

APPLICATION FOR CERTIFICATION  
On Behalf of

Mad Catz, Inc.

Remote for Nintendo Wii

Model Number: 5726

FCC ID: P25S1MC5726G1709C

Prepared for : Mad Catz, Inc.  
7480 Mission Valley Road, Suite 101, San Diego,  
California, 92108

Prepared By : Audix Technology (Shenzhen) Co., Ltd.  
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Shenzhen Science & Industrial Park,  
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Report Number : ACS-F09087  
Date of Test : May.12, 2009  
Date of Report : May.14, 2009

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## TEST REPORT CERTIFICATION

Applicant : Mad Catz, Inc.  
 EUT Description : Remote for Nintendo Wii  
 MODEL NO. : 5726  
 FCC ID : P25S1MC5726G1709C  
 POWER SUPPLY : DC 3V  
 TEST VOLTAGE : DC 3V

Test Procedure Used:

FCC Rules and Regulations Part 15 Subpart C 2008

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 : May.12, 2009

Prepared by :

Edie Huang  
 Edie Huang / Assistant

Reviewer :

Jamy Yu  
 Jamy Yu / Senior Engineer

Approved & Authorized Signer :



Ken Lu  
 Ken Lu / 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
Power Line Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.4: 2003 DA 00-705	N/A
Radiated Emission Test	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.4: 2003 DA 00-705	PASS
Carrier Frequency Separation Test	FCC Part 15: 15.247(a)(1) DA 00-705	PASS
20dB Bandwidth Test	FCC Part 15: 15.215	PASS
Number Of Hopping Frequency Test	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Dwell Time Test	FCC Part 15: 15.247(a)(1)(iii) DA 00-705	PASS
Maximum Peak Output Power Test	FCC Part 15: 15.247(b)(1) DA 00-705	PASS
Band Edge Compliance Test	FCC Part 15: 15.247(d) DA 00-705	PASS
Antenna requirement	FCC Part 15: 15.203	PASS
N/A is an abbreviation for Not Applicable.		

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Product name : Remote for Nintendo Wii

Model Number : 5726

FCC ID : P25S1MC5726G1709C

Operation frequency : 2402MHz~2480MHz

Radio Technology : Bluetooth

Modulation : GFSK

Power Supply : DC 3V  
(Note: New batteries were used for all test.)

Applicant : Mad Catz, Inc.  
7480 Mission Valley Road, Suite 101, San Diego, California,  
92108

Date of Test : May.12, 2009

Date of Receipt : May.10, 2009

Sample Type : Prototype production

## 2.2. Test Facility

### Site Description

- Name of Firm : Audix Technology (Shenzhen) Co., Ltd.  
No. 6, Ke Feng Rd., 52 Block, Shenzhen Science & Industrial Park, Nantou, Shenzhen, Guangdong, China
- 3m Anechoic Chamber : Mar. 31, 2009 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, 2009
- Accredited by NVLAP, USA  
NVLAP Code: 200372-0  
Apr.01, 2009

## 2.3. Test Uncertainty (95% confidence levels, k=2)

No.	Test Item	Uncertainty	Memo
1	Uncertainty for Radiation Emission test in 3m chamber	3.86 dB	Polarize: V
		4.3 dB	Polarize: H
2	Uncertainty for DC power test	0.056 %	
3	Uncertainty for test site temperature and humidity	0.1°C	
		1%	

### **3. POWER LINE CONDUCTED EMISSION TEST**

According to Paragraph (f) of FCC Part 15 section 15.207, 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

Frequency rang: 30~1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	Dec.05,08	1/2 Year
2.	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 09	1 Year
3.	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 09	1 Year
4.	Amplifier	HP	8447D	2648A04738	May.08, 09	1/2 Year
5.	Bilog Antenna	Schaffner	CBL6111C	2598	Nov.10, 08	1 Year
6.	RF Cable	JINGCHENG	JB Y400	3# Chamber No.1	May.08, 09	1/2 Year
7.	RF Cable	JINGCHENG	JB Y400	3# Chamber No.2	May.08, 09	1/2 Year
8.	RF Cable	JINGCHENG	JB Y400	3# Chamber No.3	May.08, 09	1/2 Year
9.	RF Cable	JINGCHENG	JB Y400	3# Chamber No.4	May.08, 09	1/2 Year
10.	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 09	1/2 Year

Frequency rang: above 1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 09	1 Year
2.	Horn Antenna	EMCO	3115	9607-4877	May.27, 08	1.5 Year
3.	Horn Antenna	EMCO	3116	00060088	May.27, 08	1Year
4.	Amplifier	Agilent	8449B	3008A02495	Nov.24,08	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX1 02	28620/2	May.08, 09	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX1 02	271471/4	May.08, 09	1 Year
7.	RF Cable	Hubersuhner	SUCOFLEX1 02	29086/2	May.08, 09	1 Year

### 4.2. Block Diagram of Test Setup

#### 4.2.1. Block Diagram of connection between EUT and simulators

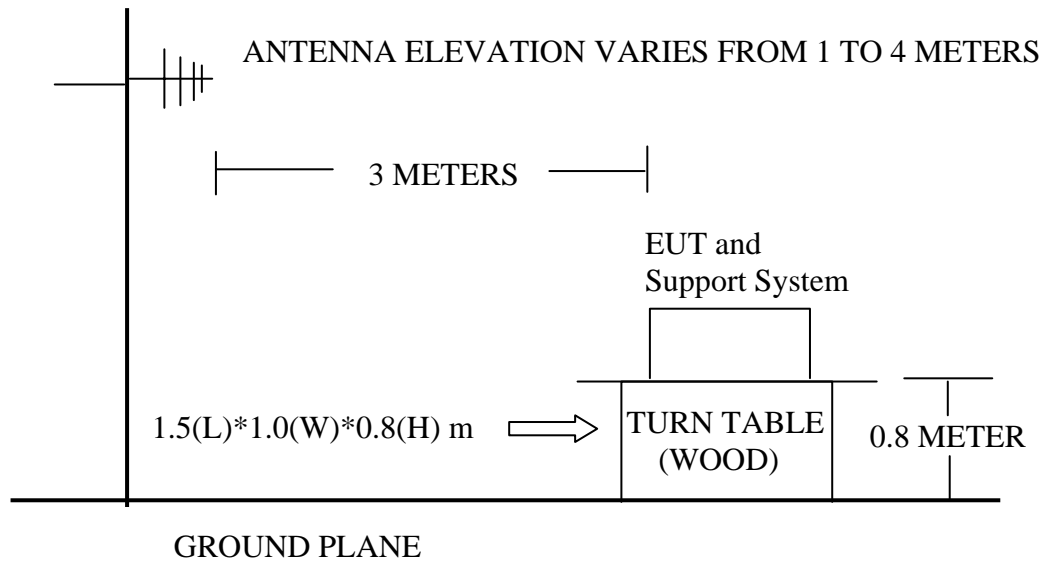


*(EUT: Remote for Nintendo Wii )*



4.2.2. Anechoic Chamber Setup Diagram

ANTENNA TOWER



4.3. Radiated Emission Limit Standard

4.3.1. 15.209 limits

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
Above 1000	3	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.

## 4.3.2. 15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	( <sup>2</sup> )

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

## 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. Remote for Nintendo Wii (EUT)

Model Number : 5726; 9656  
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 worked in test mode (Running) and tested 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.

This test was performed with EUT in X, Y, Z position, and the worse case was found when EUT in X position as the test photo indicated.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

#### 4.7. Radiated Emission Test Results

**PASS.**

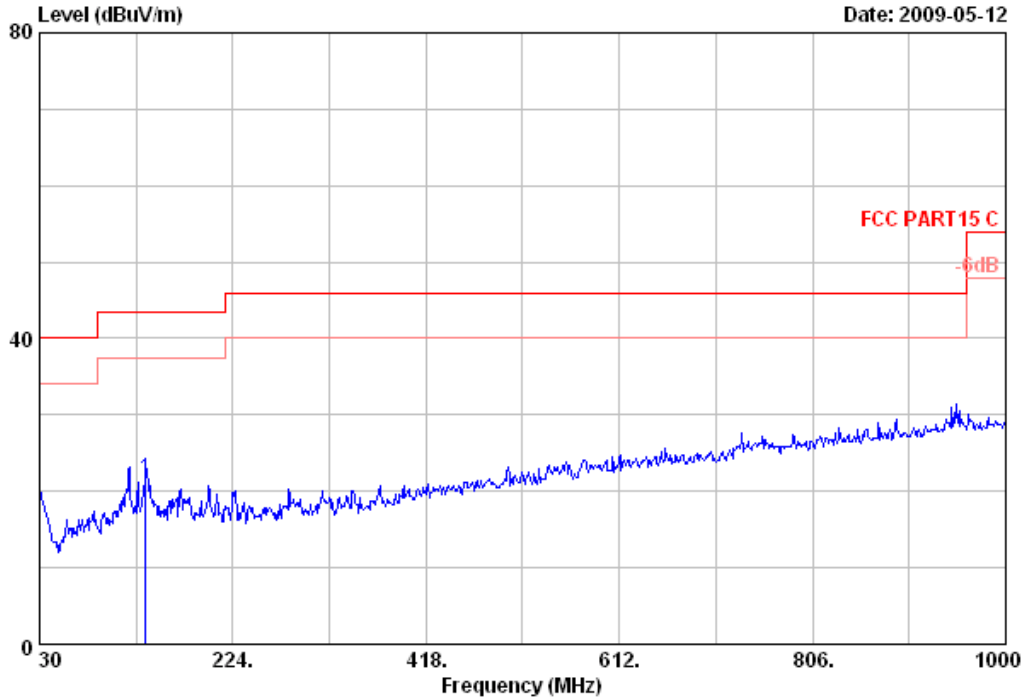
All the emissions from 30MHz to 25GHz were comply with the 15.209 and 15.247 Limit.

Test Frequency: 30MHz-1000MHz



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Data: 22 File: E:\2009 report data\M\Mad Catz\ACS90H106R1.EM6 (22)



Site no. : 3M Chamber Data no. : 22  
 Dis. / Ant. : 3m 2598 Ant. pol. : HORIZONTAL  
 Limit : FCC PART15 C  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power Rating : DC 3V  
 Test mode : Running  
 Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	136.700	11.94	1.54	8.17	21.65	43.50	21.85	QP

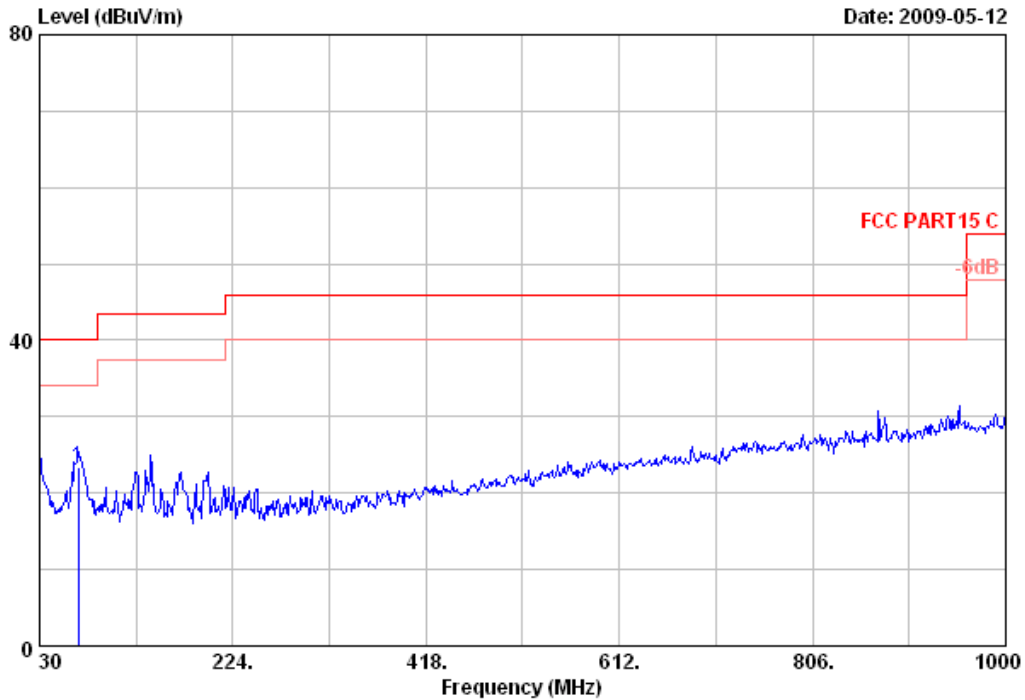
Remarks:

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



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Data: 21 File: E:\2009 report data\M\Mad Catz\ACS9QH106R1.EM6 (22)



Site no. : 3M Chamber Data no. : 21  
 Dis. / Ant. : 3m 2598 Ant. pol. : VERTICAL  
 Limit : FCC PART15 C  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power Rating : DC 3V  
 Test mode : Running  
 Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
-----	1	68.800	6.16	1.08	16.14	23.38	40.00	16.62	QP

Remarks:

