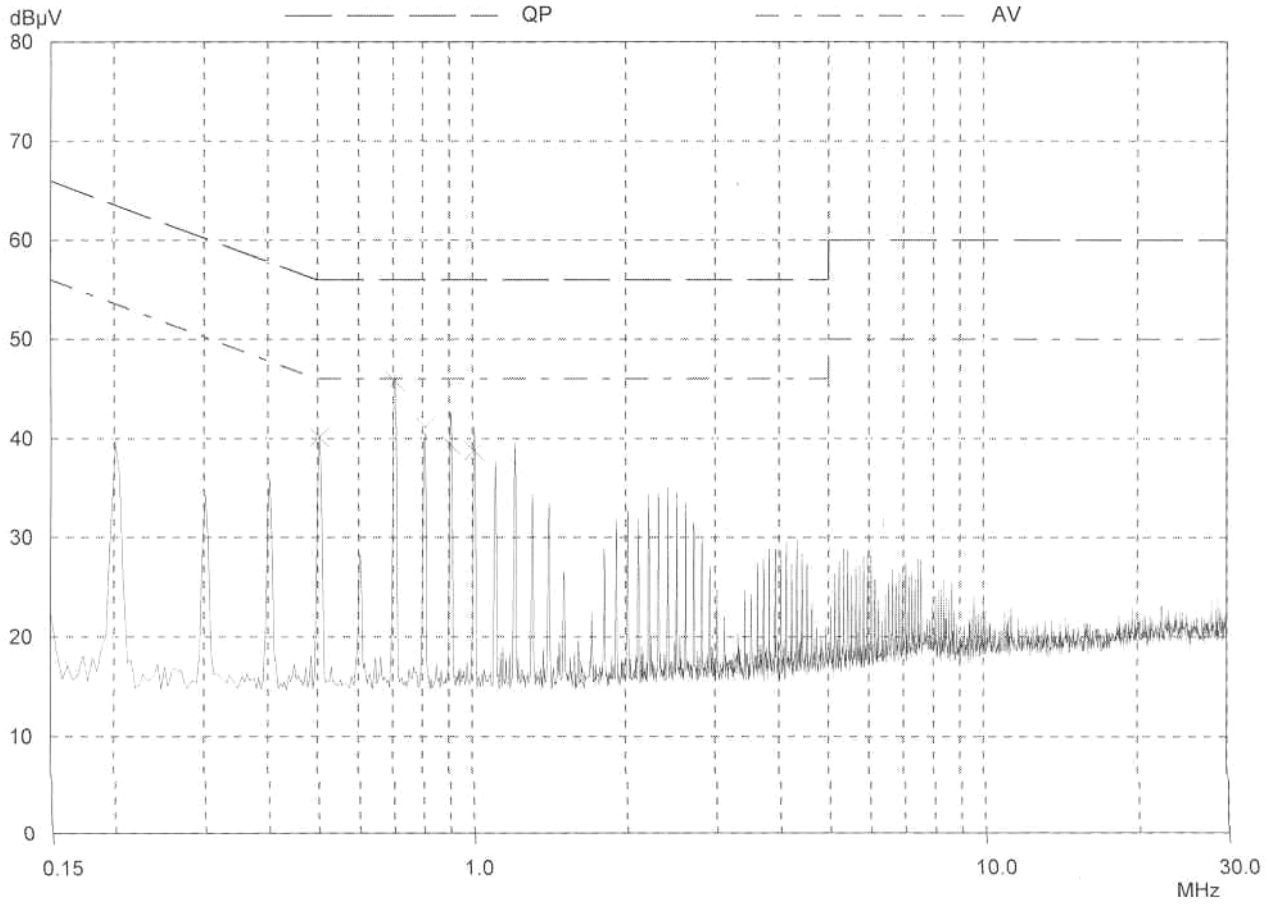


CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: Channel Mid
Operator:
Test Spec:
Comment:
N

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

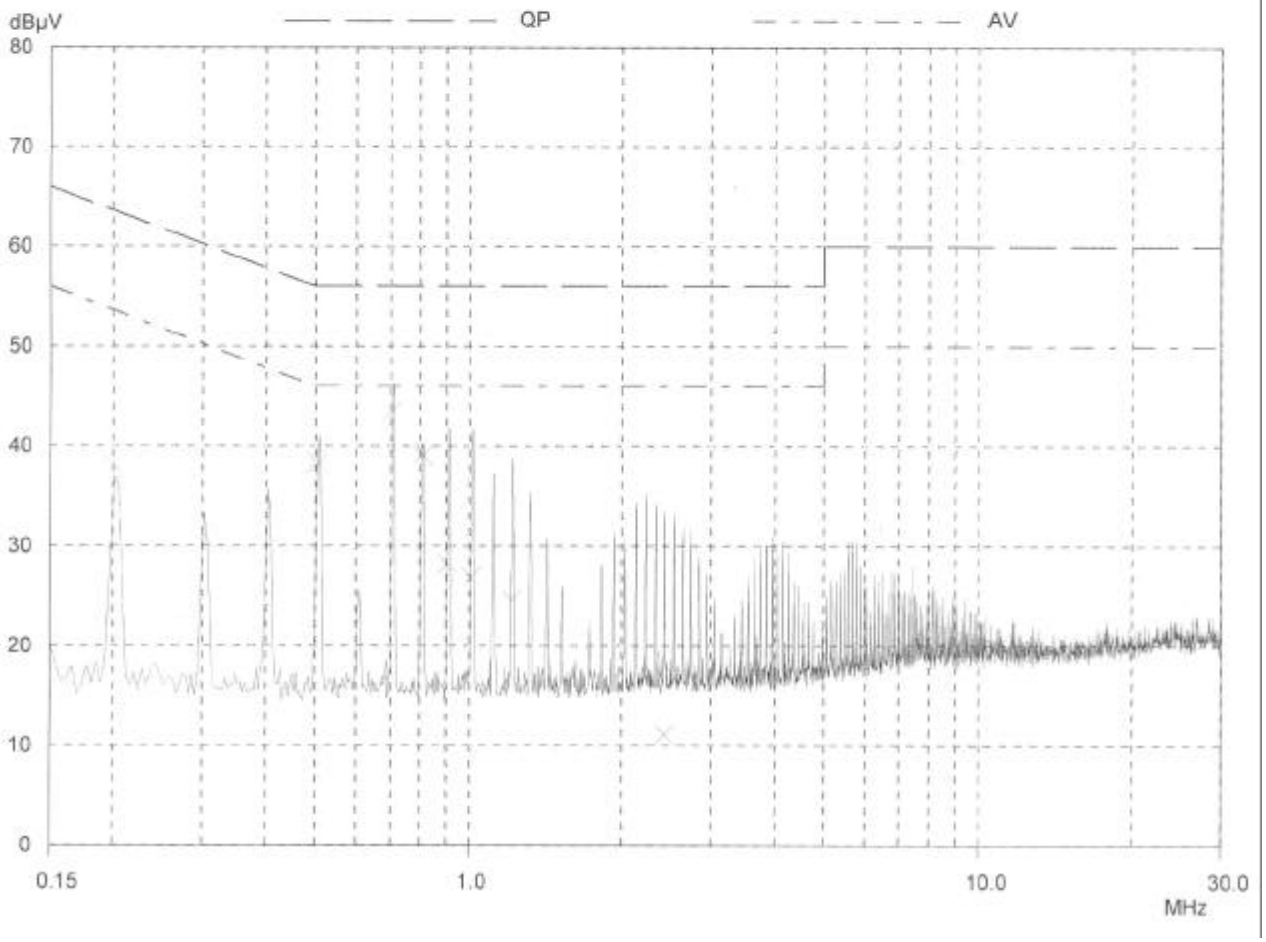


CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: Channel Mid
Operator:
Test Spec:
Comment:
L1

