

APPLICATION FOR CERTIFICATION

On Behalf of

Mad Catz, Inc.

Rock Band Wireless Pro Keyboard for Xbox 360

Model Number: 98161 (RB3)

FCC ID: P25M798161Y2310C

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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Report Number : ACS-F10125  
Date of Test : May.29~30, 2010  
Date of Report : Jun.10, 2010

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# TEST REPORT CERTIFICATION

Applicant : Mad Catz, Inc.  
 EUT Description : Rock Band Wireless Pro Keyboard for Xbox 360  
 MODEL NO. : 98161 (RB3)  
 FCC ID : P25M798161Y2310C  
 POWER SUPPLY : DC 4.5V  
 TEST VOLTAGE : DC 4.5V

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.29~30, 2010

Prepared by : Selina Liu  
Selina Liu / Assistant

Reviewer : Jamy Yu  
Jamy Yu / Supervisor

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<br>ANSI C63.10 :2009                           | N/A     |
| Radiated Emission Test                     | FCC Part 15: 15.209<br>FCC Part 15: 15.247(d)<br>ANSI C63.10 :2009 | PASS    |
| Carrier Frequency Separation Test          | FCC Part 15: 15.247(a)(1)<br>ANSI C63.10 :2009                     | PASS    |
| 20dB Bandwidth Test                        | FCC Part 15: 15.215<br>ANSI C63.10 :2009                           | PASS    |
| Number Of Hopping Frequency Test           | FCC Part 15: 15.247(a)(1)(iii)<br>ANSI C63.10 :2009                | PASS    |
| Dwell Time Test                            | FCC Part 15: 15.247(a)(1)(iii)<br>ANSI C63.10 :2009                | PASS    |
| Maximum Peak Output Power Test             | FCC Part 15: 15.247(b)(1)\<br>ANSI C63.10 :2009                    | PASS    |
| Band Edge Compliance Test                  | FCC Part 15: 15.247(d)<br>ANSI C63.10 :2009                        | PASS    |
| N/A is an abbreviation for Not Applicable. |  |         |

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Product name : Rock Band Wireless Pro Keyboard for Xbox 360

Model Number : 98161 (RB3)

FCC ID : P25M798161Y2310C

Operation frequency : 2402MHz~2482MHz

Modulation : GMSK

Power Supply : DC 4.5V  
(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.29~30, 2010

Date of Receipt : May.24, 2010

Sample Type : Prototype production

## 2.2. Test Facility

### Site Description

|                           |   |  |
|---------------------------|---|--|
| Name of Firm              | : | Audix Technology (Shenzhen) Co., Ltd.<br>No. 6, Ke Feng Rd., 52 Block, Shenzhen<br>Science & Industrial Park, Nantou,<br>Shenzhen, Guangdong, China            |
| 3m Anechoic Chamber       | : | Mar.31, 2009 File on Federal<br>Communication Commission<br>Registration Number: 90454   |
| 3m & 10m Anechoic Chamber | : | Dec. 30, 2009 File on Federal<br>Communication Commission<br>Registration Number: 794232   |
| EMC Lab.                  | : | Accredited by DATech, German<br>Registration Number: DAT-P-091/99-01<br>Feb. 02, 2009<br><br>Accredited by NVLAP, USA<br>NVLAP Code: 200372-0<br>Apr. 01, 2010 |

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

| Test Item  | Uncertainty                              |
|--|--|
| Uncertainty for Conduction emission test<br>in No. 1 Conduction  | 2.40dB                                   |
| Uncertainty for Radiation Emission test<br>in 3m chamber         | 3.82 dB (Polarize: V)                    |
|  | 4.32 dB (Polarize: H)                    |
| Uncertainty for Radiated Spurious<br>Emission test in RF chamber | 2.70 dB<br>(Bilog antenna 30M~1000MHz)   |
|  | 2.27 dB<br>(Horn antenna 1000M~25000MHz) |
| Uncertainty for Temperature and humidity<br>test                 | 2%                                       |
|  | 1°C                                      |
| Uncertainty for Bandwidth test                                   | $1 \times 10^{-9}$                       |
| Uncertainty for DC power test                                    | 0.038 %                                  |
| Uncertainty for test site temperature and<br>humidity            | 0.6°C                                    |
|  | 3%                                       |

### **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.05,09  | 1 Year        |
| 2    | EMI Spectrum   | Agilent         | E4407B    | MY41440292      | May.08, 10 | 1 Year        |
| 3    | Test Receiver  | Rohde & Schwarz | ESVS10    | 834468/011      | May.08, 10 | 1 Year        |
| 4    | Amplifier      | HP              | 8447D     | 2648A04738      | May.08, 10 | 1 Year        |
| 5    | Bilog Antenna  | Schaffner       | CBL6111C  | 2598            | Dec.14, 09 | 1 Year        |
| 6    | RF Cable       | MIYAZAKI        | 8D-FB     | 3# Chamber No.1 | May.08, 10 | 1 Year        |
| 7    | Coaxial Switch | Anritsu         | MP59B     | M73989          | May.08, 10 | 1 Year        |

Frequency rang: above 1000MHz

| Item | Equipment         | Manufacturer | Model No.   | Serial No. | Last Cal.  | Cal. Interval |
|------|-------------------|--------------|-------------|------------|------------|---------------|
| 1    | Spectrum Analyzer | Agilent      | E4446A      | US44300459 | May.08, 10 | 1 Year        |
| 2    | Horn Antenna      | EMCO         | 3115        | 9607-4877  | Nov.25, 09 | 1.5 Year      |
| 3    | Horn Antenna      | EMCO         | 3116        | 00060089   | Nov.25, 09 | 1.5 Year      |
| 4    | Amplifier         | Agilent      | 8449B       | 3008A00863 | May.08, 10 | 1 Year        |
| 5    | RF Cable          | Hubersuhner  | SUCOFLEX102 | 28620/2    | May.08, 10 | 1 Year        |
| 6    | RF Cable          | Hubersuhner  | SUCOFLEX102 | 29091/2    | May.08, 10 | 1 Year        |

### 4.2. Block Diagram of Test Setup

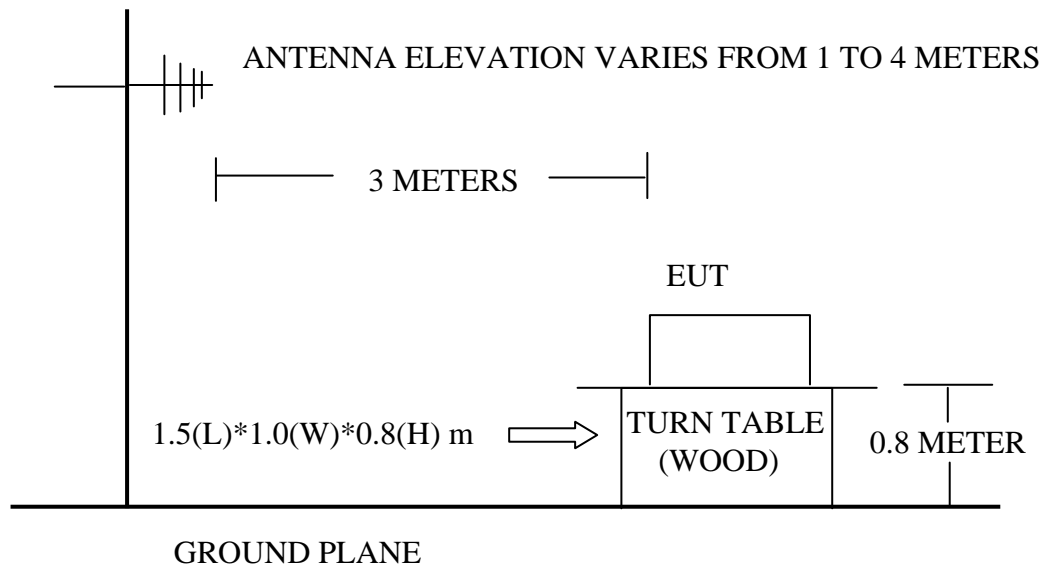
#### 4.2.1. Block Diagram of connection between EUT and simulators



*(EUT: Rock Band Wireless Pro Keyboard for Xbox 360)*

#### 4.2.2. Anechoic Chamber Setup Diagram

ANTENNA TOWER





### 4.3. Radiated Emission Limit

#### 4.3.1.15.209 limits

| FREQUENCY<br>MHz | DISTANCE<br>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 960MHz     | 3                  | 74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak)<br>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. Rock Band Wireless Pro Keyboard for Xbox 360(EUT)

Model Number : 98161 (RB3)  
Serial Number : N/A

#### 4.4.2. Support Equipment: As Tested Supporting System Detail, in Section 2.2.

#### 4.5. Operating Condition of EUT

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

4.5.2. Turned on the power of all equipment.

4.5.3. Let the EUT worked in test mode (Tx Mode) and tested it.

#### 4.6. Test Procedure

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. Power on the EUT and let it working in test mode, then test it. 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 are set on test.

This test was performed with EUT in X, Y, Z position, and the worse case was found when EUT in X position as 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 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz

This device is pulse modulated, a duty cycle factor was used to calculate average level based measured peak level.

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.

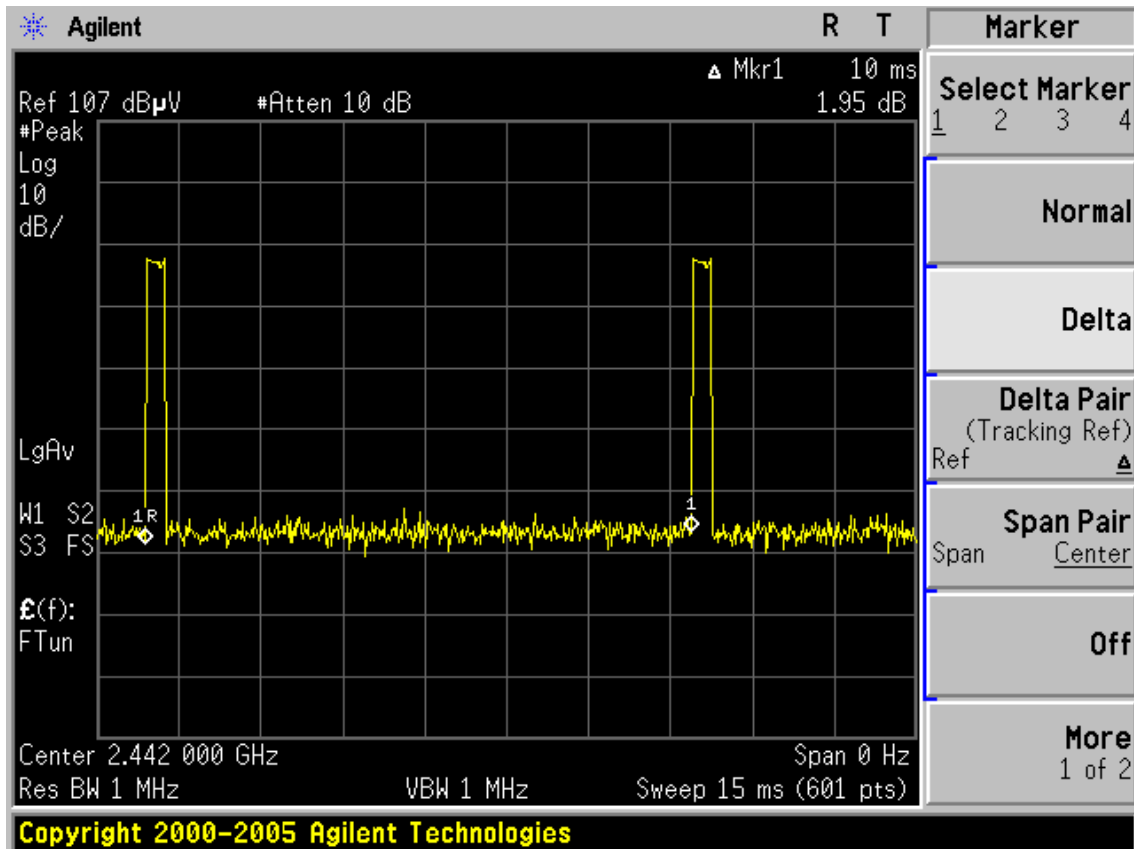
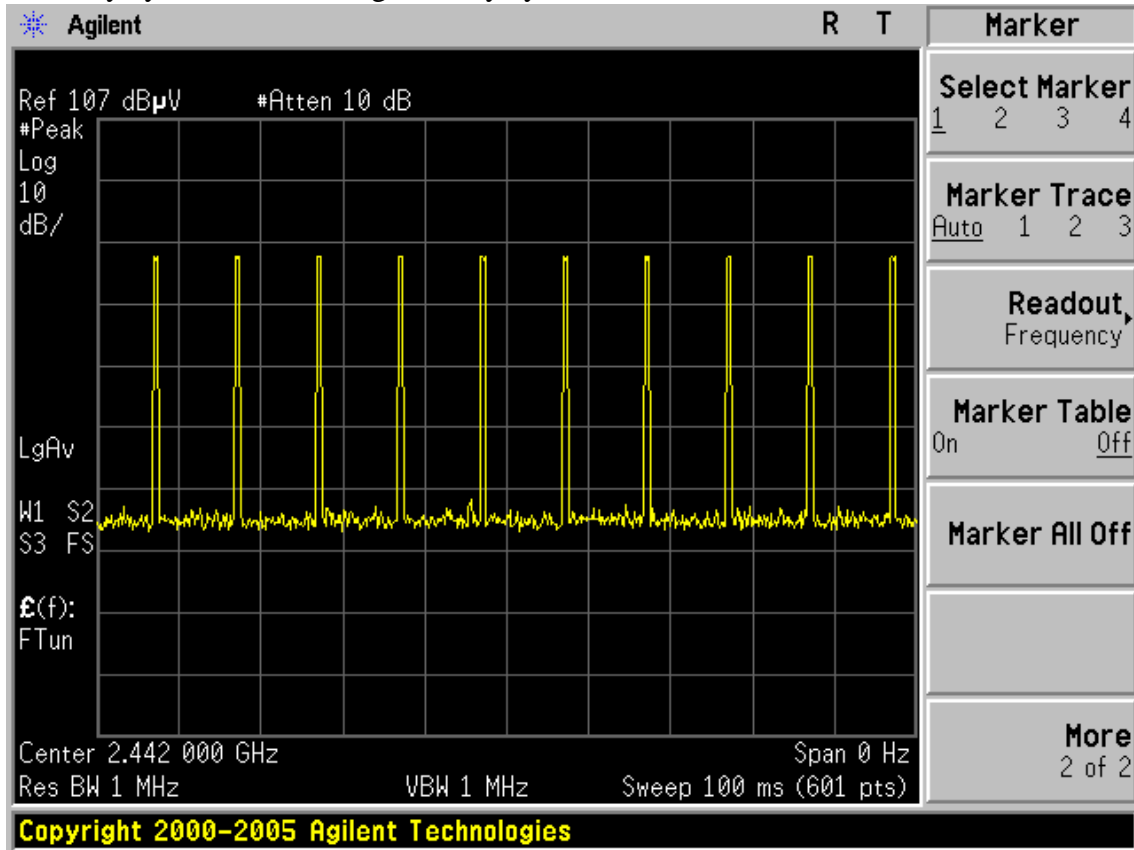
#### 4.7. Radiated Emission Test Results

