

APPLICATION FOR CERTIFICATION

On Behalf of

Shenzhen Creative Industrial Co., Ltd.

New Remote Fart Machine

Model Number: SG810

Prepared for : Shenzhen Creative Industrial Co., Ltd.
704, Block 7, Meishanyuan, Xiameilin, Putian District,
Shenzhen, China

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number : ACS-F07446
Date of Test : Sep.25~30, 2007
Date of Report : Oct.18, 2007

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TEST REPORT CERTIFICATION

Applicant : Shenzhen Creative Industrial Co., Ltd.
 EUT Description : New Remote Part Machine
 (A) MODEL NO. : SG810
 (B) SERIAL NO. : N/A
 (C) POWER SUPPLY : DC 12V

Test Procedure Used:

FCC Rules and Regulations Part 15 Subpart C 2007

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits for radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of tests. Also, this report shows that EUT is technically compliant with FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shenzhen) Co., Ltd.

Date of Test : Sep.25~30, 2007

Prepared by :

YoYo Wang

YoYo Wang / Assistant

Reviewer :

Ice-man Hu

Ice-man Hu / Supervisor



信華科技(深圳)有限公司

Audix Technology (Shenzhen) Co., Ltd.

EMC 部門報告專用章

Stamp only for EMC Dept. Report

Signature: Ken Lu 10/30/07

Approved & Authorized Signer :

Ken Lu / Deputy Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Radiated Emission Test	FCC Part 15C: 15.231 ANSI C63.4: 2003	PASS
Band Edge Compliance Test	FCC Part 15C: 15.231	PASS
Stop Transmitting Time Test	FCC Part 15C: 15.231	PASS
20 dB Bandwidth Test	FCC Part 15C: 15.231	PASS

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Description	:	New Remote Fart Machine
Model Number	:	SG810
Operation frequency	:	433.92MHz
Modulation	:	ASK
Applicant	:	Shenzhen Creative Industrial Co., Ltd. 704, Block 7, Meishanyuan, Xiameilin, Putian District, Shenzhen, China
Date of Test	:	Sep.25~30, 2007
Date of Receipt	:	Sep.20, 2007
Sample Type	:	Series production

2.2. Test Facility

Site Description

- 3m Anechoic Chamber : Jun. 13, 2006 File on Federal Communication Commission
Registration Number: 90454
- 3m & 10m Anechoic Chamber : Jan.31, 2007 File on Federal Communication Commission
Registration Number: 794232
- EMC Lab. : Accredited by DATech, German
Registration Number: DAT-P-091/99-01
Feb. 02, 2004
- Accredited by NVLAP, USA
NVLAP Code: 200372-0
Apr.01, 2006

2.3. Measurement Uncertainty

No.	Item	Uncertainty
1.	Uncertainty for Conducted Emission Test	1.22dB
2.	Uncertainty for Radiated Emission Test<1GHz	4.62dB
3.	Uncertainty for Radiated Emission Test>1GHz	4.79dB
4.	Uncertainty for Frequency measure	0.42×10^{-6}

3. POWER LINE CONDUCTED EMISSION TEST

According to Paragraph (f) of FCC Part 15 section 15.231, Tests 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.

4. RADIATED EMISSION TEST

4.1. Test Equipment

The following test equipments are used during the radiated emission Test :

4.1.1. For Anechoic Chamber

Frequency rang: 30~1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	June.25.07	1/2 Year
2.	EMI Spectrum	Agilent	E7403A	MY42000106	May 11, 07	1 Year
3.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	May 11, 07	1 Year
4.	Amplifier	HP	8447D	2944A07794	Sep.11, 07	1/2 Year
5.	Bilog Antenna	Schaffner	CBL6111C	2598	Feb.22, 07	1 Year
6.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.1	July. 16, 07	1/2 Year
7.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.2	July. 16, 07	1/2 Year
8.	RF Cable	FUJIKURAw	RG-55/U	3# Chamber No.3	July. 16, 07	1/2 Year
9.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.4	July. 16, 07	1/2 Year
10.	Coaxial Switch	Anritsu	MP59B	M73989	July. 16, 07	1/2 Year

Frequency rang: above 1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4407B	MY41440292	May 11, 07	1 Year
2.	Amp	HP	8449B	3008A00863	May 11, 07	1 Year
3.	Antenna	EMCO	3115	9607-4877	Jan. 23, 07	1.5 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May 11, 07	1 Year
5.	Antenna	ETS	3116	00060088	May. 28, 07	1 Year