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

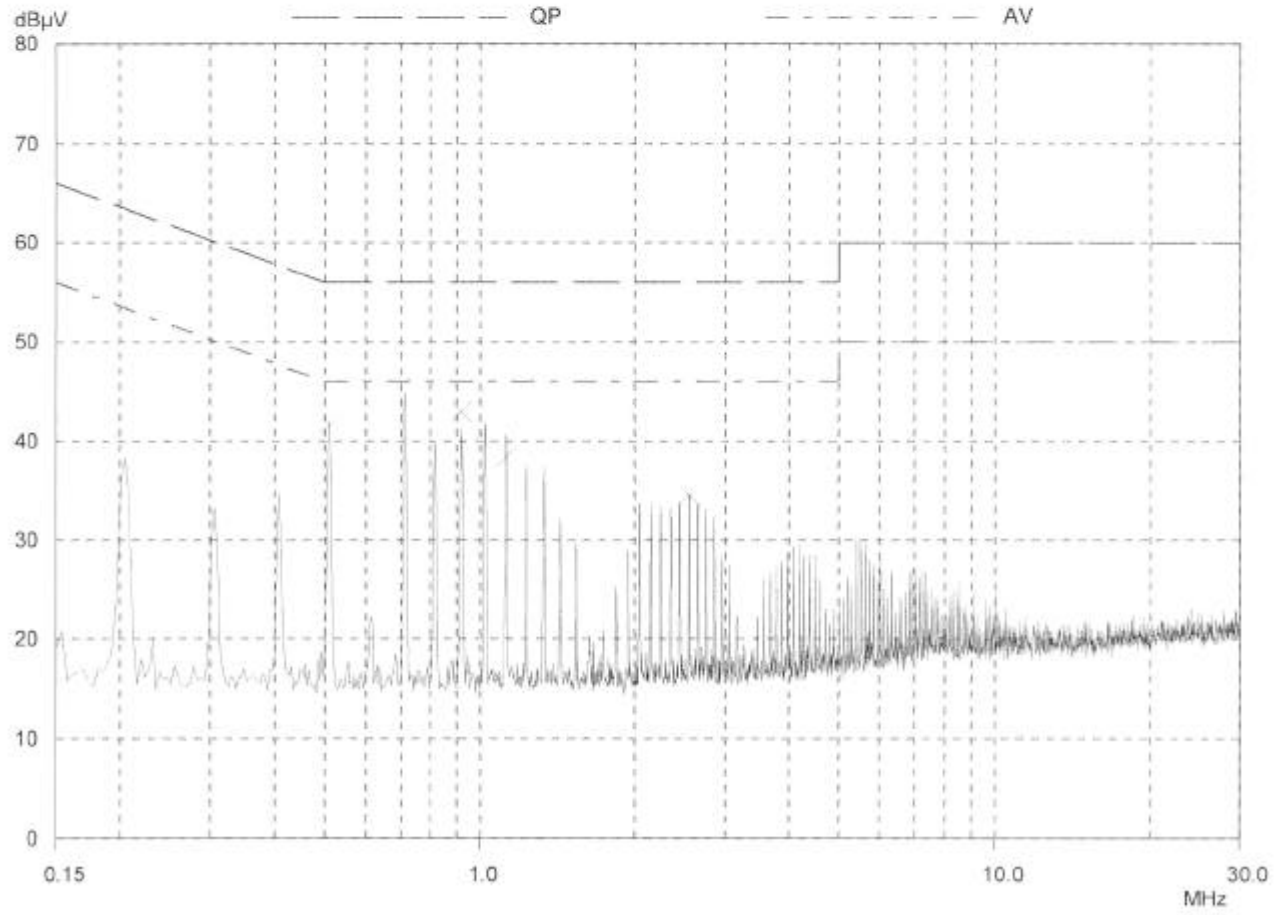


CONDUCTION EMISSION TEST

Peak Value

EUT:
Manuf:
Op Cond: Channel High
Operator:
Test Spec:
Comment:
N

