FCC Part 74 Subpart H

EMI TEST REPORT

of

E.U.T. : Wireless Microphone

FCC ID. : M5X-707H

MODEL : 707H

Working Frequency : 614-806MHz

for

APPLICANT : MIPRO ELECTRONICS CO., LTD.
ADDRESS : 814, Pei-Kang Road, Chia-Yi, Taiwan, R.O.C.

Test Performed by

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

Tel:(02)226023052, 26023054
Fax:(02)26010910
Report Number : ET90R-12-071

TEST REPORT CIRTIFICATION

Applicant : MIPRO ELECTRONICS CO., LTD.
814, Pei-Kang Road, Chia-Yi, Taiwan, R.O.C.

Manufacturer : MIPRO ELECTRONICS CO., LTD.
814, Pei-Kang Road, Chia-Yi, Taiwan, R.O.C.

Description of EUT :

a) Type of EUT	: Wireless Microphone
b) Trade Name	: MIPRO
c) Model No.	: 707H
d) FCC ID	: M5X-707H
e) Working Frequency	: 614-806MHz
f) Power Supply	: DC 3V Batteries

Regulation Applied : FCC Rules and Regulations Part 74 Subpart H (1999)

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 : Jan. 15, 2002

Test Engineer : Jeff Chuang
(Jeff Chuang)

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

Table of Contents *Page*

1. GENERAL INFORMATION

1.1 Product Description

a) Type of EUT : Wireless Microphone
b) Trade Name : MIPRO
c) Model No. : 707H
d) FCC ID : M5X-707H
e) Working Frequency : 614-806MHz
f) Power Supply : DC 3V Batteries

1.2 Characteristics of Device:

The EUT is a frequency modulation Wireless Microphone with following features :

Operation Frequency Range: 614MHz to 806MHz. Type of emission is 120KF3E for headset.

1. To adjust GT/MT Switch, and Gain Control, Simply push down both snap locks on the sides of battery cover and flip it backwards to expose the adjustment panel.
2. Before power on, ascertain if same channel was set up for both receiver and micrphone. If not adjust to same channel accordingly.
3. The LED indicator flashes briefly when power on indicating normal battery status. If not flash occurs it has either no battery, the battery is drained or installed incorrectly. Change accordingly.
4. Plug the microphone connector into the input jack and tighten the connector screw by clockwise direction.

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
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)(i), 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 100 kHz 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

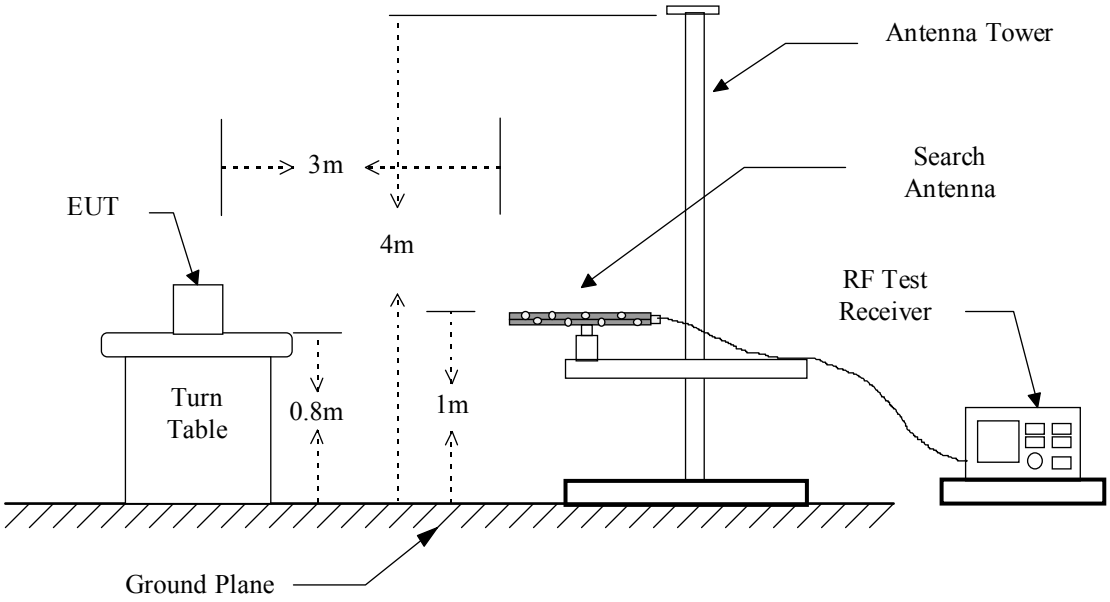
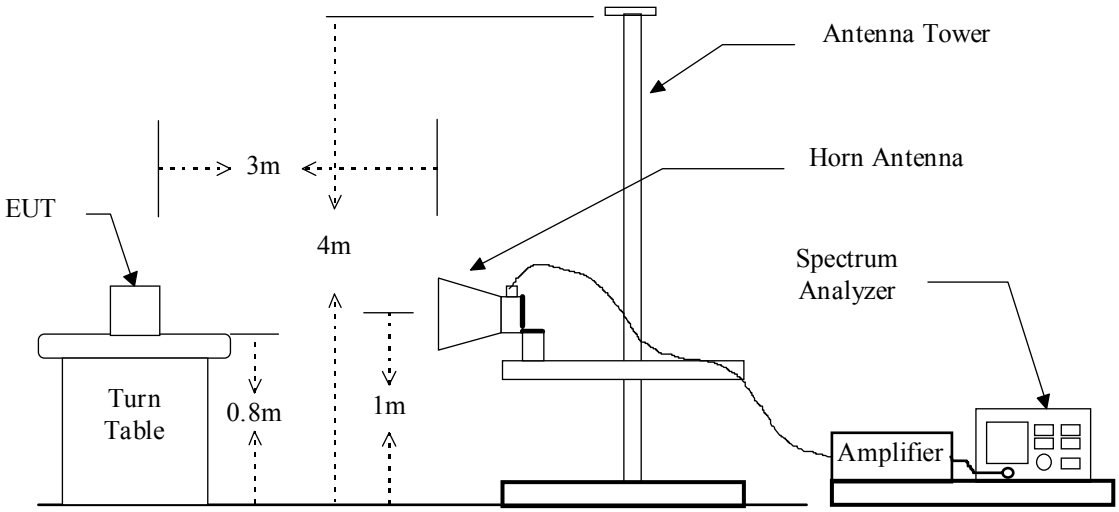


