

APPLICATION FOR CERTIFICATION
On Behalf of

Mad Catz, Inc.

Wireless Z-Chuk for Nintendo Wii

Model Number: 57461

FCC ID: P25S1MC5746Z3809C

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-F09216
Date of Test : Oct.12~15, 2009
Date of Report : Oct.22, 2009

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TEST REPORT CERTIFICATION

Applicant : Mad Catz, Inc.
 EUT Description : Wireless Z-Chuk for Nintendo Wii
 MODEL NO. : 57461
 FCC ID : P25S1MC5746Z3809C
 POWER SUPPLY : DC 3.3V
 TEST VOLTAGE : DC 3.3V

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 :

Oct.12~15, 2009

Prepared by :

Edie Huang

Edie Huang / Assistant

Reviewer :

Jamy Yu

Jamy Yu / Senior Engineer

Approved & Authorized Signer :



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 15C: 15.207 ANSI C63.4-2003	N/A
Radiated Emission Test	FCC Part 15C: 15.209 FCC Part 15C: 15.249 ANSI C63.4-2003	PASS
Band Edge Compliance Test	FCC Part 15: 15.249	PASS
20dB Bandwidth Test	FCC Part 15: 15.215	PASS
N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product name : Wireless Z-Chuk for Nintendo Wii

Model Number : 57461

FCC ID : P25S1MC5746Z3809C

Operation frequency : 2402MHz~2476MHz

Modulation : GFSK

Power Supply : DC 3.3V
(Note: Batteries were full charged for all the test.)

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

Date of Test : Oct.12~15, 2009

Date of Receipt : Oct.09, 2009

Sample Type : Prototype production

Note: This EUT has two parts, one is controller, the other one is dongle. We test controller in this report.

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)

Test Item	Uncertainty
Uncertainty for Radiation Emission test in 3m chamber	3.78 dB (Polarize: V)
	4.20 dB (Polarize: H)
Uncertainty for Bandwidth test	1×10^{-9}
Uncertainty for DC power test	0.042 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

3. POWER LINE CONDUCTED EMISSION TEST

According to Paragraph (c) 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 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 Year
5	Bilog Antenna	Schaffner	CBL6111C	2598	Nov.10, 08	1 Year
6	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 09	1 Year
7	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 09	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, 09	1 Year
2.	Horn Antenna	EMCO	3115	9607-4877	May.27, 08	1.5 Year
3.	Amplifier	Agilent	8449B	3008A02495	Nov.24,08	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08, 09	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX102	271471/4	May.08, 09	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX102	29086/2	May.08, 09	1 Year

4.2. Block Diagram of Test Setup

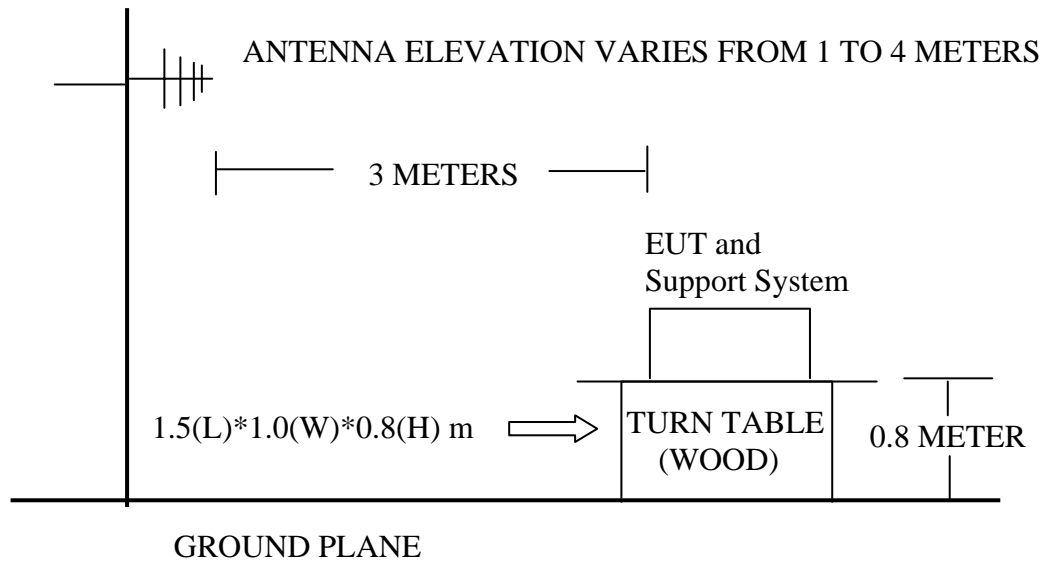
4.2.1. Block Diagram of connection between EUT and simulators



(EUT: Wireless Z-Chuk for Nintendo Wii)

4.2.2. Anechoic Chamber Setup Diagram

ANTENNA TOWER



4.3. Radiated Emission Limit Standard: FCC 15.209 and 15.249

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 1000MHz	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	
Field Strength of Fundamental emission for 2.4GHz-2.4835GHz	3	94.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average) 114.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak)	
Field Strength of Harmonics	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) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

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. Wireless Z-Chuk for Nintendo Wii (EUT)

Model Number : 57461

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 (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

This product is pulse modulated, pulse desensitization correction factor was used to determine the Average level.

The duty cycle factor was used to calculate Average Level above 1 GHz:

$$\text{Average level} = \text{PK measured level} - \text{duty cycle factor}$$

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 15.249 Limit.