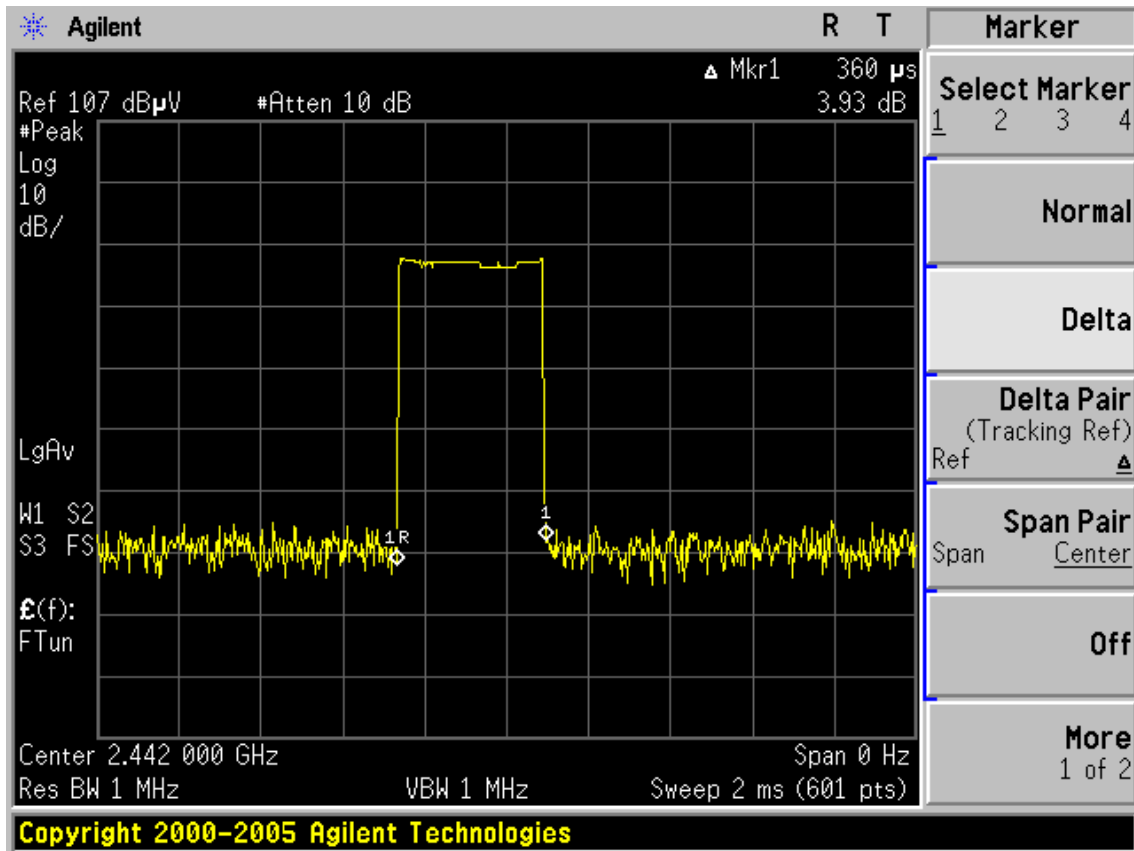
**PASS**

All the emissions from 30MHz to 25 GHz are comply with 15.209 limits

Duty cycle:  $360\mu\text{s}/10000\mu\text{s} * 100\% = 3.6\%$

Duty cycle factor =  $20\log(1/\text{duty cycle}) = 28.87$



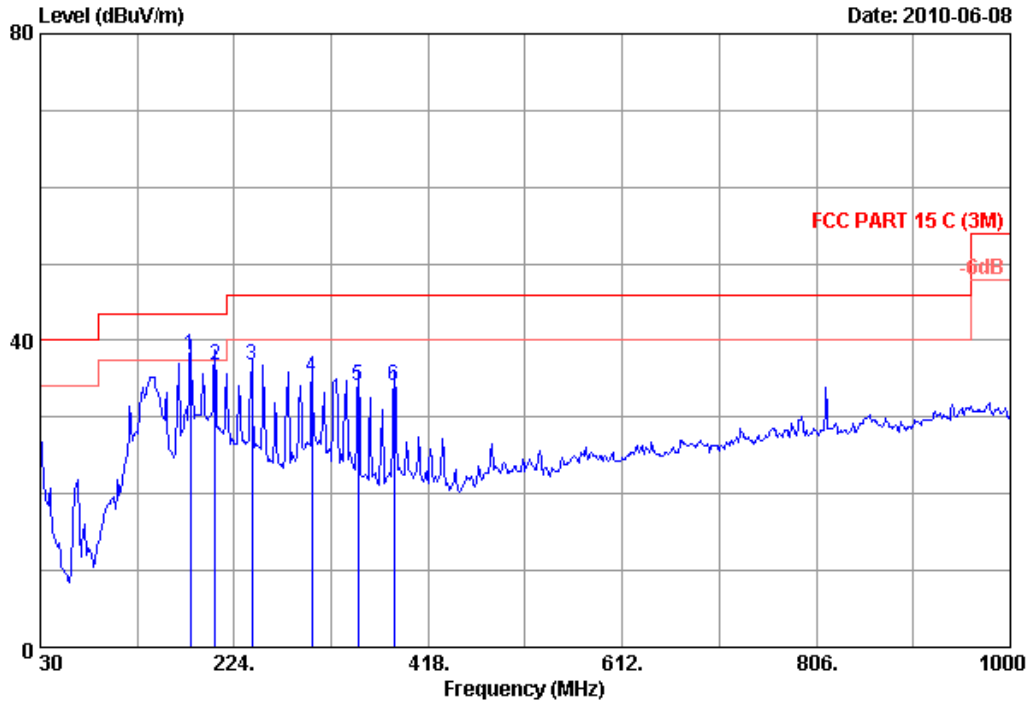


Frequency: 30MHz~1GHz



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Data: 1 File: D:\2010 Report Data\MMad Catz\ACS10QH137.EM6 (6)



Site no. : 3m Chamber Data no. : 1  
 Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 C (3M)  
 Env. / Ins. : 24°C/56% Engineer : Leo-Li  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power Rating : DC 4.5 V  
 Test Mode : Tx Mode  
 M/N:98161(RB3)

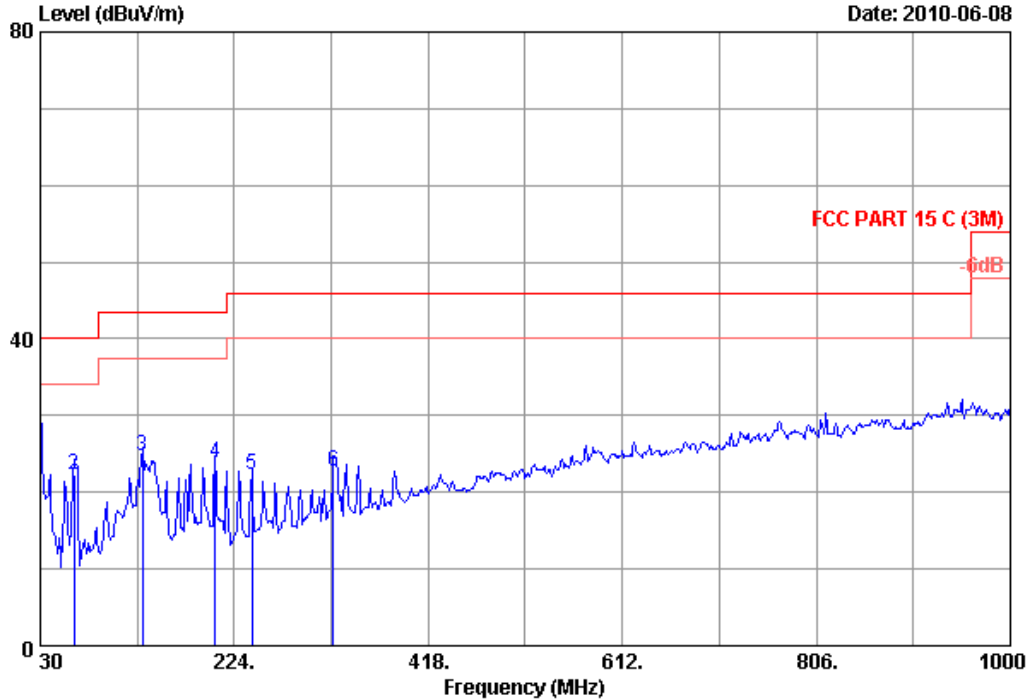
| No. | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|-----|-------------|--------------------|-----------------|----------------|-------------------------|-----------------|-------------|--------|
| 1   | 180.350     | 9.40               | 1.49            | 27.26          | 38.15                   | 43.50           | 5.35        | QP     |
| 2   | 204.600     | 10.10              | 1.76            | 24.83          | 36.69                   | 43.50           | 6.81        | QP     |
| 3   | 241.460     | 11.93              | 2.09            | 22.66          | 36.68                   | 46.00           | 9.32        | QP     |
| 4   | 301.600     | 13.75              | 2.49            | 19.05          | 35.29                   | 46.00           | 10.71       | QP     |
| 5   | 348.160     | 15.04              | 2.69            | 16.33          | 34.06                   | 46.00           | 11.94       | QP     |
| 6   | 384.050     | 15.94              | 2.84            | 15.34          | 34.12                   | 46.00           | 11.88       | 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: 2 File: D:\2010 Report Data\MMad Catz\ACS10QH137.EM6 (6)



Site no. : 3m Chamber Data no. : 2  
 Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : VERTICAL  
 Limit : FCC PART 15 C (3M)  
 Env. / Ins. : 24°C/56% Engineer : Leo-Li  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power Rating : DC 4.5 V  
 Test Mode : Tx Mode  
 M/N:98161(RB3)

| No. | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Reading<br>(dBuV) | Emission          |                    |                | Remark |
|-----|----------------|--------------------------|-----------------------|-------------------|-------------------|--------------------|----------------|--------|
|     |                |                          |                       |                   | Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) |        |
| 1   | 30.000         | 20.00                    | 0.61                  | 8.60              | 29.21             | 40.00              | 10.79          | QP     |
| 2   | 63.950         | 6.00                     | 0.88                  | 15.40             | 22.28             | 40.00              | 17.72          | QP     |
| 3   | 131.850        | 12.16                    | 1.13                  | 11.50             | 24.79             | 43.50              | 18.71          | QP     |
| 4   | 204.600        | 10.10                    | 1.76                  | 11.89             | 23.75             | 43.50              | 19.75          | QP     |
| 5   | 241.460        | 11.93                    | 2.09                  | 8.22              | 22.24             | 46.00              | 23.76          | QP     |
| 6   | 322.940        | 14.26                    | 2.58                  | 6.00              | 22.84             | 46.00              | 23.16          | QP     |

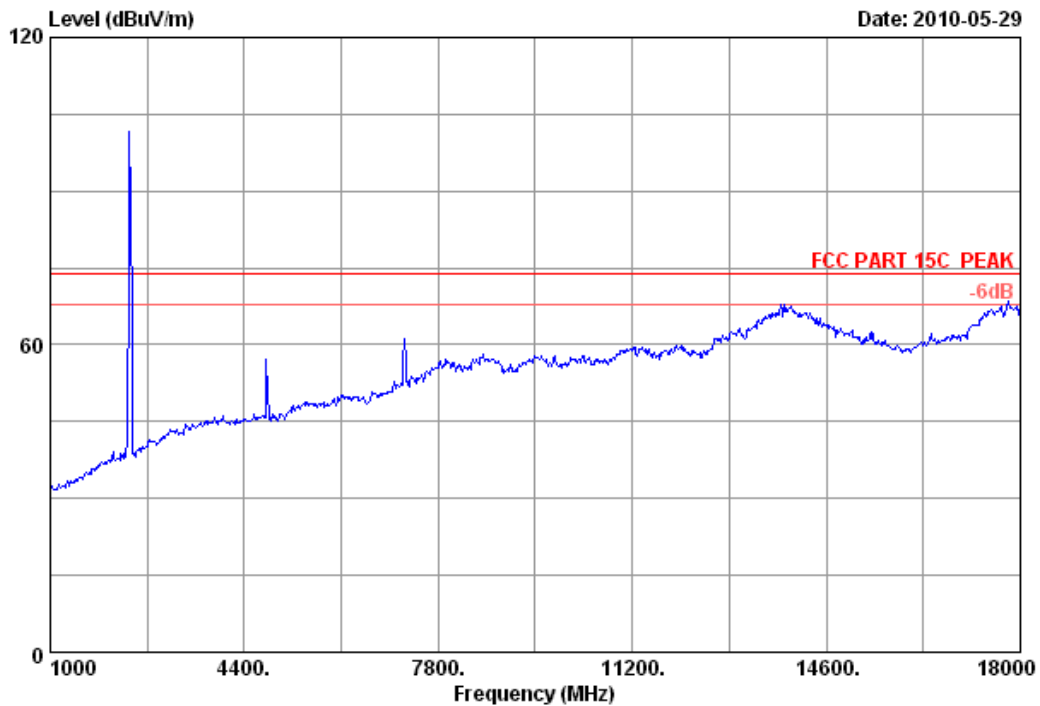
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 1GHz~18GHz



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Data: 1 File: E:\2010 report data\M\Madcatz\ACS10QH137.EM6 (35)