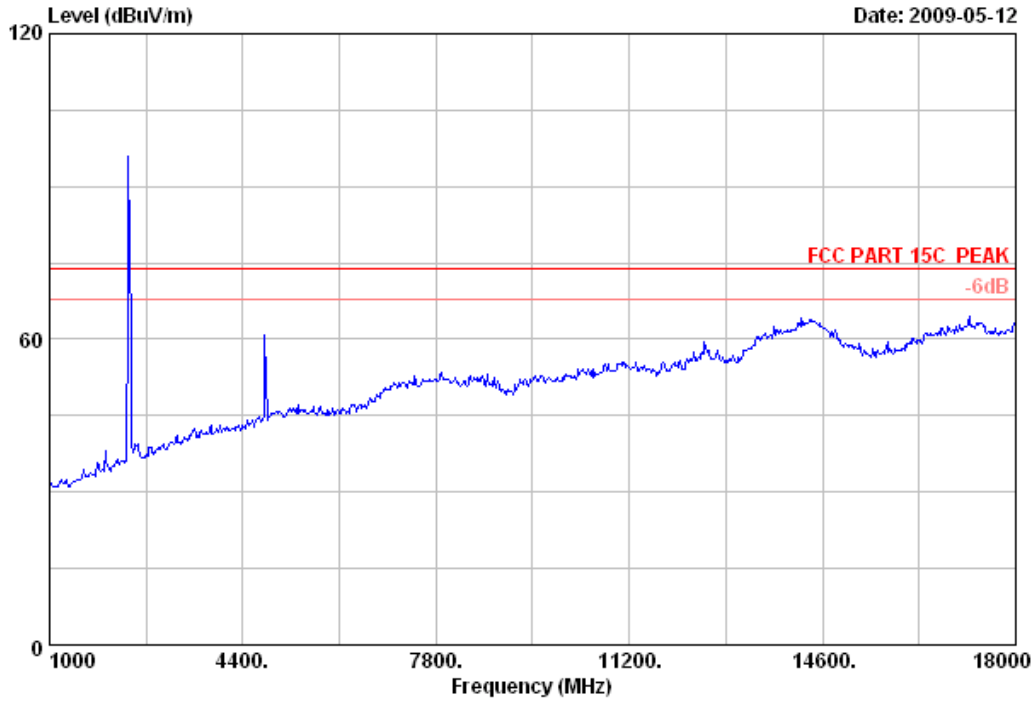
1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Test Frequency: 1GHz-18GHz



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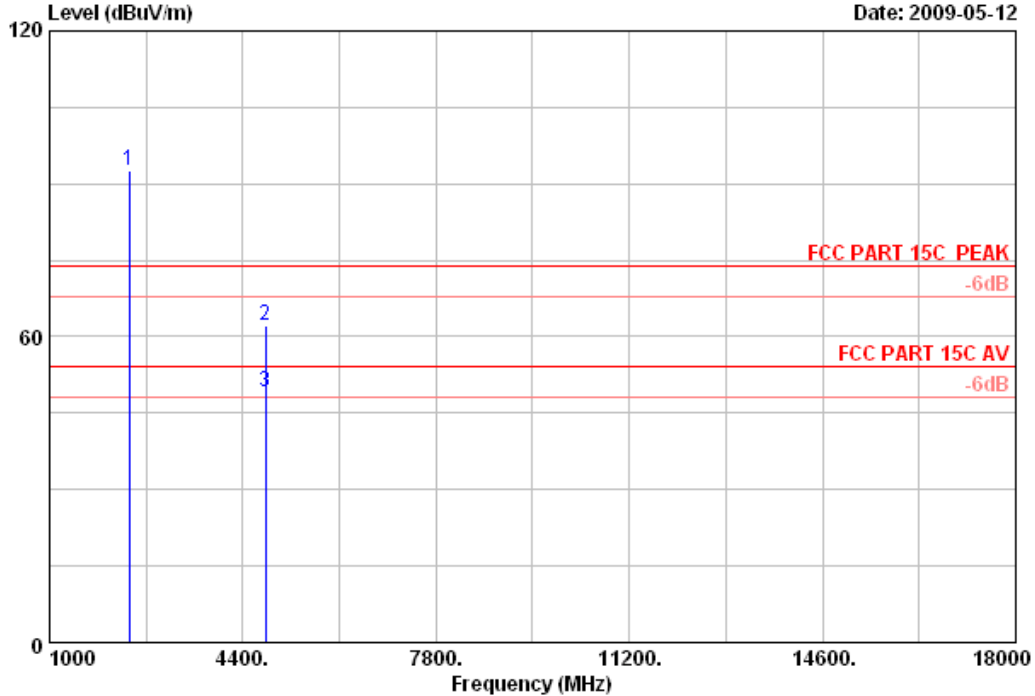


Site no.	: 3m Chamber	Data no.	: 1
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK	Engineer	: Power
Env. / Ins.	: 25°C/58%		
EUT	: Remote for Nintendo Wii		
Power	: DC 3V		
Test mode	: TX 2402MHz		
	:		
	:		



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Data: 2 File: E:\2009 report data\M\Mad Catz\ACS90H106R1.EM6 (22)



Site no. : 3m Chamber Data no. : 2  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : TX 2402MHz  
 :  
 :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.000	28.46	6.73	35.12	92.42	92.49	74.00	-18.49	Peak
2	4804.000	34.36	10.53	34.60	51.75	62.04	74.00	11.96	Peak
3	4804.000	34.36	10.53	34.60	38.87	49.16	54.00	4.84	Average

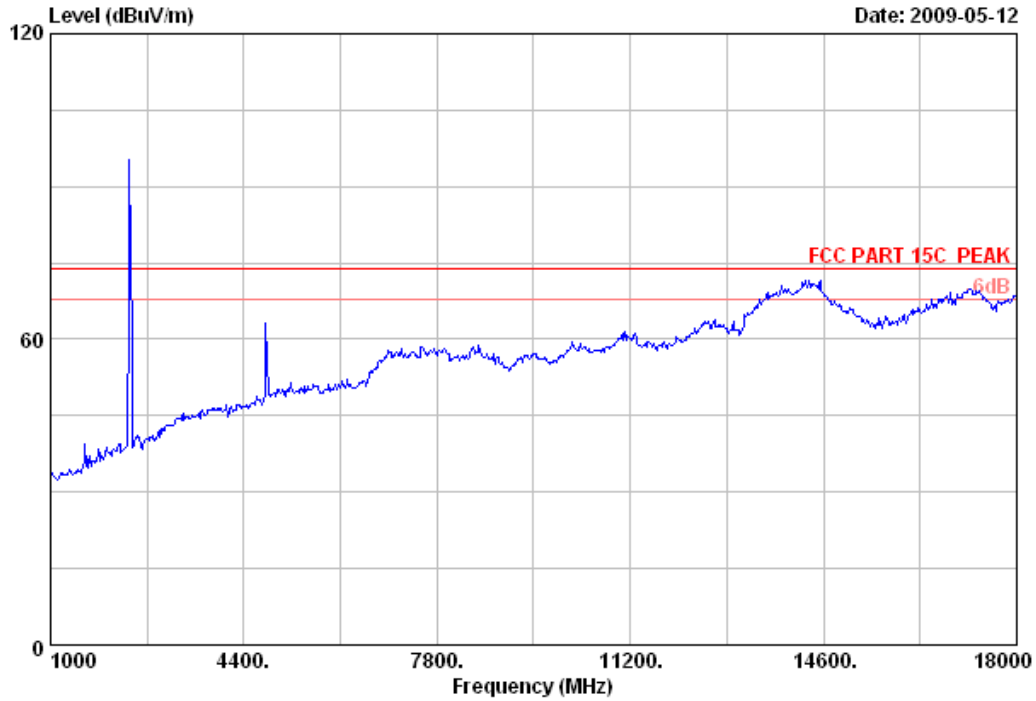
Remarks:

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



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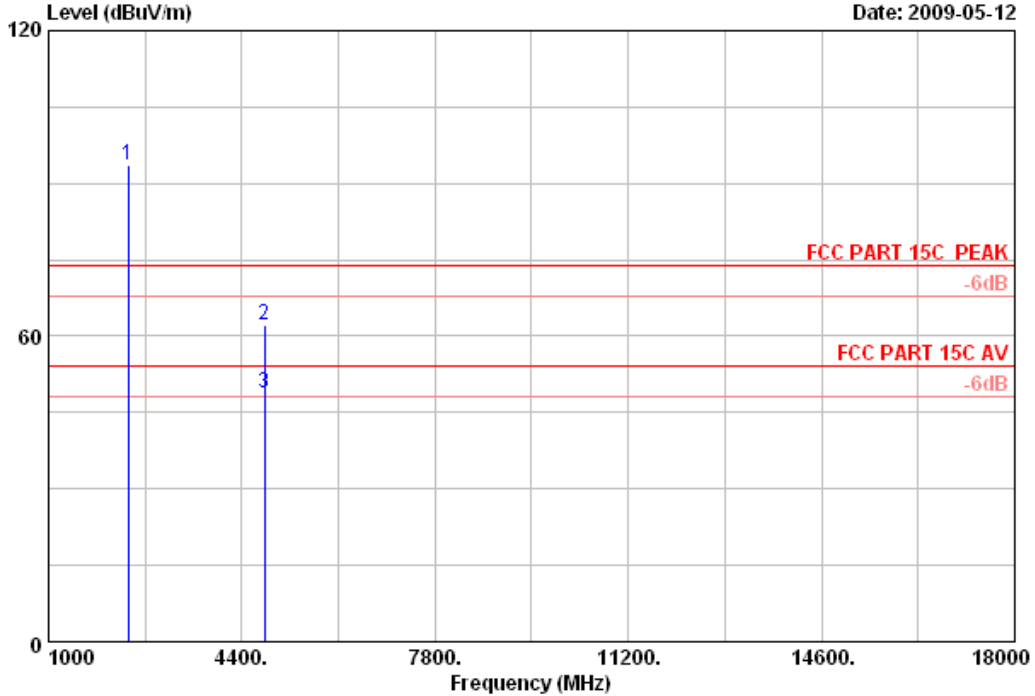
Site no.	: 3m Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 25°C/58%	Engineer	: Power
EUT	: Remote for Nintendo Wii		
Power	: DC 3V		
Test mode	: TX 2402MHz		
	:		
	:		





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Data: 4 File: E:\2009 report data\M\Mad Catz\ACS9QH106R1.EM6 (22) Date: 2009-05-12



Site no. : 3m Chamber Data no. : 4  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25\*C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : TX 2402MHz  
 :  
 :

	Ant.	Cable	Amp	Emission			Margin	Remark
Freq. (MHz)	Factor (dB/m)	Loss (dB)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	(dB)	
1	28.46	6.73	35.12	93.48	93.55	74.00	-19.55	Peak
2	34.36	10.53	34.60	51.83	62.12	74.00	11.88	Peak
3	34.36	10.53	34.60	38.59	48.88	54.00	5.12	Average

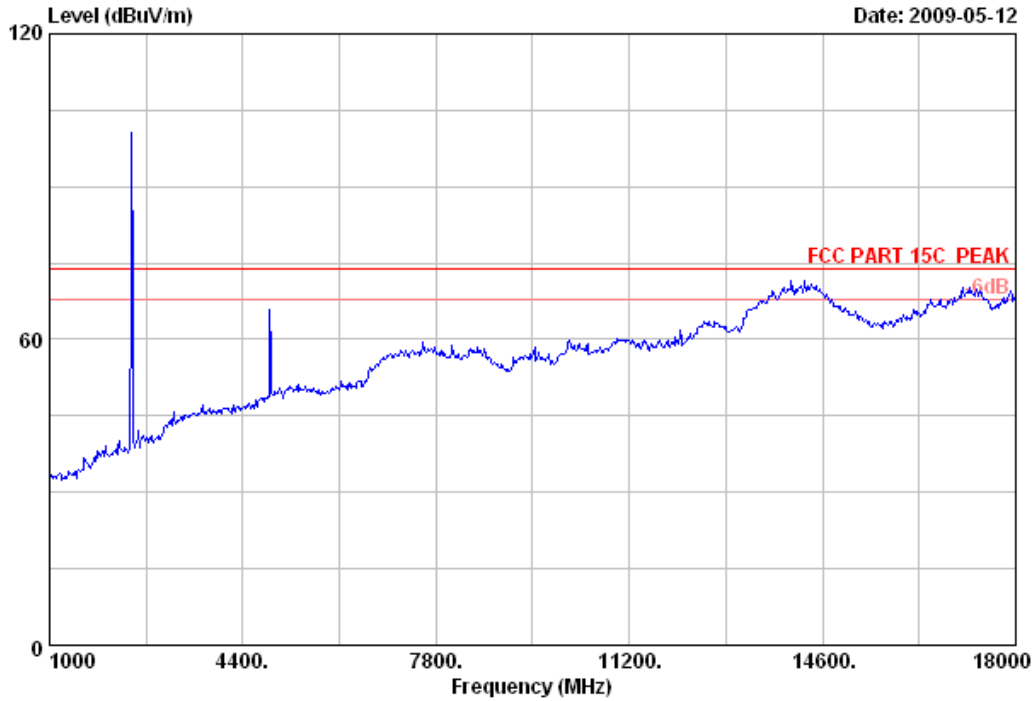
Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



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Data: 5 File: E:\2009 report data\M\Mad Catz\ACS9QH106R1.EM6 (22)

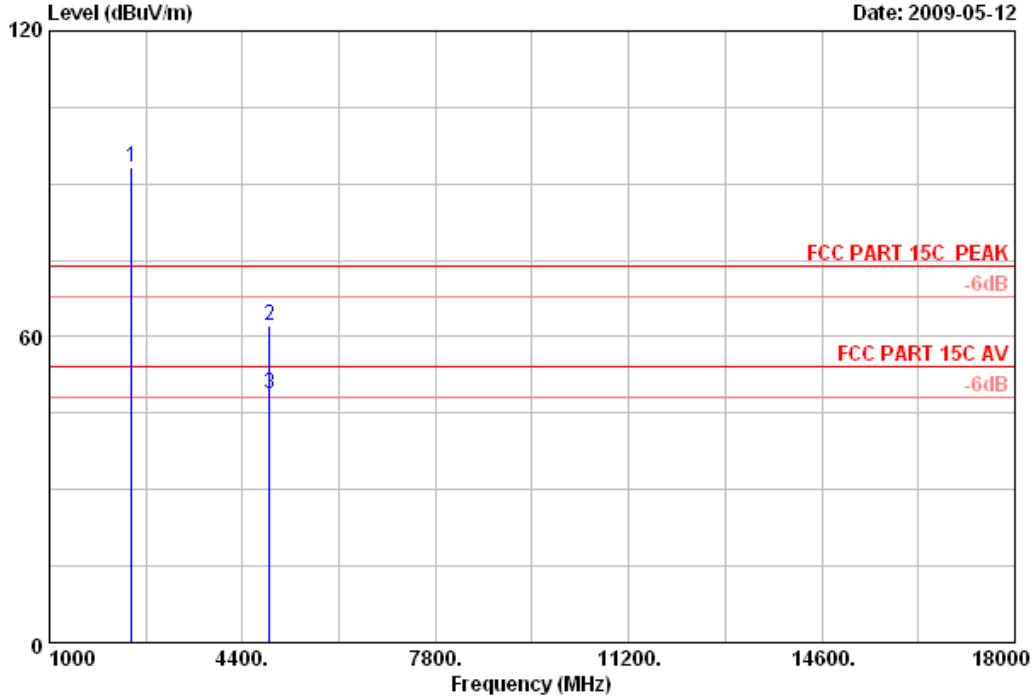


Site no.	: 3m Chamber	Data no.	: 5
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 25*C/58%	Engineer	: Power
EUT	: Remote for Nintendo Wii		
Power	: DC 3V		
Test mode	: TX 2441MHz		
	:		
	:		