4.2. Block Diagram of Test Setup

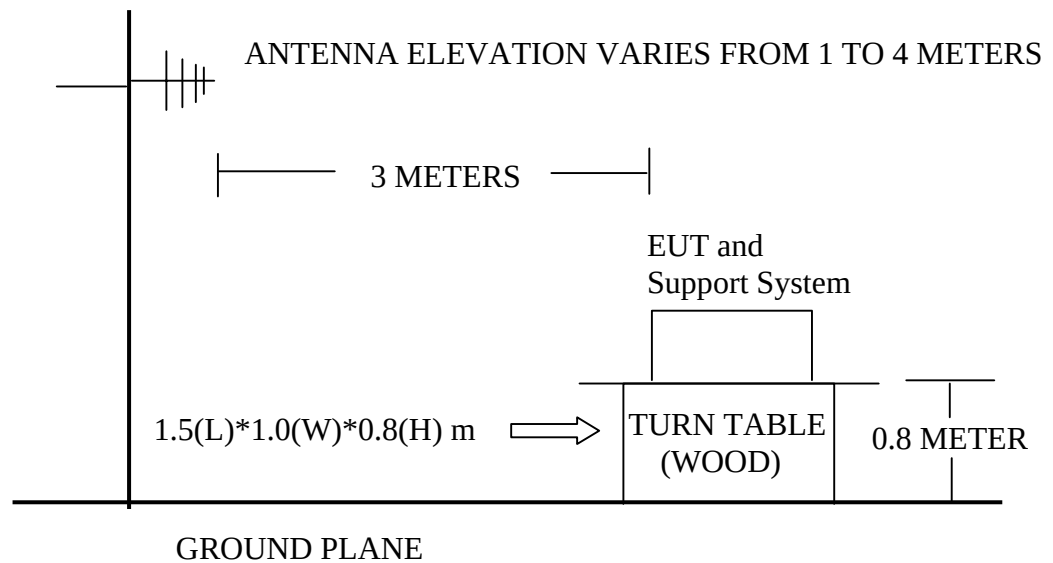
4.2.1. Block Diagram of connection between EUT and simulators

EUT

(EUT: New Remote Fart Machine)

4.2.2. Anechoic Chamber Setup Diagram

ANTENNA TOWER



4.3. Radiated Emission Limit 30~1000MHz Standard: FCC Part 15

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Local Oscillator:	3	100.80 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 80.80 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	
Above 1000	3	Other: 74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

- Remark :
- (1) Emission level $\text{dB}\mu\text{V} = 20 \log$ Emission level $\mu\text{V}/\text{m}$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

4.4. EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

4.4.1. New Remote Fart Machine (EUT)

Model Number : SG810
Serial Number : N/A

4.5. Operating Condition of EUT

4.5.1. Setup the EUT as shown in Section 4.2..

4.5.2. Let the EUT work in test modes (TX) and test it.

4.6. Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2003 on radiated emission Test.

The bandwidth of the EMI test receiver (R&S ESVS20) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the VBW is set at 300kHz and RBW is set at 120kHz for measurement below 1GHz.

The frequency range from 30MHz to 1000MHz and above 1000MHz are checked.

The test modes (TX Mode) is tested in Anechoic Chamber and all the scanning waveforms are reported on Section 4.7.

4.7. Radiated Emission Test Results

PASS.

The frequency range from 30MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

EUT: New Remote Fart Machine Model No. : SG810

Test Date: Sep.25~26, 2007 Temperature: 24℃ Humidity: 56%

The details of test modes are as follows :

Test Mode	Frequency (MHz)	Test Mode	Reference Test Data No.	
			Horizontal	Vertical
1.	30~1000	Tx Mode	#2	#1
2.	1000~5000	Tx Mode	#4	#3

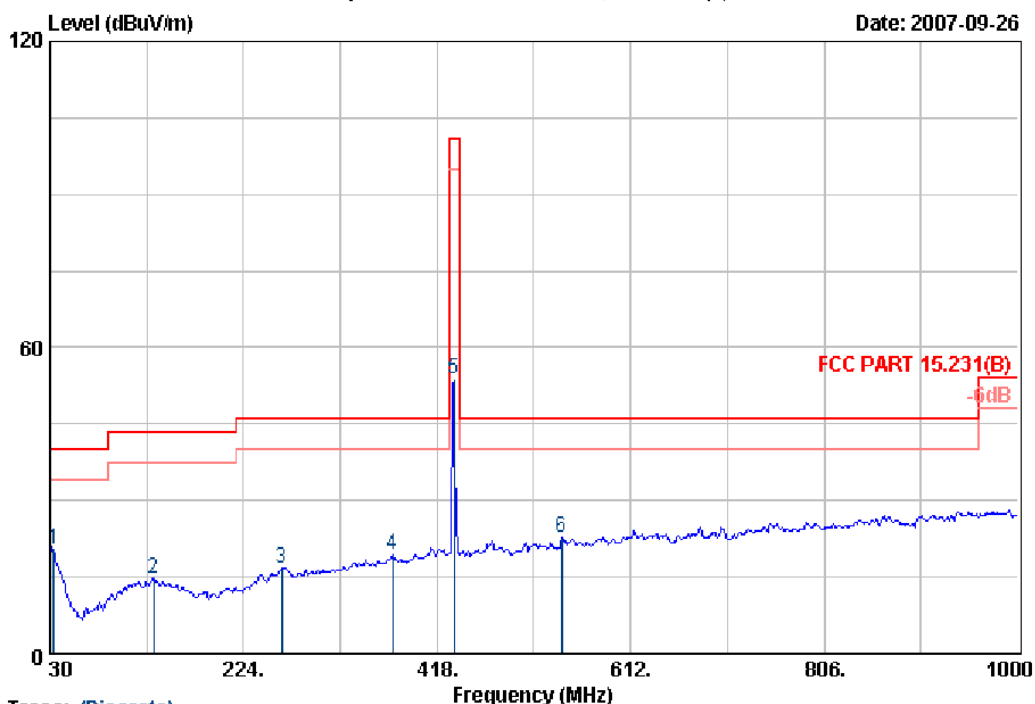


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Data: 2

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Date: 2007-09-26



Trace: (Discrete)