Figure 1 : Frequencies measured above 1 GHz configuration



3.3 Test Data

A. Channel Low (ERP)

Operated mode : Normal
Test Date : Jan. 08, 2002
Temperature : 25 ℃
Humidity : 60 %

Frequency (MHz)	Meter Reading (dBμV/m)	SG Reading (dBm)	Cable Loss (dB)	Result (dBm)		Output Power (mW)	Limit (mW)
615.0	85.0	14.9	2.3	12.6	18.2	18.90	250

B. Channel Mid (ERP)

Operated mode : Normal
Test Date : Jan. 08, 2002
Temperature : 25 ℃
Humidity : 60 %

Frequency (MHz)	Meter Reading (dBμV/m)	SG Reading (dBm)	Cable Loss (dB)	Result (dBm)		Output Power (mW)	Limit (mW)
710.0	83.2	13.4	2.3	13.4	21.9	21.88	250

C. Channel High (ERP)

Operated mode : Normal Test Date : Jan. 08, 2002
Temperature : 25 ℃ Humidity : 60 %

Frequency (MHz)	Meter Reading (dB μ V/m)	SG Reading (dBm)	Cable Loss (dB)	Result (dBm)		Output Power (mW)	Limit (mW)
805	83.0	14.1	2.6	11.5	14.1	14.12	250

3.3 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.

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

3.4 Test Equipment

Equipment	Manufacturer	Model No.	Next Cal. Date
EMI Test Receiver	R&S	ESBI	05/15/2002
Plotter	HP	7440A	N/A

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.

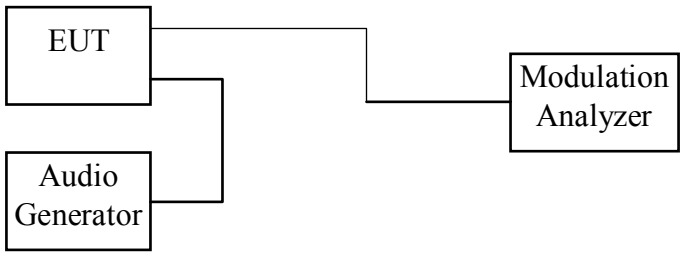
2. Repeat step 1 with changing the input frequency for 200, 500, 1000, 3000, and 5000 Hz in sequence.