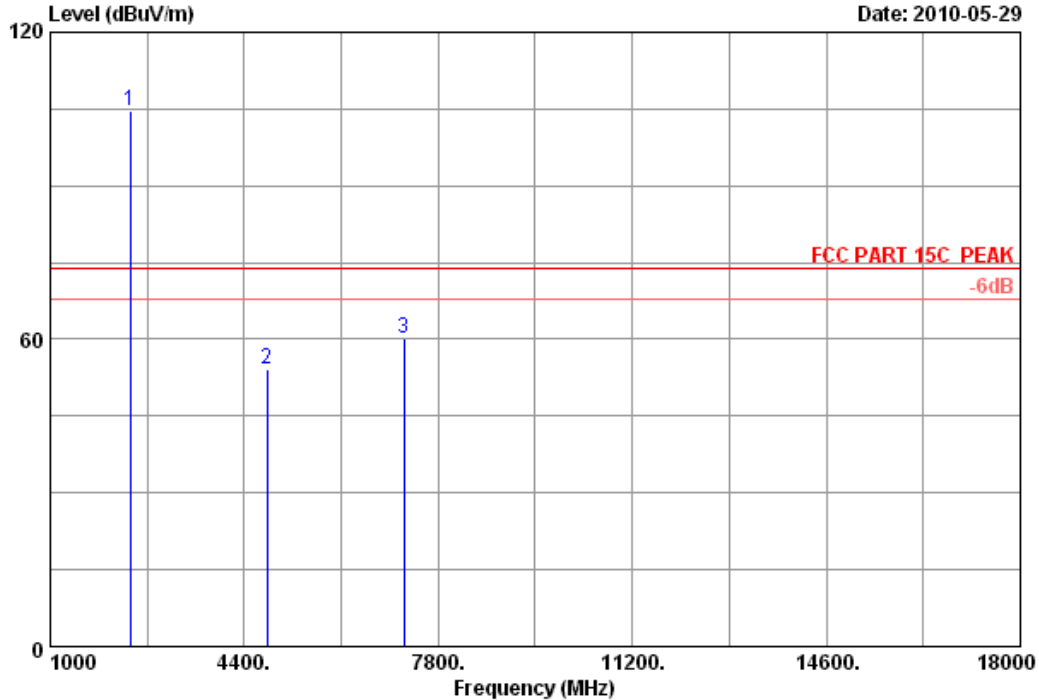


|             |  |           |              |
|-------------|--|-----------|--------------|
| Site no.    | : 3m Chamber                                   | Data no.  | : 1          |
| Dis. / Ant. | : 3m 3115(0911)                                | Ant. pol. | : HORIZONTAL |
| Limit       | : FCC PART 15C PEAK                            |           |              |
| Env. / Ins. | : 23°C/54%                                     | Engineer  | : Paul Tian  |
| EUT         | : Rock Band Wireless Pro Keyboard for Xbox 360 |           |              |
| Power       | : DC 4.5V                                      |           |              |
| Test mode   | : Tx 2402MHz                                   |           |              |
| M/N         | : 98161(RB3)                                   |           |              |
| Memo        | :  |           |              |



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Data: 2 File: E:\2010 report data\M\Madcatz\ACS10QH137.EM6 (35)



Site no. : 3m Chamber Data no. : 2  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power : DC 4.5V  
 Test mode : Tx 2402MHz  
 M/N : 98161(RB3)  
 Memo :

|   | Ant. 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 | 2402.000         | 29.44              | 8.72            | 36.09            | 95.65          | 97.72                   | 74.00           | -23.72      | Peak   |
| 2 | 4804.000         | 34.30              | 12.35           | 35.37            | 42.91          | 54.19                   | 74.00           | 19.81       | Peak   |
| 3 | 7206.000         | 36.72              | 15.40           | 35.01            | 43.11          | 60.22                   | 74.00           | 13.78       | 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.

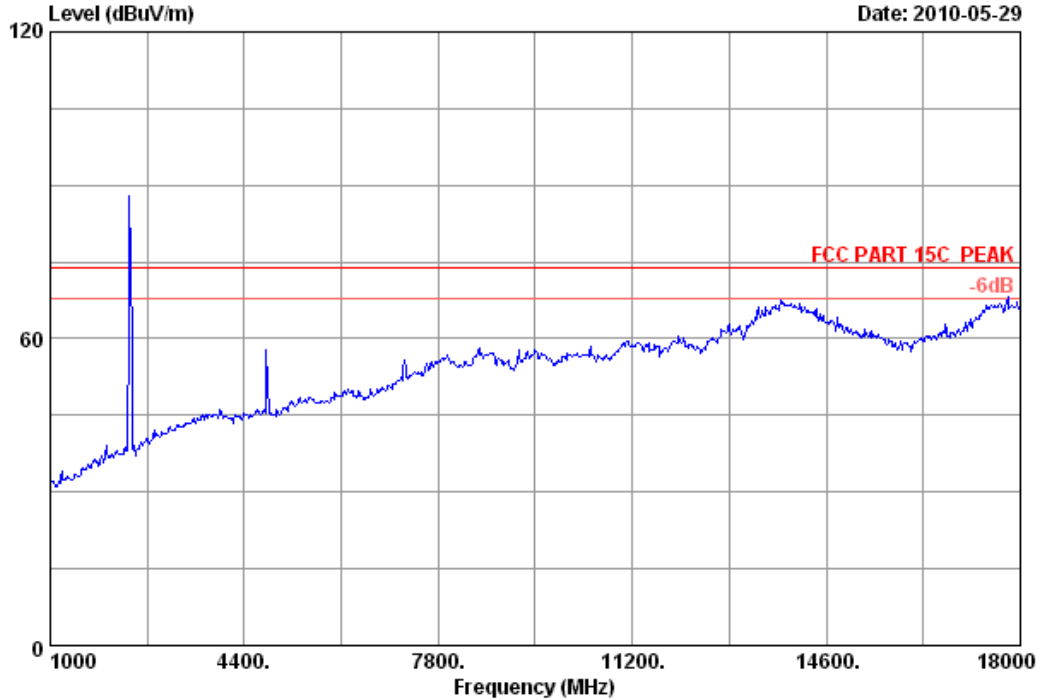
| Frequency (MHz) | PK measured level (dBuV/m) | Duty cycle factor (dB) | Average level (dBuV/m) | Average Limit (dBuV/m) | Result |
|-----------------|----------------------------|------------------------|------------------------|------------------------|--------|
| 4804            | 54.19                      | 28.87                  | 25.32                  | 54                     | PASS   |
| 7206            | 60.22                      | 28.87                  | 31.35                  | 54                     | PASS   |





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Postcode:518057

Data: 3 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)

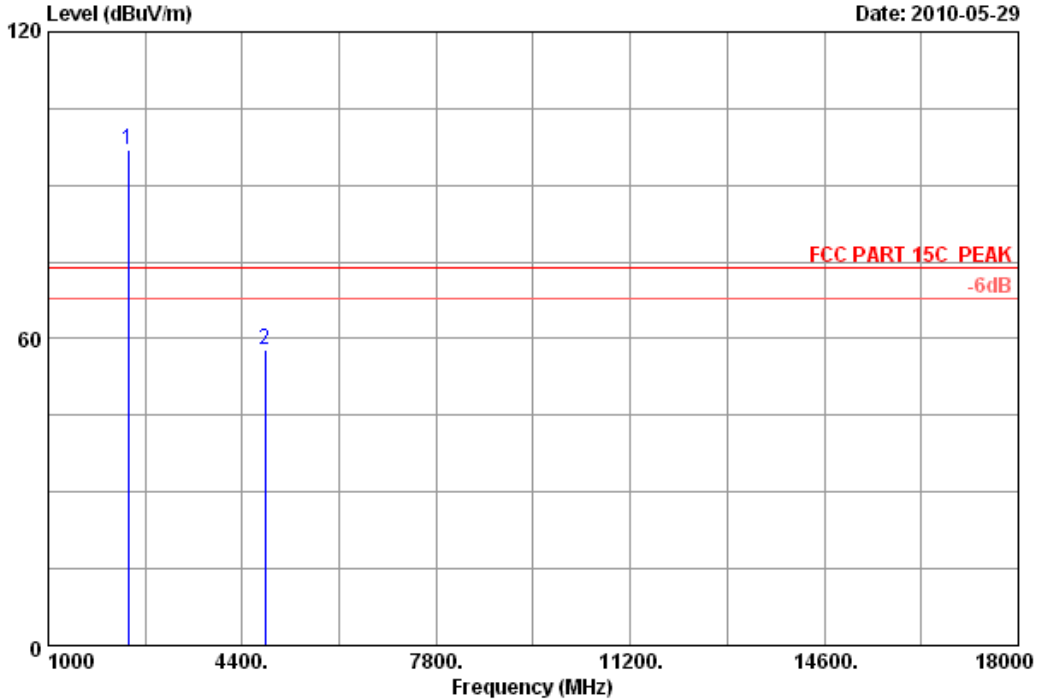


Site no. : 3m Chamber Data no. : 3  
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 23°C/54% Engineer : Paul Tian  
EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
Power : DC 4.5V  
Test mode : Tx 2402MHz  
M/N : 98161(RB3)  
Memo :



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Data: 4 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)



Site no. : 3m Chamber Data no. : 4  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power : DC 4.5V  
 Test mode : Tx 2402MHz  
 M/N : 98161(RB3)  
 Memo :

|   | Freq.    | Ant. Factor | Cable loss | Amp. Factor | Reading | Emission Level | Limits   | Margin | Remark |
|---|----------|-------------|------------|-------------|---------|----------------|----------|--------|--------|
|   | (MHz)    | (dB/m)      | (dB)       | (dB)        | (dBuV)  | (dBuV/m)       | (dBuV/m) | (dB)   |        |
| 1 | 2402.000 | 29.44       | 8.72       | 36.09       | 94.83   | 96.90          | 74.00    | -22.90 | Peak   |
| 2 | 4804.000 | 34.30       | 12.35      | 35.37       | 46.64   | 57.92          | 74.00    | 16.08  | Peak   |

Remarks:

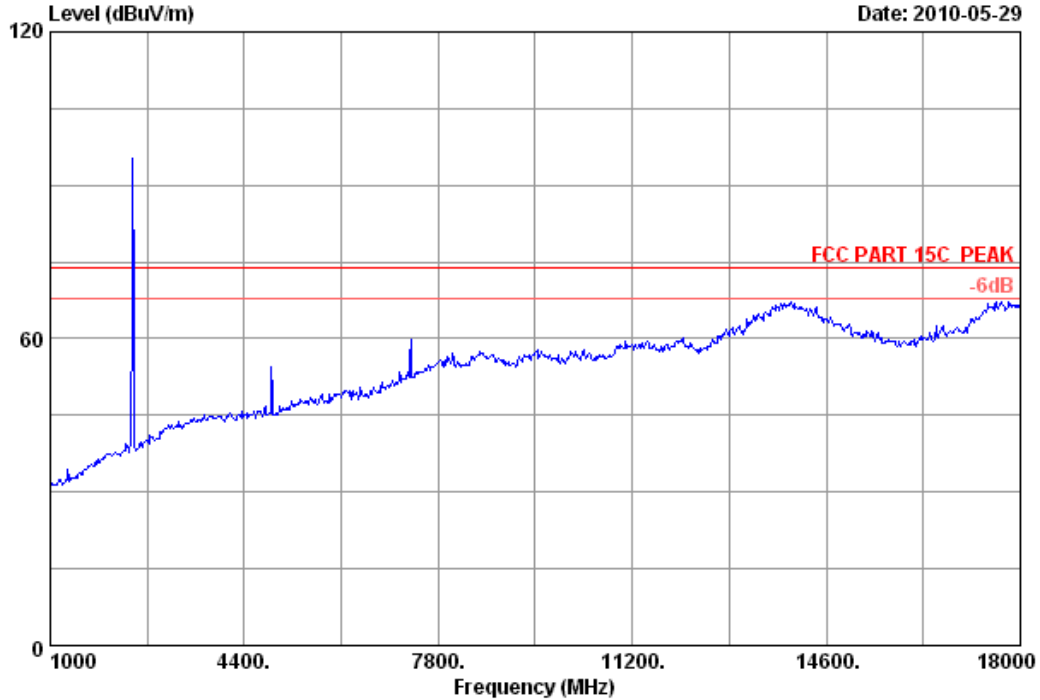
- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

| Frequency (MHz) | PK measured level (dBuV/m) | Duty cycle factor (dB) | Average level (dBuV/m) | Average Limit (dBuV/m) | Result |
|-----------------|----------------------------|------------------------|------------------------|------------------------|--------|
| 4804            | 57.92                      | 28.87                  | 29.05                  | 54                     | PASS   |



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Data: 7 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)

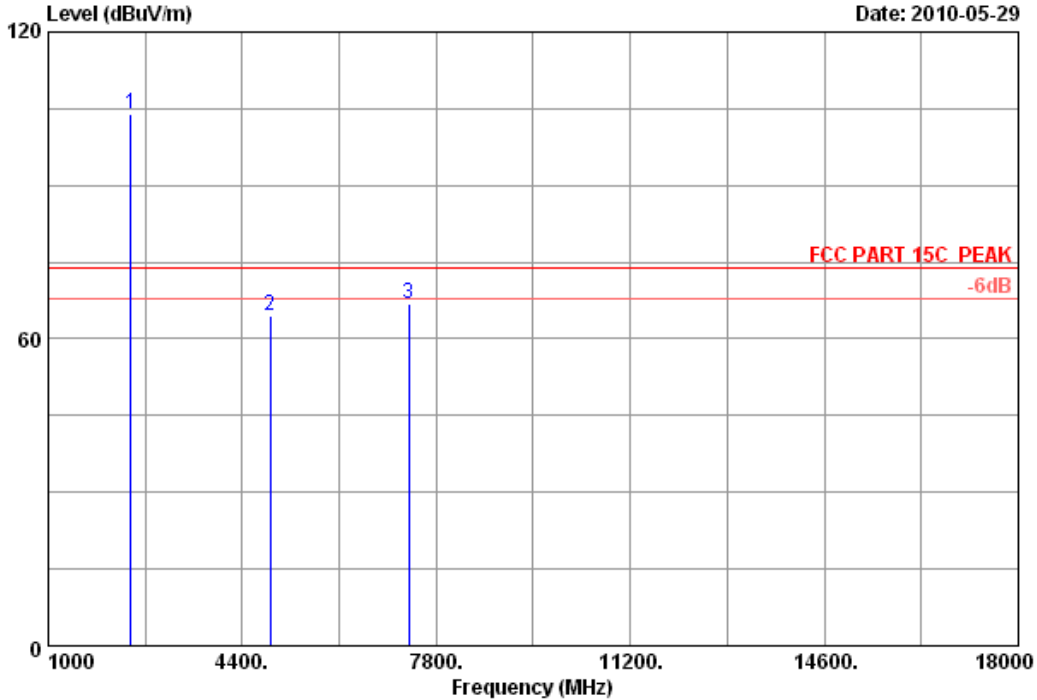


Site no. : 3m Chamber Data no. : 7  
Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 23°C/54% Engineer : Paul Tian  
EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
Power : DC 4.5V  
Test mode : Tx 2442MHz  
M/N : 98161(RB3)  
Memo :



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Data: 8 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)



Site no. : 3m Chamber Data no. : 8  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power : DC 4.5V  
 Test mode : Tx 2442MHz  
 M/N : 98161(RB3)  
 Memo :

|   | Freq.    | Ant. Factor | Cable loss | Amp. Factor | Reading | Emission Level | Limits   | Margin | Remark |
|---|----------|-------------|------------|-------------|---------|----------------|----------|--------|--------|
|   | (MHz)    | (dB/m)      | (dB)       | (dB)        | (dBuV)  | (dBuV/m)       | (dBuV/m) | (dB)   |        |
| 1 | 2442.000 | 29.47       | 8.77       | 36.06       | 95.64   | 97.82          | 74.00    | -23.82 | Peak   |
| 2 | 4884.000 | 34.41       | 12.44      | 35.36       | 53.10   | 64.59          | 74.00    | 9.41   | Peak   |
| 3 | 7326.000 | 37.37       | 15.62      | 35.07       | 48.79   | 66.71          | 74.00    | 7.29   | Peak   |