Site no. :	3# Chamber Radiation	Data no. :	2
Dis. / Ant. :	3m 2598	Ant. pol. :	HORIZONTAL
Limit :	FCC PART 15.231(B)	Engineer :	Skyle
Env. / Ins. :	24°C/56% ESVS20	M/N:	SG810
EUT :	New Remote Part Machine		
Power Rating :	DC 12V		
Test mode :	TX 433.92MHz		
Memo :			

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	33.88	17.48	0.70	30.15	20.47	40.00	19.53	QP
2	133.79	11.94	1.14	29.26	14.73	43.50	28.77	QP
3	261.83	13.98	1.55	28.57	16.88	46.00	29.12	QP
4	373.38	15.62	1.78	29.68	19.41	46.00	26.59	QP
5	435.15	17.00	1.95	34.80	53.75	100.80	47.05	Peak
6	543.13	19.04	2.13	30.09	22.62	46.00	23.38	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Fundamental and Harmonics Average Result

Freq(MHz)	Peak Level (dBμV/m)	PDCF(dBμV/m) (see Section 8)	Average Level (dBμV/m)	Limit(dBμV/m) (average)	Conclusion
435.15	53.75	-8.4	45.35	80.80	PASS

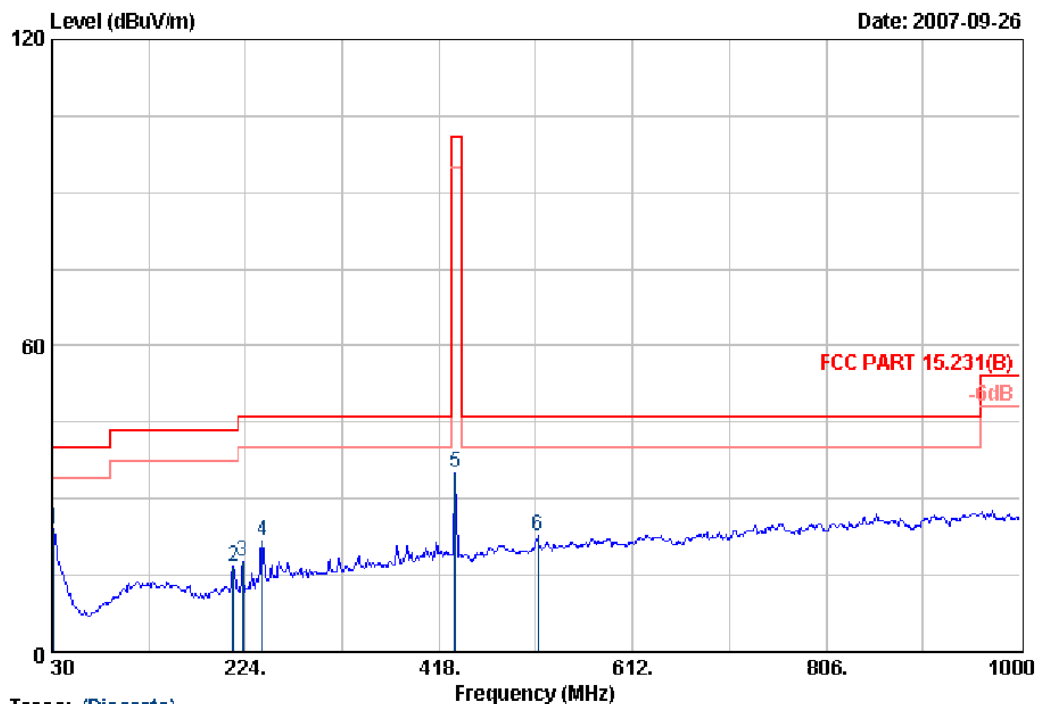


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Data: 1

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Date: 2007-09-26



Trace: (Discrete)

Site no. : 3# Chamber Radiation Data no. : 1
 Dis. / Ant. : 3m 2598 Ant. pol. : VERTICAL
 Limit : FCC PART 15.231(B)
 Env. / Ins. : 24°C/56% ESVS20 Engineer : Skyle
 EUT : New Remote Part Machine M/N:SG810
 Power Rating : DC 12V
 Test mode : TX 433.92MHz
 Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	31.94	18.64	0.70	32.46	23.94	40.00	16.06	QP
2	211.39	10.32	1.37	32.25	16.59	43.50	26.91	QP
3	221.09	10.38	1.42	33.37	17.85	46.00	28.15	QP
4	240.49	11.88	1.46	35.75	21.86	46.00	24.14	QP
5	434.49	17.00	1.95	44.15	35.04	100.80	65.76	Peak
6	516.94	18.34	2.18	30.39	22.58	46.00	23.42	QP