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

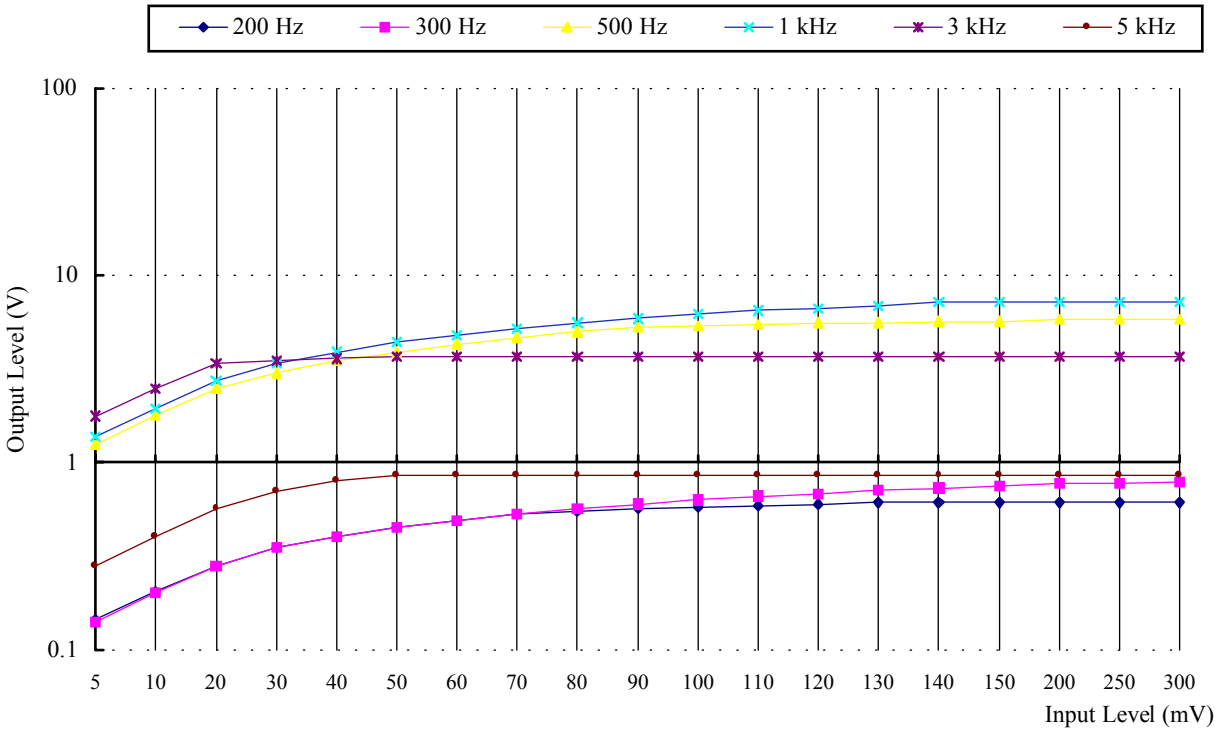


4.3 Measurement Instrument

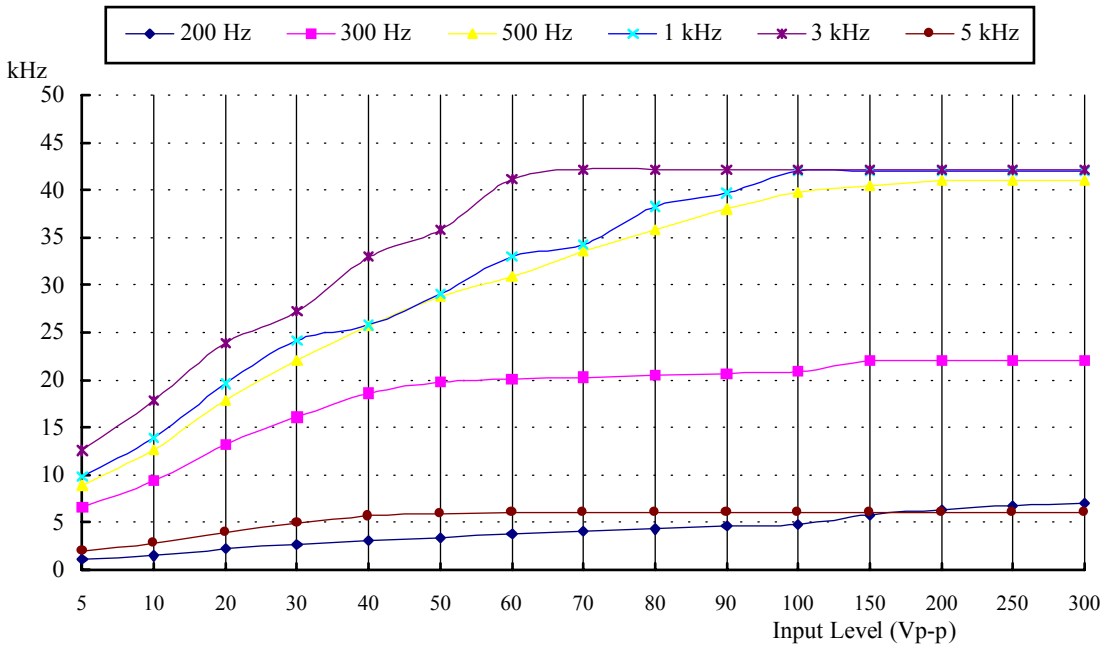
Equipment	Manufacturer	Model No.	Next Cal. Date
Modulation Analyzer	Hewlett-Packard	8901A	12/01/2002
Multifunction Synthesizer	Hewlett-Packard	8904A	11/24/2002
Oscillscope	Lecroy	9350A	12/01/2002

4.4 Measurement Result

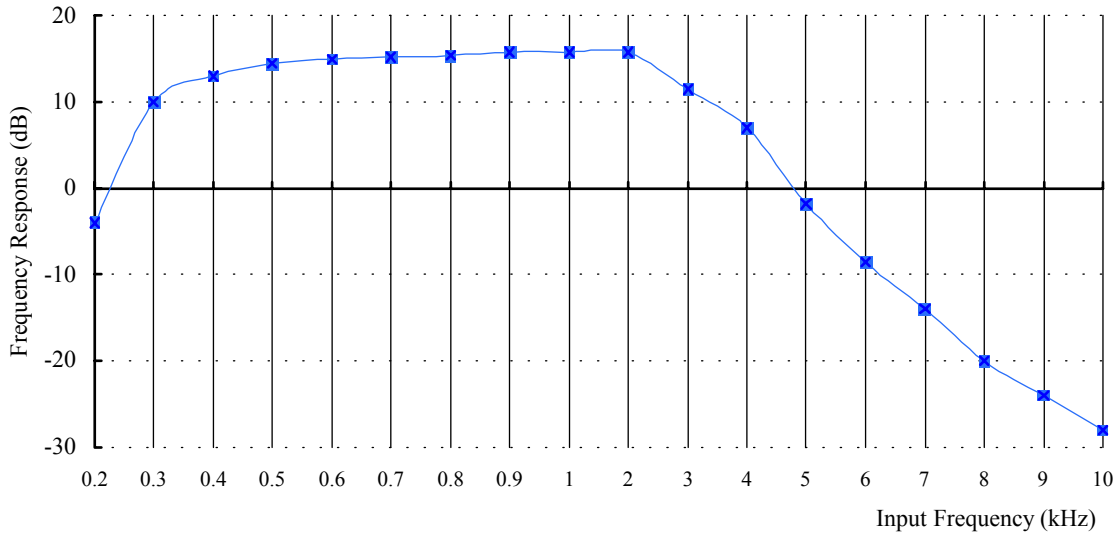
A). Frequency response



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.