Remarks:

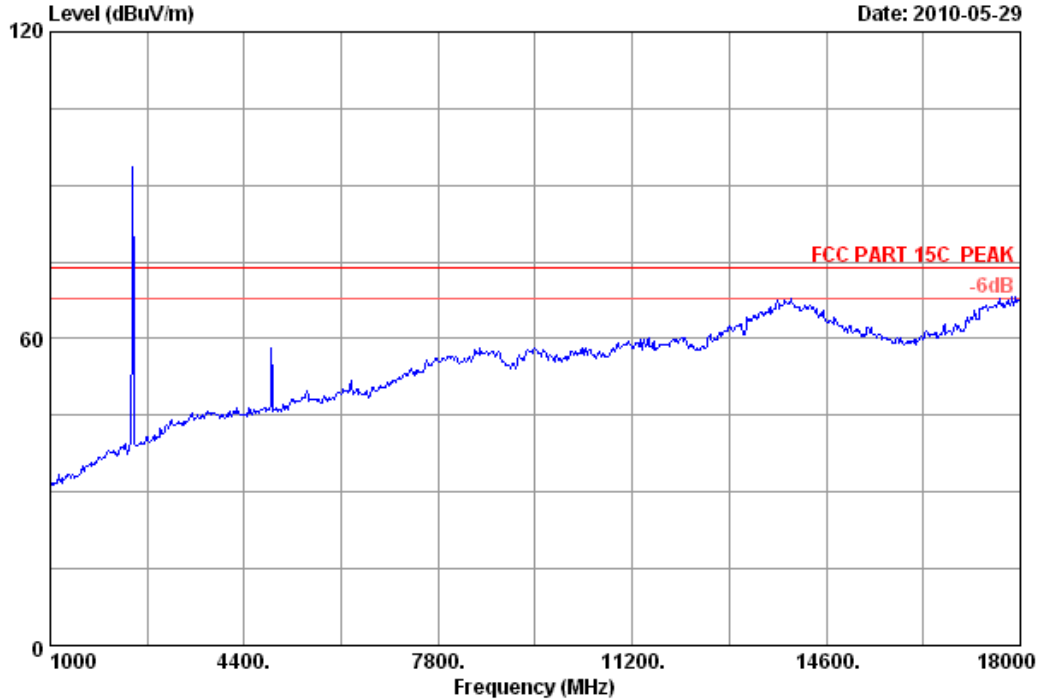
- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.

| Frequency (MHz) | PK measured level (dBuV/m) | Duty cycle factor (dB) | Average level (dBuV/m) | Average Limit (dBuV/m) | Result |
|-----------------|----------------------------|------------------------|------------------------|------------------------|--------|
| 4884            | 64.59                      | 28.87                  | 35.72                  | 54                     | PASS   |
| 7326            | 66.71                      | 28.87                  | 37.84                  | 54                     | PASS   |



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Data: 9 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)

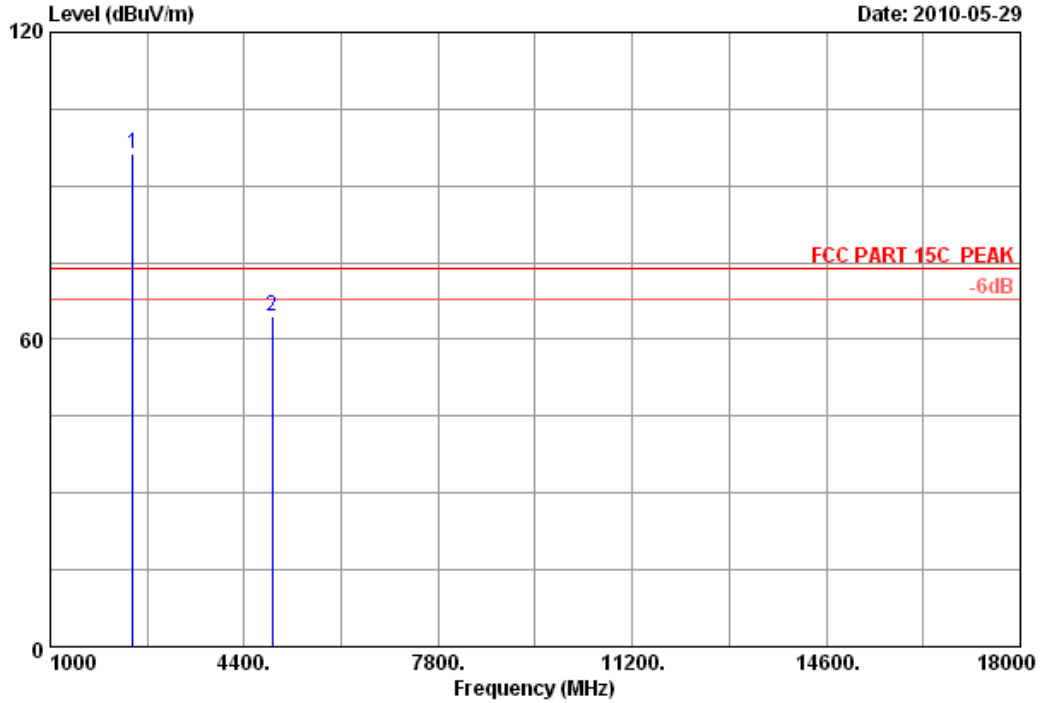


Site no. : 3m Chamber Data no. : 9  
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 23°C/54% Engineer : Paul Tian  
EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
Power : DC 4.5V  
Test mode : Tx 2442MHz  
M/N : 98161(RB3)  
Memo :



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Data: 10 File: E:\2010 report data\MM\Madcatz\ACS10QH137.EM6 (35)



Site no. : 3m Chamber Data no. : 10  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power : DC 4.5V  
 Test mode : Tx 2442MHz  
 M/N : 98161(RB3)  
 Memo :

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>loss<br>(dB) | Amp.<br>Factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|------------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2442.000       | 29.47                    | 8.77                  | 36.06                  | 94.23             | 96.41                         | 74.00              | -22.41         | Peak   |
| 2 | 4884.000       | 34.41                    | 12.44                 | 35.36                  | 53.15             | 64.64                         | 74.00              | 9.36           | Peak   |

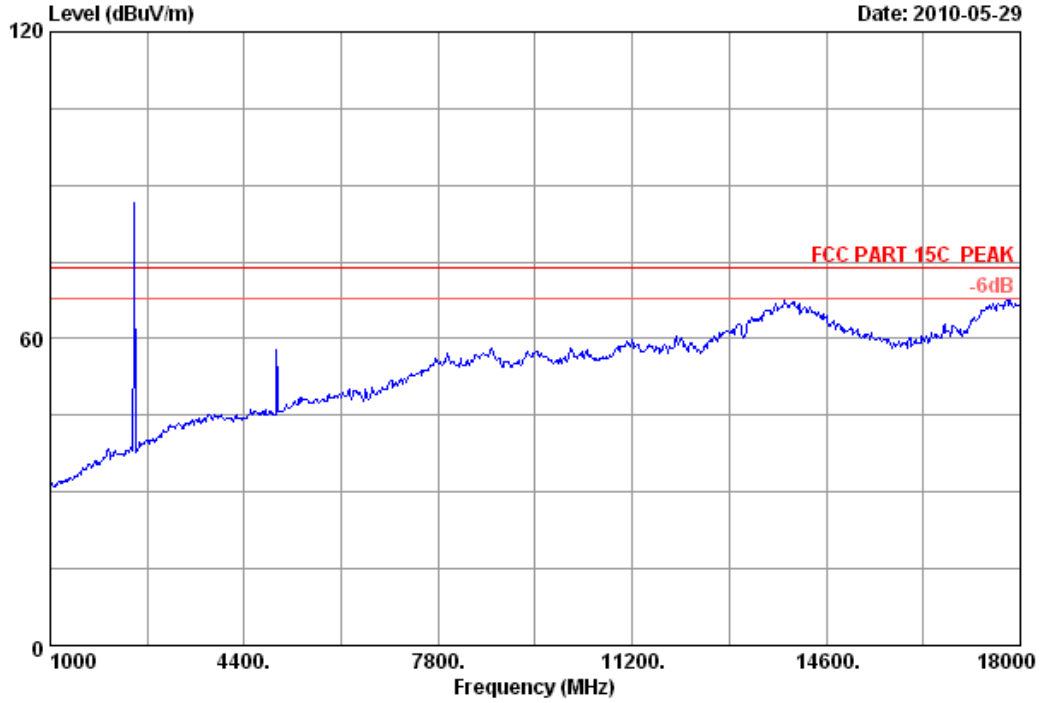
Remarks:  
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

| Frequency<br>(MHz) | PK measured<br>level (dBuV/m) | Duty cycle<br>factor (dB) | Average level<br>(dBuV/m) | Average Limit<br>(dBuV/m) | Result |
|--------------------|-------------------------------|---------------------------|---------------------------|---------------------------|--------|
| 4884               | 64.64                         | 28.87                     | 35.77                     | 54                        | PASS   |



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Data: 11 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)

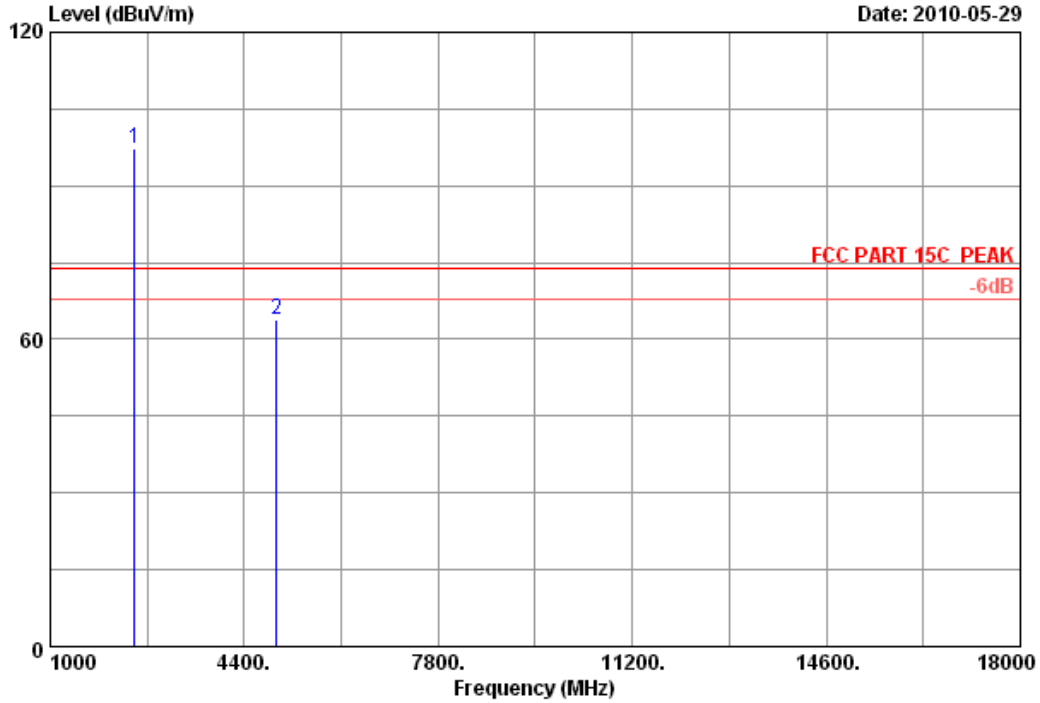


Site no. : 3m Chamber Data no. : 11  
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 23°C/54% Engineer : Paul Tian  
EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
Power : DC 4.5V  
Test mode : Tx 2482MHz  
M/N : 98161(RB3)  
Memo :



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Data: 12 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)



Site no. : 3m Chamber Data no. : 12  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power : DC 4.5V  
 Test mode : Tx 2482MHz  
 M/N : 98161(RB3)  
 Memo :

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>loss<br>(dB) | Amp.<br>Factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|------------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2482.000       | 29.49                    | 8.87                  | 35.97                  | 94.78             | 97.17                         | 74.00              | -23.17         | Peak   |
| 2 | 4961.000       | 34.54                    | 12.53                 | 35.37                  | 52.25             | 63.95                         | 74.00              | 10.05          | Peak   |

Remarks:

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

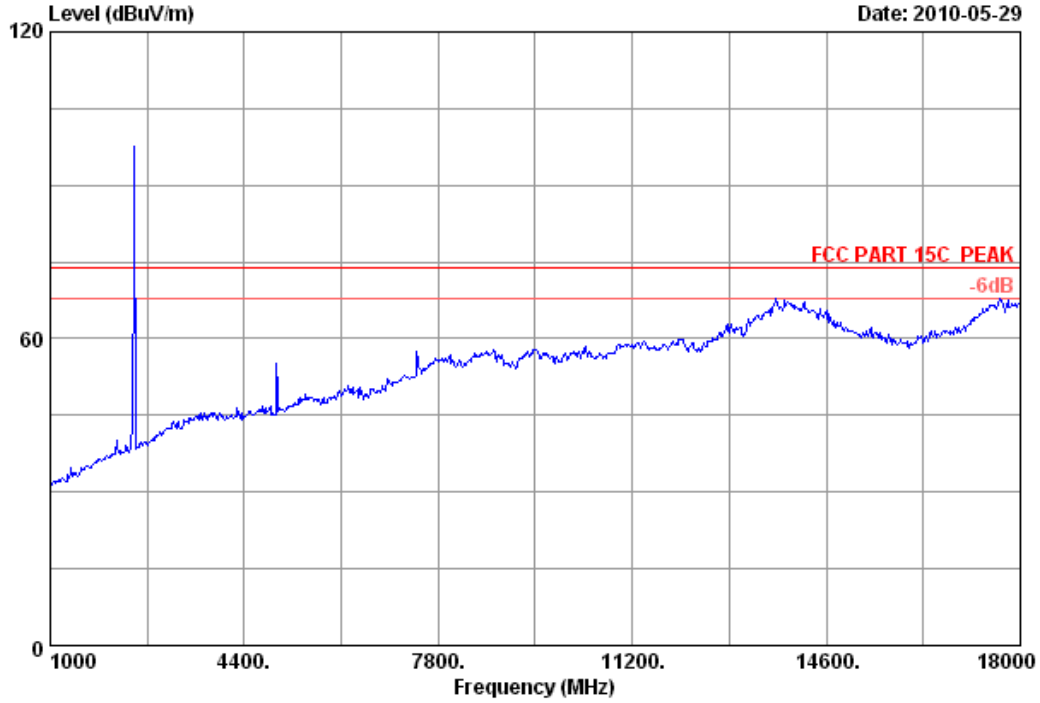
| Frequency<br>(MHz) | PK measured<br>level (dBuV/m) | Duty cycle<br>factor (dB) | Average level<br>(dBuV/m) | Average Limit<br>(dBuV/m) | Result |
|--------------------|-------------------------------|---------------------------|---------------------------|---------------------------|--------|
| 4961               | 63.95                         | 28.87                     | 35.08                     | 54                        | PASS   |