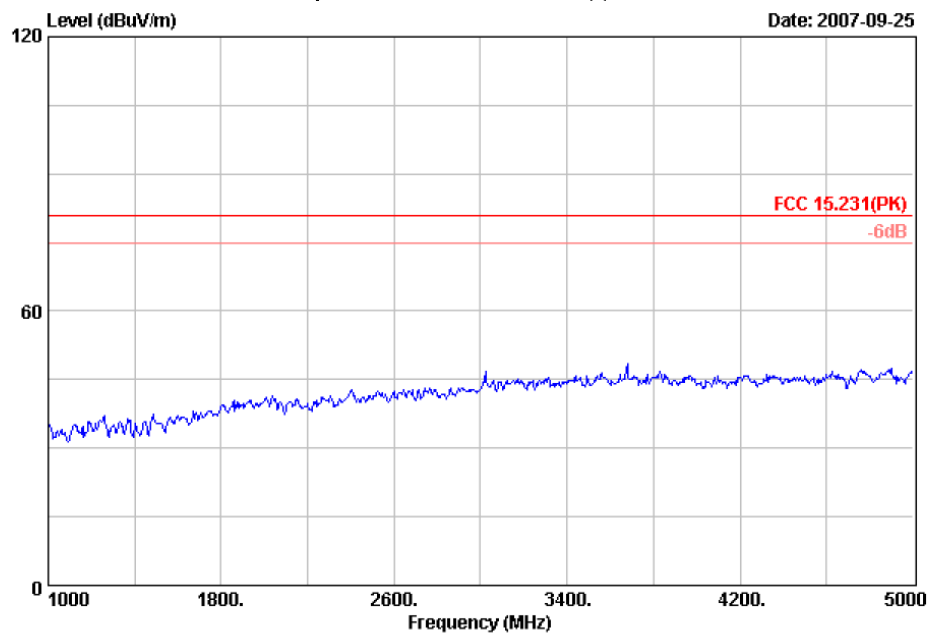
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Fundamental and Harmonics Average Result					
Freq(MHz)	Peak Level (dBμV/m)	PDCF(dBμV/m) (see Section 8)	Average Level (dBμV/m)	Limit(dBμV/m) (average)	Conclusion
434.49	35.04	-8.4	26.64	80.80	PASS



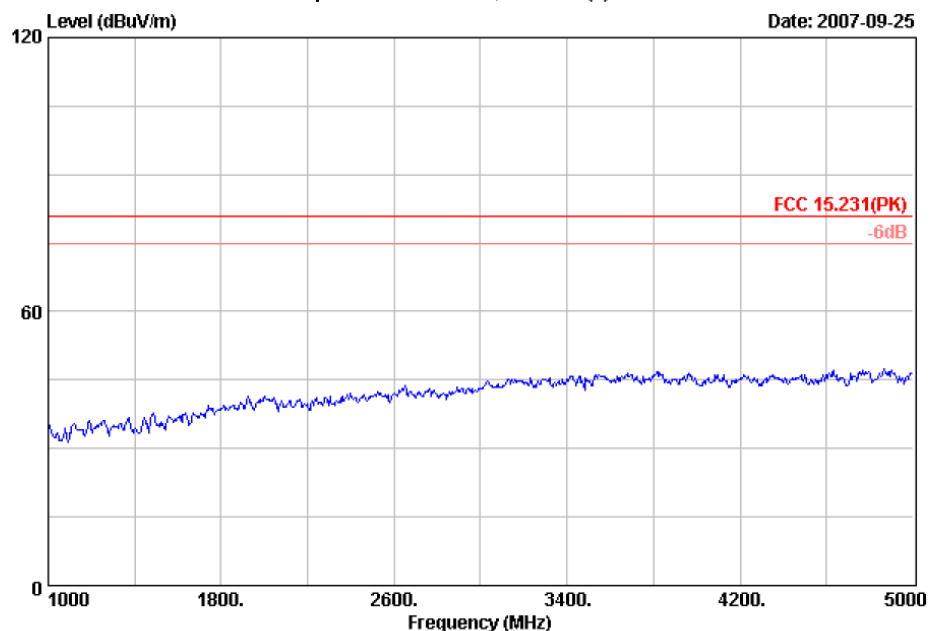
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Data: 4 File: D:\2007 Report\5\Sinoart\ACS7QH165.EMI (4)



Site no. :		Data no. : 4
Dis. / Ant. : 3m 3115 FACTOR		Ant. pol. : HORIZONTAL
Limit : FCC 15.231(PK)		
Env. / Ins. : 23°C/54%		Engineer : Skyle
EUT : New Remote Part Machine		M/N:SG810
Power Rating : DC 12V		
Test Mode : TX 433.92MHz		

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Site no. :		Data no. : 3
Dis. / Ant. : 3m 3115 FACTOR		Ant. pol. : VERTICAL
Limit : FCC 15.231(PK)		
Env. / Ins. : 23°C/54%		Engineer : Skyle
EUT : New Remote Part Machine		M/N:SG810
Power Rating : DC 12V		
Test Mode : TX 433.92MHz		