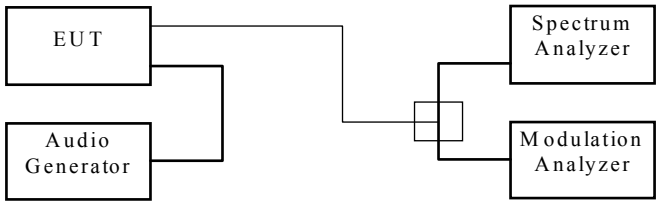
5.2 Measurement Method

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



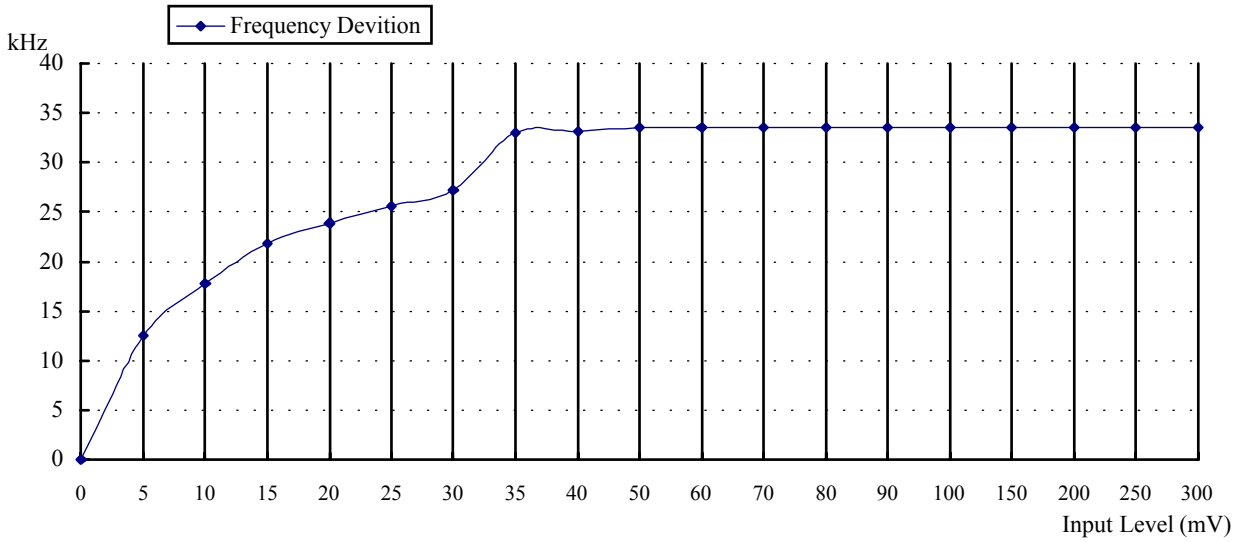
5.3 Occupied Bandwidth Test Equipment

Equipment	Manufacturer	Model No.	Next Cal. Date
Spectrum Analyzer	R&S	ESBI	05/15/2002
Modulation Analyzer	Hewlett-Packard	8901A	12/01/2002
Multifunction Synthesizer	Hewlett-Packard	8904A	11/24/2002
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 50 mV, therefore the magnitude 16 dB greater than it is 315.5 mV.

5.4.2 Occupied Bandwidth Plotted

The Channel Low 26 dB Bandwidth is 118KHz.
The Channel Mid 26 dB Bandwidth is 117KHz.
The Channel High 26 dB Bandwidth is 113.5KHz.

Please see appendix 1 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 100 kHz 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
Spectrum Analyzer	Hewlett-Packard	8568B	12/21/2002
Quasi Peak Detector	Hewlett-Packard	85650A	01/10/2003
Pre-selector	Hewlett-Packard	85685A	01/10/2003
Spectrum Analyzer	Hewlett-Packard	8564E	05/22/2002
Horn Antenna	EMCO	3115	05/14/2002
Log periodic Antenna	EMCO	3146	11/02/2002
Biconical Antenna	EMCO	3110B	11/02/2002
Preamplifier	Hewlett-Packard	8449B	05/10/2002
Preamplifier	Hewlett-Packard	8447D	04/09/2002

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. Channel Low

Operated mode : Normal
Test Date : Jan. 08, 2002
Temperature : 21℃
Humidity : 55

Unmodulated carrier output power is 18.2 dBm , or 18.9 mW (ERP).

The limit of spurious or harmonics is calculated as following :

-13.5-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV)		SG Reading (dBm)		Cable Loss (dB)	Result (dBm)		Amp. Gain	Limit (dBm)	Margin (dB)
1230	60.2	72.4	-44.6	-35.3	1.3	-45.9	-36.6	37.5	-13.0	-23.6
1845	59.7	59.1	-40.6	-36.6	1.3	-41.9	-37.9	36.5	-13.0	-24.9
2460	60.9	60.3	-41.4	-41.2	1.8	-43.2	-43.0	36.3	-13.0	-30.0
3075	65.8	60.6	-31.7	-37.4	1.8	-33.5	-39.2	36.2	-13.0	-20.5
3690	53.5	51.9	-43.0	-44.4	2.2	-45.2	-46.6	36.1	-13.0	-32.2
4305	57.6	53.7	-39.0	-42.4	2.2	-41.2	-44.6	35.4	-13.0	-28.2
4920	56.9	56.7	-37.5	-37.4	2.2	-39.7	-39.6	35.7	-13.0	-26.6
5535	---	---	---	---	2.6	---	---	35.3	---	---
6150	---	---	---	---	2.6	---	---	35.6	---	---

Note :

1. Remark "---" means that the emission level is too weak to be detected.
2. 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.
3. 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 : Normal
Test Date : Jan. 08, 2002
Temperature : 21℃
Humidity : 55

Unmodulated carrier output power is 21.9 dBm , or 21.9 mW (ERP).

The limit of spurious or harmonics is calculated as following :

-11.6-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV)		SG Reading (dBm)		Cable Loss (dB)	Result (dBm)		Amp. Gain	Limit (dBm)	Margin (dB)
1420	53.3	72.1	-54.9	-32.9	1.3	-56.2	-34.2	37.0	-13.0	-21.2
2130	58.0	59.8	-46.3	-41.8	1.8	-48.1	-43.6	36.5	-13.0	-30.6
2840	68.0	66.0	-33.7	-34.5	1.8	-35.5	-36.3	36.2	-13.0	-22.5
3550	55.9	39.2	-39.1	-39.0	1.8	-40.9	-40.8	36.1	-13.0	-27.8
4260	61.3	59.4	-35.3	-36.7	2.2	-37.5	-38.9	35.4	-13.0	-24.5
4970	54.1	54.6	-40.7	-38.5	2.2	-42.9	-40.7	35.7	-13.0	-27.7
5680	---	---	---	---	2.6	---	---	35.5	---	---
6390	---	---	---	---	2.6	---	---	35.8	---	---
7100	---	---	---	---	2.6	---	---	35.6	---	---

Note :

1. Remark "---" means that the emission level is too weak to be detected.
2. 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.
3. 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 : Normal Test Date : Jan. 08, 2002
Temperature : 21℃ Humidity : 55

Unmodulated carrier output power is 14.1 dBm , or 14.1 mW (ERP).
The limit of spurious or harmonics is calculated as following :
-11.9-[43+10log(carrier output power in W)], or -13dBm

Frequency (MHz)	Meter Reading (dBuV)		SG Reading (dBm)		Cable Loss (dB)	Result (dBm)		Amp. Gain	Limit (dBm)	Margin (dB)
1610	55.7	62.1	-51.0	-44.2	1.3	-52.3	-45.5	37.0	-13.0	-32.5
2415	74.3	73.0	-25.1	-28.9	1.8	-26.9	-30.7	36.5	-13.0	-13.9
3220	63.0	61.8	-36.7	-35.9	1.8	-38.5	-37.7	36.2	-13.0	-24.7
4025	53.0	53.5	-41.2	-41.9	2.2	-43.4	-44.1	36.1	-13.0	-30.4
4830	65.5	62.8	-28.2	-32.1	2.2	-30.4	-34.3	35.4	-13.0	-17.4
5635	49.8	51.7	-43.9	-40.3	2.6	-46.5	-42.9	35.7	-13.0	-29.9
6440	---	---	---	---	2.6	---	---	35.5	-13.0	---
7245	58.0	56.2	-31.5	-35.1	2.6	-34.1	-37.7	35.8	-13.0	-21.1
7100	56.2	---	-33.9	---	2.9	-36.8		35.6	-13.0	-23.8

Note :

1. Remark "---" means that the emission level is too weak to be detected.
2. 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.
3. Spurious or harmonics above 1 GHz is too low to be detected or attenuated more than 60 dB from limit value.