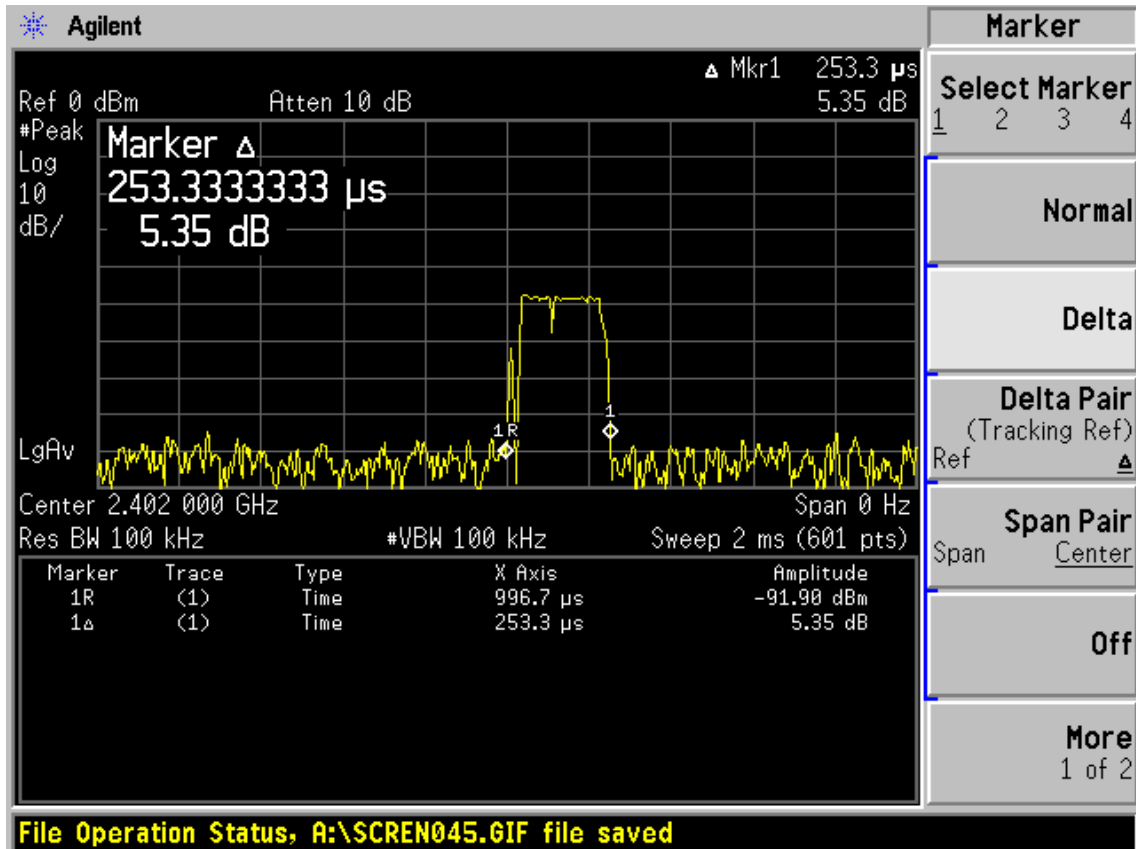
4.8. Duty factor

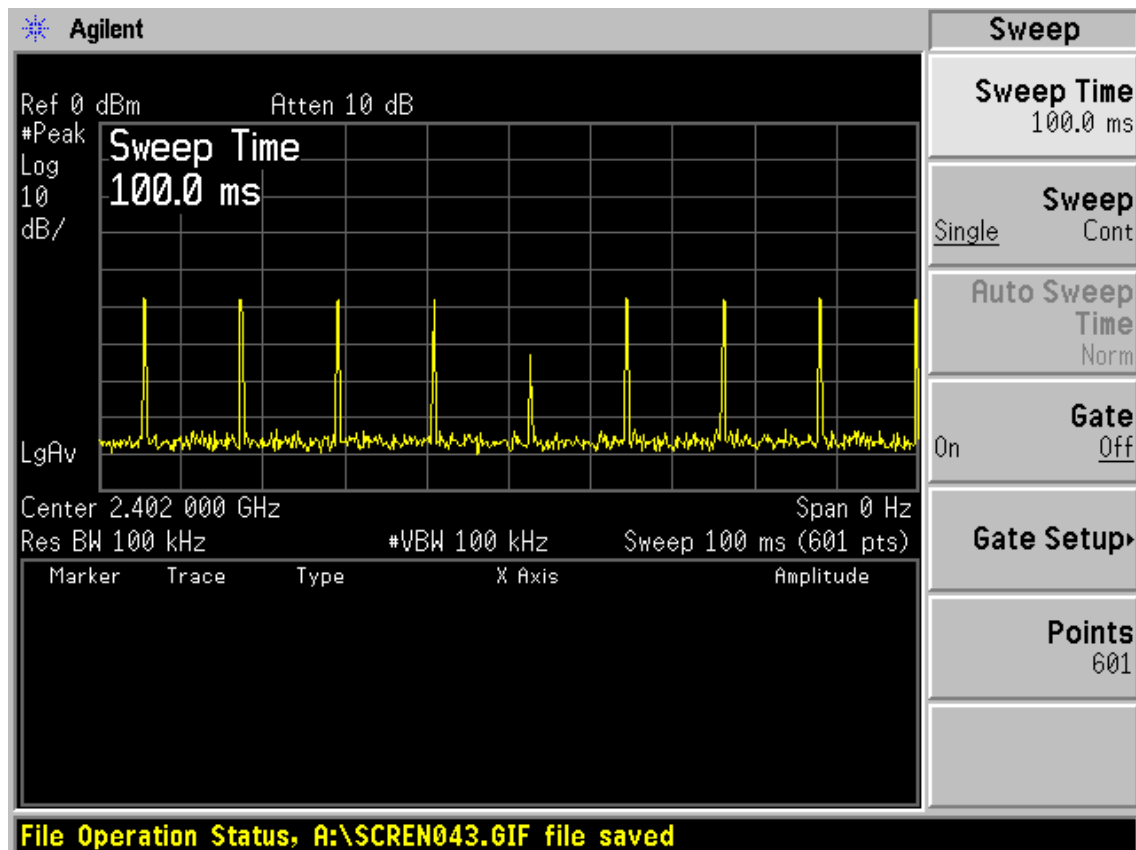
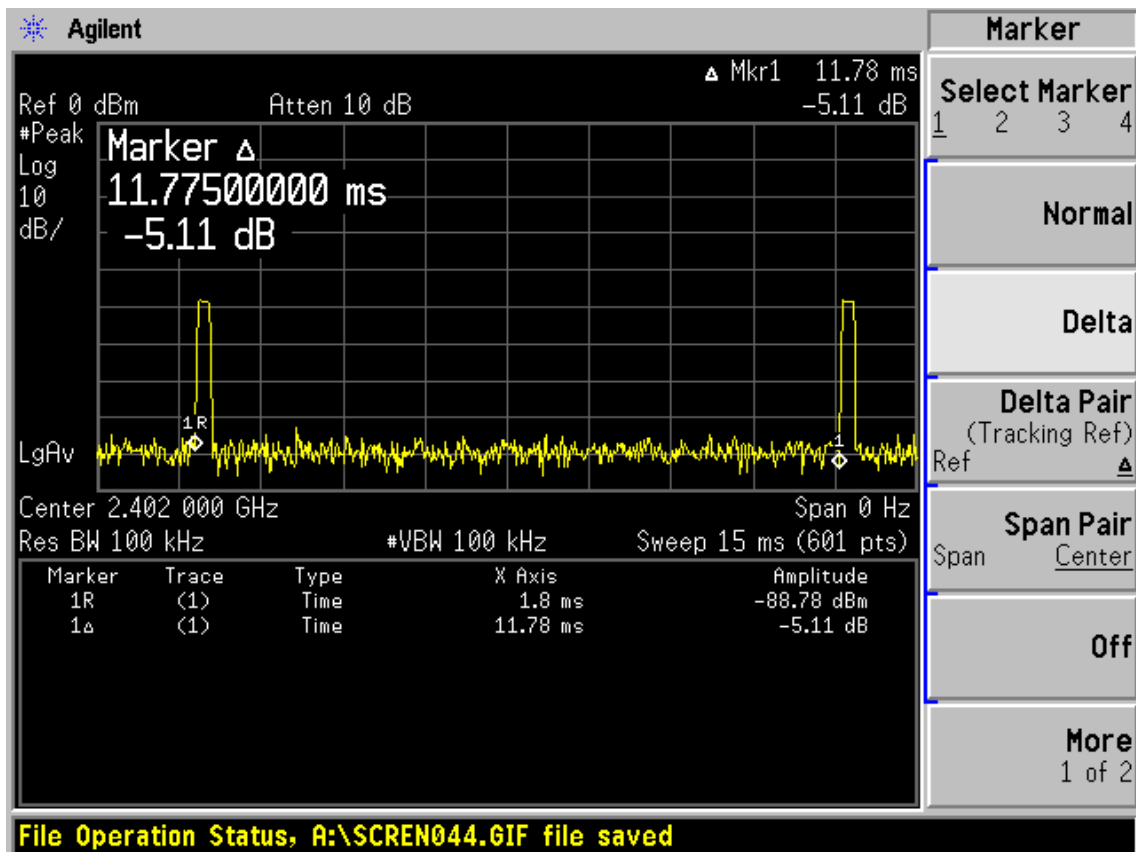
Average level = Peak level – Duty factor

Duty factor = $20 \log (1/x) = 33.35$

$X = \text{Tx on} / (\text{Tx on} + \text{Tx off}) = 0.253/11.78$

Note: All the emissions comply with PK limit, and average limit is 20dB below PK limit, the duty factor is 33.35dB. So all levels were deemed to comply with average limit.