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

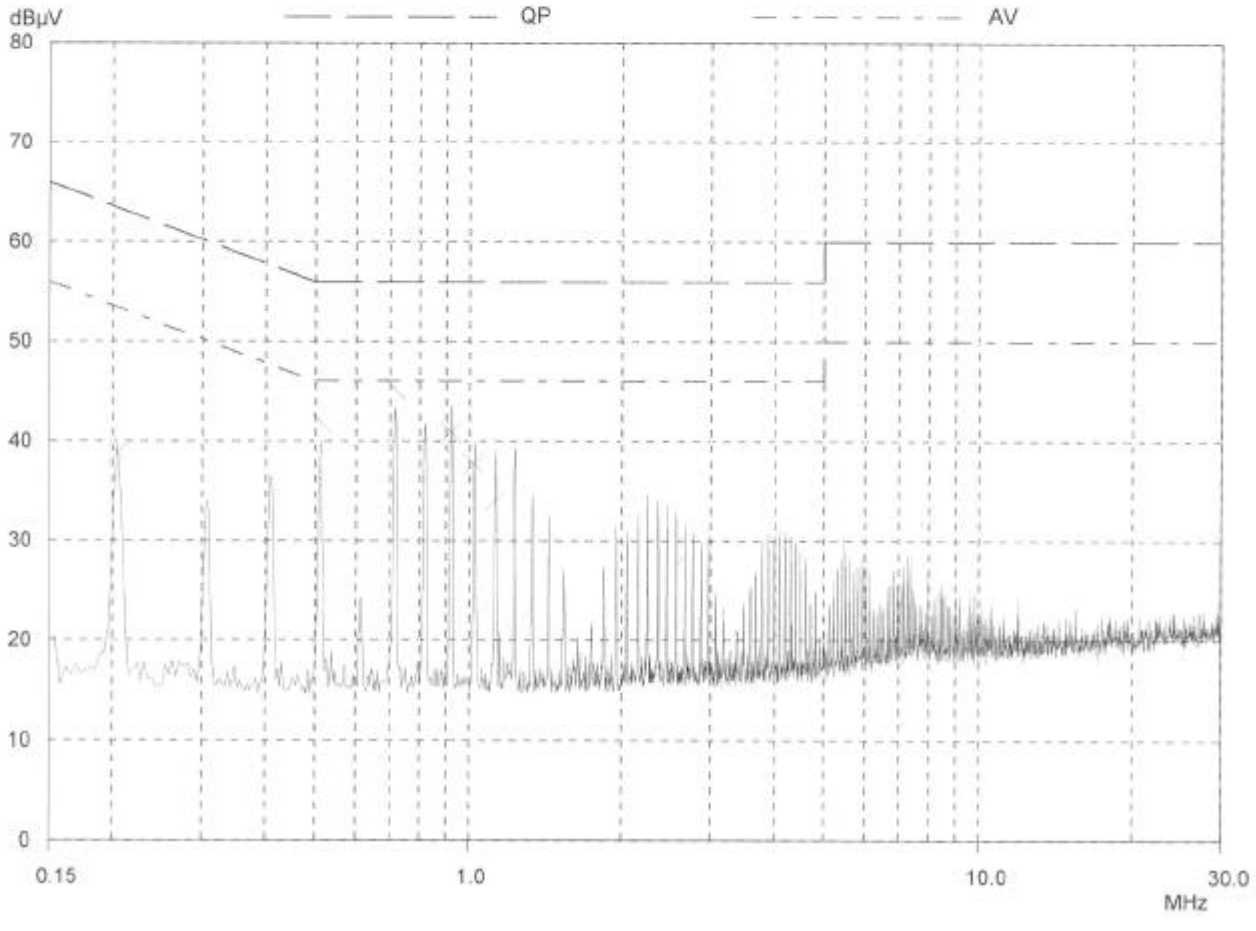


CONDUCTION EMISSION TEST

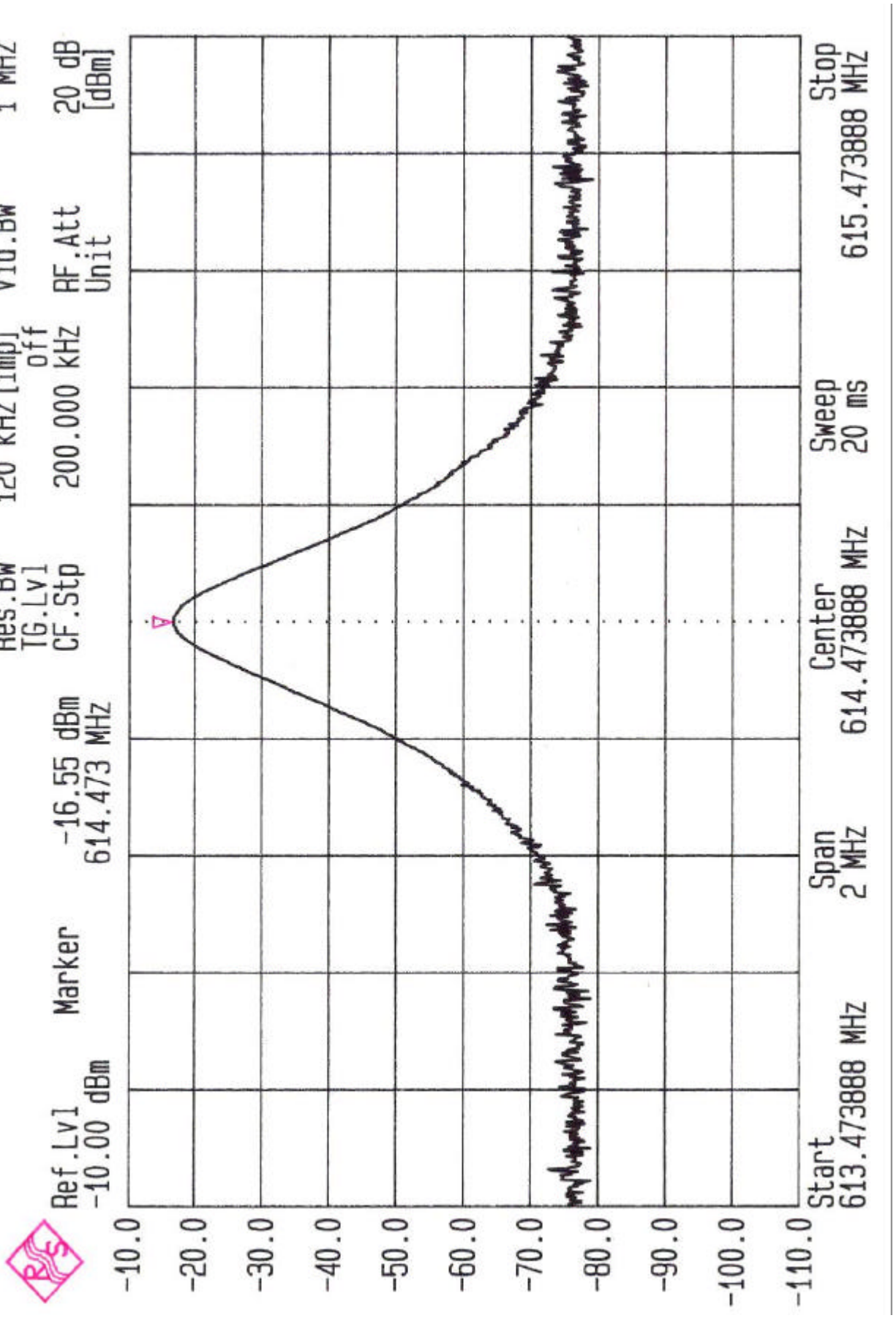
Peak Value

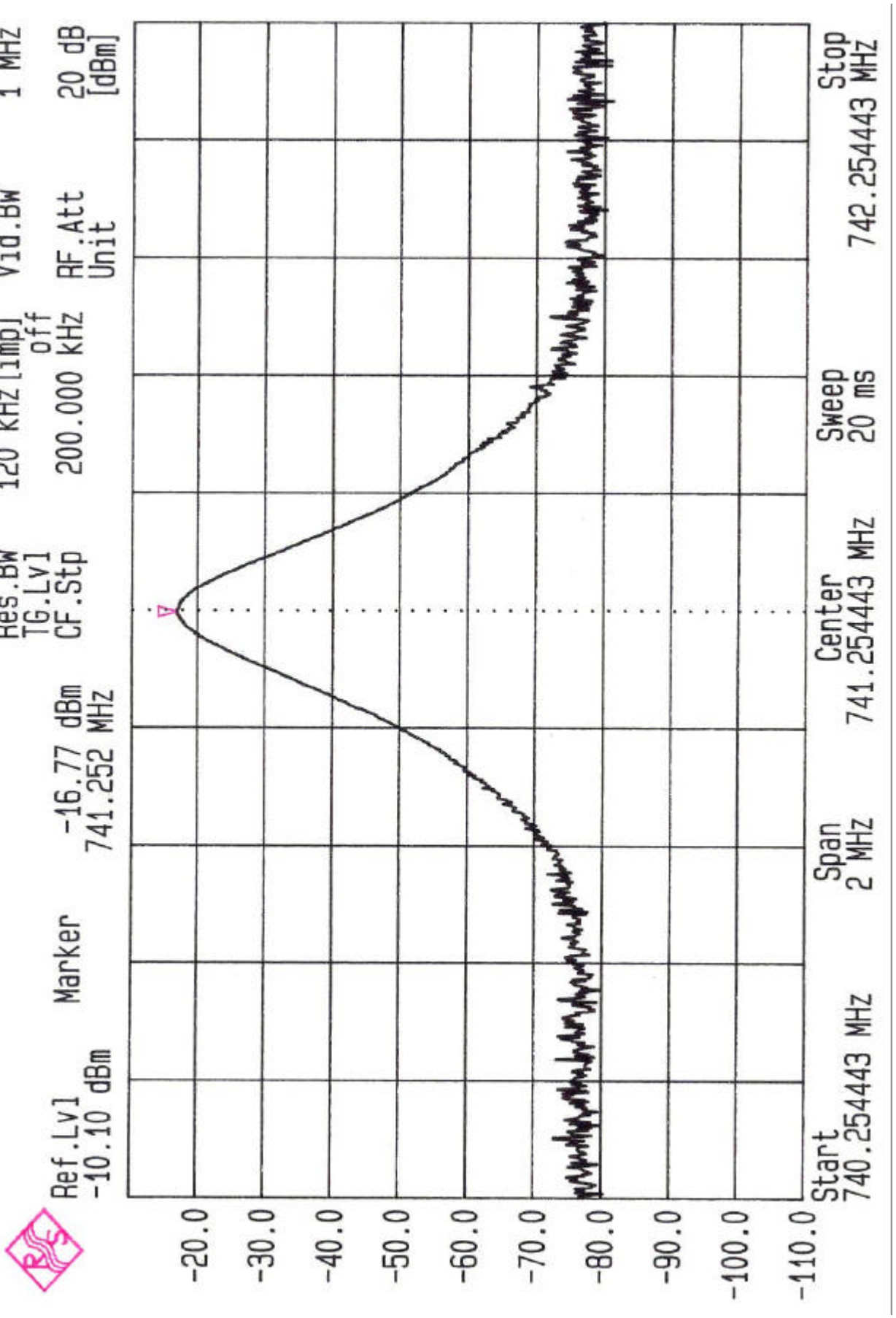