5. EDGE BAND TEST

5.1. Test Equipment

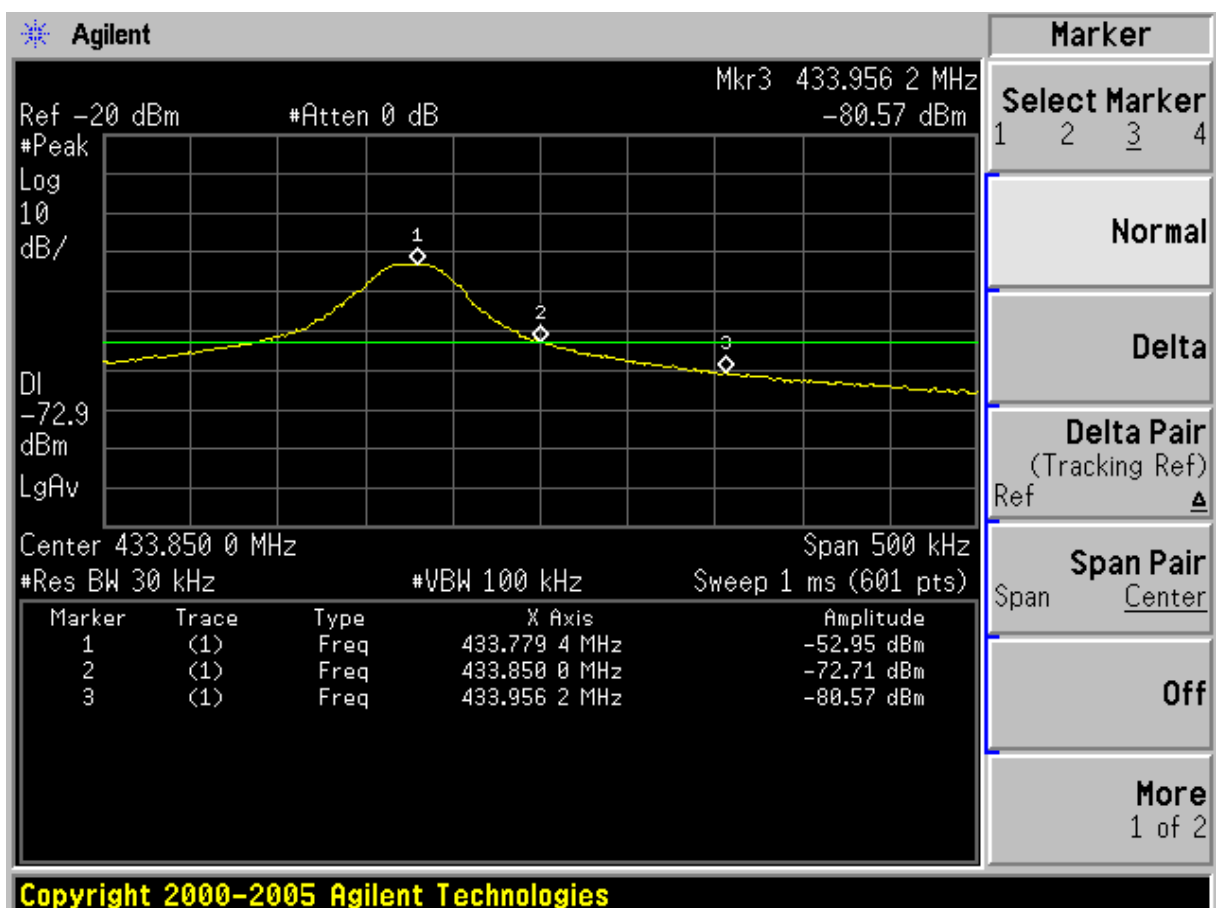
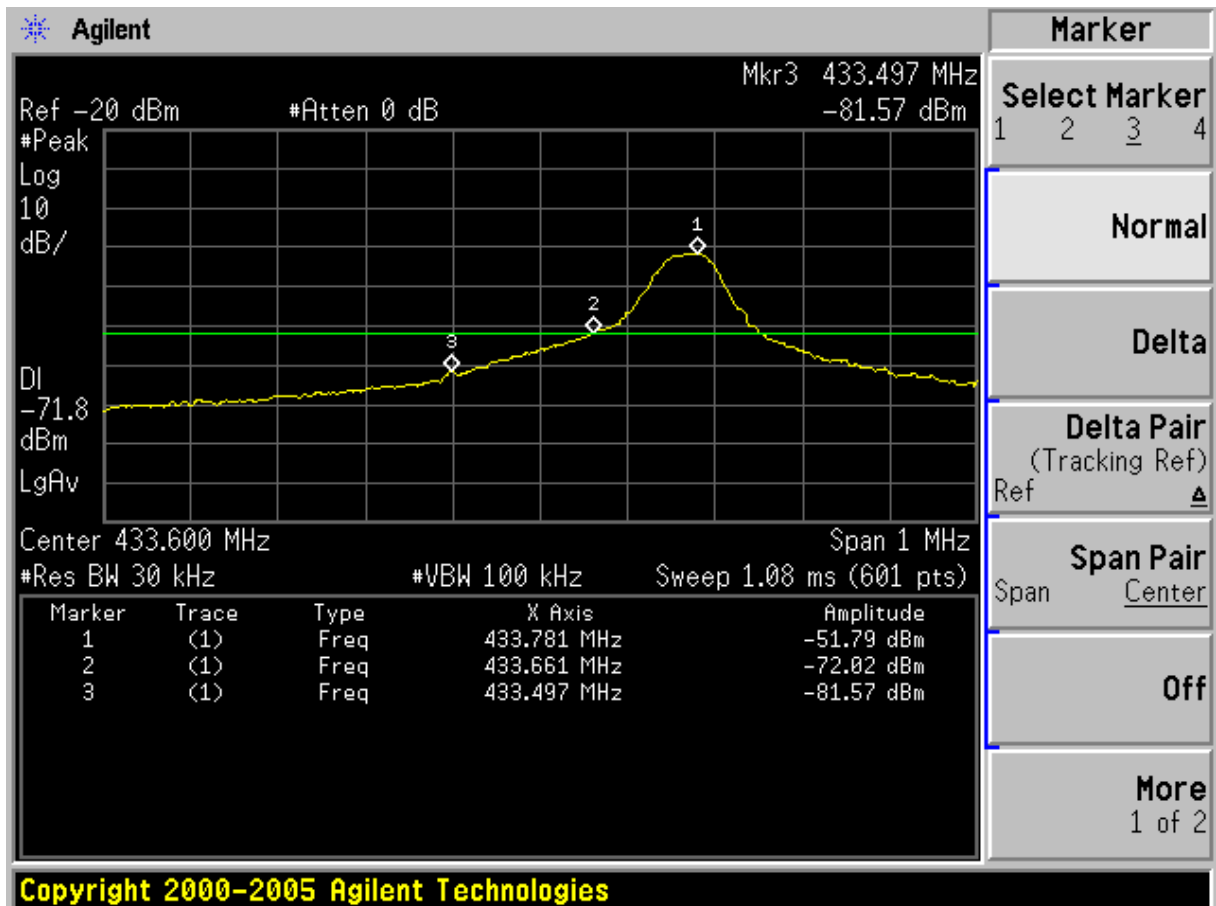
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4407B	MY41440292	May 11, 07	1 Year
2.	Amp	HP	8449B	3008A00863	May 11, 07	1 Year
3.	Antenna	EMCO	3115	9607-4877	Jan. 23, 07	1.5 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May 11, 07	1 Year