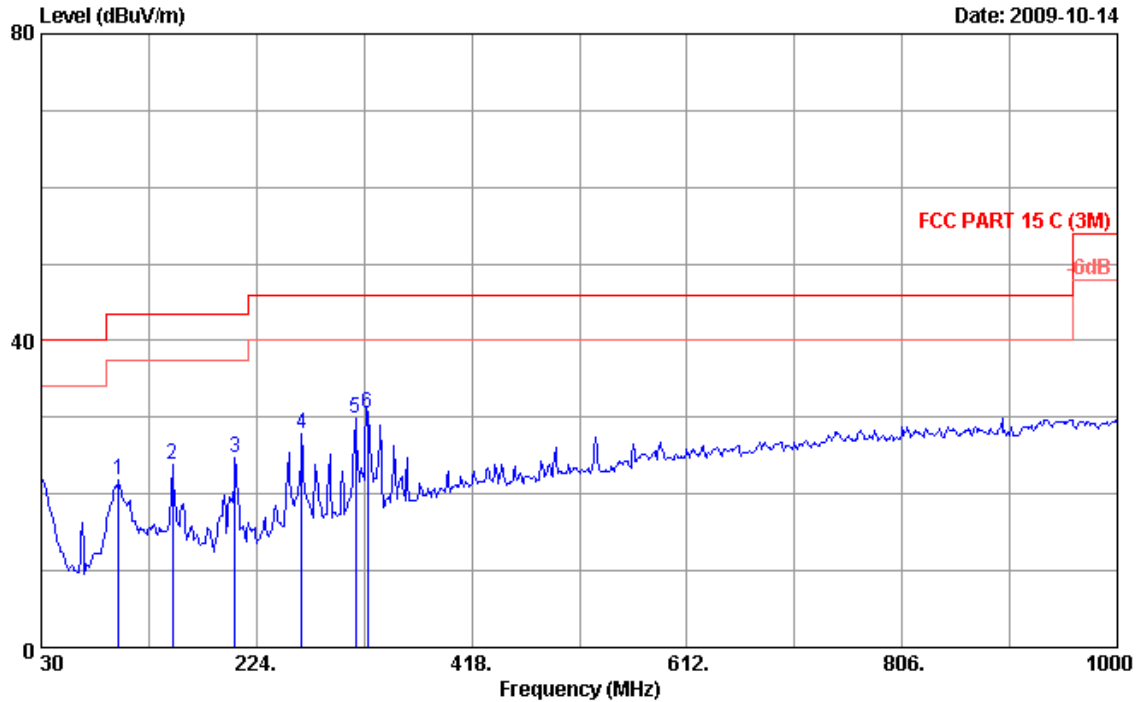


Test Frequency: 30MHz-1000MHz



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Data: 3 File: D:\2009 Report Data\M\MAD CATZ\ACS9QH275.EM6 (4)



Site no. : 3m Chamber Data no. : 3
 Dis. / Ant. : 3m CBL6111C Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power Rating : DC 3.3V
 Test Mode : Tx mode
 M/N:57461

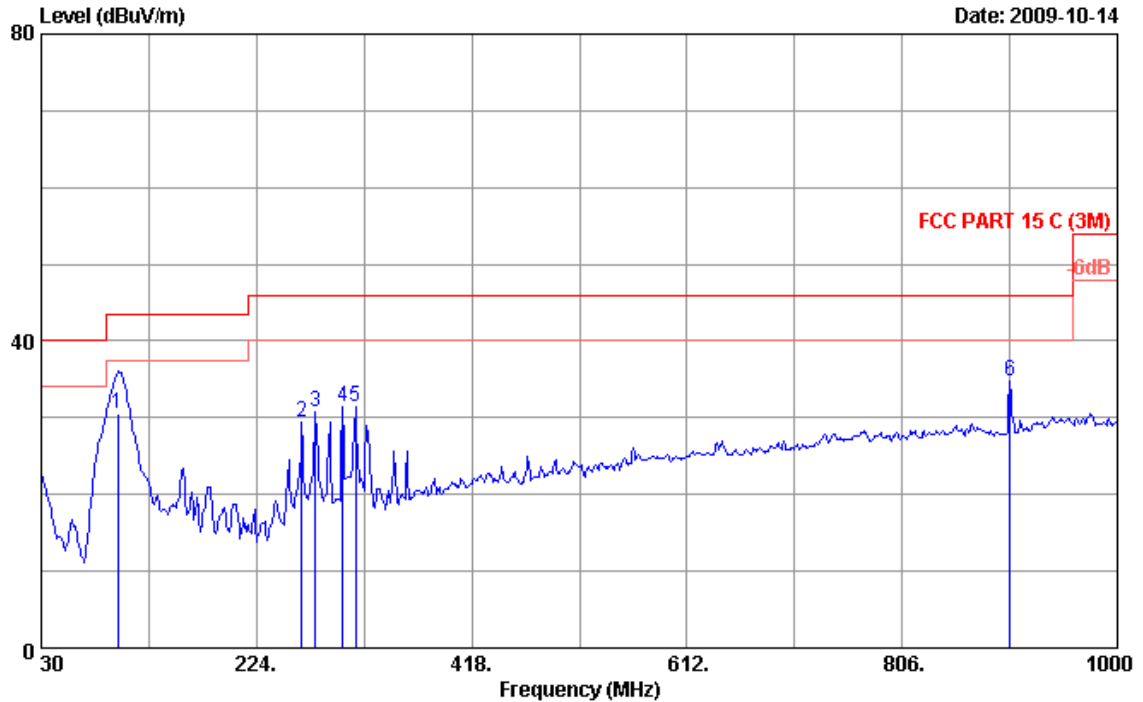
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	99.840	10.23	0.90	10.60	21.73	43.50	21.77	QP
2	148.340	11.62	1.08	11.15	23.85	43.50	19.65	QP
3	204.600	10.09	1.34	13.22	24.65	43.50	18.85	QP
4	264.740	13.71	1.67	12.42	27.80	46.00	18.20	QP
5	313.240	13.80	1.76	14.29	29.85	46.00	16.15	QP
6	323.910	14.10	1.78	14.55	30.43	46.00	15.57	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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Site no. : 3m Chamber Data no. : 4
 Dis. / Ant. : 3m CBL6111C Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power Rating : DC 3.3V
 Test Mode : Tx mode
 M/N:57461

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	99.120	10.11	0.90	19.50	30.51	43.50	12.99	QP
2	264.740	13.71	1.67	14.09	29.47	46.00	16.53	QP
3	277.350	13.13	1.69	15.89	30.71	46.00	15.29	QP
4	301.600	13.66	1.73	16.03	31.42	46.00	14.58	QP
5	313.240	13.80	1.76	15.90	31.46	46.00	14.54	QP
6	903.000	22.68	3.19	8.83	34.70	46.00	11.30	QP

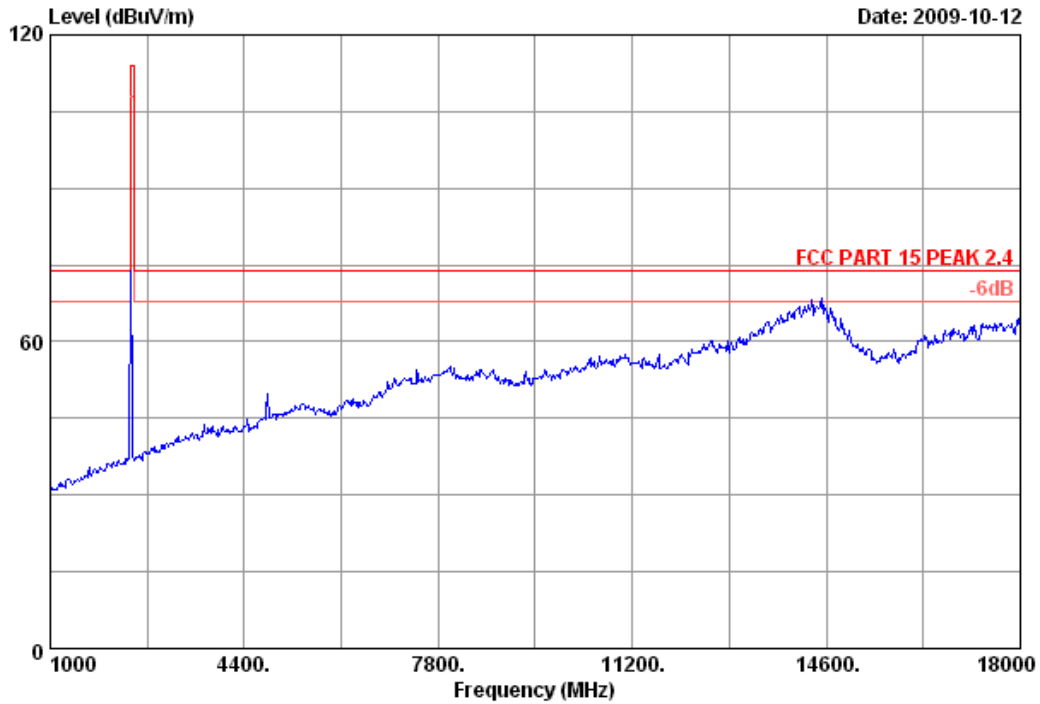
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Test Frequency: 1GHz-18GHz