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Data: 13 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)

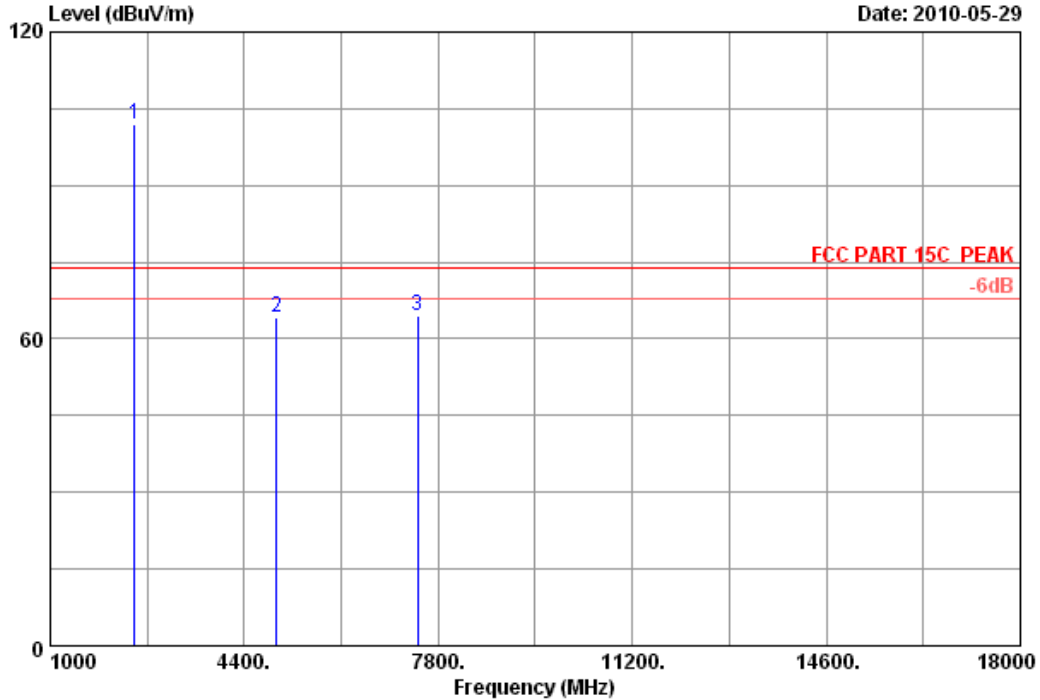


Site no. : 3m Chamber Data no. : 13  
Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C PEAK  
Env. / Ins. : 23°C/54% Engineer : Paul Tian  
EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
Power : DC 4.5V  
Test mode : Tx 2482MHz  
M/N : 98161(RB3)  
Memo :



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Data: 14 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)



Site no. : 3m Chamber Data no. : 14  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power : DC 4.5V  
 Test mode : Tx 2482MHz  
 M/N : 98161(RB3)  
 Memo :

|   | Freq.    | Ant. Factor | Cable loss | Amp. Factor | Reading | Emission Level | Limits   | Margin | Remark |
|---|----------|-------------|------------|-------------|---------|----------------|----------|--------|--------|
|   | (MHz)    | (dB/m)      | (dB)       | (dB)        | (dBuV)  | (dBuV/m)       | (dBuV/m) | (dB)   |        |
| 1 | 2482.000 | 29.49       | 8.87       | 35.97       | 95.46   | 97.85          | 74.00    | -23.85 | Peak   |
| 2 | 4964.000 | 34.54       | 12.53      | 35.37       | 52.58   | 64.28          | 74.00    | 9.72   | Peak   |
| 3 | 7446.000 | 38.02       | 15.83      | 35.16       | 45.85   | 64.54          | 74.00    | 9.46   | 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.

| Frequency (MHz) | PK measured level (dBuV/m) | Duty cycle factor (dB) | Average level (dBuV/m) | Average Limit (dBuV/m) | Result |
|-----------------|----------------------------|------------------------|------------------------|------------------------|--------|
| 4964            | 64.28                      | 28.87                  | 35.41                  | 54                     | PASS   |
| 7446            | 64.54                      | 28.87                  | 35.67                  | 54                     | PASS   |

## 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, 10 | 1 Year        |

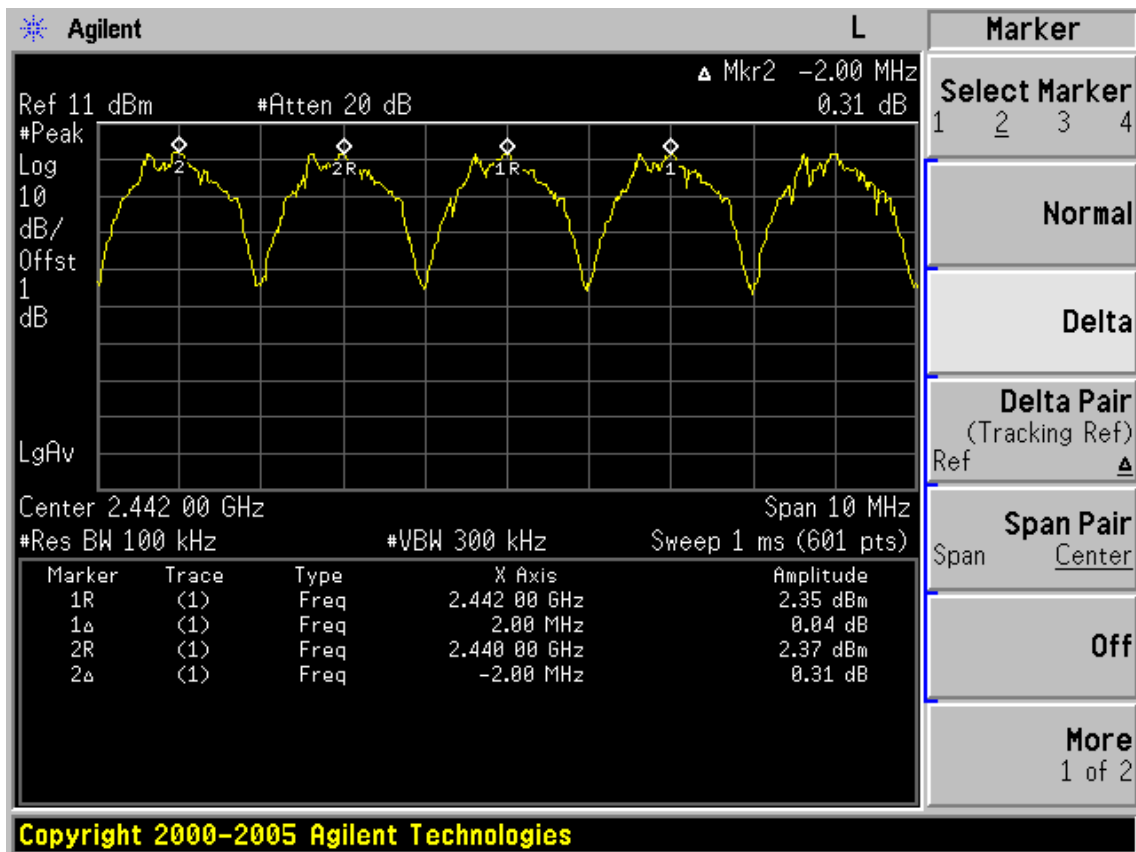
### 5.2. Limit

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.

|   |                    |                   |
|---|--------------------|-------------------|
| EUT: Rock Band Wireless Pro Keyboard for Xbox 360 |                    |                   |
| M/N: 98161(RB3)                                   |                    |                   |
| Test date:2010-06-03                              | Pressure:100.6 kpa | Humidity:53%      |
| Tested by:Paul Tian                               | Test site: RF site | Temperature:25 °C |

| Channel separation | Conclusion |
|--------------------|------------|
| 2.00MHz            | PASS       |



## 6. 20 DB BANDWIDTH TEST

### 6.1. Test Equipment

| Item | Equipment         | Manufacturer | Model No.   | Serial No. | Last Cal. | Cal. Interval |
|------|-------------------|--------------|-------------|------------|-----------|---------------|
| 1.   | Spectrum Analyzer | Agilent      | E4446A      | US44300459 | May.08,10 | 1 Year        |
| 2.   | Attenuator        | Agilent      | 8491B       | MY39262165 | May.08,10 | 1 Year        |
| 3.   | RF Cable          | Hubersuhner  | SUCOFLEX102 | 28618/2    | May.08,10 | 1Year         |

### 6.2. Limit

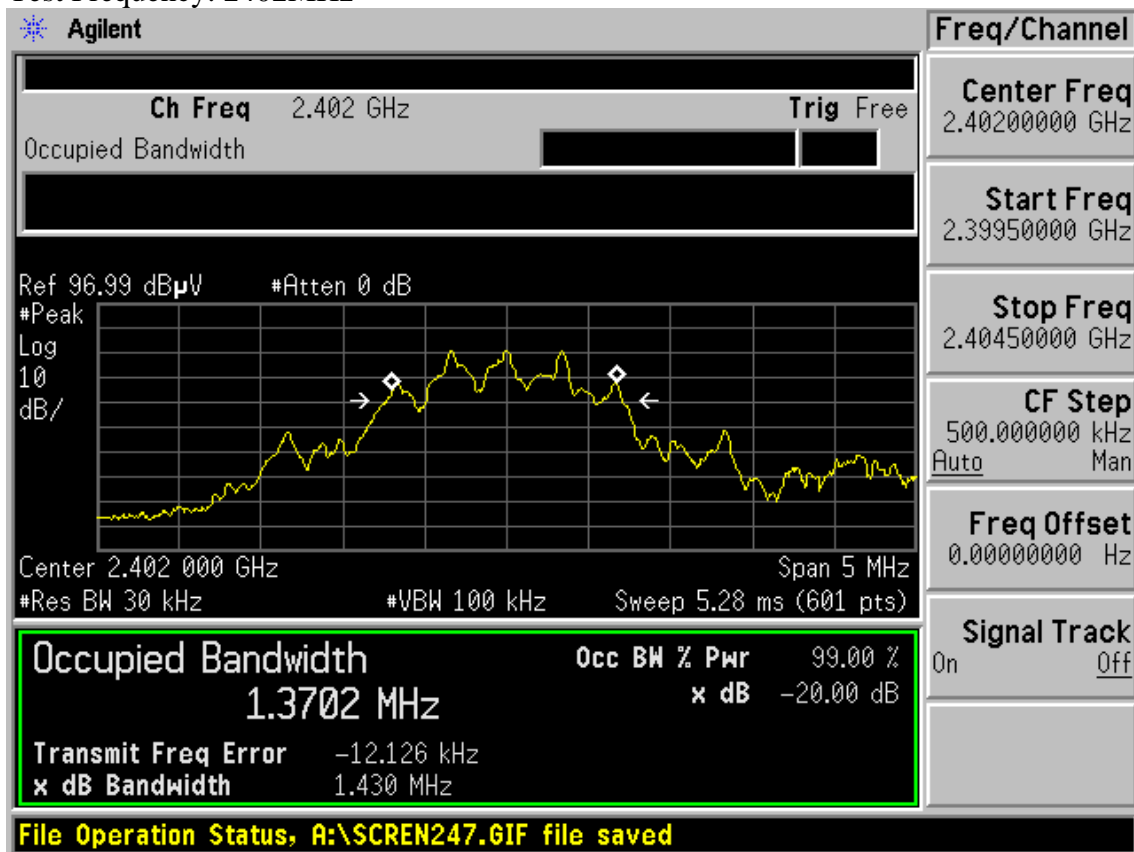
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific 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

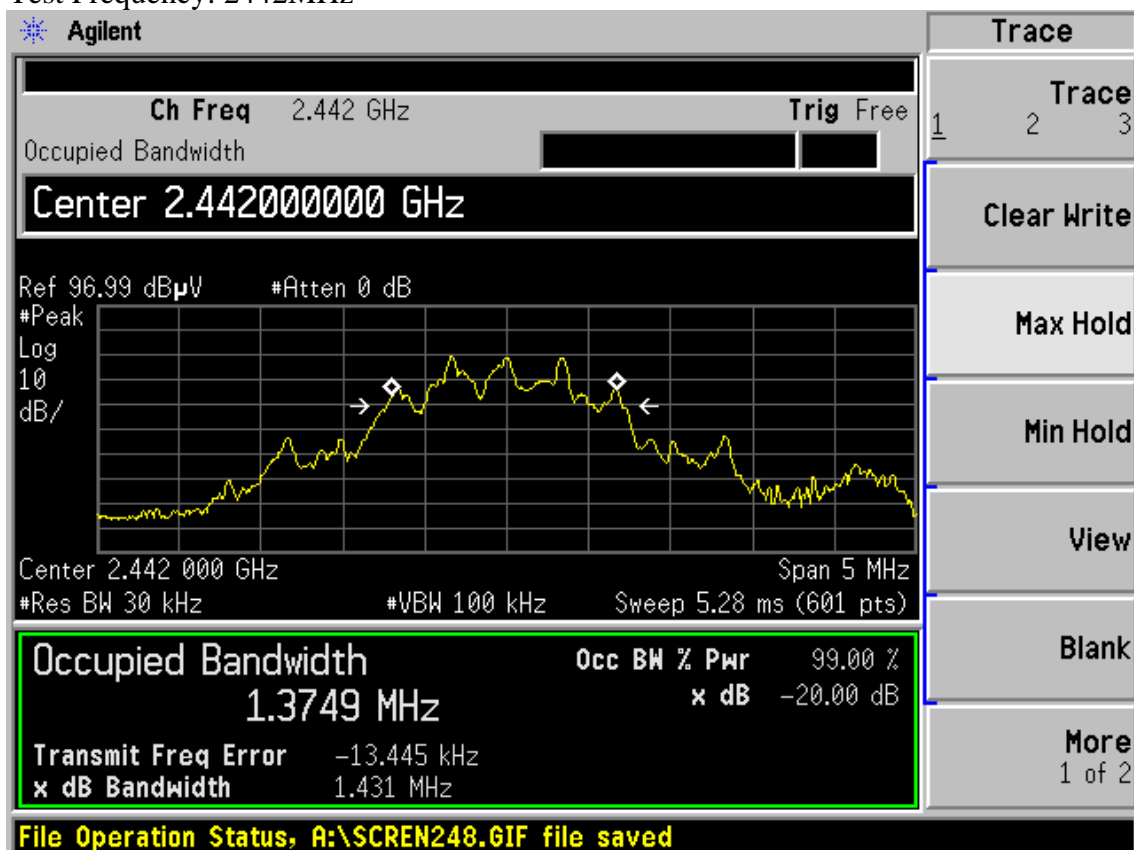
|  |                    |                     |
|--|--------------------|---------------------|
| EUT:Rock Band Wireless Pro Keyboard for Xbox 360 |                    |                     |
| M/N:98161(RB3)                                   |                    |                     |
| Test date:2010-05-30                             | Pressure:100.6 kpa | Humidity:52 %       |
| Tested by:Paul Tian                              | Test site: RF site | Temperature : 25 °C |

| Frequency         | 20dB bandwidth<br>( KHz ) | Limit<br>(KHz) |
|-------------------|---------------------------|----------------|
| 2402              | 1430                      | N/A            |
| 2442              | 1431                      | N/A            |
| 2482              | 1413                      | N/A            |
| Conclusion : PASS |                           |                |