6.5 Radiated Measurement Photos

Please see setup photos in Exhibit F.

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℃ to +50℃ 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℃ to 25℃. Otherwise, an environmental chamber set for a temperature of 20℃ 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℃. 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℃ decreased per stage until the lowest temperature -30℃ is measured, record all measurement frequencies.

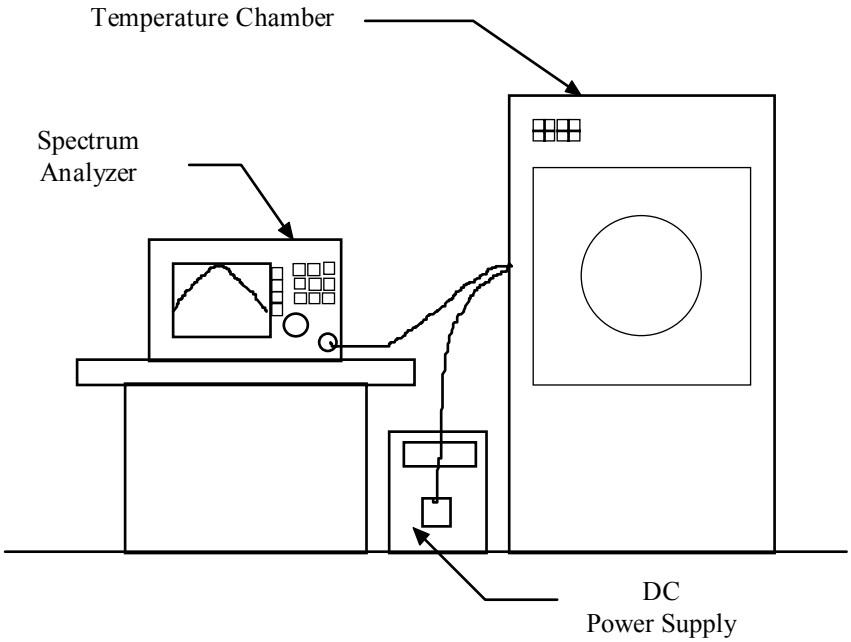
B) Frequency stability versus input voltage

1. Setup the configuration per figure 7 for frequencies measured at ambient temperature if it is within 15℃ to 25℃. Otherwise, an environmental chamber set for a temperature of 20℃ 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	HP	8564E	05/22/2002
Temperature Chamber	ACS	EOS 200T	01/17/2002

7.4 Measurement Data

A1. Frequency stability versus enviroment tempture

Reference Frequency : 615.0000 MHz		Limit：0.005%					
Enviroment	Power	Frequency measured with time elapsed					
Tempture	Supplied	2 minute		5 minute		10 minute	
(℃)	(Vdc)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	New Batt.	614.9906	-0.00153	615.0201	0.00326	614.9934	-0.00107
	New Batt.	614.9925	-0.00123	615.0113	0.00184	614.9934	-0.00108
	New Batt.	614.9971	-0.00047	614.9937	-0.00103	615.0054	0.00088
40	New Batt.	615.0086	0.00139	615.0034	0.00055	615.0172	0.00280
	New Batt.	614.9900	-0.00162	615.0156	0.00254	614.9880	-0.00196
	New Batt.	614.9920	-0.00130	615.0193	0.00314	614.9832	-0.00273
30	New Batt.	615.0188	0.00306	615.0095	0.00154	615.0112	0.00182
	New Batt.	614.9779	-0.00359	614.9963	-0.00061	615.0030	0.00048
	New Batt.	614.9781	-0.00356	614.9764	-0.00384	614.9850	-0.00245
20	New Batt.	614.9930	-0.00113	614.9944	-0.00091	615.0134	0.00218
	New Batt.	614.9947	-0.00086	615.0159	0.00259	614.9882	-0.00193
	New Batt.	614.9793	-0.00337	615.0089	0.00145	614.9784	-0.00351
10	New Batt.	615.0199	0.00323	615.0236	0.00384	615.0016	0.00026
	New Batt.	614.9823	-0.00289	615.0204	0.00332	614.9965	-0.00057
	New Batt.	614.9950	-0.00081	615.0125	0.00203	615.0070	0.00114
0	New Batt.	615.0089	0.00145	615.0047	0.00076	615.0025	0.00041
	New Batt.	615.0214	0.00347	614.9946	-0.00089	615.0088	0.00143
	New Batt.	615.0203	0.00330	615.0022	0.00036	614.9988	-0.00019
-10	New Batt.	614.9921	-0.00129	615.0164	0.00267	614.9899	-0.00165
	New Batt.	615.0105	0.00170	614.9957	-0.00070	615.0193	0.00314
	New Batt.	614.9955	-0.00074	615.0091	0.00149	615.0046	0.00075
-20	New Batt.	614.9906	-0.00152	614.9773	-0.00370	615.0084	0.00136
	New Batt.	614.9889	-0.00181	615.0092	0.00149	614.9822	-0.00289
	New Batt.	614.9840	-0.00261	614.9928	-0.00117	615.0176	0.00286

A2. Frequency stability versus end-point supplied voltage (2Vdc)

Reference Frequency : 615.0000 MHz		Limit：0.005%					
Enviroment	Power	Frequency measured with time elapsed					
Tempture	Supplied	2 minute		5 minute		10 minute	
(℃)	(Vdc)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
25	End-Point	615.0039	0.00064	614.9864	-0.00221	615.0222	0.00360