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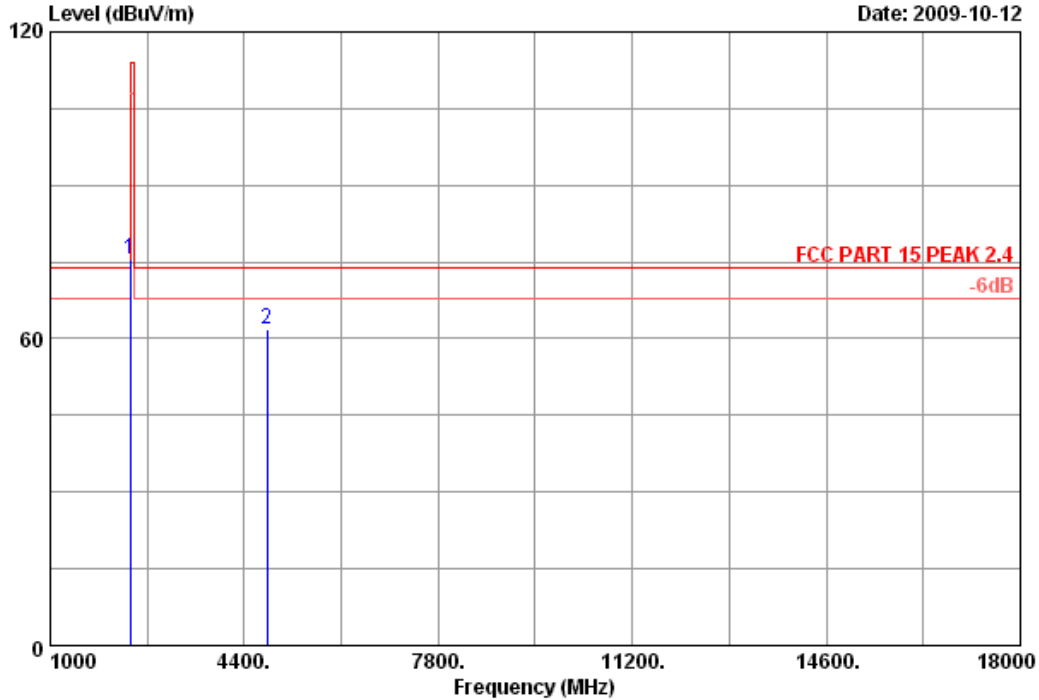


Site no.	: 3m Chamber	Data no.	: 1
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer	: Power Feng
EUT	: Wireless Z-Chuk for Nintendo Wii		
Power	: DC 3.3V		
Test mode	: Tx 2402MHz		
M/N	: M/N: 57461		



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Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power : DC 3.3V
 Test mode : Tx 2402MHz
 M/N : M/N: 57461

	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	28.46	8.60	36.09	74.70	75.67	114.00	38.33	Peak
2	4804.000	34.36	12.40	35.37	50.47	61.86	74.00	12.14	Peak

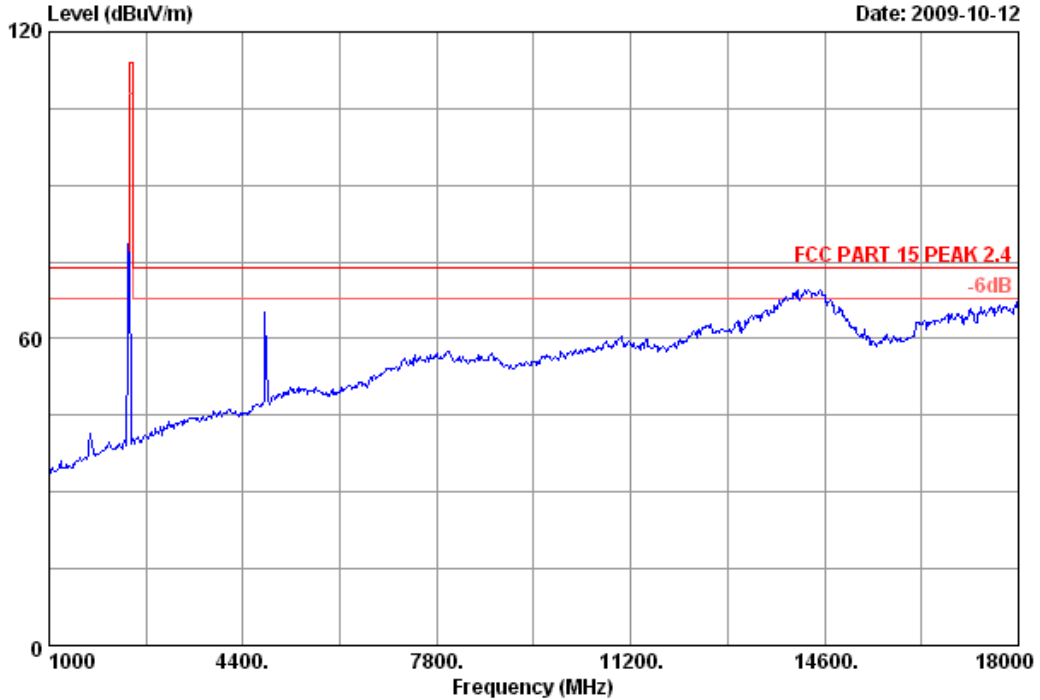
Remarks:
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4804	61.86	33.35	28.51	54	25.49



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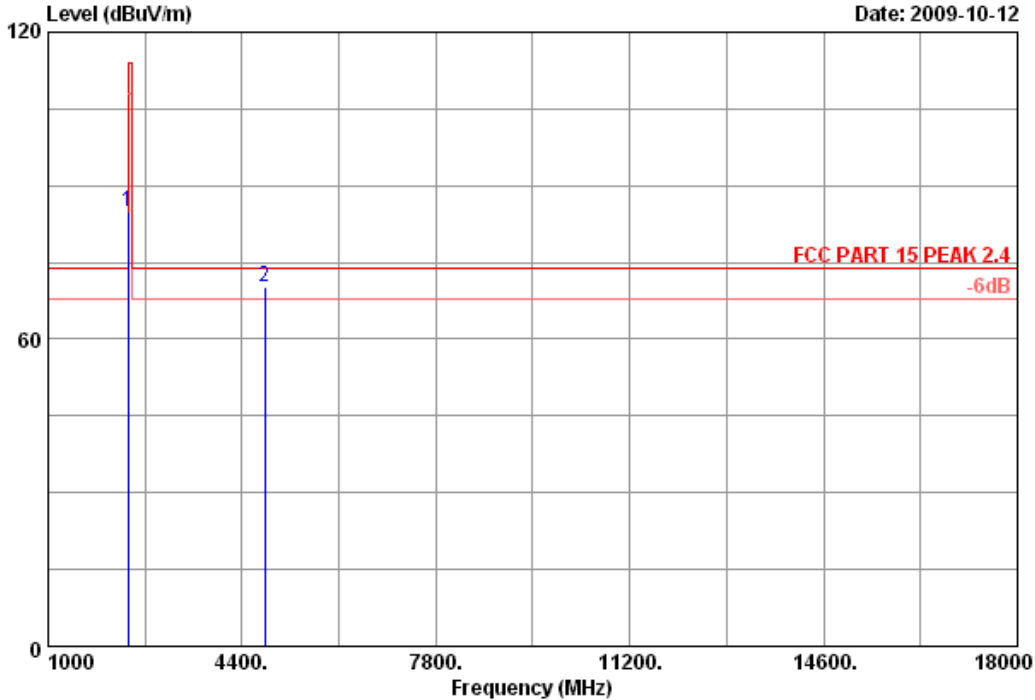


Site no.	: 3m Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15 PEAK 2.4		
Env. / Ins.	: 23°C/54%	Engineer	: Power Feng
EUT	: Wireless Z-Chuk for Nintendo Wii		
Power	: DC 3.3V		
Test mode	: Tx 2402MHz		
M/N	: M/N: 57461		