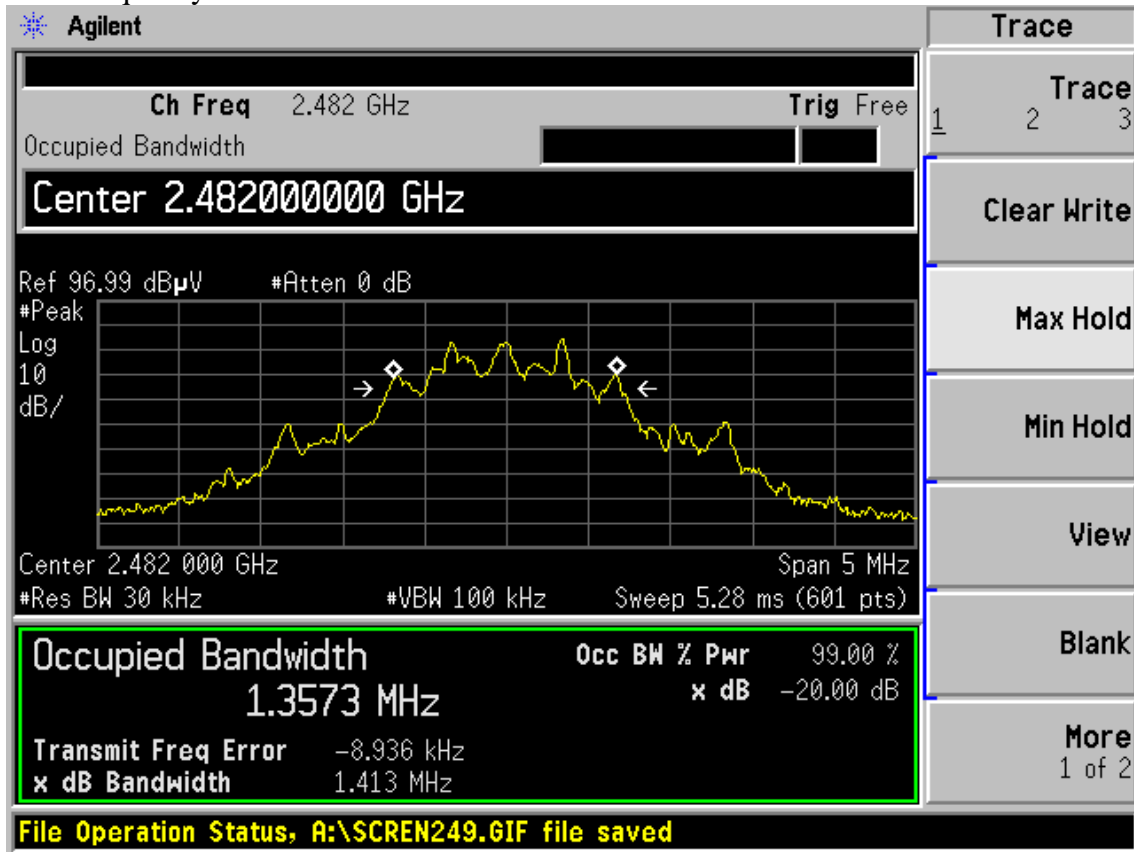
Test Frequency: 2402MHz



Test Frequency: 2442MHz



Test Frequency: 2482MHz



## 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, 10 | 1 Year        |
| 2    | Attenuator        | Agilent      | 8491B           | MY39262165 | May,08, 10 | 1 Year        |
| 3    | RF Cable          | Hubersuhner  | SUCOFLEX<br>102 | 28618/2    | May,08, 10 | 1Year         |

### 7.2. Limit

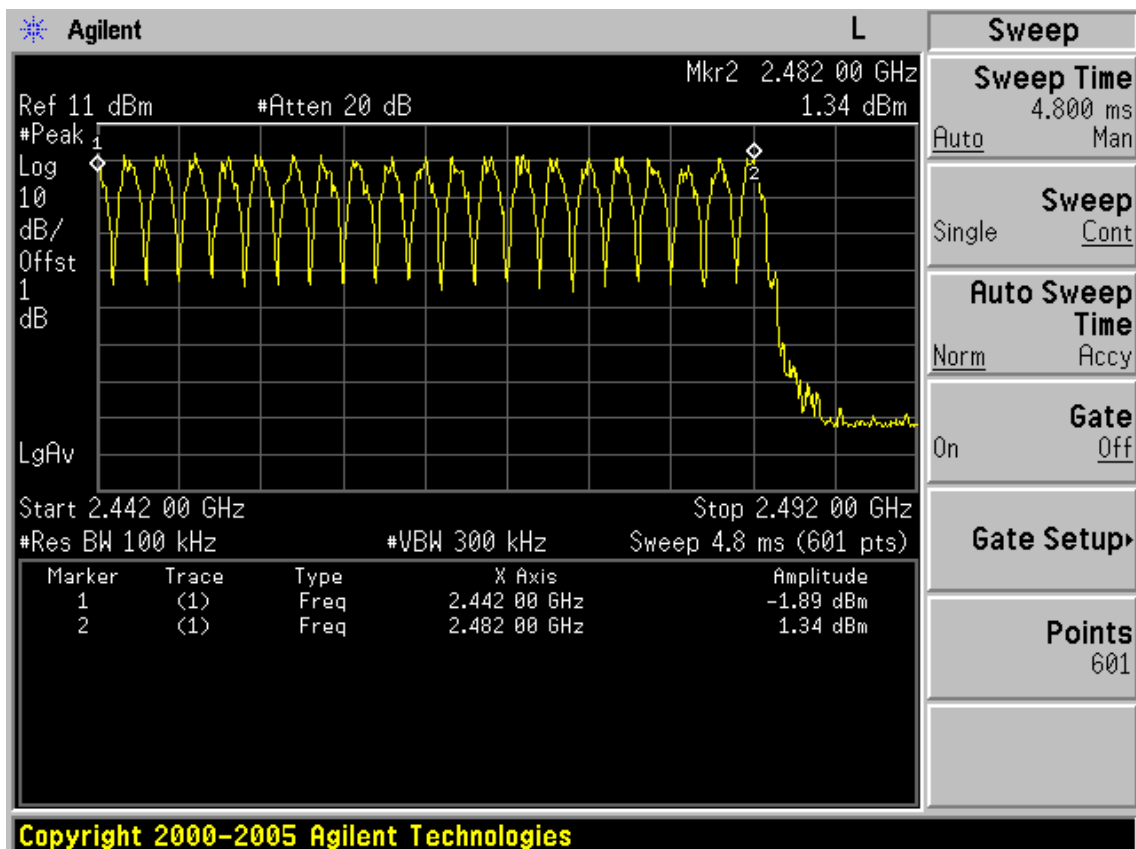
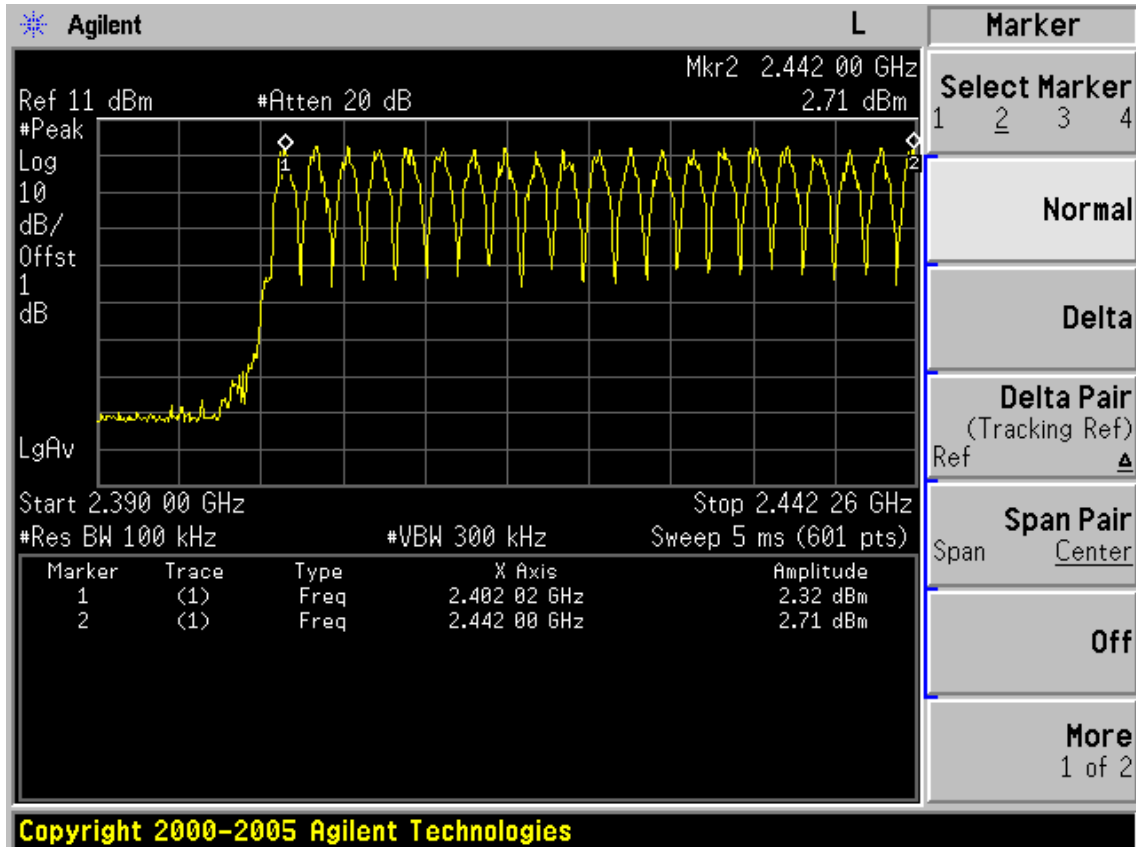
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

### 7.3. Test Results

|   |                    |                   |
|---|--------------------|-------------------|
| EUT: Rock Band Wireless Pro Keyboard for Xbox 360 |                    |                   |
| M/N: 98161(RB3)                                   |                    |                   |
| Test date:2010-06-03                              | Pressure:100.6 kpa | Humidity:53%      |
| Tested by:Paul Tian                               | Test site: RF site | Temperature:25 °C |

| Number of channel | Limit     | Conclusion |
|-------------------|-----------|------------|
| 41                | $\geq 15$ | PASS       |





## 8. DWELL TIME

### 8.1. Test Equipment

| Item | Equipment         | Manufacturer | Model No.       | Serial No. | Last Cal.  | Cal. Interval |
|------|-------------------|--------------|-----------------|------------|------------|---------------|
| 1    | Spectrum Analyzer | Agilent      | E4446A          | US44300459 | May.08, 10 | 1 Year        |
| 2    | Attenuator        | Agilent      | 8491B           | MY39262165 | May,08, 10 | 1 Year        |
| 3    | RF Cable          | Hubersuhner  | SUCOFLEX<br>102 | 28618/2    | May,08, 10 | 1Year         |

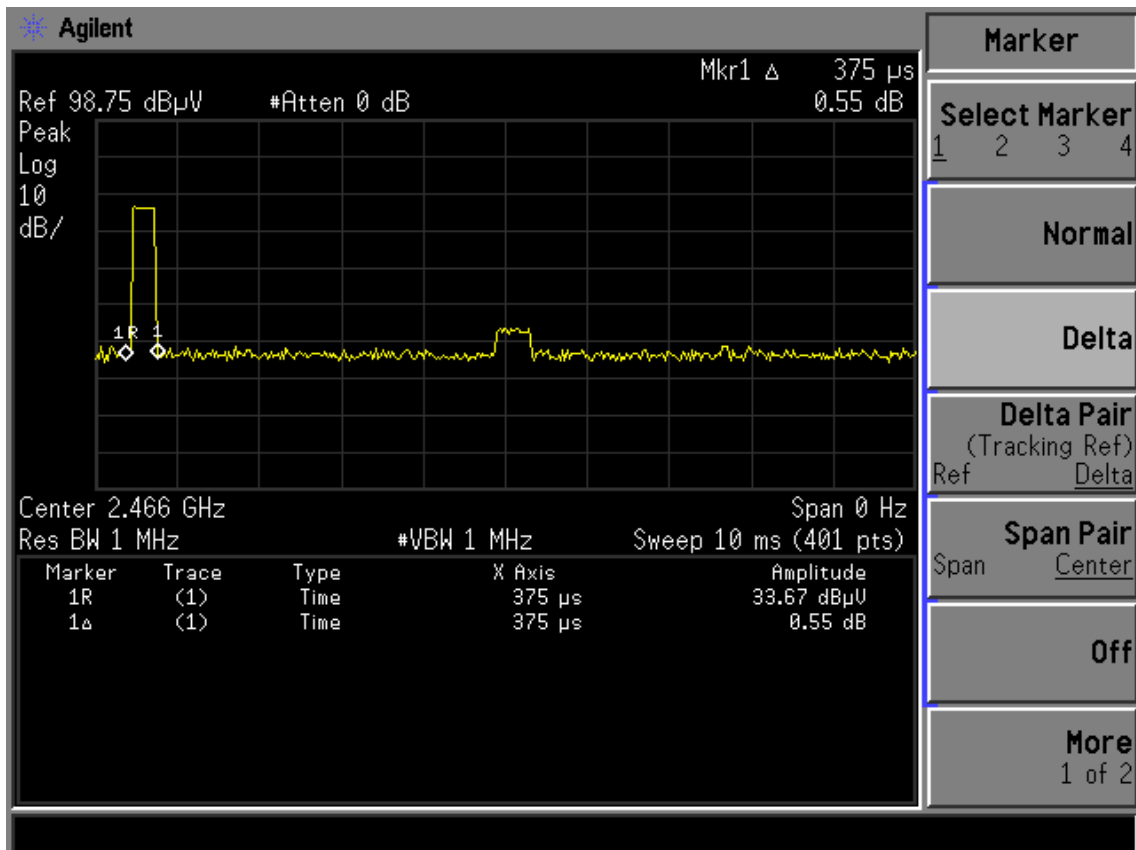
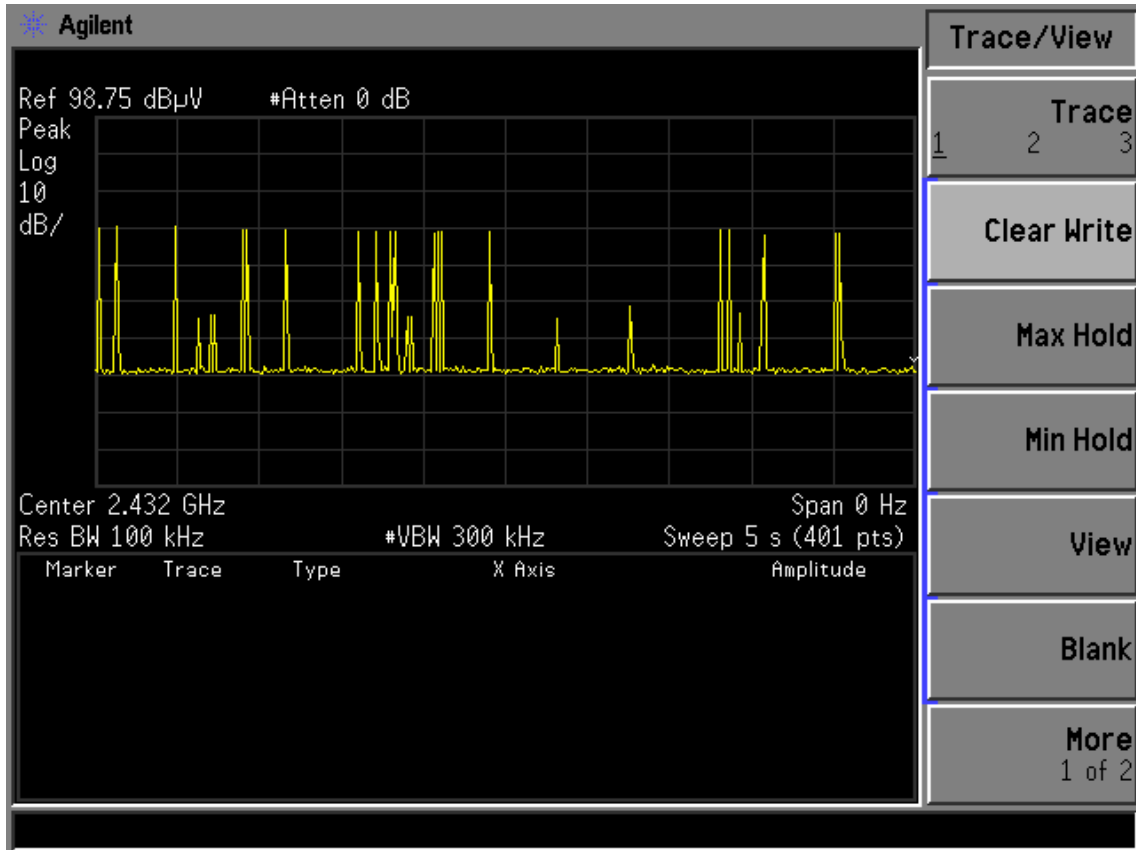
### 8.2. Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