EUT:
Manuf:
Op Cond: Channel High
Operator:
Test Spec:
Comment:
L1

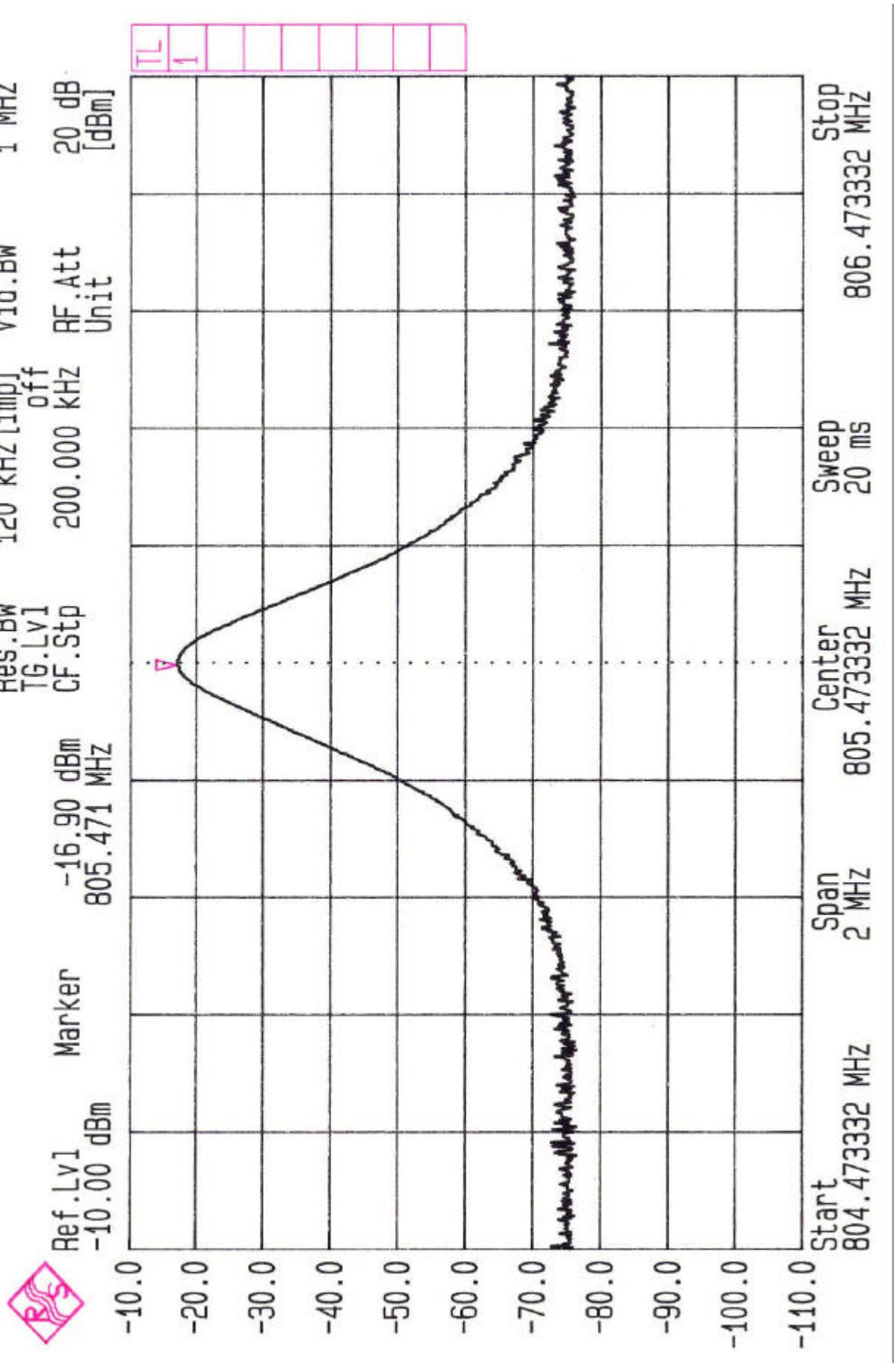
Final Measurement: Detector: X QP
Meas Time: 1sec
Peaks: 8
Acc Margin: 25 dB