5.2. Test Information

EUT:	New Remote Fart Machine
M/N:	SG810
Test Date:	Sep.29, 2007
Ambient Temperature:	23°C
Relative Humidity:	50%
Test standard:	FCC PART 15C: 15.231
Test mode:	Transmitting
Test Frequency:	433.92MHz
Test By:	skyle

5.3. Test Results

Pass (The EUT was tested and all the test results are listed in next page.)



6. STOP TRANSMITTING TIME TEST

6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4407B	MY41440292	May 11, 07	1 Year
2.	Amp	HP	8449B	3008A00863	May 11, 07	1 Year
3.	Antenna	EMCO	3115	9607-4877	Jan. 23, 07	1.5 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May 11, 07	1 Year

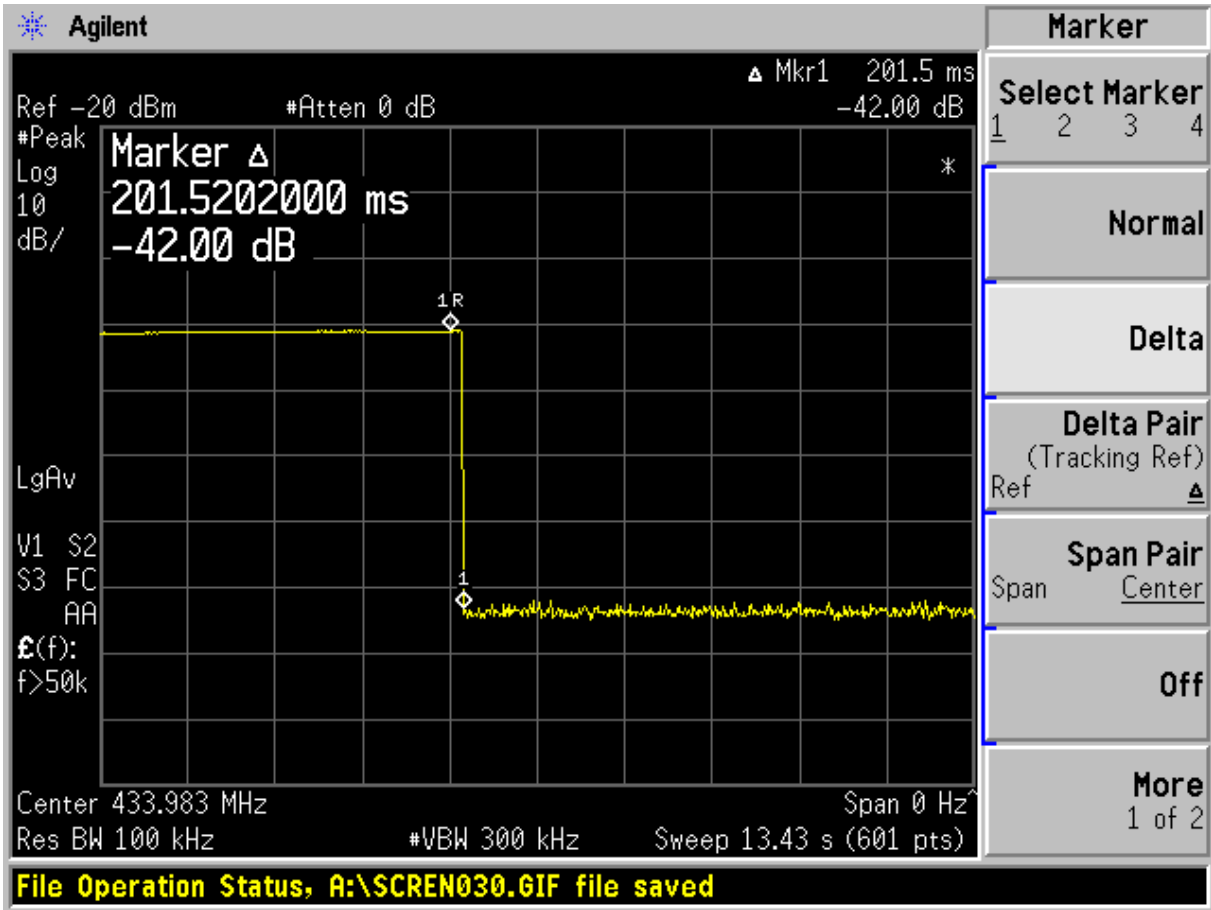
6.2. Test Information

EUT:	New Remote Fart Machine
M/N:	SG810
Test Date:	Sep.30, 2007
Ambient Temperature:	23°C
Relative Humidity:	50%