### 8.3. Test Results

|   |                    |                   |
|---|--------------------|-------------------|
| EUT: Rock Band Wireless Pro Keyboard for Xbox 360 |                    |                   |
| M/N: 98161(RB3)                                   |                    |                   |
| Test date:2010-06-03                              | Pressure:100.6 kpa | Humidity:53%      |
| Tested by:Paul Tian                               | Test site: RF site | Temperature:25 °C |

| dwll time   | Limit  | Conclusion |
|---|--------|------------|
| $19\text{hops}/5\text{s} * 0.4 * 41\text{chanel} * 0.375\text{ms} = 21.81\text{ms}$ | <400ms | PASS       |



## 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.08, 10  | 1 Year        |
| 2.   | Horn Antenna      | EMCO         | 3115         | 9510-4580  | Nov.19, 09  | 1.5 Year      |
| 3.   | Horn Antenna      | EMCO         | 3115         | 9607-4877  | Nov. 25, 09 | 1.5 Year      |
| 4.   | Signal Generator  | HP           | 83732B       | VS34490501 | May.08, 10  | 1 Year        |
| 5.   | Amplifier         | Agilent      | 8491B        | MY39262165 | May.08, 10  | 1 Year        |
| 6.   | RF Cable          | Hubersuhner  | SUCOFLEX 102 | 28620/2    | May,08, 10  | 1 Year        |
| 7.   | RF Cable          | Hubersuhner  | SUCOFLEX 102 | 271471/4   | May,08, 10  | 1 Year        |
| 8.   | RF Cable          | Hubersuhner  | SUCOFLEX 102 | 29086/2    | May,08, 10  | 1 Year        |
| 9.   | RF Cable          | Hubersuhner  | SUCOFLEX 102 | 271473/4   | May,08, 10  | 1 Year        |
| 10.  | RF Cable          | Hubersuhner  | SUCOFLEX 102 | 29091/2    | May,08, 10  | 1 Year        |

### 9.2. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

### 9.3. Test Procedure

- (1).The EUT was placed on a 0.8m high table in the chamber and turned on in continuously transmitting mode.
- (2).The maximum fundamental emission at 3m distance was measured with 2MHz RBW (above 20dB bandwidth of device), 3MHz VBW, PK detector, and recorded with receive antenna in both vertical and horizontal by rotating the turntable and by lowering the receive antenna.
- (3).The EUT was then removed and replaced with a substitution antenna in the same position and the substitution antenna must have the same polarization with the receive antenna.
- (4).A signal which have the same frequency obtained in step 2 was fed to the substitution, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver, the level of the signal generator was adjusted until the measured field strength level in step 2 was obtained, recorded the level of the signal generator.
- (5).Repeated step 4 with both antenna polarizations
- (6).The radiated power is equal to the power supplied by the signal generator and corrections due to the gain of the substitution antenna and the cable loss between the signal generator and the substitution antenna.

## 9.4. Test Results

|   |                    |                   |
|---|--------------------|-------------------|
| EUT: Rock Band Wireless Pro Keyboard for Xbox 360 |                    |                   |
| M/N: 98161(RB3)                                   |                    |                   |
| Test date:2010-06-03                              | Pressure:100.6 kpa | Humidity:53%      |
| Tested by:Paul Tian                               | Test site: RF site | Temperature:25 °C |

| Frequency (MHz)                                    | Test Antenna polarization | Maximum field strength (dBuV/m) | SG Level (dBm) | Cable loss (dB) | Antenna Gain (dBi) | Result (dBm) |
|--|---------------------------|---------------------------------|----------------|-----------------|--------------------|--------------|
| 2402   | H                         | 99.12                           | 0.30           | 5.75            | 8.90               | 3.45         |
|  | V                         | 97.54                           | -1.92          | 5.75            | 8.90               | 1.23         |
| 2442   | H                         | 98.45                           | -0.35          | 5.77            | 8.91               | 2.79         |
|  | V                         | 97.32                           | -2.07          | 5.77            | 8.91               | 1.07         |
| 2482   | H                         | 99.21                           | -0.03          | 5.78            | 8.94               | 3.13         |
|  | V                         | 97.56                           | -1.95          | 5.78            | 8.94               | 1.21         |
| Note: Result = SG level –Cable loss + Antenna Gain |                           |                                 |                |                 |                    |              |
| Limit: 21dBm                                       |                           |                                 |                |                 |                    |              |
| Conclusion: PASS                                   |                           |                                 |                |                 |                    |              |

## 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.08,10  | 1 Year        |
| 2.   | Horn Antenna      | EMCO         | 3115        | 9607-4877  | Nov.25, 09 | 1.5 Year      |
| 3.   | Amplifier         | Agilent      | 8449B       | 3008A02495 | May.08, 10 | 1 Year        |
| 4.   | RF Cable          | Hubersuhner  | SUCOFLEX102 | 28620/2    | May.08,10  | 1 Year        |
| 5.   | RF Cable          | Hubersuhner  | SUCOFLEX102 | 28618/2    | May.08,10  | 1 Year        |
| 6.   | RF Cable          | Hubersuhner  | SUCOFLEX102 | 28610/2    | May.08,10  | 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

For emissions that are up to two bandwidths(1.5MHz) away (2390-2370MHz and 2483.5MHz to 2486.5MHz) from the band-edge use below produce:

1. Choose a spectrum analyzer span that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set the analyzer RBW to 100KHz and with a video bandwidth 300KHz. Record the peak levels of the fundamental emission and the relevant band-edge emission, Observe the stored trace and measure the amplitude delta between the peak of the fundamental and the peak of the band-edge emission. This is not a field strength measurement, it is only a relative measurement to determine the amount by which the emission drops at the band edge relative to the highest fundamental emission level.
2. Subtract the delta measured in step (1) from the maximum field strengths measured in clause 4 .The resultant field strengths are then used to determine band-edge compliance as required by Section 15.205

For emissions above two bandwidths away from the band-edge use below 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=1MHz ;VBW=3MHz, PK detector, Sweep=AUTO
  - (b)This device is pulse modulated, a duty cycle factor was used to calculate average level based measured peak level.

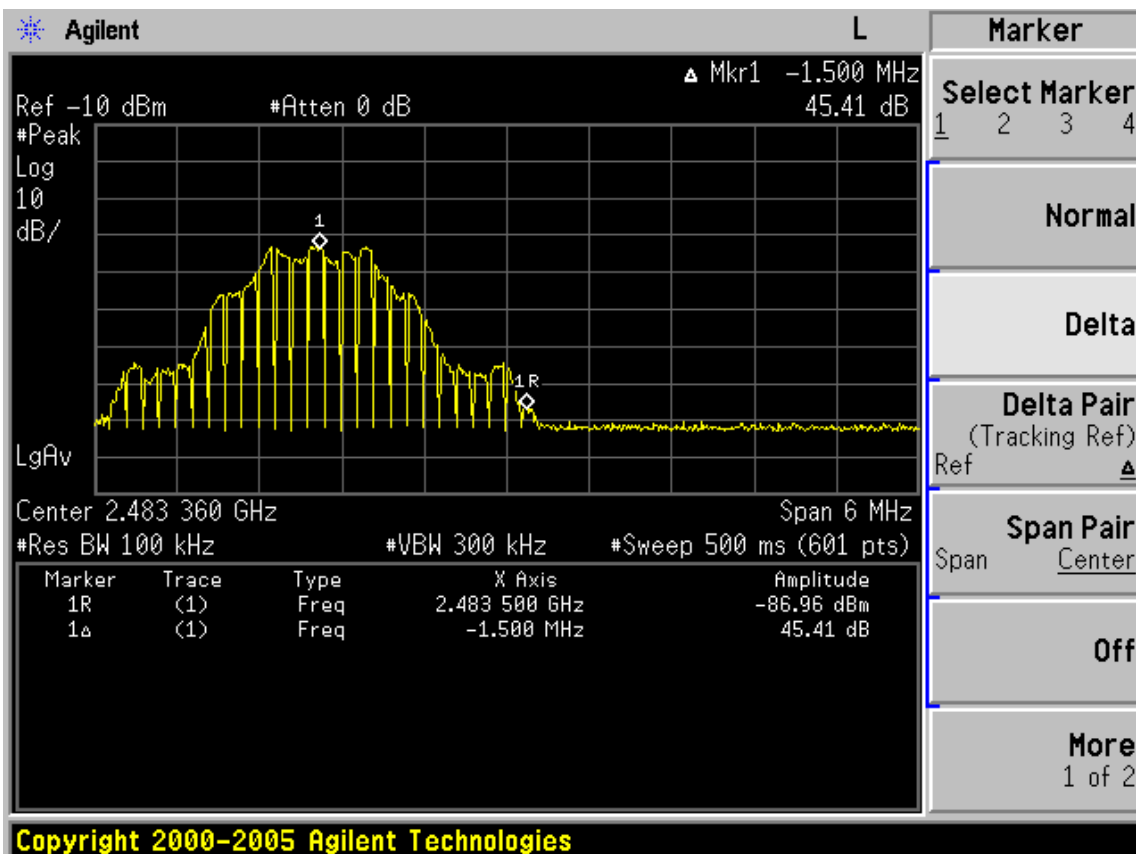
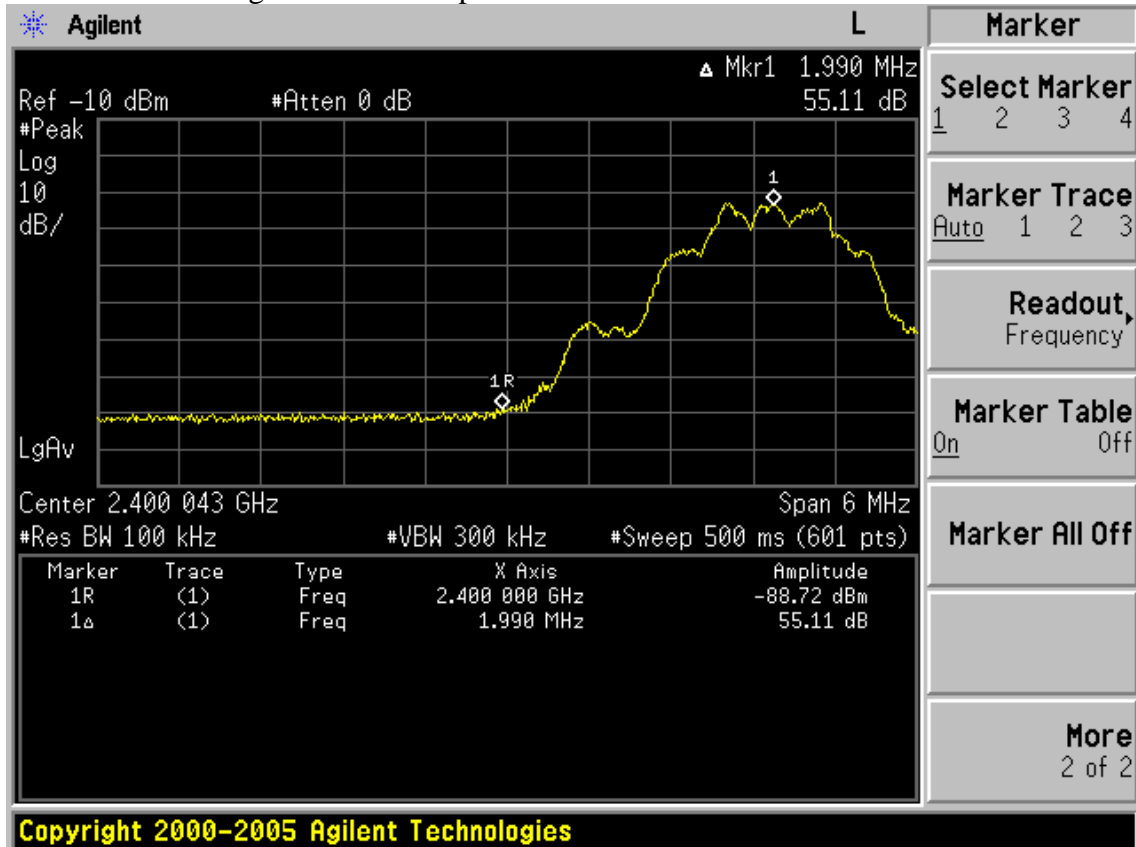
#### 10.4. Test Results

Pass (The testing data was attached in the next pages.)  
All the PK levels comply with average limit, so the average levels were deemed to comply with average limit.