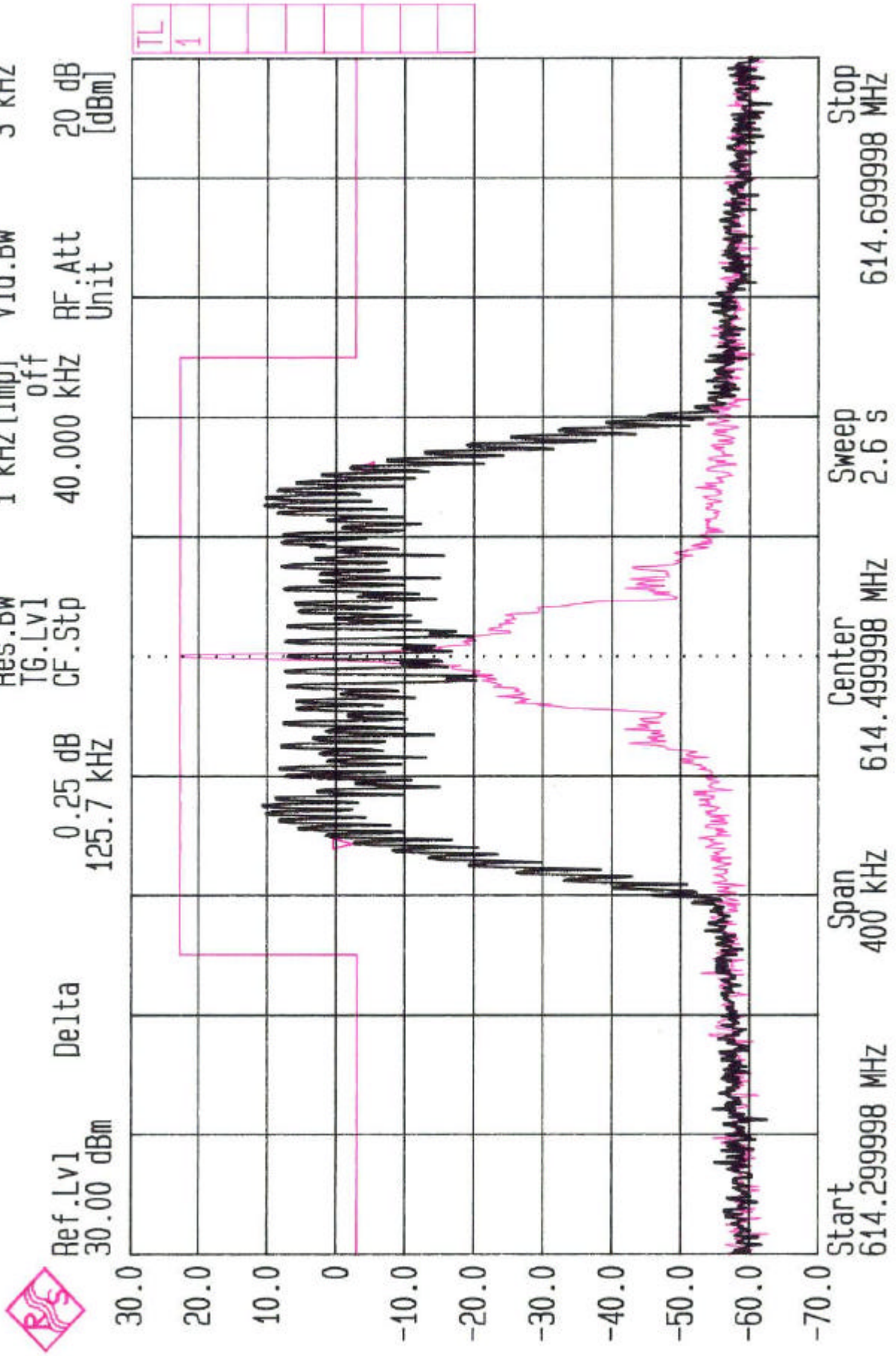
Appendix 2 : Plotted Data for Output Peak Power