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Data: 6 File: E:\2009 report data\MMad Catz\ACS90H106R1.EM6 (22)



Site no. : 3m Chamber Data no. : 6  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : TX 2441MHz  
 :  
 :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.000	28.53	6.80	35.11	92.95	93.17	74.00	-19.17	Peak
2	4882.000	34.78	10.57	34.58	51.40	62.17	74.00	11.83	Peak
3	4882.000	34.78	10.57	34.58	38.09	48.86	54.00	5.14	Average

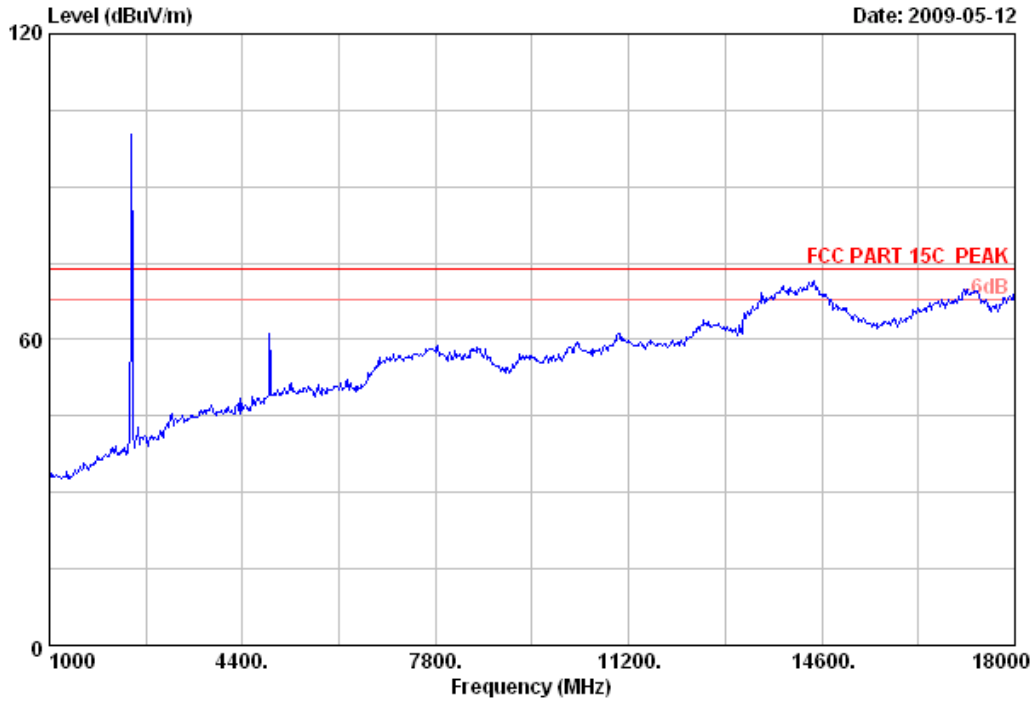
Remarks:

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



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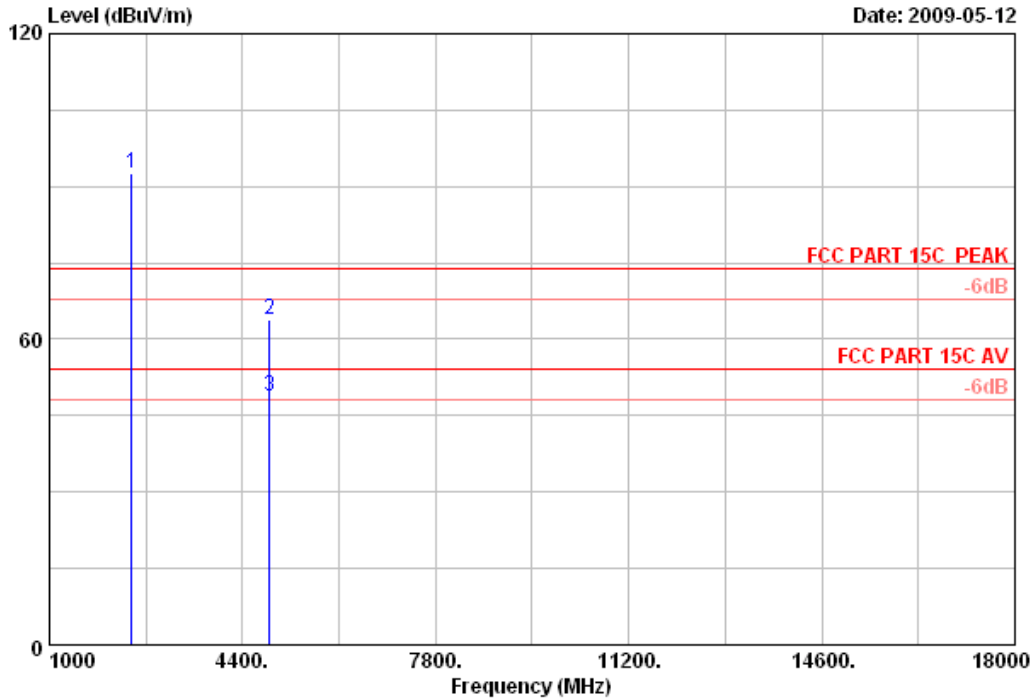


Site no.	: 3m Chamber	Data no.	: 7
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 25*C/58%	Engineer	: Power
EUT	: Remote for Nintendo Wii		
Power	: DC 3V		
Test mode	: TX 2441MHz		
	:		
	:		



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Data: 8 File: E:\2009 report data\MMad Catz\ACS9QH106R1.EM6 (22)



Site no.	: 3m Chamber	Data no.	: 8
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK	Engineer	: Power
Env. / Ins.	: 25*C/58%		
EUT	: Remote for Nintendo Wii		
Power	: DC 3V		
Test mode	: TX 2441MHz		
	:		
	:		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.000	28.53	6.80	35.11	92.47	92.69	74.00	-18.69	Peak
2	4882.000	34.78	10.57	34.58	53.03	63.80	74.00	10.20	Peak
3	4882.000	34.78	10.57	34.58	38.06	48.83	54.00	5.17	Average

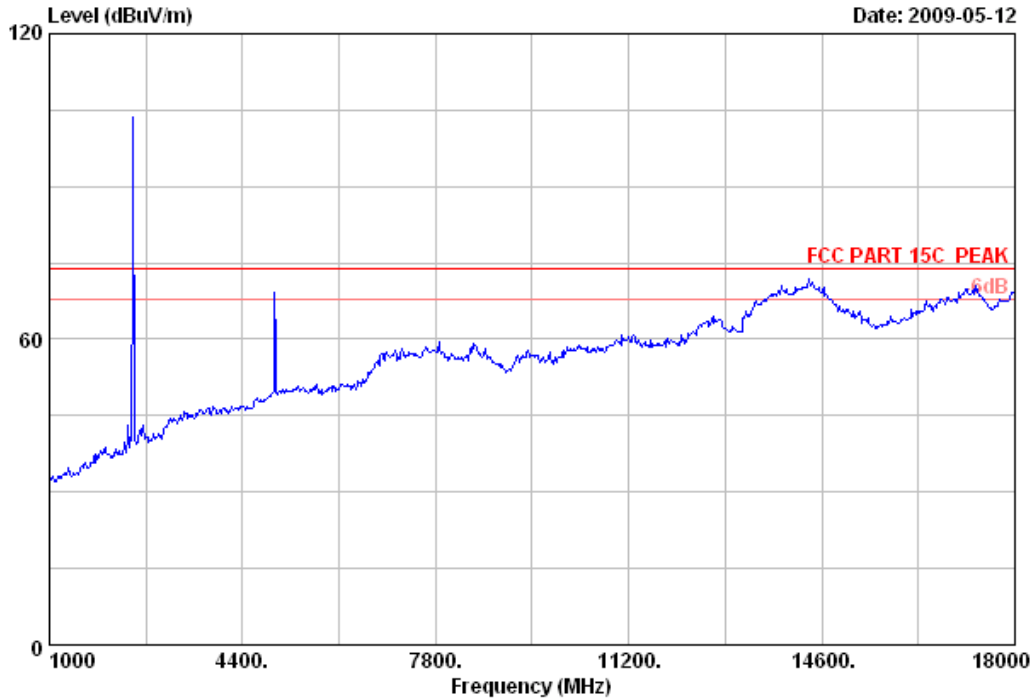
Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



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Data: 9 File: E:\2009 report data\MMad Catz\ACS90H106R1.EM6 (22)

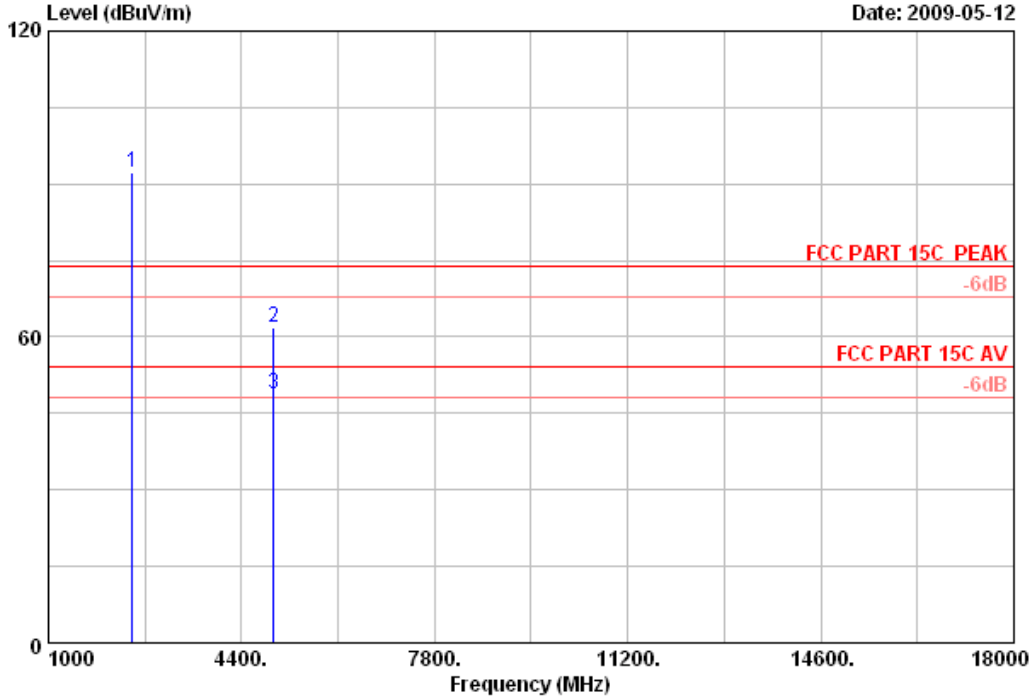


Site no.	: 3m Chamber	Data no.	: 9
Dis. / Ant.	: 3m 3115	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 25*C/58%	Engineer	: Power
EUT	: Remote for Nintendo Wii		
Power	: DC 3V		
Test mode	: TX 2480MHz		
	:		
	:		



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Data: 10 File: E:\2009 report data\MMad Catz\ACS90H106R1.EM6 (22)



Site no. : 3m Chamber Data no. : 10  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : TX 2480MHz  
 :  
 :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	28.58	6.87	35.10	92.05	92.40	74.00	-18.40	Peak
2	4960.000	35.29	10.59	34.56	50.41	61.73	74.00	12.27	Peak
3	4960.000	35.29	10.59	34.56	37.50	48.82	54.00	5.18	Average

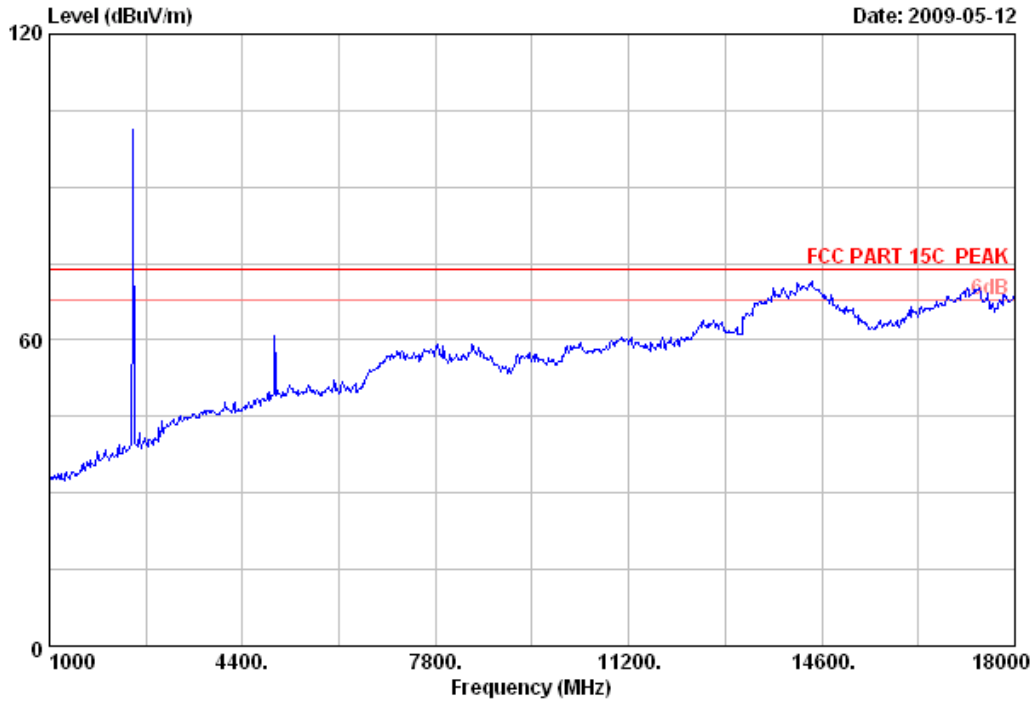
Remarks:

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



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Data: 11 File: E:\2009 report data\MMad Catz\ACS90H106R1.EM6 (22)



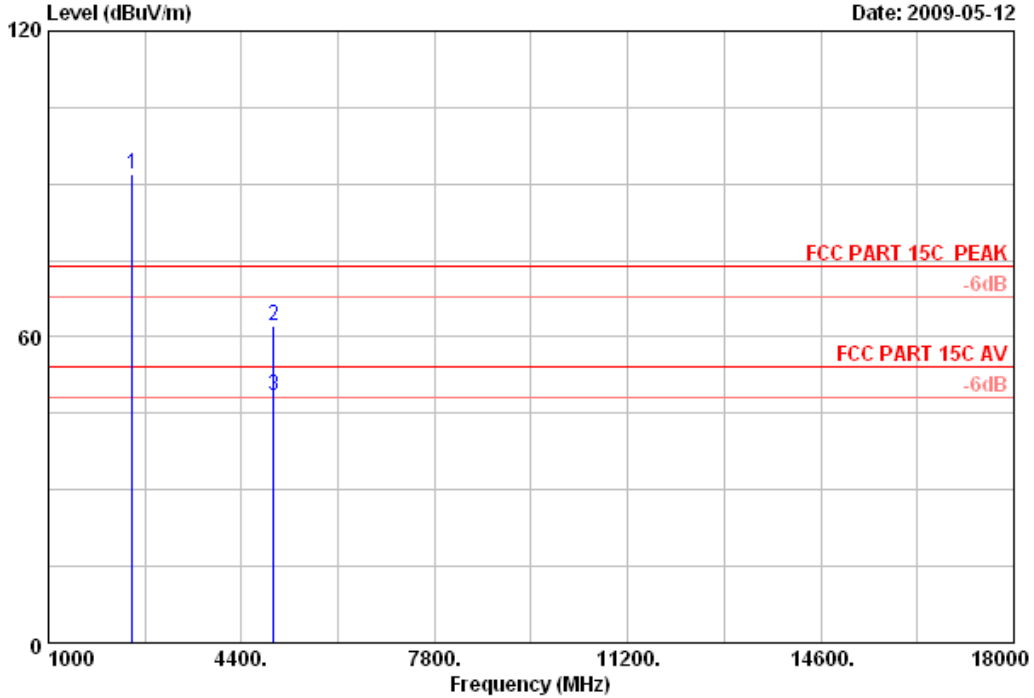
Site no.	: 3m Chamber	Data no.	: 11
Dis. / Ant.	: 3m 3115	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 25*C/58%	Engineer	: Power
EUT	: Remote for Nintendo Wii		
Power	: DC 3V		
Test mode	: TX 2480MHz		
	:		
	:		





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Data: 12 File: E:\2009 report data\MMad Catz\ACS90H106R1.EM6 (22)



Site no. : 3m Chamber Data no. : 12  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : TX 2480MHz  
 :  
 :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	28.58	6.87	35.10	91.66	92.01	74.00	-18.01	Peak
2	4960.000	35.29	10.59	34.56	50.90	62.22	74.00	11.78	Peak
3	4960.000	35.29	10.59	34.56	37.02	48.34	54.00	5.66	Average

Remarks:

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

## 5. CARRIER FREQUENCY SEPARATION TEST

### 5.1. Test Equipment

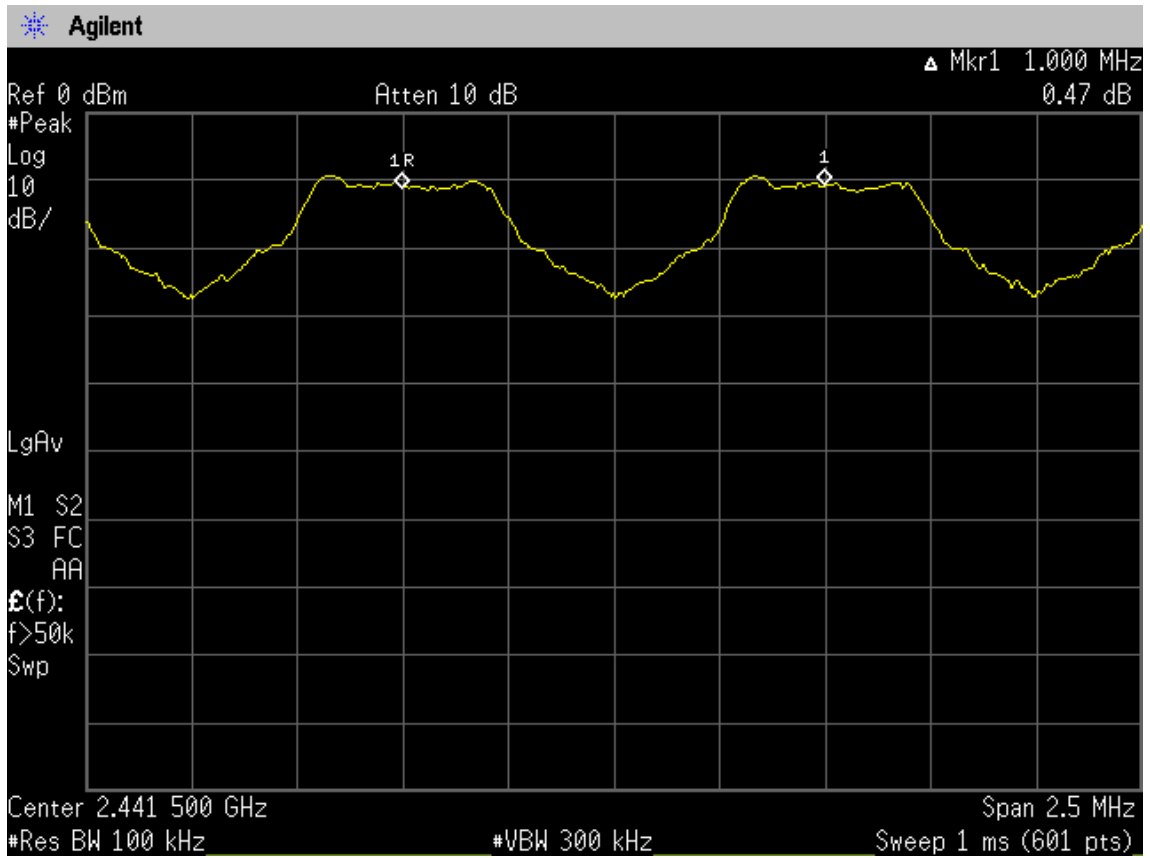
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May,08, 09	1 Year

### 5.2. Limit

Frequency hopping systems shall have hopping channel carrier frequency separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater.

### 5.3. Test Results (Pass.)

Channel separation	Conclusion
1.000MHz	PASS



## 6. 20DB BANDWIDTH TEST

### 6.1. Test Equipment

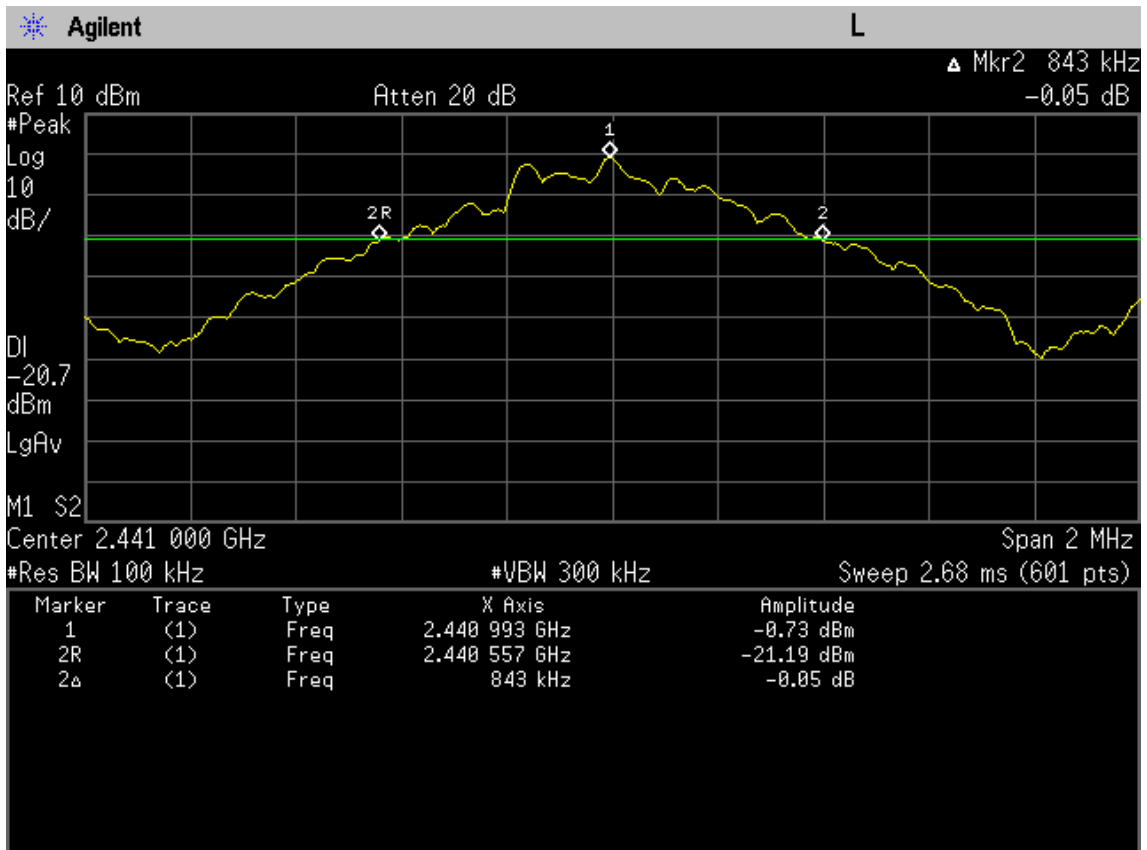
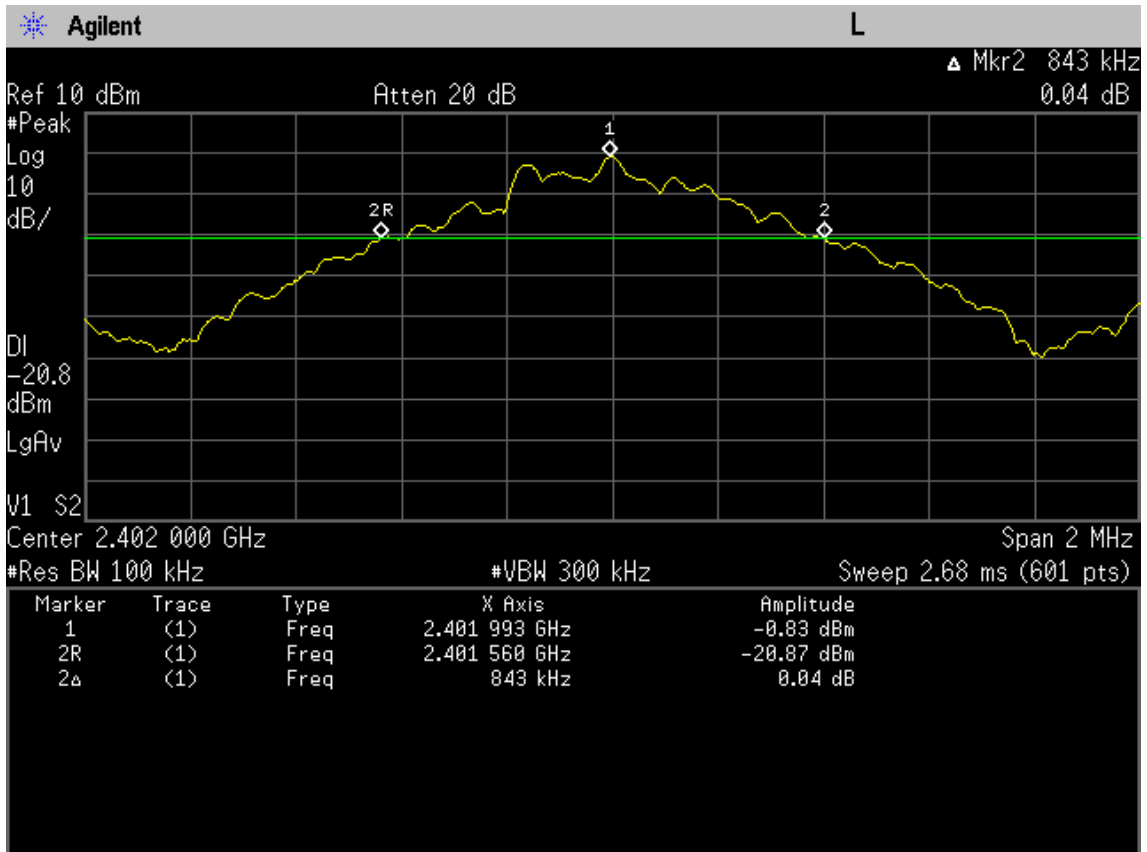
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May,08, 09	1 Year