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Site no. : 3m Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23*C/54% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power : DC 3.3V
 Test mode : Tx 2402MHz
 M/N : M/N: 57461

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.000	28.46	8.60	36.09	83.85	84.82	114.00	29.18	Peak
2	4804.000	34.36	12.40	35.37	58.74	70.13	74.00	3.87	Peak

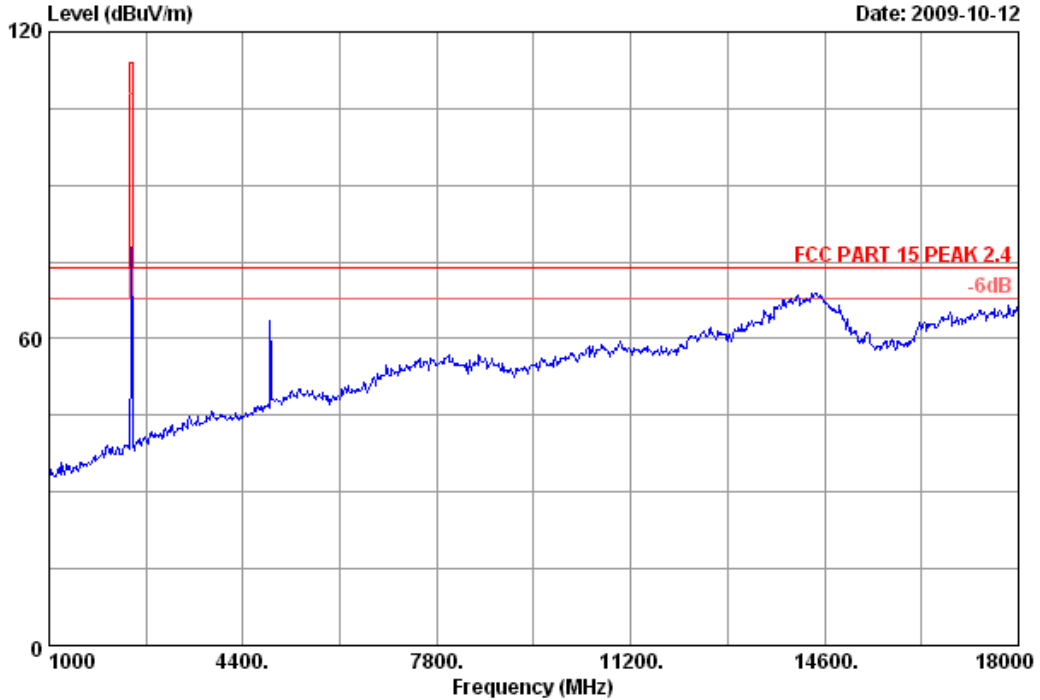
Remarks:
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4804	70.13	33.35	36.78	54	17.22



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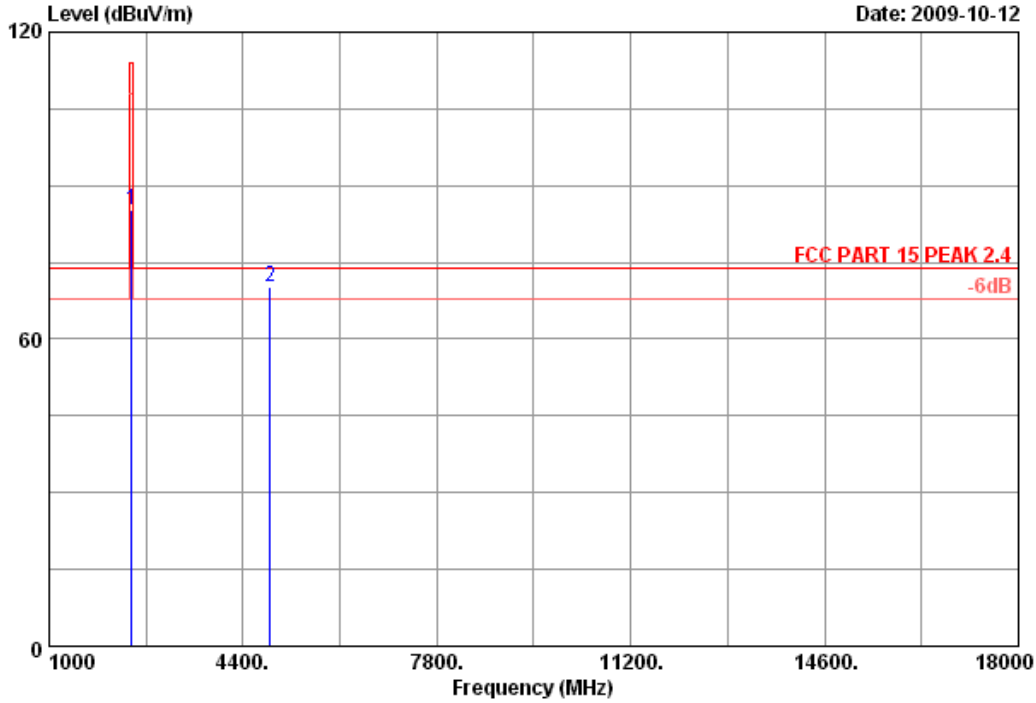


Site no. : 3m Chamber Data no. : 5
Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23*C/54% Engineer : Power Feng
EUT : Wireless Z-Chuk for Nintendo Wii
Power : DC 3.3V
Test mode : Tx 2440MHz
M/N : M/N: 57461



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Site no. : 3m Chamber Data no. : 6
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23*C/54% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power : DC 3.3V
 Test mode : Tx 2440MHz
 M/N : M/N: 57461

	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	2440.000	28.53	8.48	36.06	84.37	85.32	114.00	28.68	Peak
2	4880.000	34.78	12.33	35.36	58.60	70.35	74.00	3.65	Peak

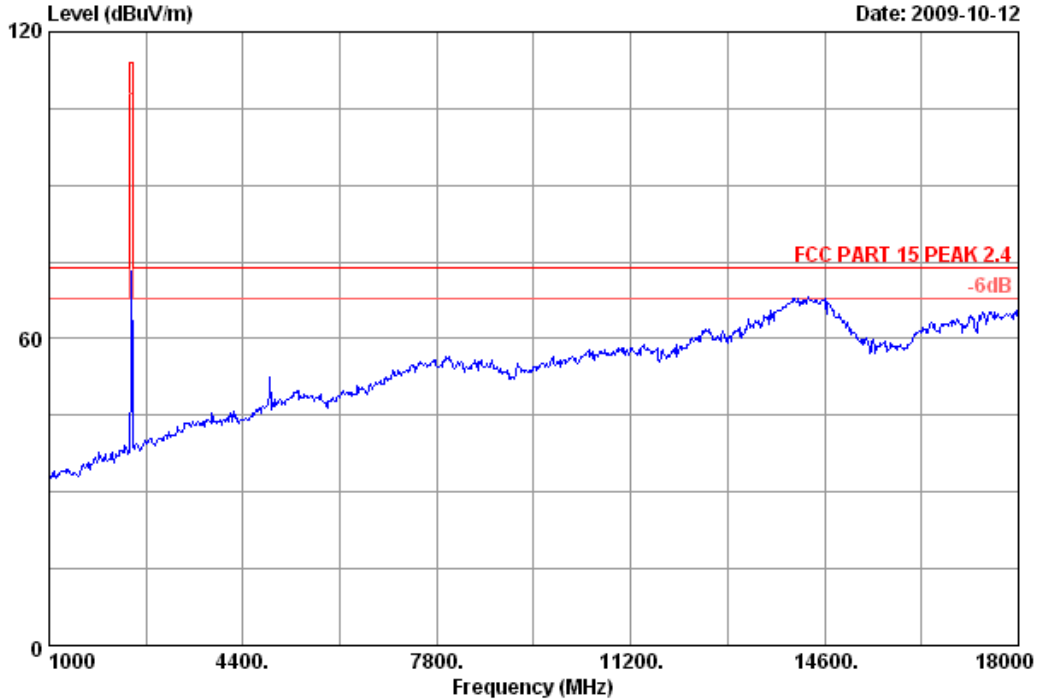
Remarks:
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4880	70.35	33.35	37	54	17