Emissions in two bandwidths away from the band-edge

| CH   | Frequency (MHz) | Maximum PK Fundamental level (dBuV/m) | Marker delta (dB) (Note2) | band edge level (dBuV/m) | PK Limit (dBuV/m) | Result |
|--|-----------------|---------------------------------------|---------------------------|--------------------------|-------------------|--------|
| Low 2402MHz  | 2390            | 98.46                                 | 55.11                     | 43.35                    | 74                | PASS   |
| High 2482MHz   | 2483.5          | 98.31                                 | 45.41                     | 52.90                    | 74                | PASS   |
| <p>Note1: Because calculate with maximum PK fundamental level, the result will comply with average limit, so all the other levels and average levels were deemed to comply with FCC requirements.</p> <p>Note 2: The data comes from next page marker delta test result.</p> |                 |                                       |                           |                          |                   |        |

Band edge marker delta-plot:

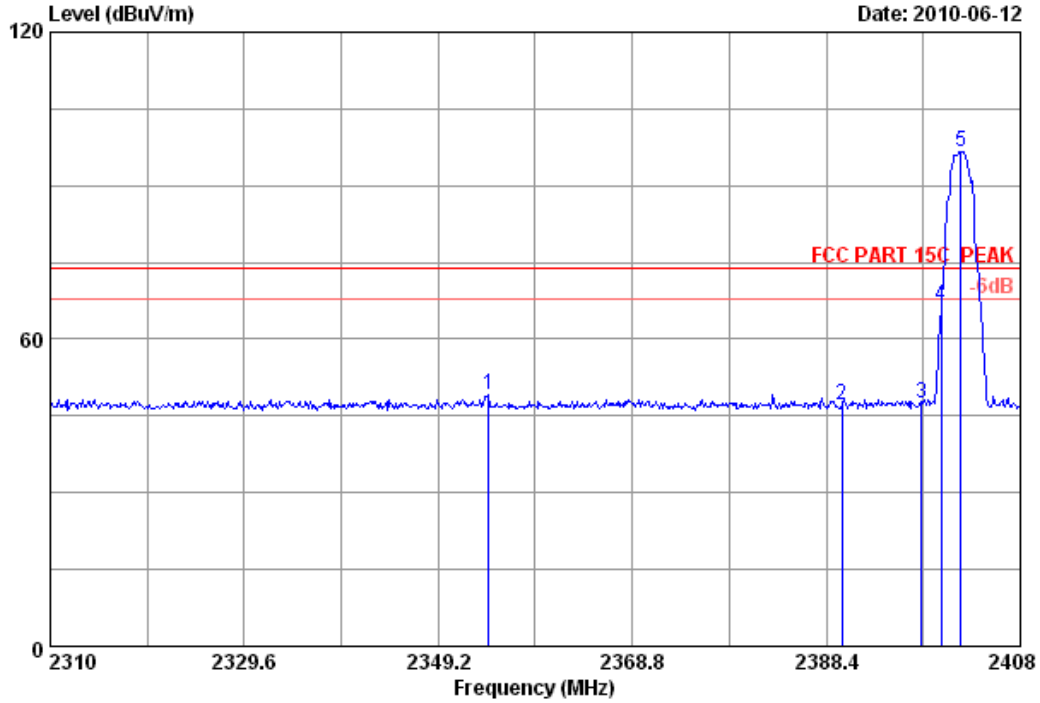






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Data: 5 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)



Site no. : 3m Chamber Data no. : 5  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power : DC 4.5V  
 Test mode : Tx 2402MHz  
 M/N : 98161(RB3)

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>loss<br>(dB) | Amp.<br>Factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|------------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2354.296       | 29.42                    | 8.62                  | 35.91                  | 47.17             | 49.30                         | 74.00              | 24.70          | Peak   |
| 2 | 2390.000       | 29.44                    | 8.67                  | 36.09                  | 45.06             | 47.08                         | 74.00              | 26.92          | Peak   |
| 3 | 2398.000       | 29.44                    | 8.72                  | 36.09                  | 45.41             | 47.48                         | 74.00              | 26.52          | Peak   |
| 4 | 2400.000       | 29.44                    | 8.72                  | 36.09                  | 64.45             | 66.52                         | 74.00              | 7.48           | Peak   |
| 5 | 2402.000       | 29.44                    | 8.72                  | 36.09                  | 94.68             | 96.75                         | 74.00              | -22.75         | Peak   |

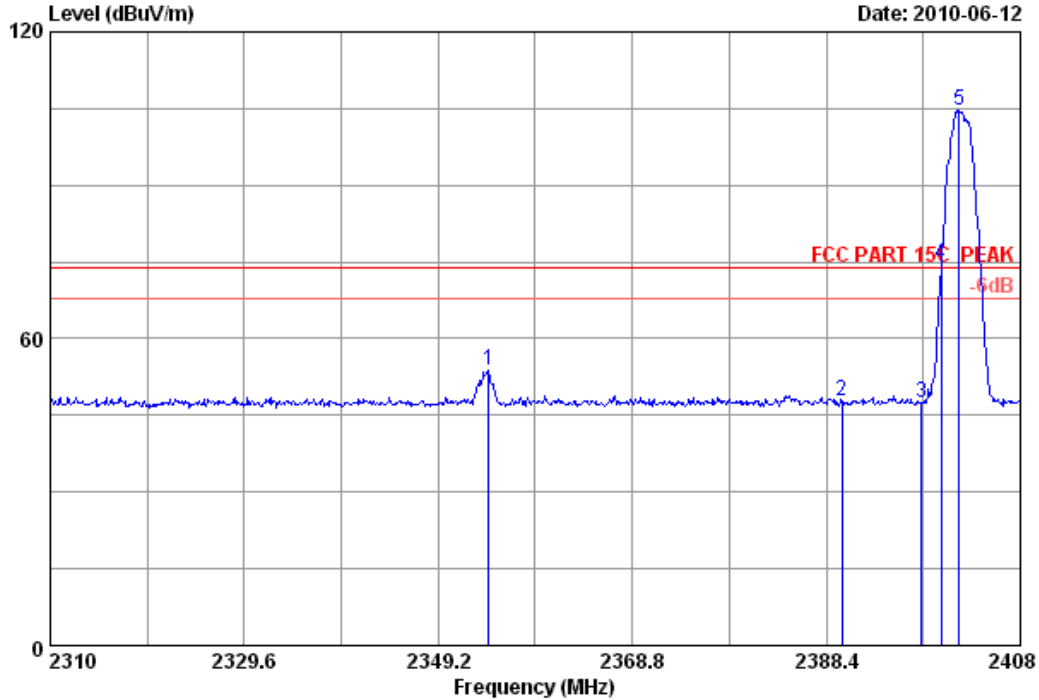
Remarks:

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: 6 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)



Site no. : 3m Chamber Data no. : 6  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power : DC 4.5V  
 Test mode : Tx 2402MHz  
 M/N : 98161(RB3)

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>loss<br>(dB) | Amp.<br>Factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|------------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2354.296       | 29.42                    | 8.62                  | 35.91                  | 51.61             | 53.74                         | 74.00              | 20.26          | Peak   |
| 2 | 2390.000       | 29.44                    | 8.67                  | 36.09                  | 45.79             | 47.81                         | 74.00              | 26.19          | Peak   |
| 3 | 2398.000       | 29.44                    | 8.72                  | 36.09                  | 45.55             | 47.62                         | 74.00              | 26.38          | Peak   |
| 4 | 2400.000       | 29.44                    | 8.72                  | 36.09                  | 72.42             | 74.49                         | 74.00              | -0.49          | Peak   |
| 5 | 2401.826       | 29.44                    | 8.72                  | 36.09                  | 96.39             | 98.46                         | 74.00              | -24.46         | Peak   |

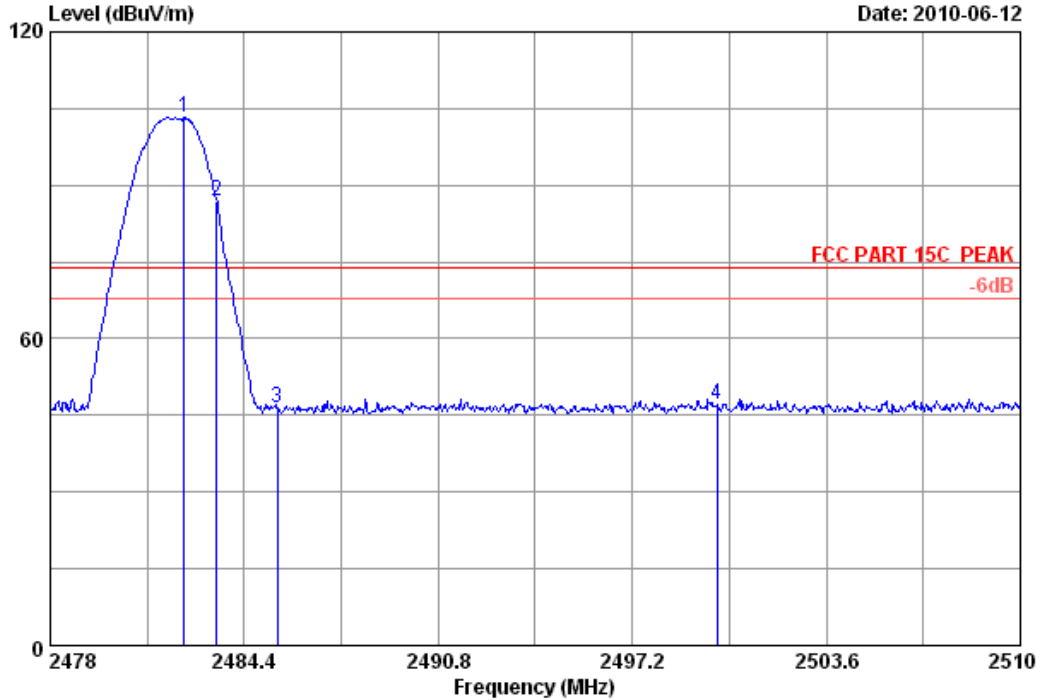
Remarks:

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: 15 File: E:\2010 report data\MMadcatz\ACS10QH137.EM6 (35)



Site no. : 3m Chamber Data no. : 15  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power : DC 4.5V  
 Test mode : Tx 2482MHz  
 M/N : 98161(RB3)

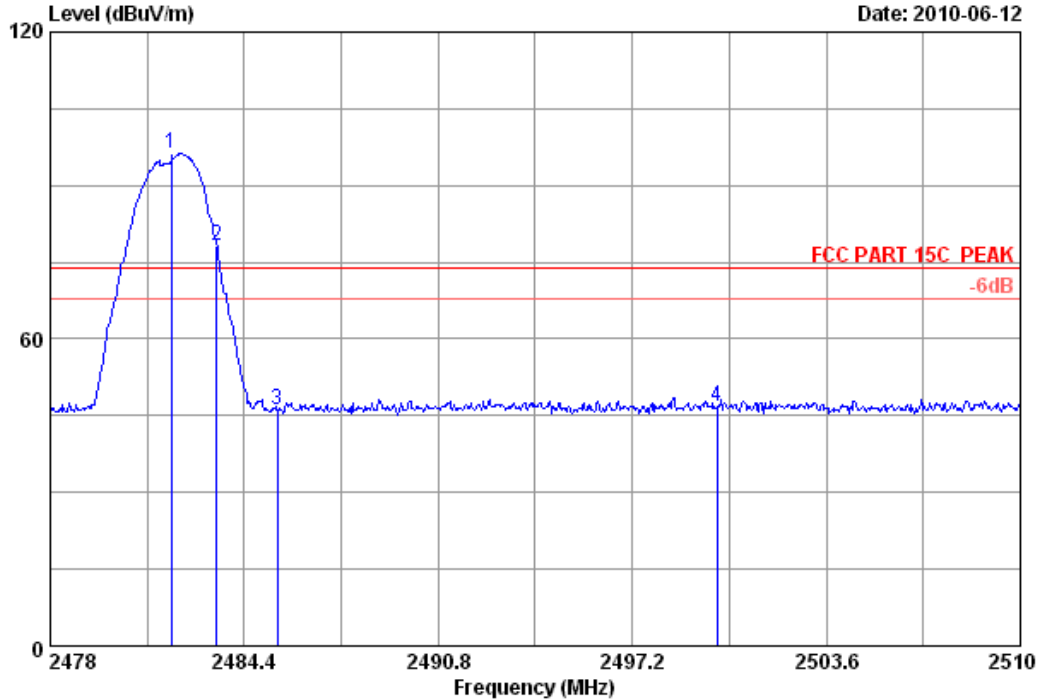
|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>loss<br>(dB) | Amp.<br>Factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|------------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2482.416       | 29.49                    | 8.87                  | 35.97                  | 95.92             | 98.31                         | 74.00              | -24.31         | Peak   |
| 2 | 2483.500       | 29.49                    | 8.87                  | 35.97                  | 84.37             | 86.76                         | 74.00              | -12.76         | Peak   |
| 3 | 2485.500       | 29.49                    | 8.87                  | 35.97                  | 44.05             | 46.44                         | 74.00              | 27.56          | Peak   |
| 4 | 2500.000       | 29.50                    | 8.92                  | 36.00                  | 44.71             | 47.13                         | 74.00              | 26.87          | 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: 16 File: E:\2010 report data\M\Madcatz\ACS10QH137.EM6 (35)



Site no. : 3m Chamber Data no. : 16  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : Rock Band Wireless Pro Keyboard for Xbox 360  
 Power : DC 4.5V  
 Test mode : Tx 2482MHz  
 M/N : 98161(RB3)

|   | Freq.<br>(MHz) | Ant.<br>Factor<br>(dB/m) | Cable<br>loss<br>(dB) | Amp.<br>Factor<br>(dB) | Reading<br>(dBuV) | Emission<br>Level<br>(dBuV/m) | Limits<br>(dBuV/m) | Margin<br>(dB) | Remark |
|---|----------------|--------------------------|-----------------------|------------------------|-------------------|-------------------------------|--------------------|----------------|--------|
| 1 | 2482.000       | 29.49                    | 8.87                  | 35.97                  | 93.74             | 96.13                         | 74.00              | -22.13         | Peak   |
| 2 | 2483.500       | 29.49                    | 8.87                  | 35.97                  | 75.89             | 78.28                         | 74.00              | -4.28          | Peak   |
| 3 | 2485.500       | 29.49                    | 8.87                  | 35.97                  | 43.86             | 46.25                         | 74.00              | 27.75          | Peak   |
| 4 | 2500.000       | 29.50                    | 8.92                  | 36.00                  | 44.23             | 46.65                         | 74.00              | 27.35          | 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.DEVIATION TO TEST SPECIFICATIONS**

[ NONE]