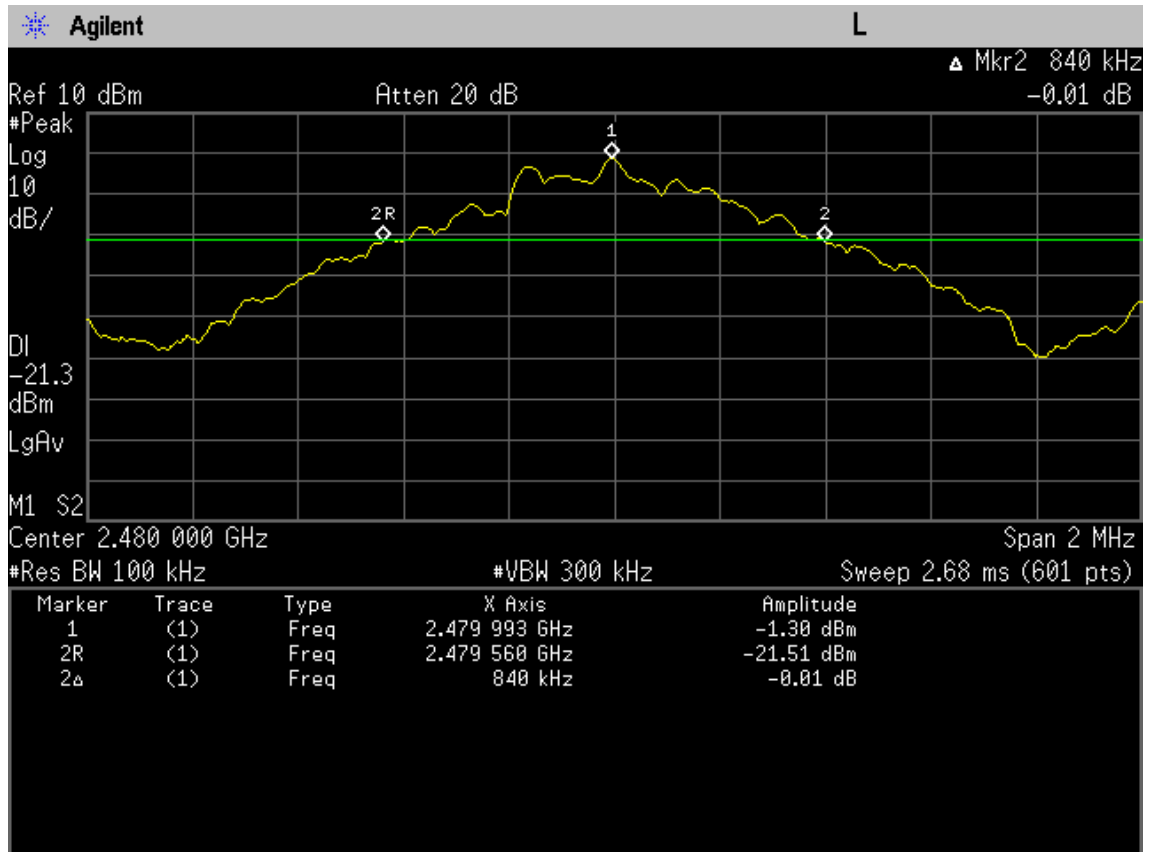
### 6.2. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

### 6.3. Test Results

CH	20dB Bandwidth (kHz)	Limit (MHz)	Conclusion
(Low)	843	---	PASS
(Mid)	843	---	PASS
(High)	840	---	PASS





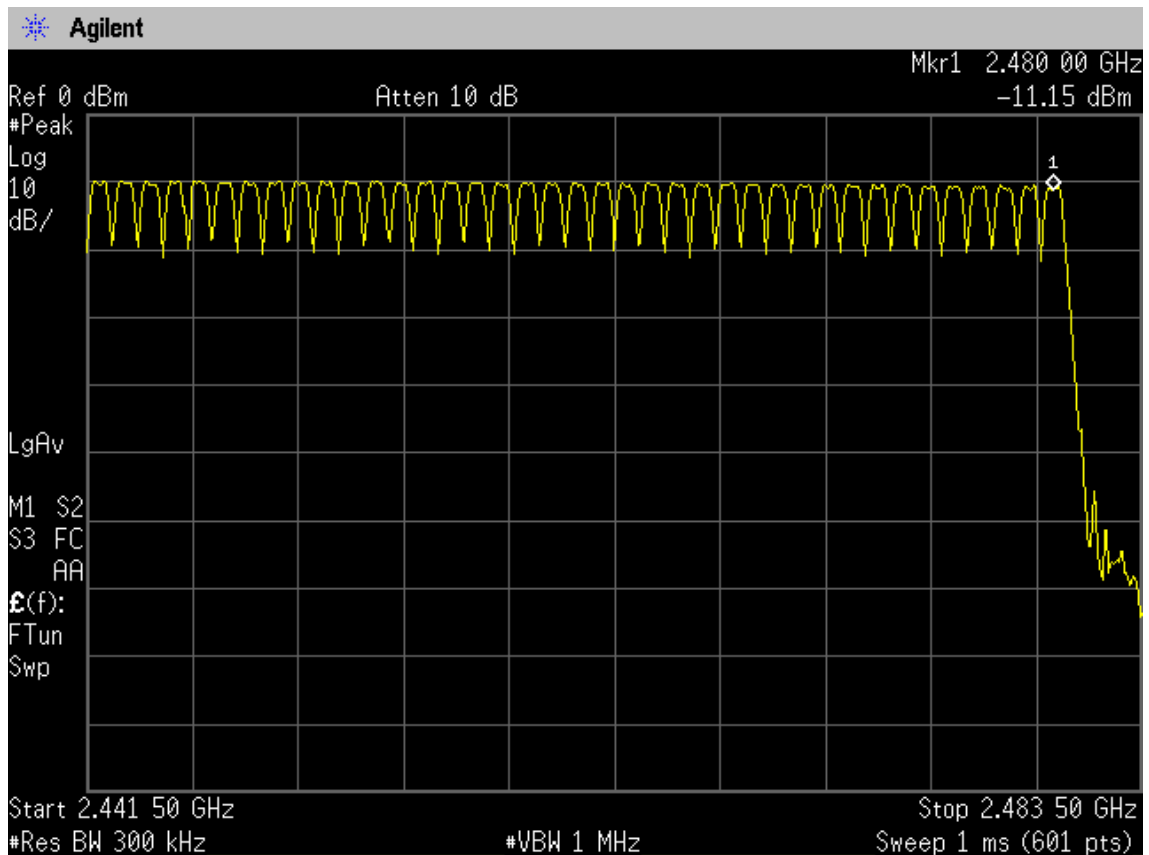
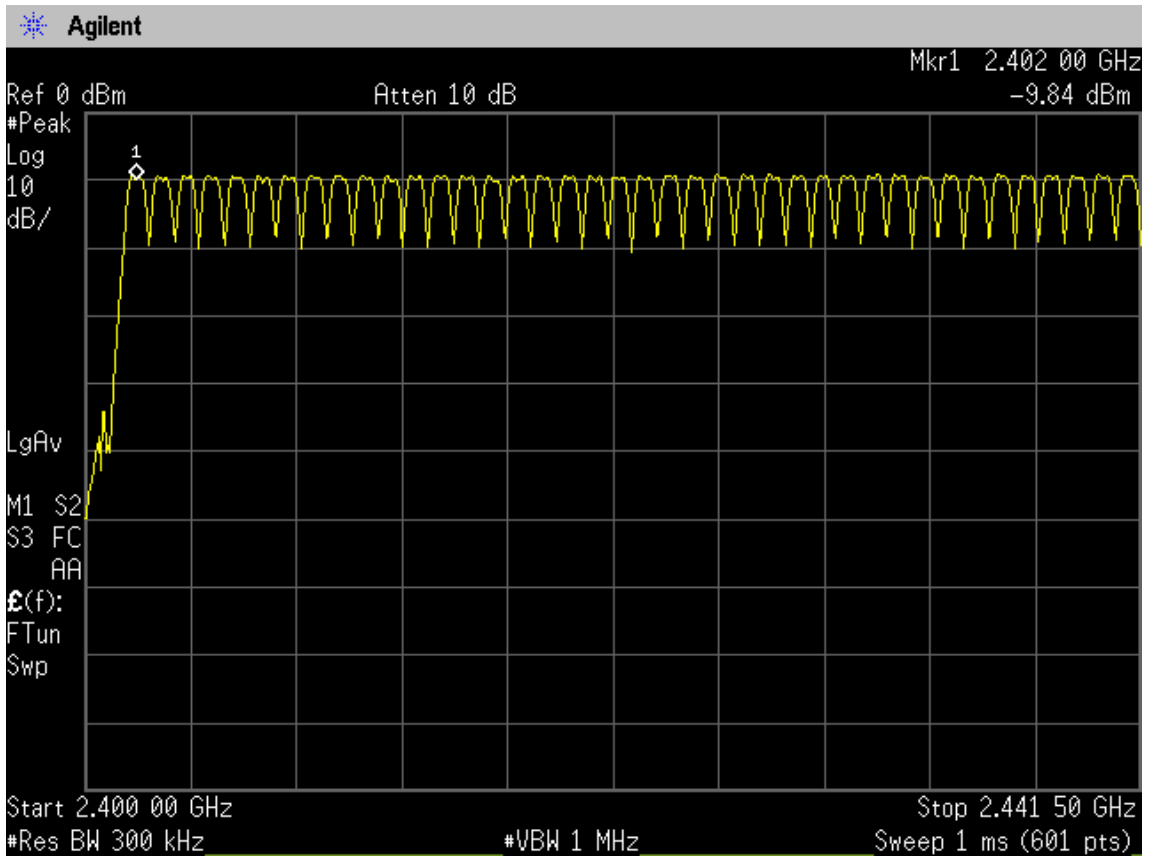
## 7. NUMBER OF HOPPING FREQUENCY TEST

### 7.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May,08, 09	1 Year
2	Attenuator	Agilent	8491B	MY39262165	May,28, 08	1 Year
3	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May,28, 08	1Year

### 7.2. Test Results

Number of channel	Limit	Conclusion
79	$\geq 15$	PASS





## 8. DWELL TIME TEST

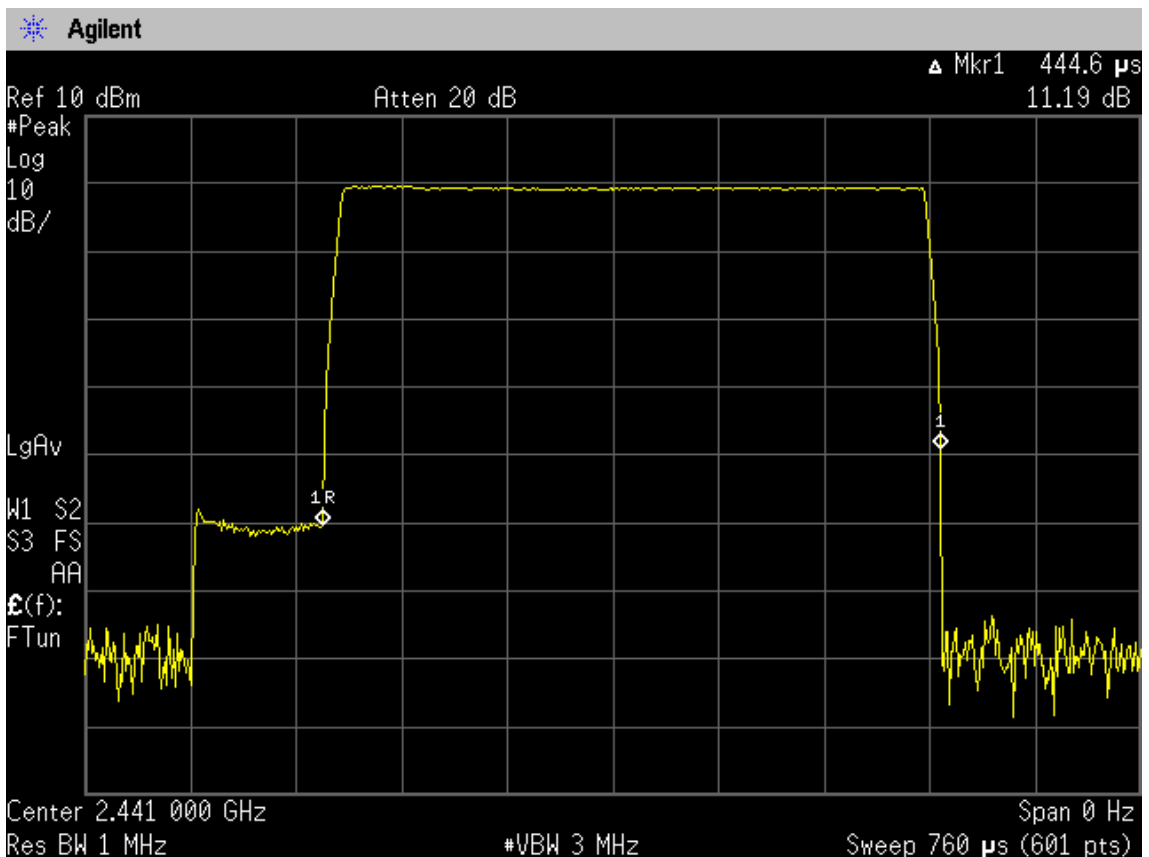
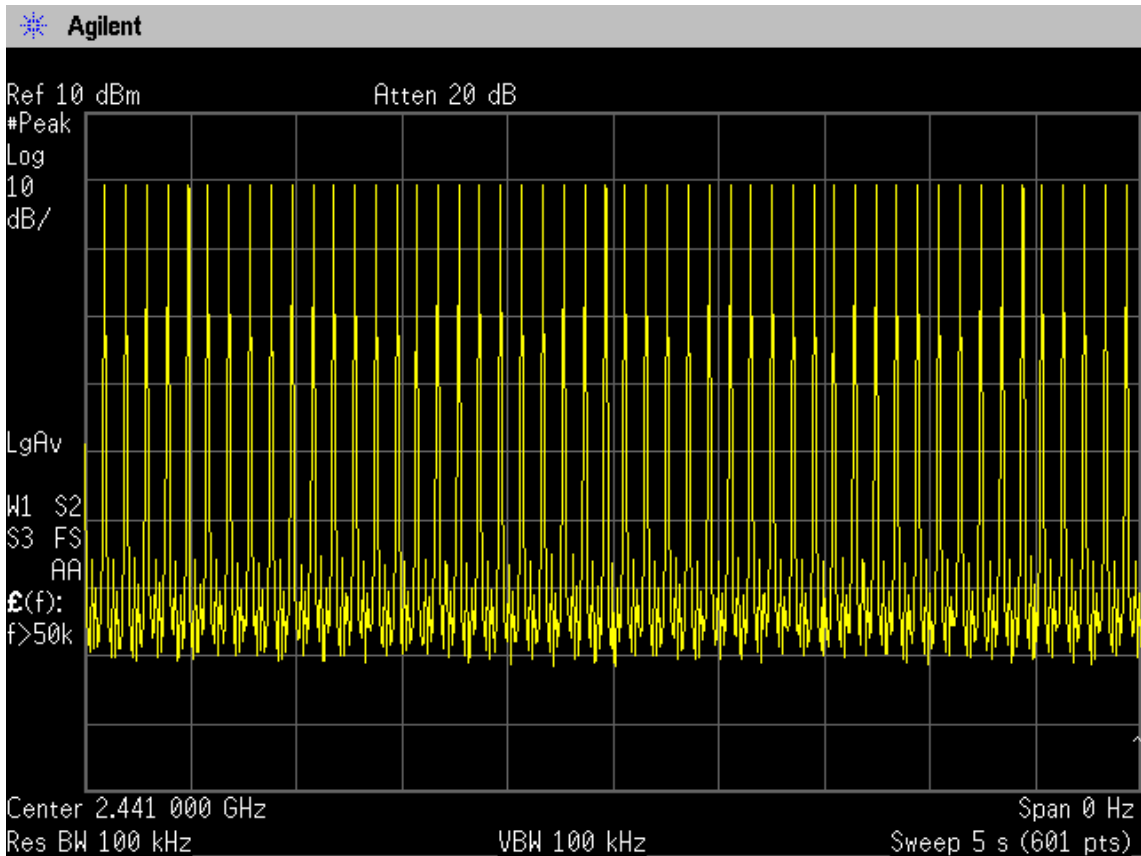
### 8.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May,08, 09	1 Year
2	Attenuator	Agilent	8491B	MY39262165	May,28, 08	1 Year
3	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May,28, 08	1Year