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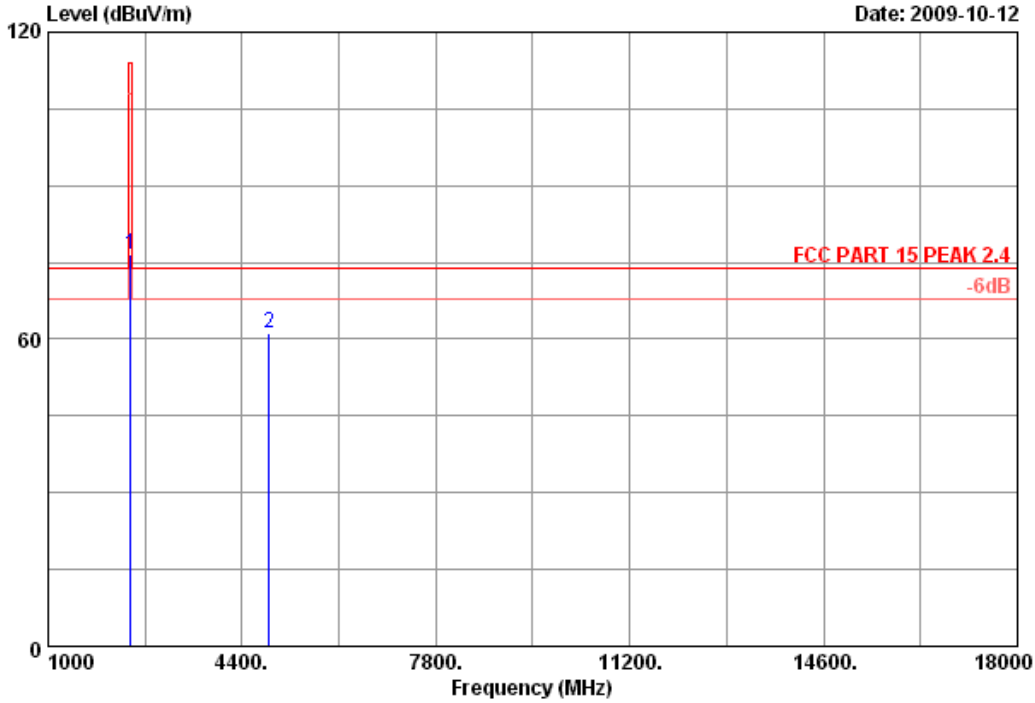


Site no. : 3m Chamber Data no. : 7
Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23*C/54% Engineer : Power Feng
EUT : Wireless Z-Chuk for Nintendo Wii
Power : DC 3.3V
Test mode : Tx 2440MHz
M/N : M/N: 57461



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Site no. : 3m Chamber Data no. : 8
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power : DC 3.3V
 Test mode : Tx 2440MHz
 M/N : M/N: 57461

	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	2440.000	28.53	8.48	36.06	75.47	76.42	114.00	37.58	Peak
2	4880.000	34.78	12.33	35.36	49.53	61.28	74.00	12.72	Peak

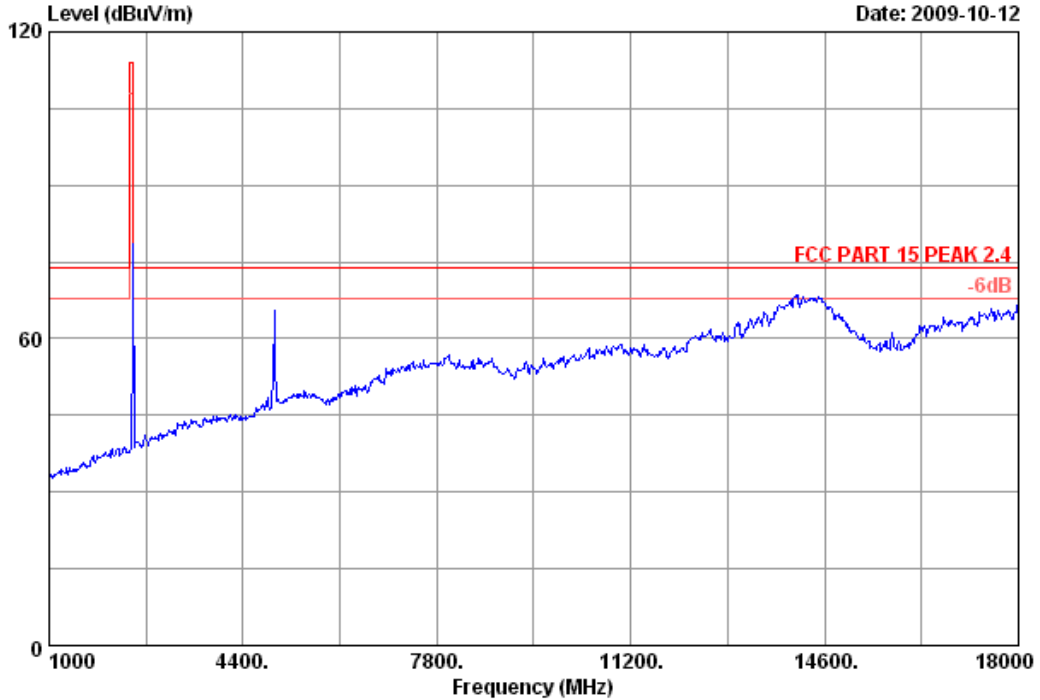
Remarks:
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4880	61.28	33.35	27.93	54	26.07



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Data: 9 File: E:\2009 report data\MMad Catz\ACS9QH275C.EM6 (36)

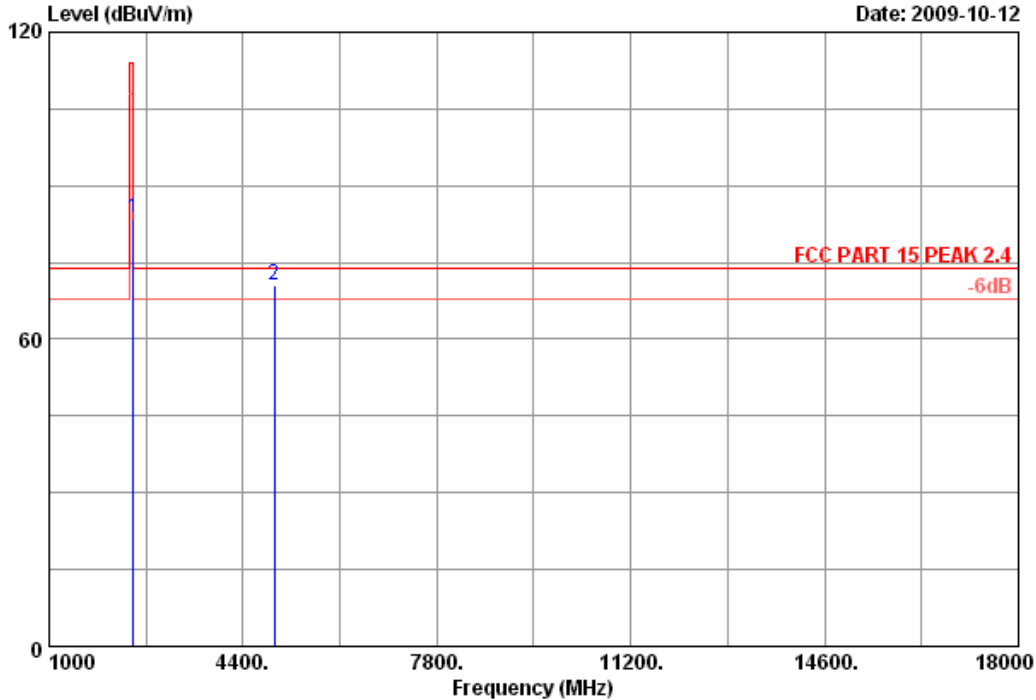


Site no. : 3m Chamber Data no. : 9
Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23°C/54% Engineer : Power Feng
EUT : Wireless Z-Chuk for Nintendo Wii
Power : DC 3.3V
Test mode : Tx 2476MHz
M/N : M/N: 57461