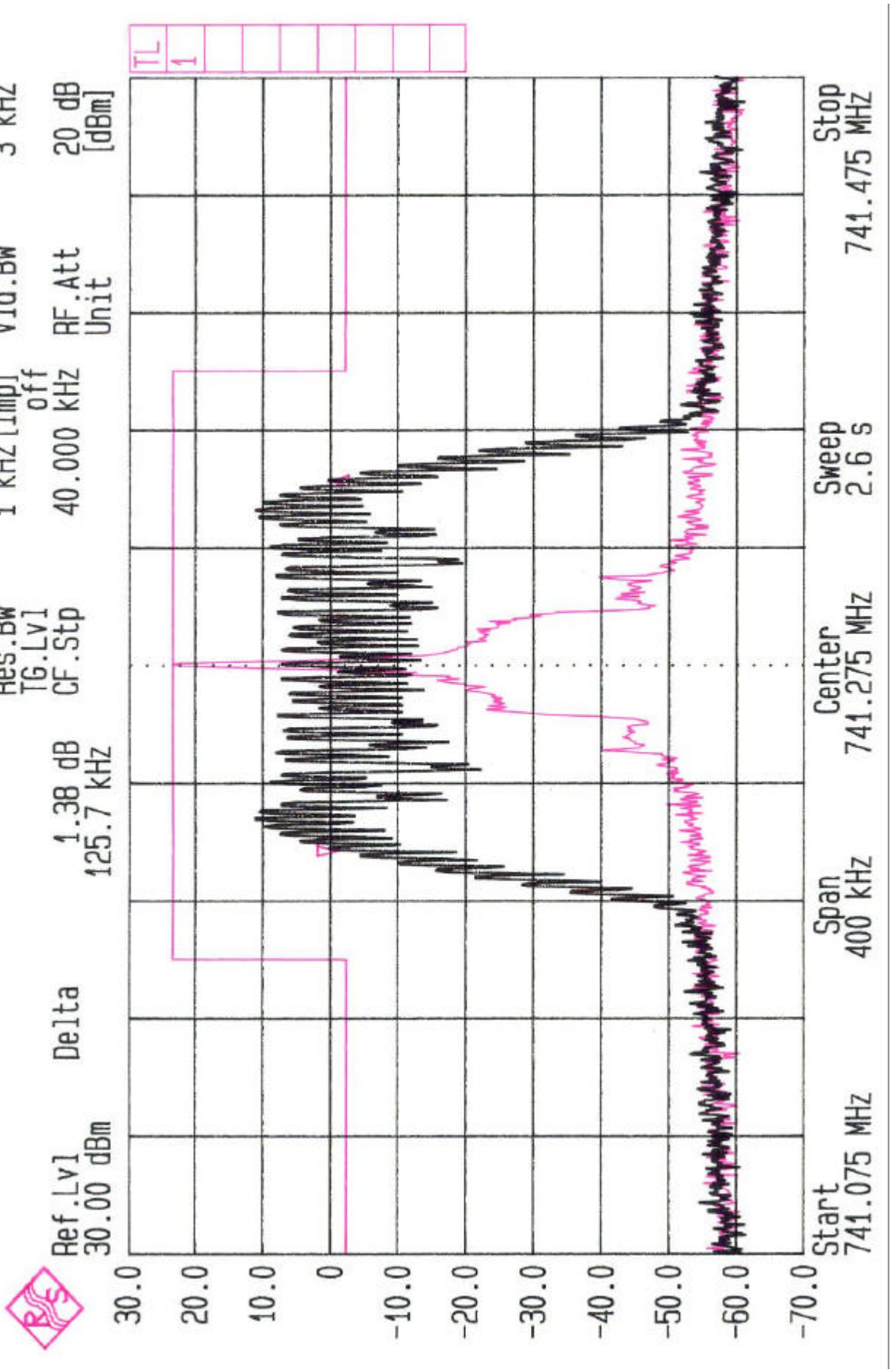

Ref.Lvl
-10.00 dBm
Marker
-16.55 dBm
614.473 MHz
Res.Bw
120 kHz [imp]
TG.Lvl
off
CF.Stp
200.000 kHz
Vid.Bw
1 MHz
RF.Att
20 dB
Unit
[dBm]
Start
613.473888 MHz
Span
2 MHz
Center
614.473888 MHz
Sweep
20 ms
Stop
615.473888 MHz
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0

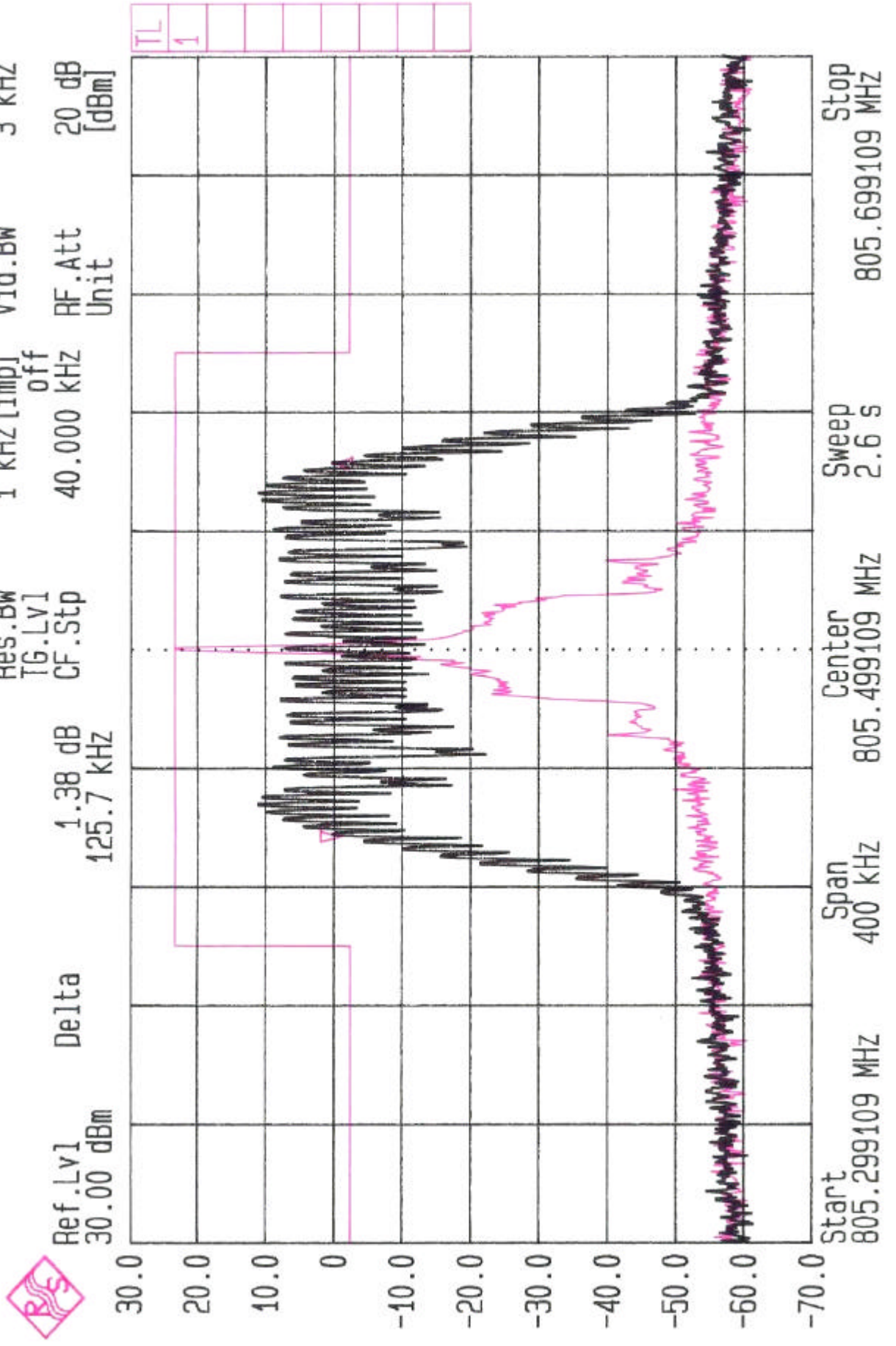

Ref.Lvl
-10.10 dBm
Marker
-16.77 dBm
741.252 MHz
Res.Bw
120 kHz [imp]
TG.Lvl
off
CF.Stp
200.000 kHz
Vid.Bw
1 MHz
RF.Att
20 dB
Unit
[dBm]
Start
740.254443 MHz
Span
2 MHz
Center
741.254443 MHz
Sweep
20 ms
Stop
742.254443 MHz
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0


TL
1
Ref.Lvl
-10.00 dBm
Marker
-16.90 dBm
805.471 MHz
Res.Bw
120 kHz [imp]
TG.Lvl
off
CF.Stp
200.000 kHz
Vid.Bw
1 MHz
RF.Att
20 dB
Unit
[dBm]
Start
804.473332 MHz
Span
2 MHz
Center
805.473332 MHz
Sweep
20 ms
Stop
806.473332 MHz
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100.0
-110.0