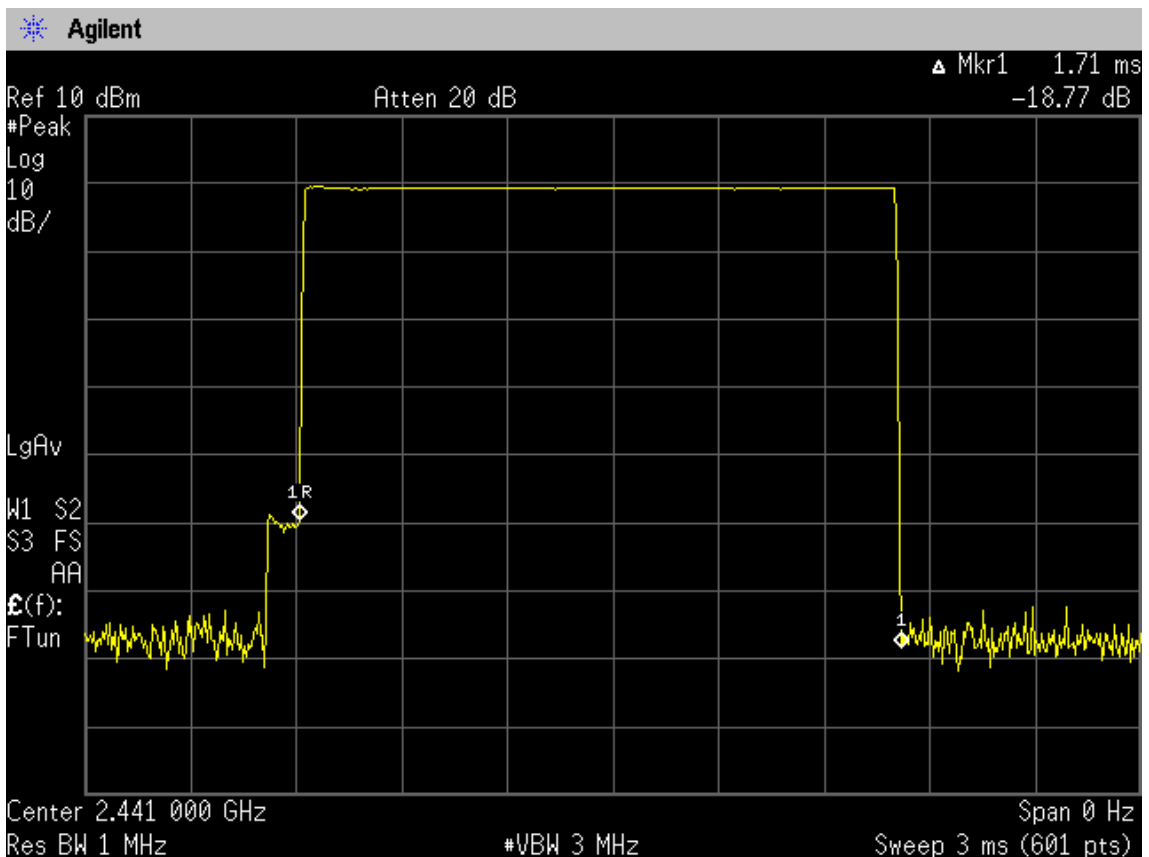
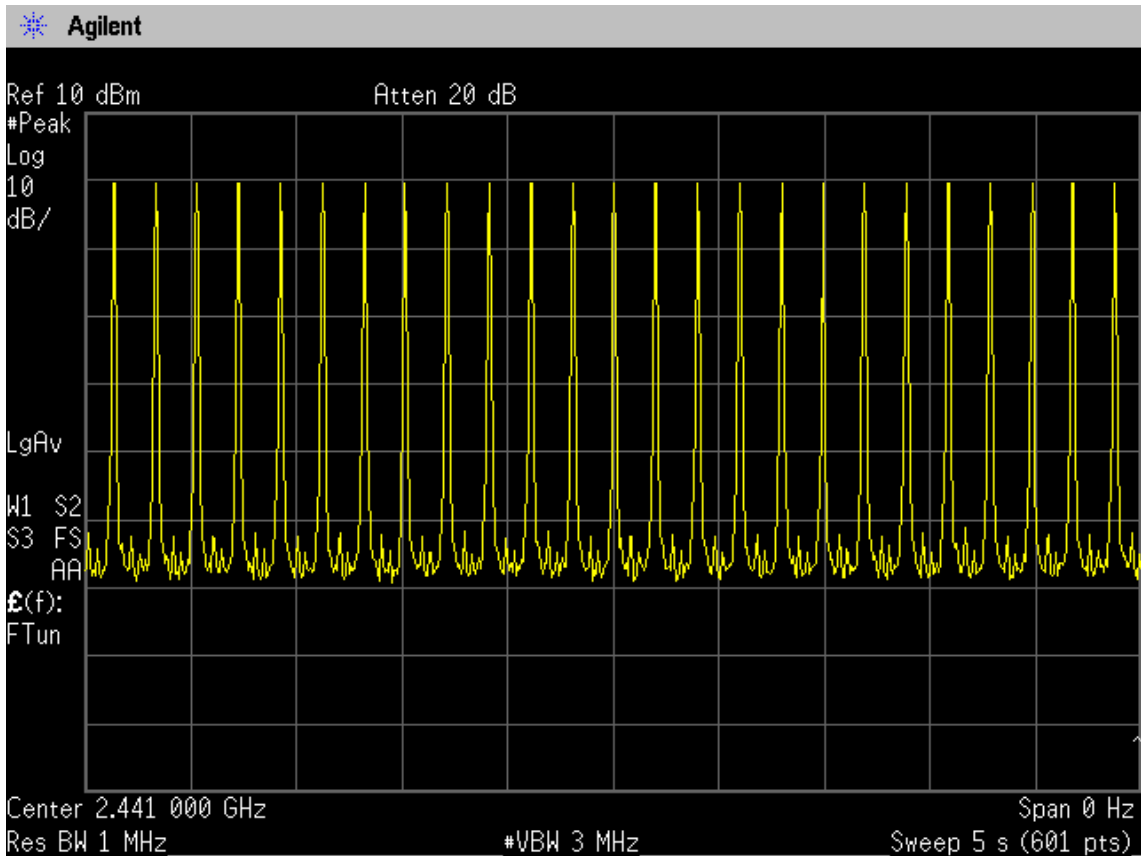
### 8.2. Test Results

dwll time	Limit	Conclusion
DH1: 140.49ms	<400ms	PASS
DH3: 270.18ms	<400ms	PASS
DH5: 317.81ms	<400ms	PASS

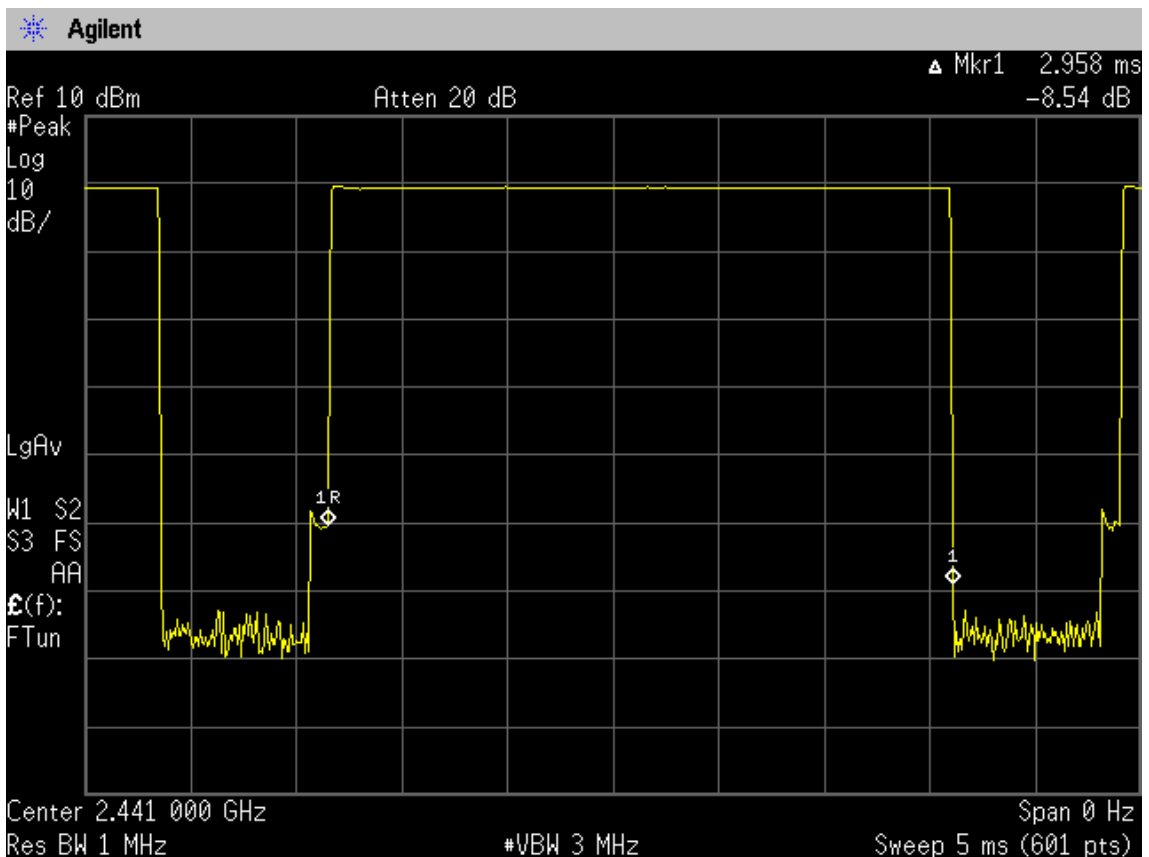
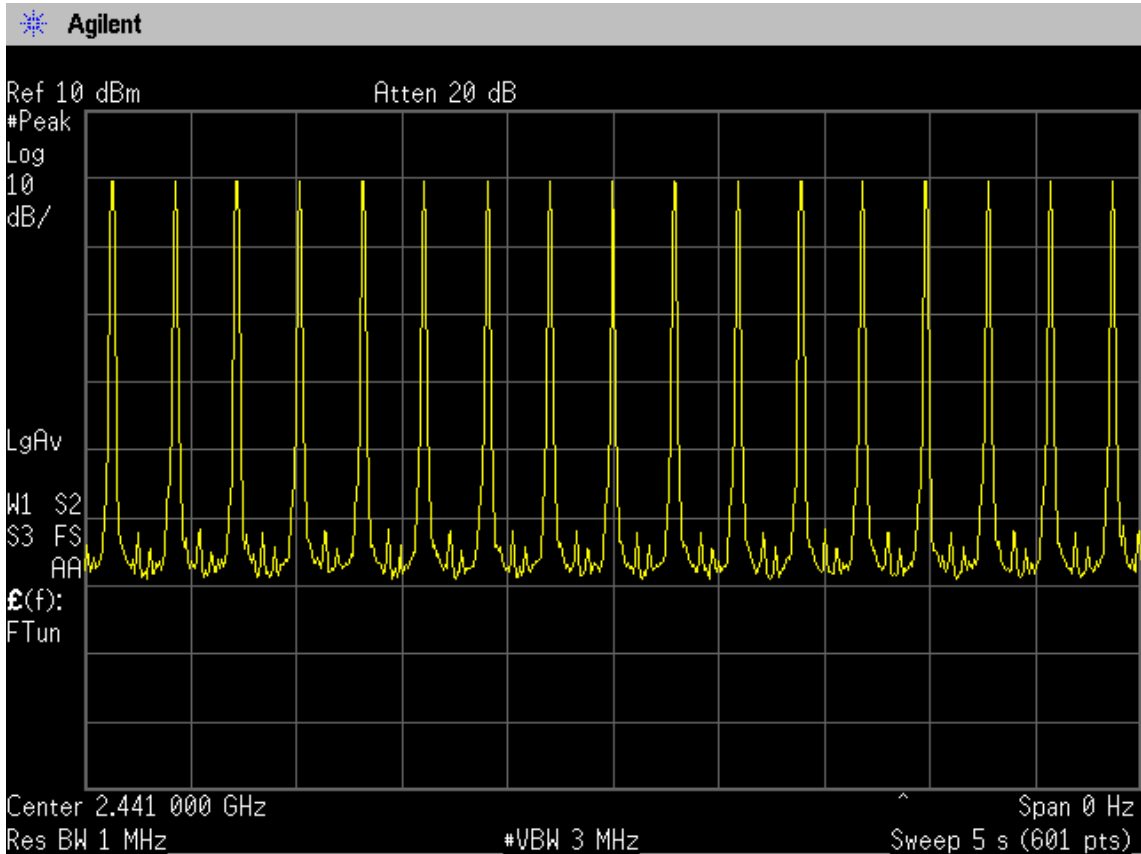
DH1: Dwell time = 50times/5s\*31.6\*0.4446ms =140.49ms