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Data: 10 File: E:\2009 report data\MMad Catz\ACS9QH275C.EM6 (36)



Site no. : 3m Chamber Data no. : 10
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23*C/54% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power : DC 3.3V
 Test mode : Tx 2476MHz
 M/N : M/N: 57461

	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	2476.000	28.58	8.76	35.97	82.32	83.69	114.00	30.31	Peak
2	4952.000	35.19	12.63	35.40	58.26	70.68	74.00	3.32	Peak

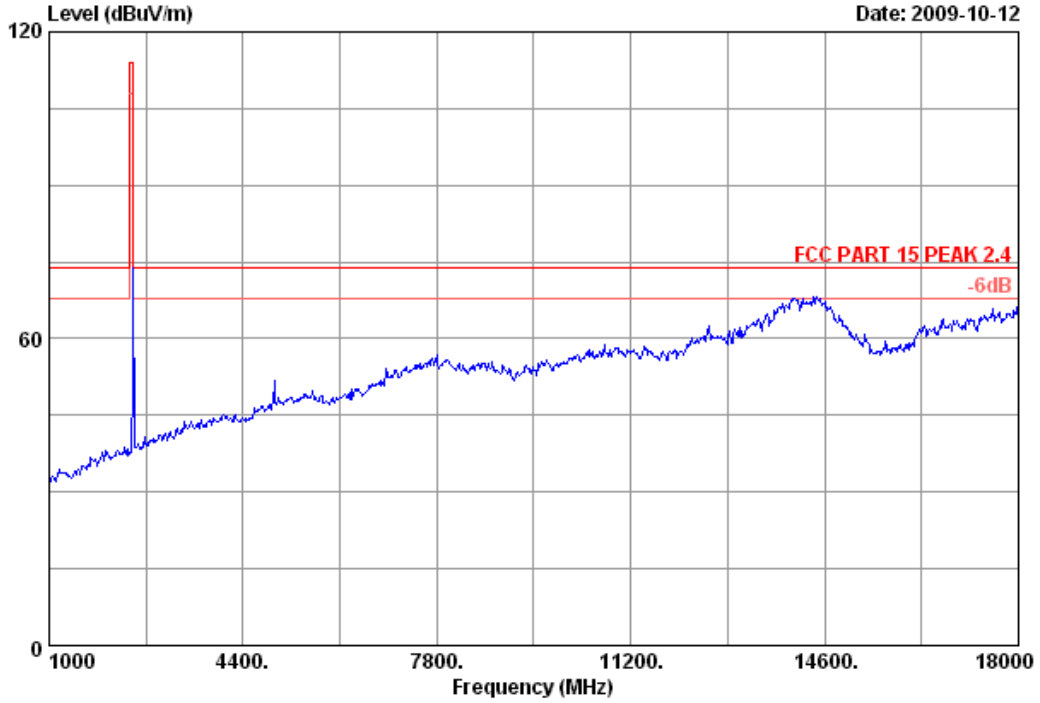
Remarks:
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4952	70.68	33.35	37.33	54	16.67



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Data: 11 File: E:\2009 report data\MMad Catz\ACS9QH275C.EM6 (36)

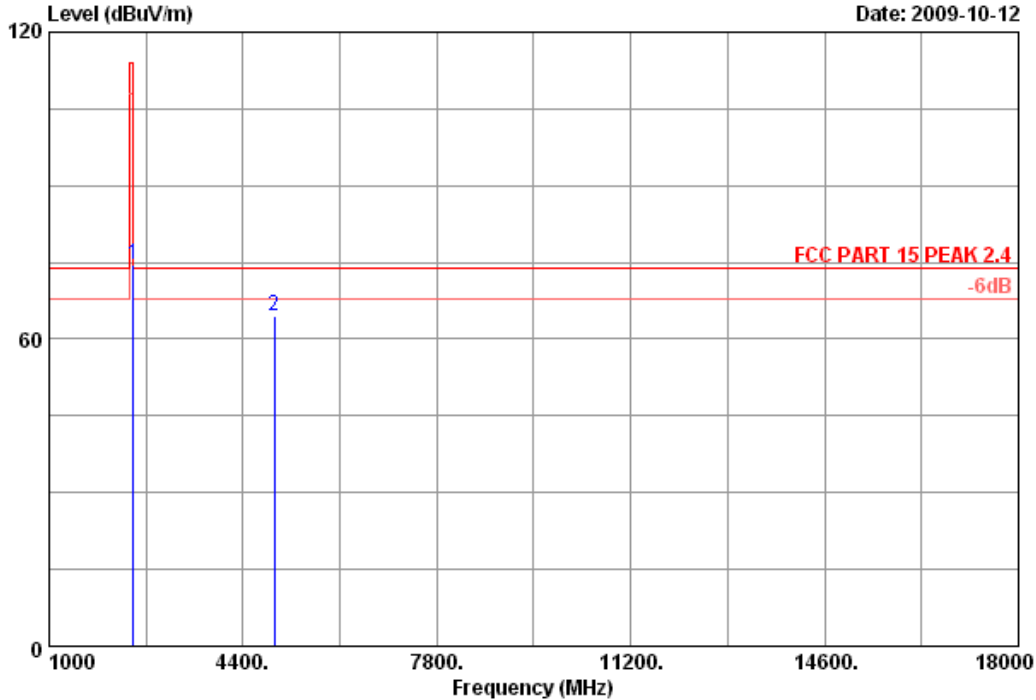


Site no. : 3m Chamber Data no. : 11
Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 23°C/54% Engineer : Power Feng
EUT : Wireless Z-Chuk for Nintendo Wii
Power : DC 3.3V
Test mode : Tx 2476MHz
M/N : M/N: 57461



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Data: 12 File: E:\2009 report data\MMad Catz\ACS9QH275C.EM6 (36)



Site no. : 3m Chamber Data no. : 12
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power : DC 3.3V
 Test mode : Tx 2476MHz
 M/N : M/N: 57461

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2476.000	28.58	8.76	35.97	73.23	74.60	114.00	39.40	Peak
2	4952.000	35.19	12.63	35.40	51.97	64.39	74.00	9.61	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)	Peak level (dBuV/m)	Duty factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4952	64.39	33.35	31.04	54	22.96

5. BAND EDGE COMPLIANCE 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
2.	Horn Antenna	EMCO	3115	9607-4877	May.27, 08	1.5 Year
3.	Amplifier	Agilent	8449B	3008A02495	May.08, 09	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX 102	28620/2	May.08, 09	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX 102	271471/4	May.08, 09	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX 102	29086/2	May.08, 09	1 Year

5.2. Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in section 15.209, which is the lesser attenuation.

5.3. 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

5.4. Test Results

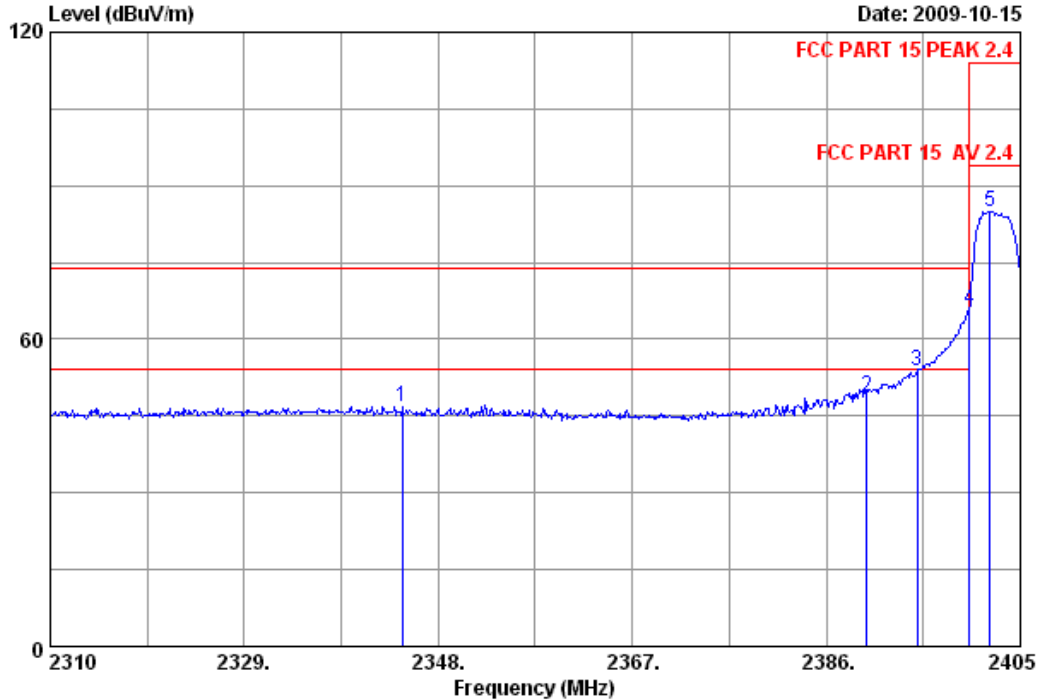
Pass (The testing data was attached in the next pages.)