Test standard:	FCC PART 15C: 15.231
Test mode:	Transmitting
Test Frequency:	433.92MHz
Test By:	skyle

6.3. Test Results

Set the spectrum to zero span, activated the EUT by manually, And then, we could see the transmitting wave in the spectrum, when the time marker went to “1R”, released the EUT, After 201.5ms, we could see the EUT stop transmitting.

Frequency (MHz)	Stop Transmitting Time	Limit: not more than 5 seconds of being released	Conclusion
433.92	201.5ms	5s	PASS



7. 20 DB BANDWITH TEST

7.1. Test Equipment

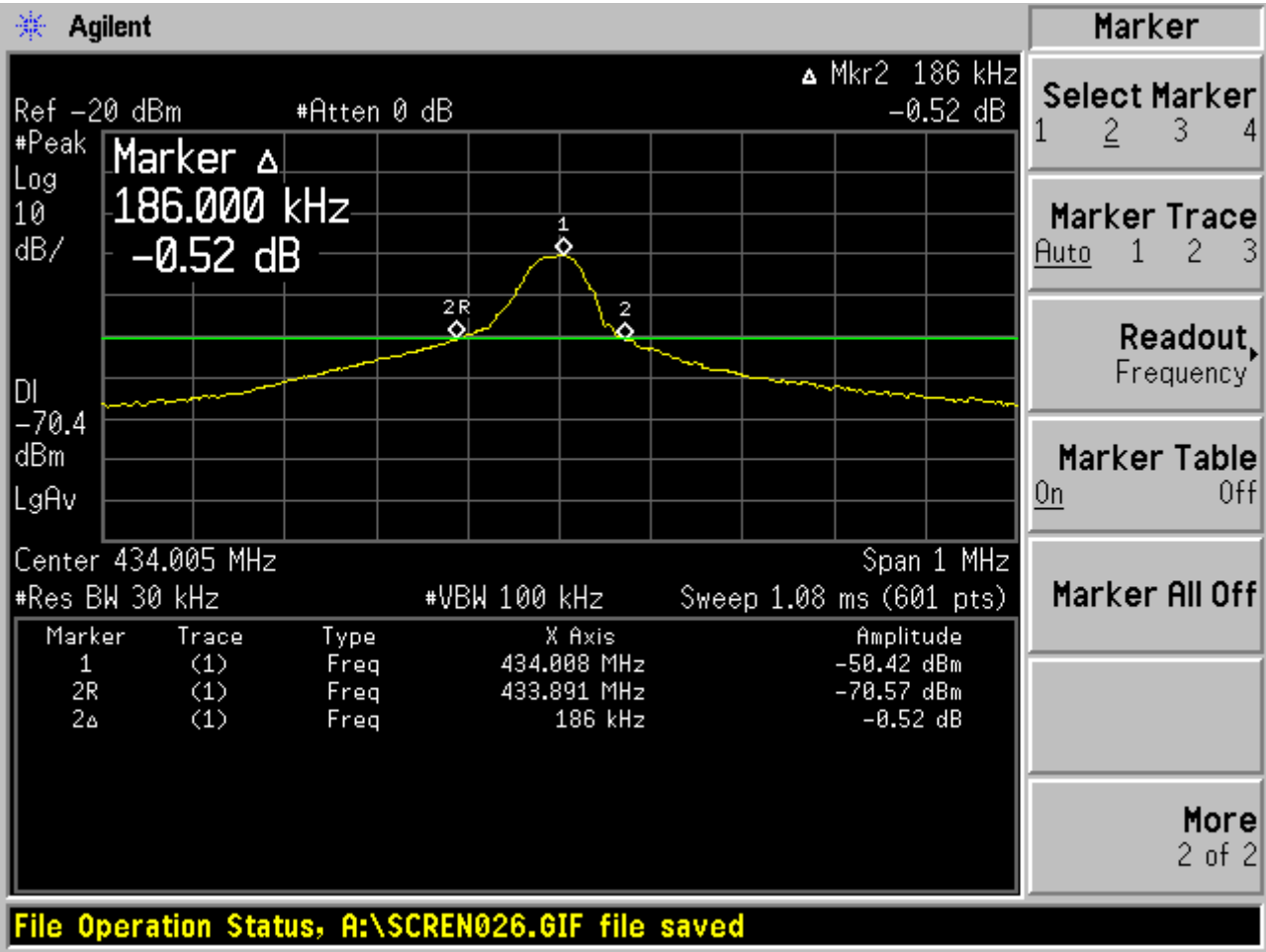
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4407B	MY41440292	May 11, 07	1 Year
2.	Amp	HP	8449B	3008A00863	May 11, 07	1 Year
3.	Antenna	EMCO	3115	9607-4877	Jan. 23, 07	1.5 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May 11, 07	1 Year