DH3: Dwell time = 25times/5s\*31.6\*1.71ms = 270.18ms



DH5: Dwell time = 17times/5s\*31.6\*2.958ms = 317.81ms



## 9. MAXIMUM PEAK OUTPUT POWER TEST

### 9.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May,10, 08	1 Year
2	Attenuator	Agilent	8491B	MY39262165	May,28, 08	1 Year
3	Power meter	Anritsu	ML2487A	6K00002472	May,10, 08	1 Year
4	Power sensor	Anritsu	ML2491A	032516	May,10, 08	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May,28, 08	1 Year

### 9.2. Limit (FCC Part 15C 15.247 b(3))

For systems using digital modulation in the 2400—2483.5MHz, The Peak out put Power shall not exceed 1W(30dBm)

### 9.3. Test Procedure

The transmitter output was connected to a power meter, and read out the PK output power.

### 9.4. Test Results

EUT: Remote for Nintendo Wii		Test Date: 2009-05-12	
M/N: 5726		Test site: RF Chamber	
Power: DC 3V		Engineer: Power	
Test mode: Tx Mode		Temperature/Humidity: 25°C/58%	
Freq (MHz)	Result (dBm)	Limit (dBm)	Margin (dB)
2402	-0.15	30	30.15
2441	-0.42	30	30.42
2480	-0.35	30	30.35

## 10.BAND EDGE COMPLIANCE TEST

### 10.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May,08, 09	1 Year
2	Horn Antenna	EMCO	3115	9607-4877	May, 27, 08	1.5 Year
3	Amplifier	Agilent	8449B	3008A02495	Nov 6.08	1 Year
4	RF Cable	Hubersuhner	SUCOFLEX 102	28620/2	May,28, 08	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX 102	271471/4	May,28, 08	1 Year
6	RF Cable	Hubersuhner	SUCOFLEX 102	29086/2	May,28, 08	1 Year

### 10.2.Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

### 10.3.Test Produce

1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
  - (a) PEAK: RBW=VBW=1MHz, PK detector, Sweep=AUTO

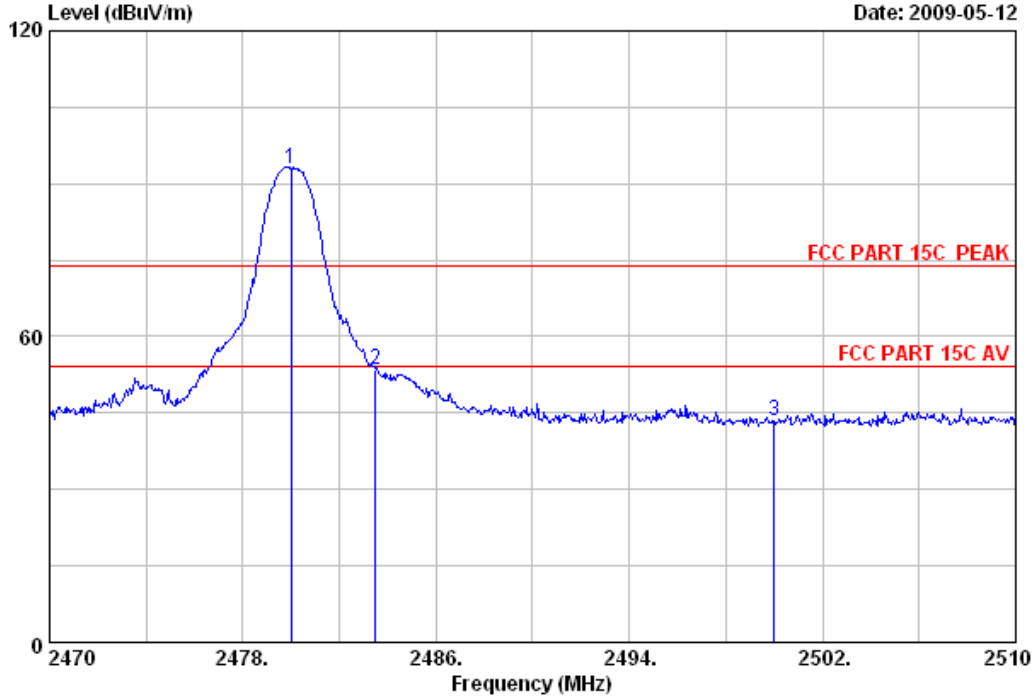
### 10.4.Test Results

Pass (The testing data was attached in the next pages.)  
All the emissions located at restricted bands were PK measured and comply with Average limit, so the average level were deemed to comply with average limit.



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Data: 13 File: E:\2009 report data\M\Mad Catz\ACS90H106R1.EM6 (22)



```

Site no.      : 3m Chamber                Data no.   : 13
Dis. / Ant.  : 3m 3115                   Ant. pol.  : VERTICAL
Limit        : FCC PART 15C PEAK
Env. / Ins.  : 25*C/58%                  Engineer   : Power
EUT          : Remote for Nintendo Wii
Power        : DC 3V
Test mode    : TX 2480MHz
:
:

```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	28.58	6.87	35.10	92.71	93.06	74.00	-19.06	Peak
2	2483.500	28.58	6.87	35.10	53.18	53.53	74.00	20.47	Peak
3	2500.000	28.60	6.91	35.10	43.05	43.46	74.00	30.54	Peak

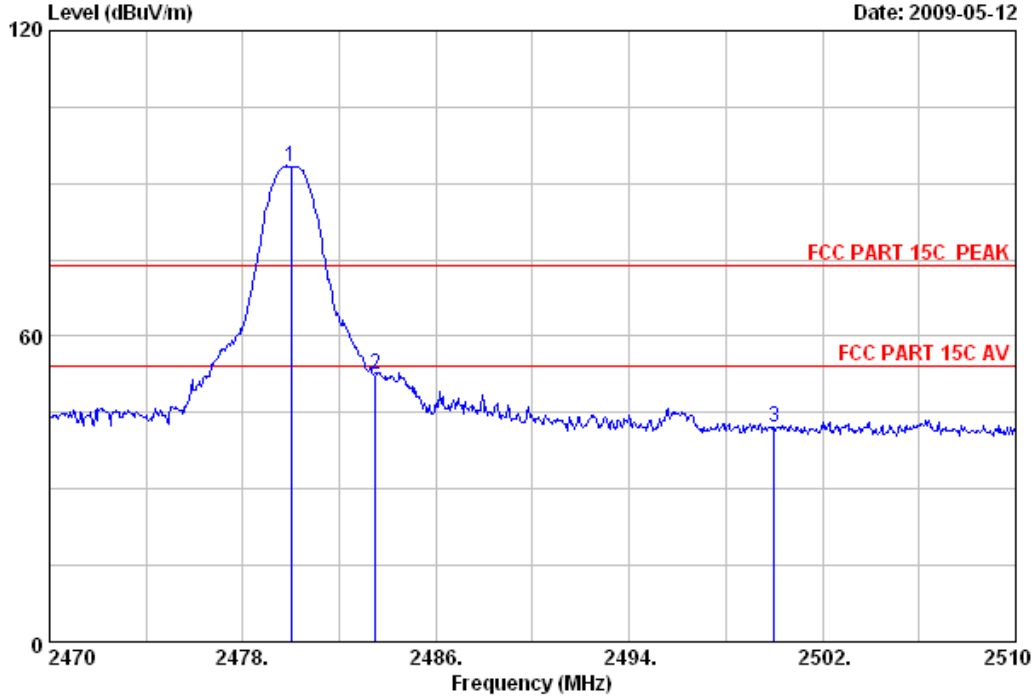
Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



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Data: 14 File: E:\2009 report data\M\Mad Catz\ACS90H106R1.EM6 (22)



```

Site no.      : 3m Chamber           Data no.   : 14
Dis. / Ant.  : 3m 3115             Ant. pol.  : HORIZONTAL
Limit        : FCC PART 15C PEAK
Env. / Ins.  : 25*C/58%           Engineer   : Power
EUT          : Remote for Nintendo Wii
Power        : DC 3V
Test mode    : TX 2480MHz
:
:

```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
					Reading (dBuV)	Level (dBuV/m)			
1	2480.000	28.58	6.87	35.10	92.96	93.31	74.00	-19.31	Peak
2	2483.500	28.58	6.87	35.10	52.29	52.64	74.00	21.36	Peak
3	2500.000	28.60	6.91	35.10	41.55	41.96	74.00	32.04	Peak

Remarks:

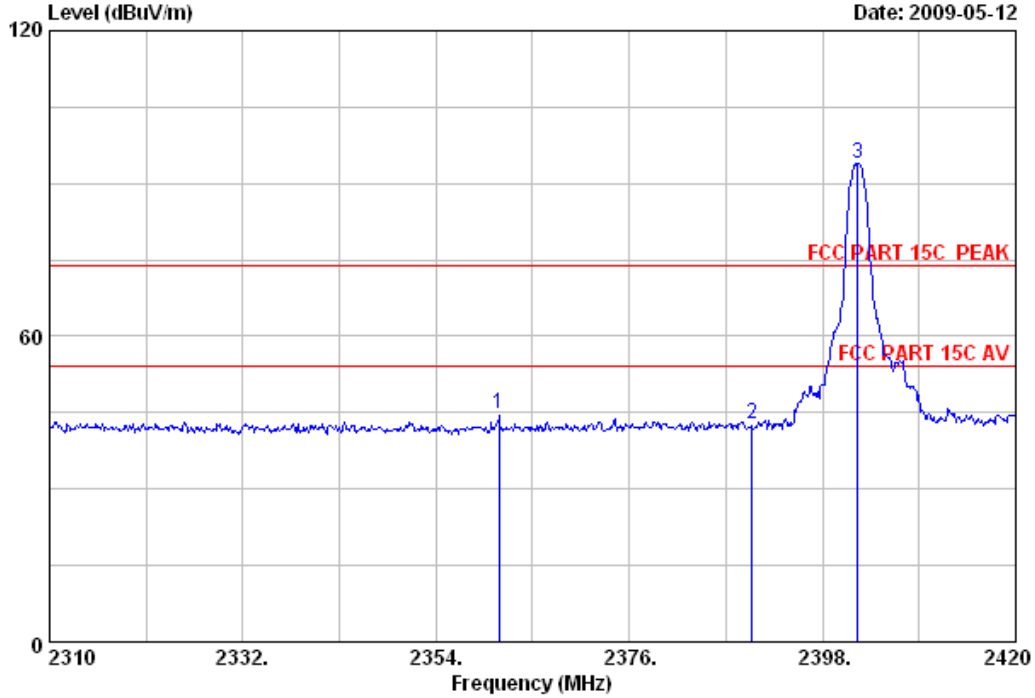
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Site no. : 3m Chamber Data no. : 15  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : TX 2402MHz  
 :  
 :

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
				Reading (dBuV)	Level (dBuV/m)			
1	28.41	6.69	35.13	44.79	44.76	74.00	29.24	Peak
2	28.46	6.71	35.12	42.81	42.86	74.00	31.14	Peak
3	28.46	6.73	35.12	93.78	93.85	74.00	-19.85	Peak