B1. Frequency stability versus enviroment tempture

Reference Frequency : 710.0014 MHz		Limit：0.005%					
Enviroment	Power	Frequency measured with time elapsed					
Tempture	Supplied	2 minute		5 minute		10 minute	
(℃)	(Vdc)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	New Batt.	709.9893	-0.00170	709.9916	-0.00138	709.9938	-0.00107
	New Batt.	709.9939	-0.00105	710.0244	0.00324	709.9816	-0.00279
	New Batt.	709.9866	-0.00208	709.9938	-0.00107	709.9868	-0.00205
40	New Batt.	709.9882	-0.00185	710.0217	0.00286	710.0123	0.00154
	New Batt.	710.0116	0.00144	710.0052	0.00053	709.9767	-0.00348
	New Batt.	709.9954	-0.00084	710.0008	-0.00008	710.0103	0.00125
30	New Batt.	709.9888	-0.00178	710.0119	0.00148	710.0233	0.00309
	New Batt.	709.9915	-0.00140	710.0186	0.00243	709.9955	-0.00084
	New Batt.	709.9804	-0.00296	710.0198	0.00259	709.9820	-0.00274
20	New Batt.	709.9962	-0.00073	710.0218	0.00287	710.0190	0.00248
	New Batt.	709.9767	-0.00348	710.0129	0.00162	710.0074	0.00084
	New Batt.	709.9846	-0.00237	709.9946	-0.00096	709.9796	-0.00307
10	New Batt.	710.0125	0.00156	710.0025	0.00016	709.9741	-0.00384
	New Batt.	710.0206	0.00271	709.9835	-0.00253	709.9888	-0.00178
	New Batt.	709.9836	-0.00251	710.0064	0.00070	710.0273	0.00364
0	New Batt.	710.0186	0.00242	709.9785	-0.00322	709.9806	-0.00293
	New Batt.	709.9745	-0.00379	709.9958	-0.00079	709.9914	-0.00141
	New Batt.	709.9828	-0.00262	709.9778	-0.00332	709.9790	-0.00315
-10	New Batt.	710.0108	0.00133	709.9844	-0.00240	709.9793	-0.00311
	New Batt.	710.0097	0.00117	710.0224	0.00296	710.0049	0.00050
	New Batt.	710.0087	0.00103	709.9872	-0.00200	710.0036	0.00031
-20	New Batt.	710.0147	0.00187	709.9890	-0.00175	710.0204	0.00267
	New Batt.	709.9800	-0.00302	709.9768	-0.00346	710.0147	0.00187
	New Batt.	709.9747	-0.00375	710.0279	0.00373	709.9990	-0.00033

B2. Frequency stability versus end-point supplied voltage (2Vdc)

Reference Frequency :710.0014 MHz		Limit：0.005%					
Enviroment	Power	Frequency measured with time elapsed					
Tempture	Supplied	2 minute		5 minute		10 minute	
(℃)	(Vdc)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
25	End-Point	709.9903	-0.00156	709.9976	-0.00054	709.9825	-0.00267

C1. Frequency stability versus enviroment tempture

Reference Frequency : 805.0012 MHz		Limit：0.005%					
Enviroment	Power	Frequency measured with time elapsed					
Tempture	Supplied	2 minute		5 minute		10 minute	
(℃)	(Vdc)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	New Batt.	804.9795	-0.00270	804.9987	-0.00031	804.9777	-0.00292
	New Batt.	804.9924	-0.00109	805.0000	-0.00014	805.0144	0.00164
	New Batt.	804.9784	-0.00283	805.0315	0.00377	805.0082	0.00087
40	New Batt.	805.0316	0.00377	804.9960	-0.00064	804.9863	-0.00185
	New Batt.	805.0124	0.00139	804.9904	-0.00134	805.0296	0.00353
	New Batt.	805.0225	0.00264	804.9871	-0.00175	805.0204	0.00239
30	New Batt.	804.9839	-0.00215	804.9925	-0.00109	804.9983	-0.00037
	New Batt.	804.9831	-0.00225	804.9762	-0.00310	804.9920	-0.00114
	New Batt.	804.9750	-0.00326	804.9792	-0.00274	805.0212	0.00249
20	New Batt.	805.0221	0.00259	805.0276	0.00328	805.0232	0.00273
	New Batt.	805.0131	0.00148	805.0266	0.00316	804.9939	-0.00090
	New Batt.	805.0030	0.00022	805.0219	0.00257	805.0118	0.00132
10	New Batt.	804.9940	-0.00089	805.0305	0.00363	804.9827	-0.00230
	New Batt.	804.9967	-0.00055	804.9962	-0.00062	805.0080	0.00084
	New Batt.	805.0113	0.00126	804.9893	-0.00148	804.9989	-0.00028
0	New Batt.	804.9705	-0.00381	805.0054	0.00052	804.9990	-0.00028
	New Batt.	804.9848	-0.00204	804.9784	-0.00283	804.9732	-0.00348
	New Batt.	804.9875	-0.00171	804.9721	-0.00362	804.9710	-0.00375
-10	New Batt.	805.0302	0.00360	805.0145	0.00166	804.9776	-0.00294
	New Batt.	804.9931	-0.00100	804.9851	-0.00200	805.0290	0.00346
	New Batt.	804.9795	-0.00270	805.0079	0.00083	805.0188	0.00219
-20	New Batt.	805.0066	0.00068	804.9853	-0.00197	805.0157	0.00180
	New Batt.	804.9978	-0.00042	804.9942	-0.00087	805.0106	0.00117
	New Batt.	805.0078	0.00082	805.0076	0.00080	805.0088	0.00094

C2. Frequency stability versus end-point supplied voltage (2Vdc)

Reference Frequency : 805.0012 MHz		Limit：0.005%					
Enviroment	Power	Frequency measured with time elapsed					
Tempture	Supplied	2 minute		5 minute		10 minute	
(℃)	(Vdc)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
25	End-Point	805.0143	0.00163	804.9960	-0.00064	805.0041	0.00036