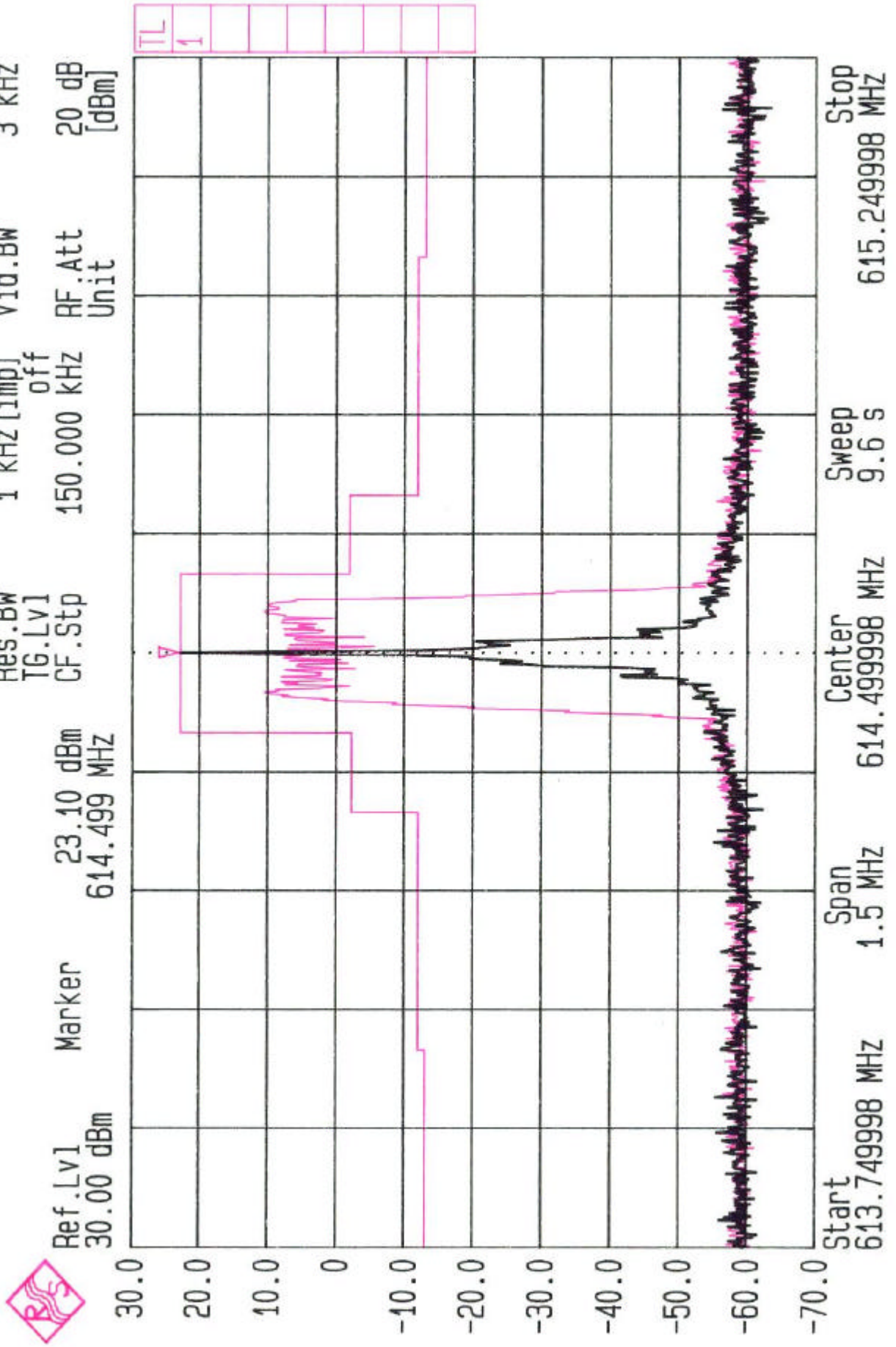
Appendix 3 : Occupied Emission Bandwidth Plotted Data

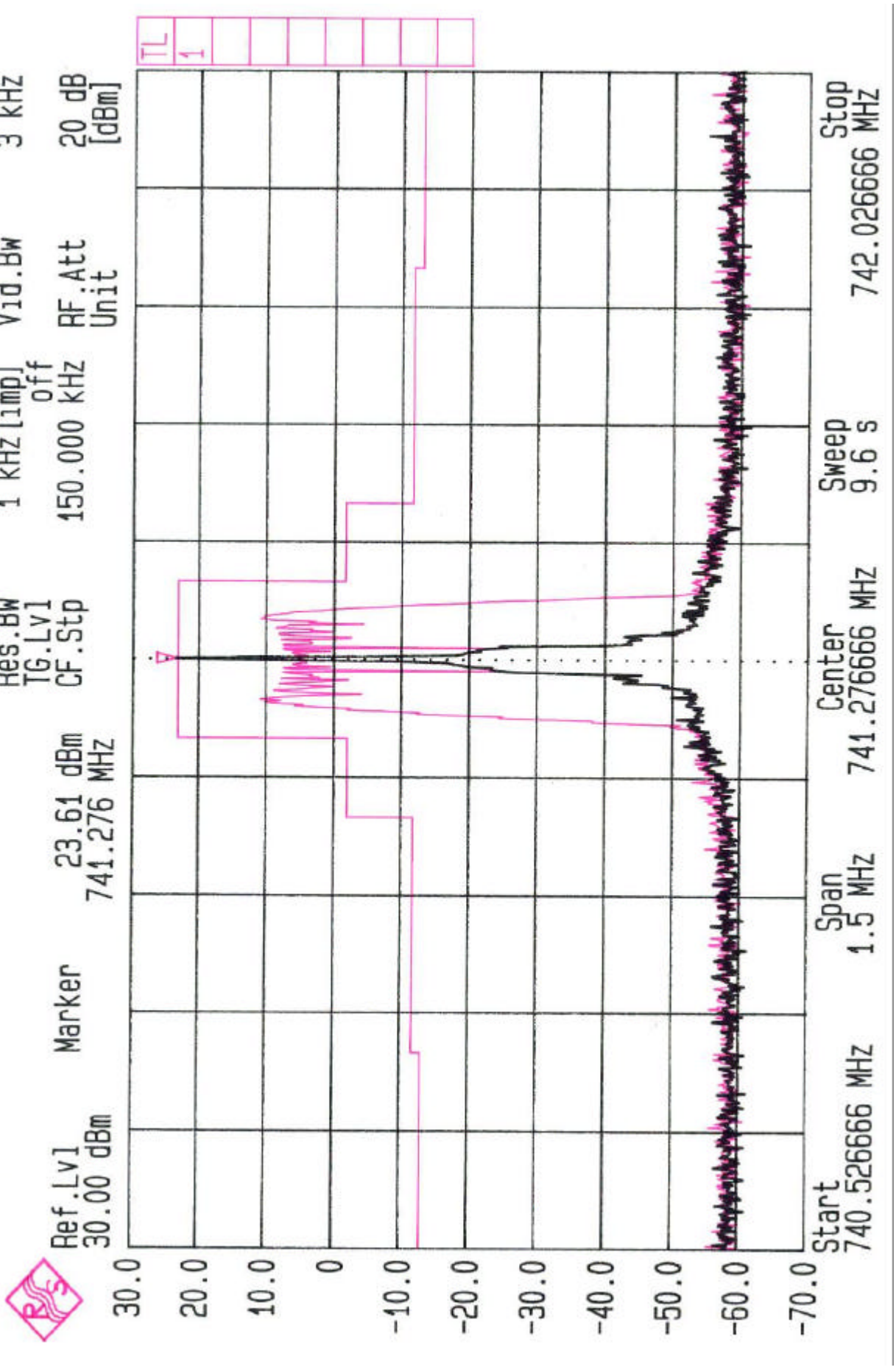

Ref.Lvl
30.00 dBm
Delta
0.25 dB
125.7 kHz
Res.Bw
1 kHz [imp]
TG.Lvl
off
CF.Stp
40.000 kHz
Vid.Bw
3 kHz
RF.Att
20 dB
Unit
[dBm]
TL
1
30.0
20.0
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Start
614.299998 MHz
Span
400 kHz
Center
614.499998 MHz
Sweep
2.6 s
Stop
614.699998 MHz