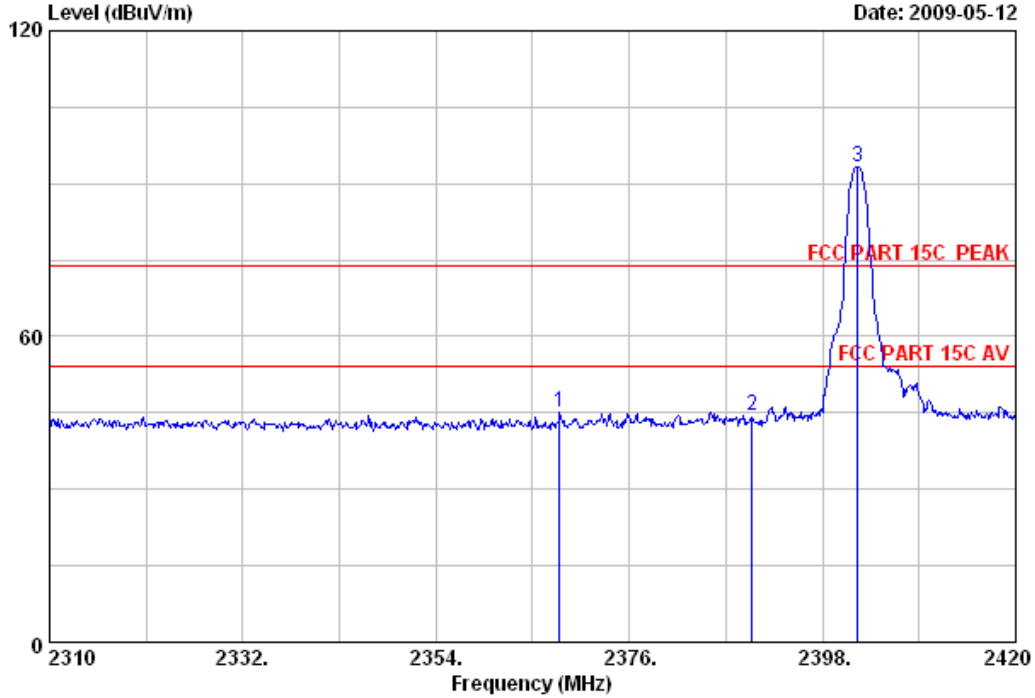
Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



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Data: 16 File: E:\2009 report data\M\Mad Catz\ACS90H106R1.EM6 (22)



Site no. : 3m Chamber Data no. : 16  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : TX 2402MHz  
 :  
 :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2368.080	28.41	6.69	35.12	45.25	45.23	74.00	28.77	Peak
2	2390.000	28.46	6.71	35.12	44.26	44.31	74.00	29.69	Peak
3	2402.000	28.46	6.73	35.12	93.10	93.17	74.00	-19.17	Peak

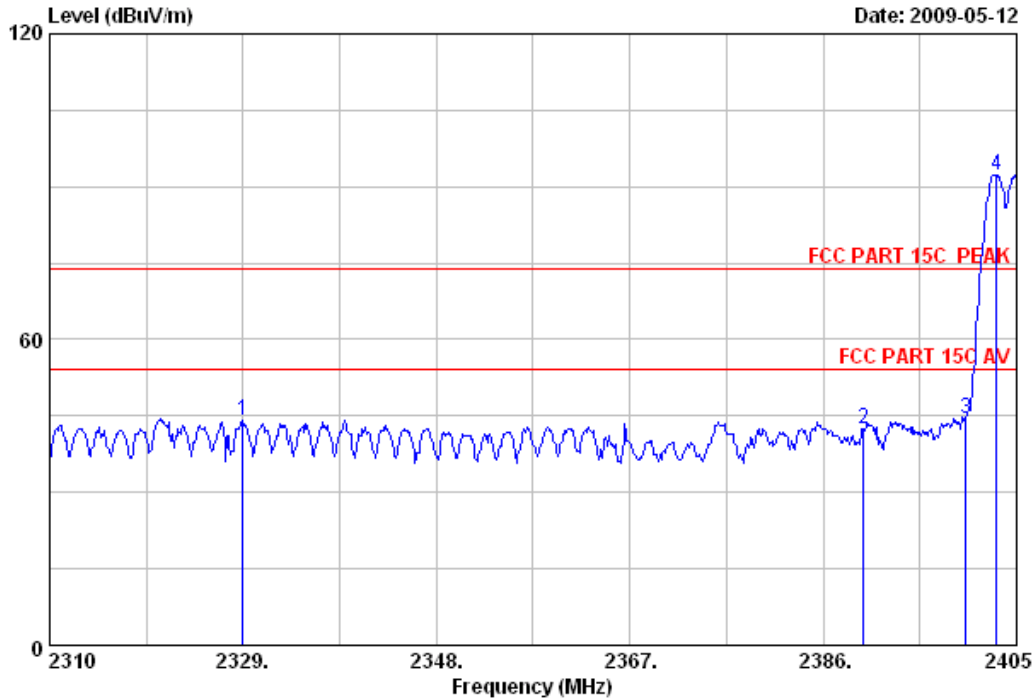
Remarks:

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



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Data: 17 File: E:\2009 report data\M\Mad Catz\ACS90H106R1.EM6 (22)



Site no. : 3m Chamber Data no. : 17  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : Hopping on  
 :  
 :

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
				Reading (dBuV)	Level (dBuV/m)			
1 2329.000	28.36	6.65	35.13	44.24	44.12	74.00	29.88	Peak
2 2390.000	28.46	6.71	35.12	42.25	42.30	74.00	31.70	Peak
3 2400.000	28.46	6.73	35.12	44.49	44.56	74.00	29.44	Peak
4 2402.000	28.48	6.73	35.12	92.17	92.26	74.00	-18.26	Peak

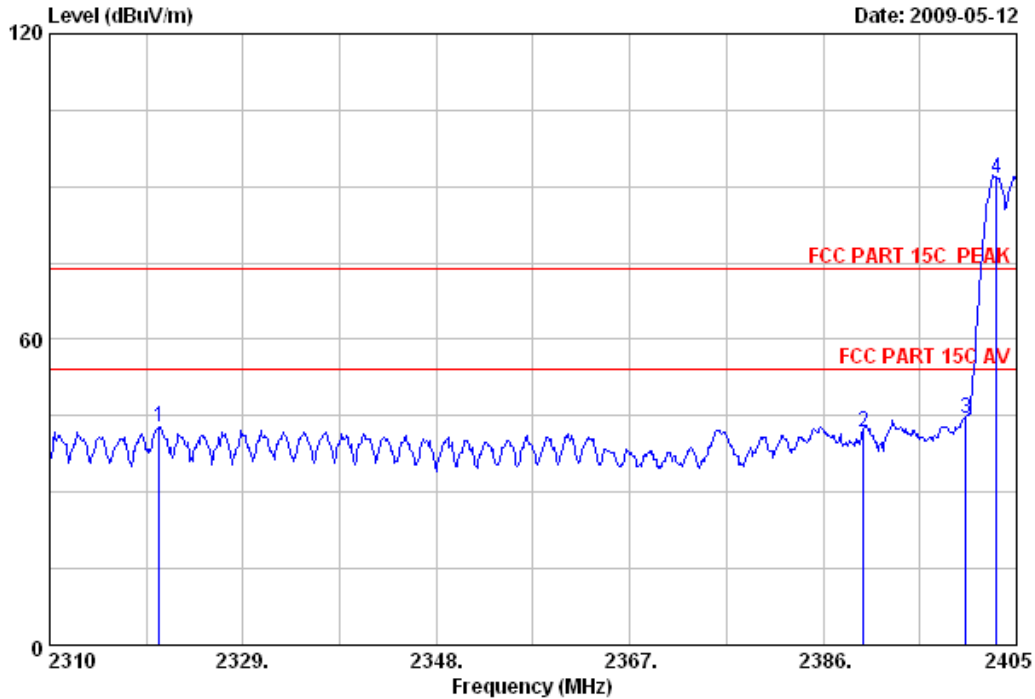
Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



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Data: 18 File: E:\2009 report data\M\Mad Catz\ACS90H106R1.EM6 (22)



Site no. : 3m Chamber Data no. : 18  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : Hopping on  
 :  
 :

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
				Reading (dBuV)	Level (dBuV/m)			
1	28.36	6.65	35.13	43.01	42.89	74.00	31.11	Peak
2	28.46	6.71	35.12	41.77	41.82	74.00	32.18	Peak
3	28.46	6.73	35.12	44.42	44.49	74.00	29.51	Peak
4	28.48	6.73	35.12	91.65	91.74	74.00	-17.74	Peak

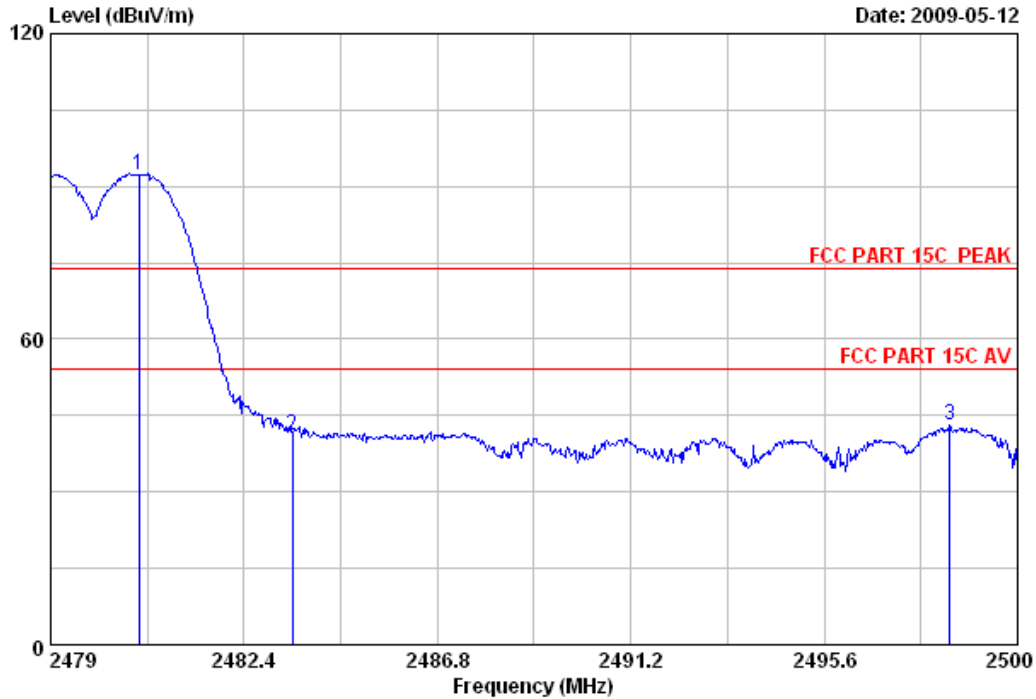
Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



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Data: 19 File: E:\2009 report data\M\Mad Catz\ACS90H106R1.EM6 (22)



Site no. : 3m Chamber Data no. : 19  
 Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25°C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : Hopping on  
 :  
 :

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
				Reading (dBuV)	Level (dBuV/m)			
1 2480.000	28.58	6.87	35.10	91.96	92.31	74.00	-18.31	Peak
2 2483.500	28.58	6.87	35.10	40.87	41.22	74.00	32.78	Peak
3 2498.460	28.60	6.91	35.10	42.58	42.99	74.00	31.01	Peak

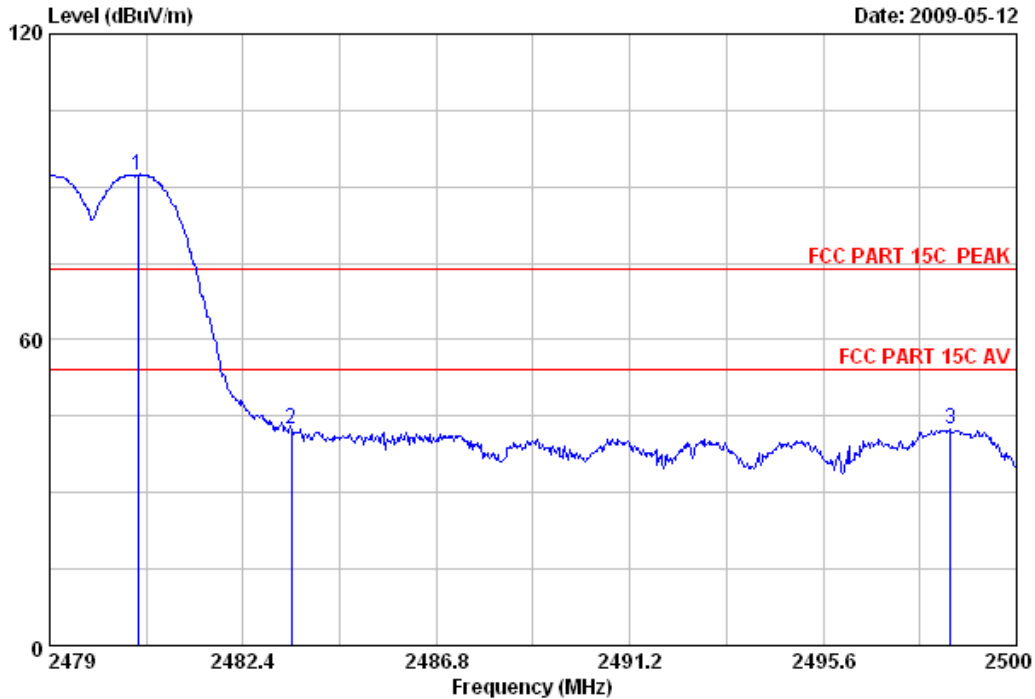
Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



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Data: 20 File: E:\2009 report data\M\Mad Catz\ACS90H106R1.EM6 (22)



Site no. : 3m Chamber Data no. : 20  
 Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 25\*C/58% Engineer : Power  
 EUT : Remote for Nintendo Wii  
 Power : DC 3V  
 Test mode : Hopping on  
 :  
 :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.000	28.58	6.87	35.10	91.92	92.27	74.00	-18.27	Peak
2	2483.500	28.58	6.87	35.10	42.01	42.36	74.00	31.64	Peak
3	2498.504	28.60	6.91	35.10	42.01	42.42	74.00	31.58	Peak

Remarks:

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

## **11. ANTENNA REQUIREMENT**

### **11.1 STANDARD APPLICABLE**

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### **11.2 ANTENNA CONNECTED CONSTRUCTION**

The antennas used for this product are integral PCB Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0dBi.

## **12.DEVIATION TO TEST SPECIFICATIONS**

[ NONE]