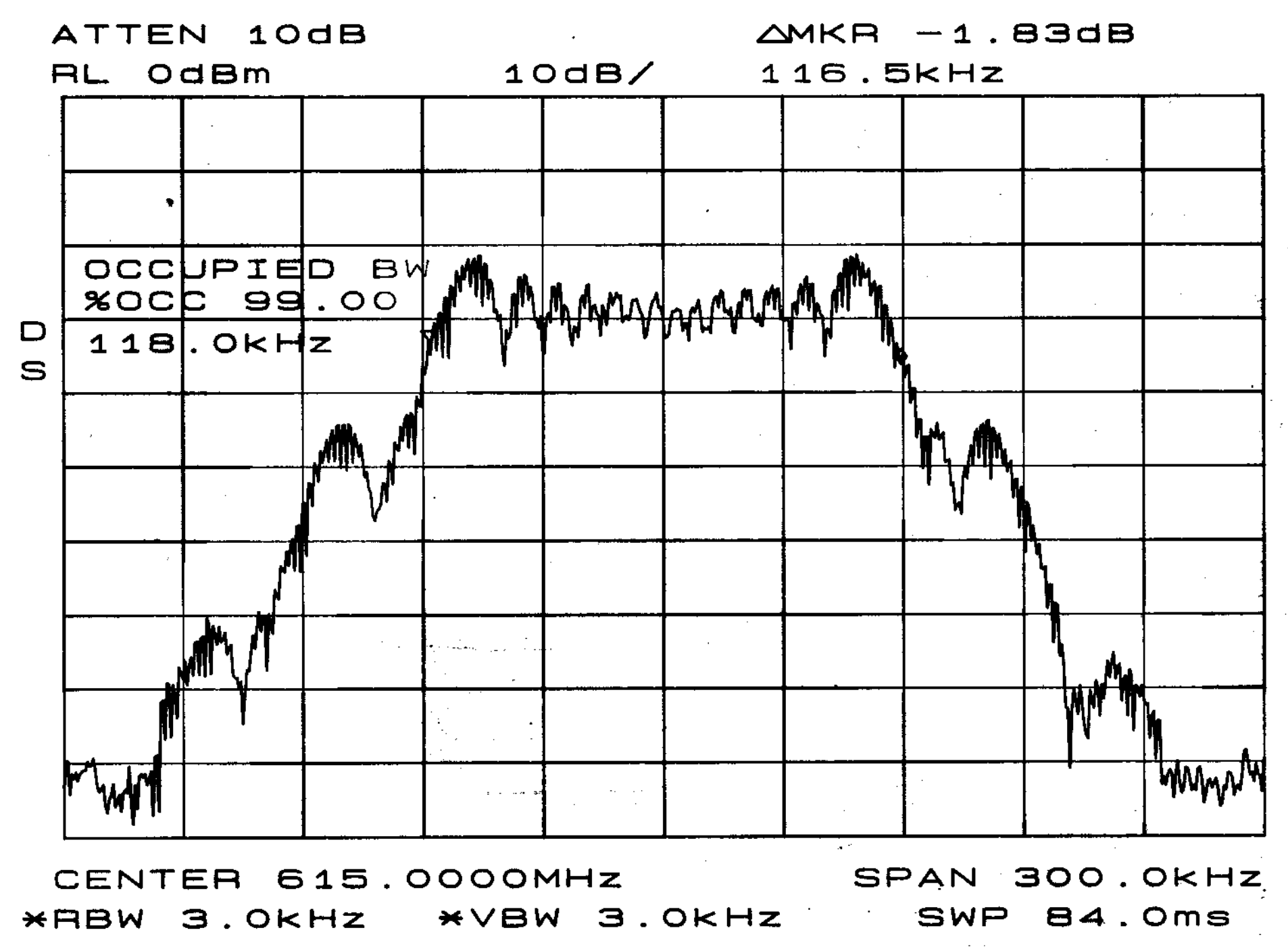
8 CONDUCTED EMISSION MEASUREMENT

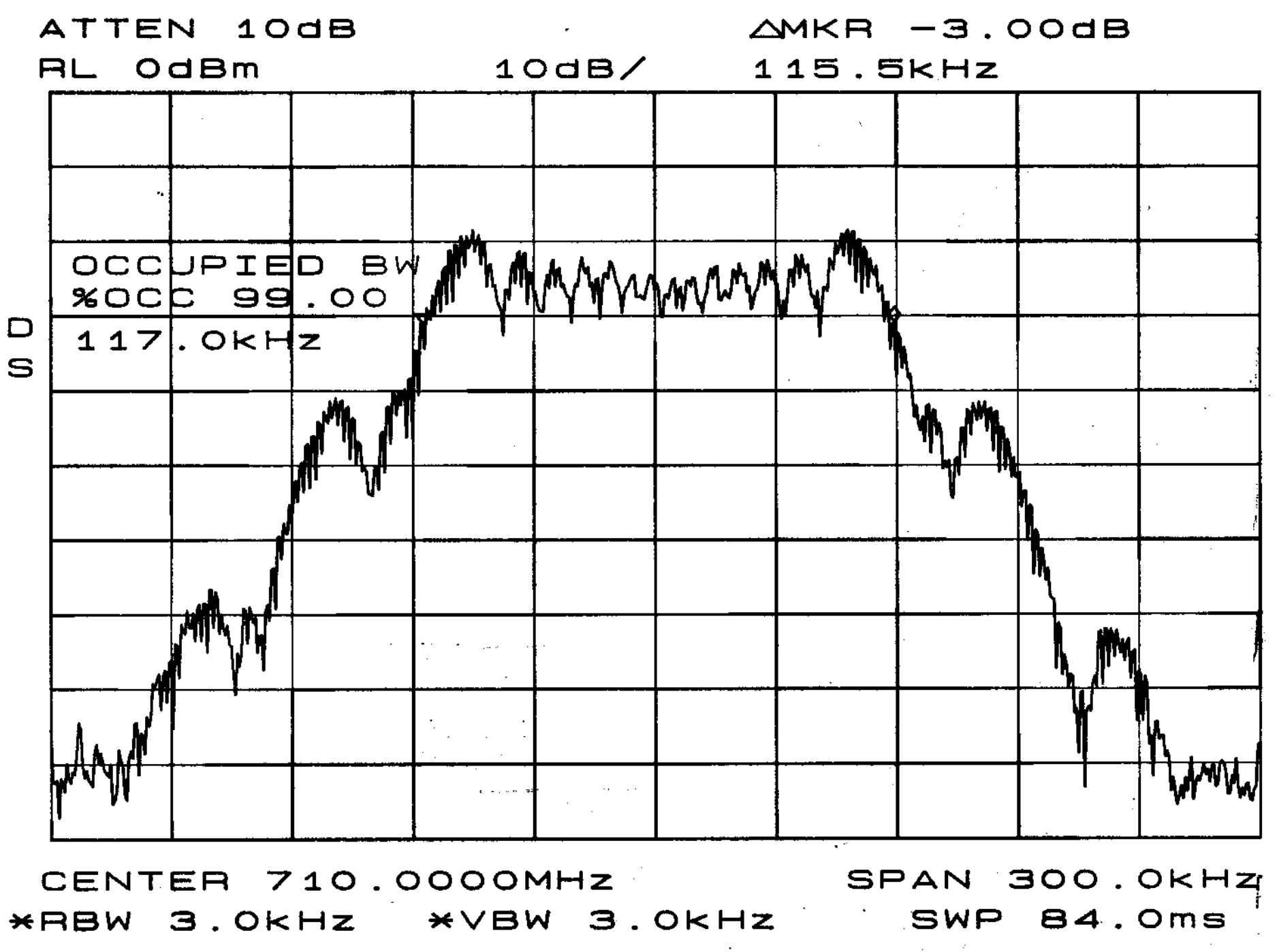
8.1 Standard Applicable

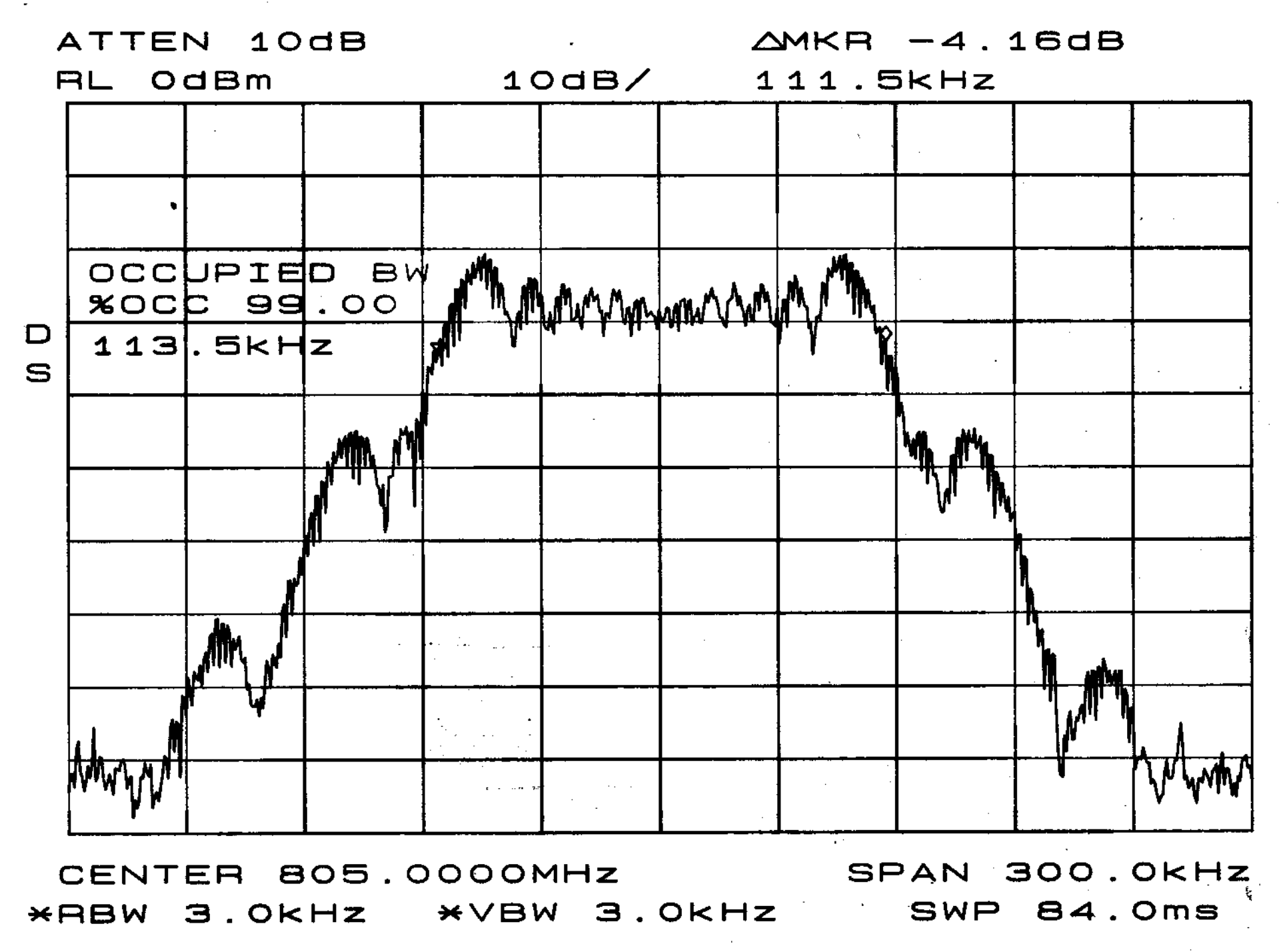
This EUT is excused from investigation of conducted emission, for it is powered by battery only. According to § 15.207 (d), measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

For intentional device, Line Conducted Emission Limits are in accordance to § 15.207(a), any emissions level shall not exceed 48 dBuV.

Appendix 1 : Occupied Emission Bandwidth Plotted Data


ATTEN 10dB
ΔMKR −1.83dB
RL 0dBm
10dB/
116.5kHz
OCCUPIED BW
%OCC 99.00
118.0kHz
D
S
CENTER 615.0000MHz
SPAN 300.0kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 84.0ms


ATTEN 10dB
ΔMKR -3.00dB
RL 0dBm
10dB/
115.5kHz
OCCUPIED BW
%OCC 99.00
117.0kHz
D
S
CENTER 710.0000MHz
SPAN 300.0kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 84.0ms


ATTEN 10dB
ΔMKR -4.16dB
RL 0dBm
10dB/
111.5kHz
OCCUPIED BW
%OCC 99.00
113.5kHz
D
S
CENTER 805.0000MHz
SPAN 300.0kHz
*RBW 3.0kHz
*VBW 3.0kHz
SWP 84.0ms