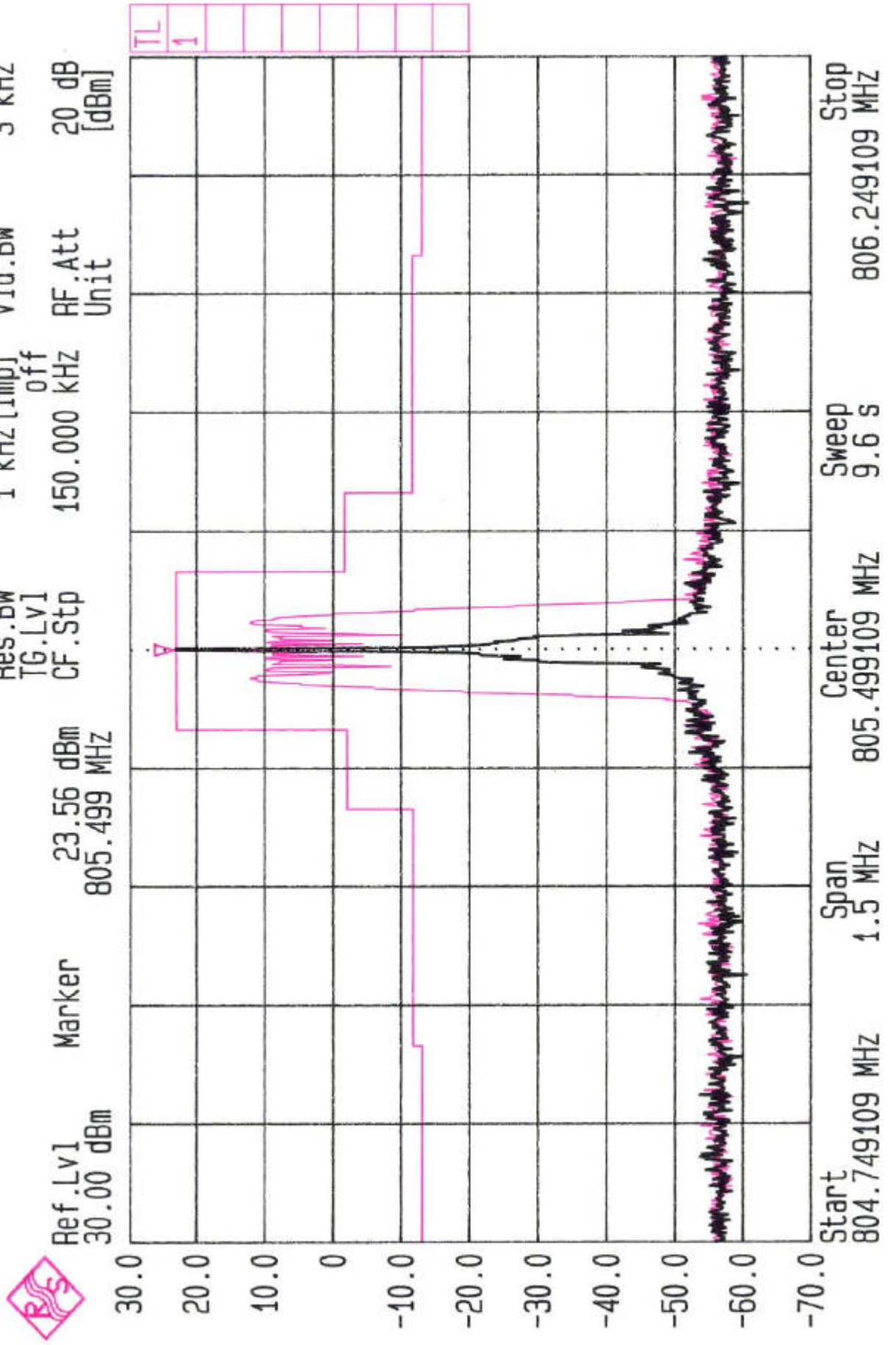

Ref.Lvl
30.00 dBm
Delta
1.38 dB
125.7 kHz
Res.Bw
TG.Lvl
CF.Stp
1 kHz [imp]
off
40.000 kHz
Vid.Bw
RF.Att
Unit
3 kHz
20 dB
[dBm]
TL
1
Start
741.075 MHz
Span
400 kHz
Center
741.275 MHz
Sweep
2.6 s
Stop
741.475 MHz
30.0
20.0
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0


TL
1
Ref.Lvl
30.00 dBm
Delta
1.38 dB
125.7 kHz
Res.Bw
1 kHz [imp]
TG.Lvl
off
CF.Stp
40.000 kHz
Vid.Bw
3 kHz
RF.Att
20 dB
Unit
[dBm]
Start
805.299109 MHz
Span
400 kHz
Center
805.499109 MHz
Sweep
2.6 s
Stop
805.699109 MHz
30.0
20.0
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0

Appendix 4 : Emission Mask Plotted Data


TL
1
Ref.Lvl
30.00 dBm
Marker
23.10 dBm
614.499 MHz
Res.Bw
1 kHz [imp]
TG.Lvl
off
CF.Stp
150.000 kHz
Vid.Bw
3 kHz
RF.Att
20 dB
Unit
[dBm]
Start
613.749998 MHz
Span
1.5 MHz
Center
614.499998 MHz
Sweep
9.6 s
Stop
615.249998 MHz
30.0
20.0
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0


Ref.Lvl
30.00 dBm
Marker
23.61 dBm
741.276 MHz
Res.Bw
1 kHz [imp]
TG.Lvl
Off
CF.Stp
150.000 kHz
Vid.Bw
3 kHz
RF.Att
20 dB
Unit
[dBm]
TL
1
30.0
20.0
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Start
740.526666 MHz
Span
1.5 MHz
Center
741.276666 MHz
Sweep
9.6 s
Stop
742.026666 MHz


Ref.Lvl
30.00 dBm
Marker
23.56 dBm
805.499 MHz
Res.Bw
1 kHz [imp]
TG.Lvl
off
CF.Stp
150.000 kHz
Vid.Bw
3 kHz
RF.Att
20 dB
Unit
[dBm]
TL
1
30.0
20.0
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Start
804.749109 MHz
Span
1.5 MHz
Center
805.499109 MHz
Sweep
9.6 s
Stop
806.249109 MHz