7.2. Test Information

EUT:	New Remote Fart Machine
M/N:	SG810
Test Date:	Sep.30, 2007
Ambient Temperature:	23°C
Relative Humidity:	50%
Test standard:	FCC PART 15C: 15.231
Test mode:	Transmitting
Test Frequency:	433.92MHz
Test By:	skyle

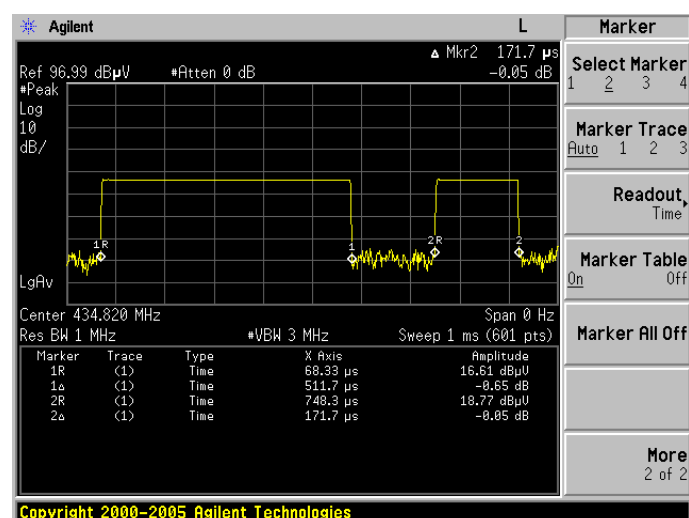
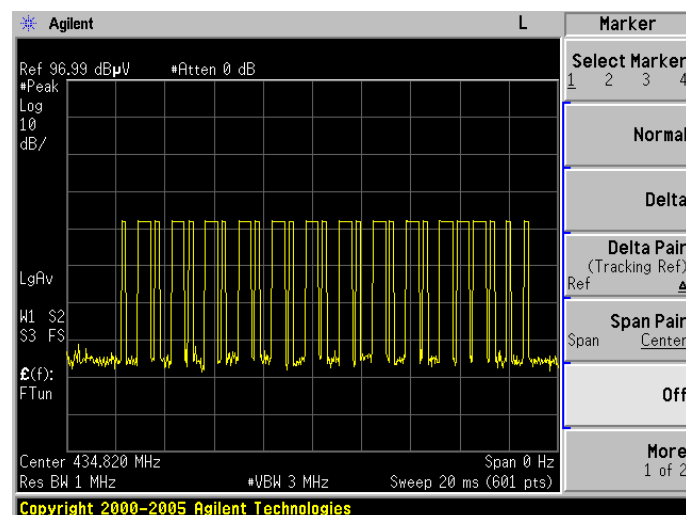
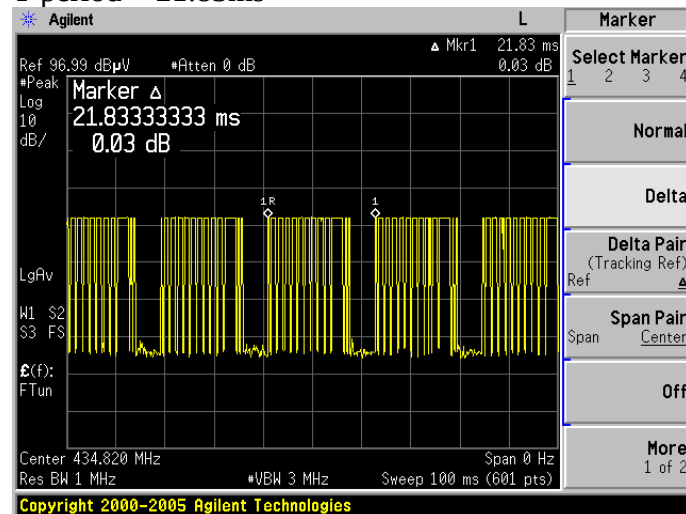
7.3. Test Results

Frequency (MHz)	20 dB Bandwidth (kHz)	Limit(kHz): No wider than 0.25% of the center frequency	Conclusion
433.92	186.00	$433.92 \times 0.25\% = 1.08\text{MHz}$	PASS



8. PULSE DESENSITIZATION CORRECTION FACTOR

T period = 21.83ms



T ontime(assumed worse case)=12*0.5117ms+13*0.1717=8.3725ms

Duty cycle= T ontime / T period=8.3725ms / 21.83ms=0.38

PDCF=20*log(Duty cycle)=20*log(0.38)=-8.4

9. DEVIATION TO TEST SPECIFICATIONS

[NONE]