All the levels PK measured and comply with average limit, so the average levels were deemed to comply with average limit



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Data: 13 File: E:\2009 report data\MMad Catz\ACS9QH275C.EM6 (36)



Site no. : 3m Chamber Data no. : 13
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power : DC 3.3V
 Test mode : Tx 2402MHz
 M/N : M/N: 57461

	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	2344.485	28.38	8.57	35.99	45.90	46.86	74.00	27.14	Peak
2	2390.000	28.46	8.41	36.09	47.87	48.65	74.00	25.35	Peak
3	2394.930	28.46	8.41	36.09	52.97	53.75	74.00	20.25	Peak
4	2400.000	28.46	8.60	36.09	64.92	65.89	74.00	8.11	Peak
5	2402.000	28.46	8.60	36.09	83.88	84.85	114.00	29.15	Peak

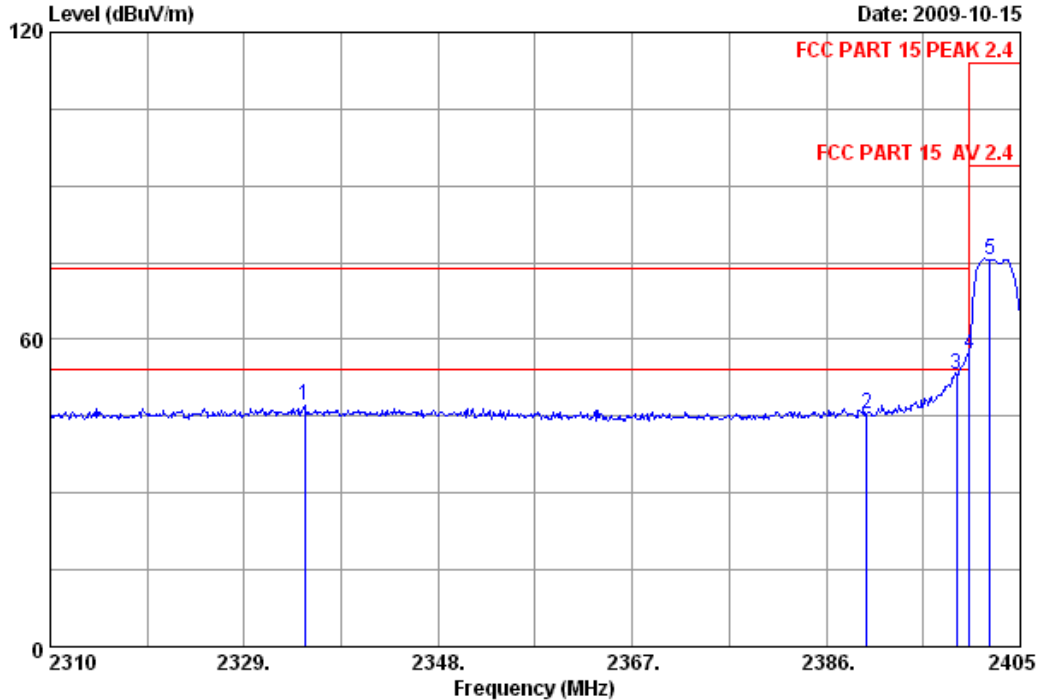
Remarks:
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2400	65.89	33.35	32.54	54	21.46



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Data: 14 File: E:\2009 report data\MMad Catz\ACS9QH275C.EM6 (36)



Site no. : 3m Chamber Data no. : 14
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power : DC 3.3V
 Test mode : Tx 2402MHz
 M/N : M/N: 57461

	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	2334.890	28.38	8.64	35.99	46.12	47.15	74.00	26.85	Peak
2	2390.000	28.46	8.41	36.09	44.75	45.53	74.00	28.47	Peak
3	2398.730	28.46	8.41	36.09	52.37	53.15	74.00	20.85	Peak
4	2400.000	28.46	8.60	36.09	56.13	57.10	74.00	16.90	Peak
5	2402.000	28.46	8.60	36.09	74.64	75.61	114.00	38.39	Peak

Remarks:

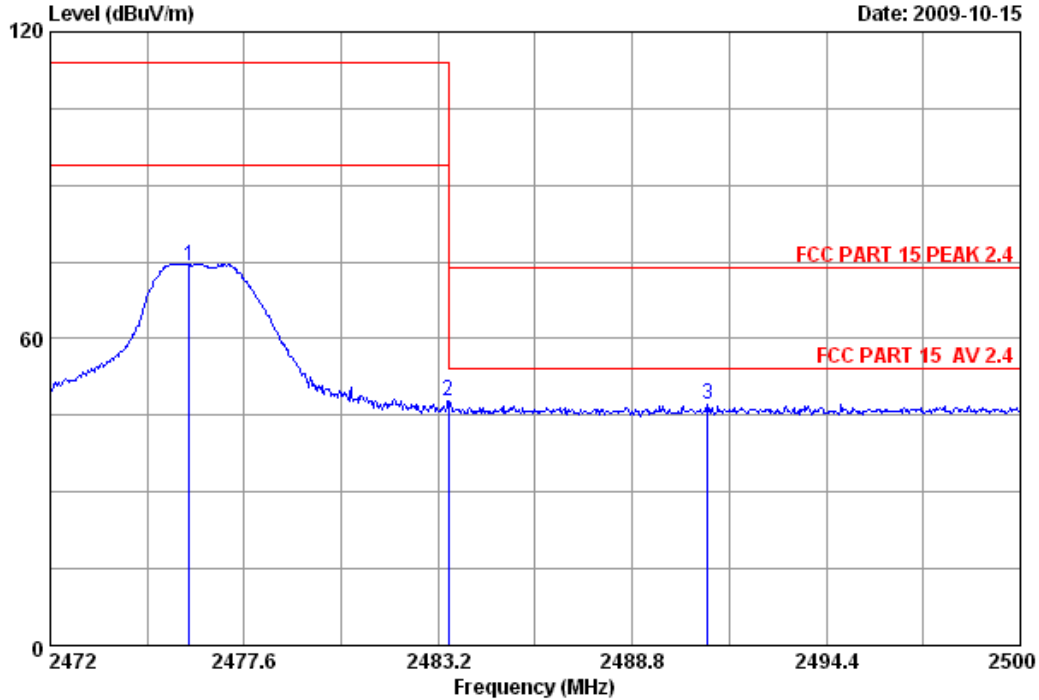
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2400	57.10	33.35	23.75	54	30.25



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Data: 15 File: E:\2009 report data\MMad Catz\ACS9QH275C.EM6 (36)



Site no. : 3m Chamber Data no. : 15
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power : DC 3.3V
 Test mode : Tx 2476MHz
 M/N : M/N: 57461

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2476.000	28.58	8.76	35.97	72.98	74.35	114.00	39.65	Peak
2	2483.500	28.58	8.94	35.97	46.11	47.66	74.00	26.34	Peak
3	2490.984	28.60	8.94	36.00	45.44	46.98	74.00	27.02	Peak

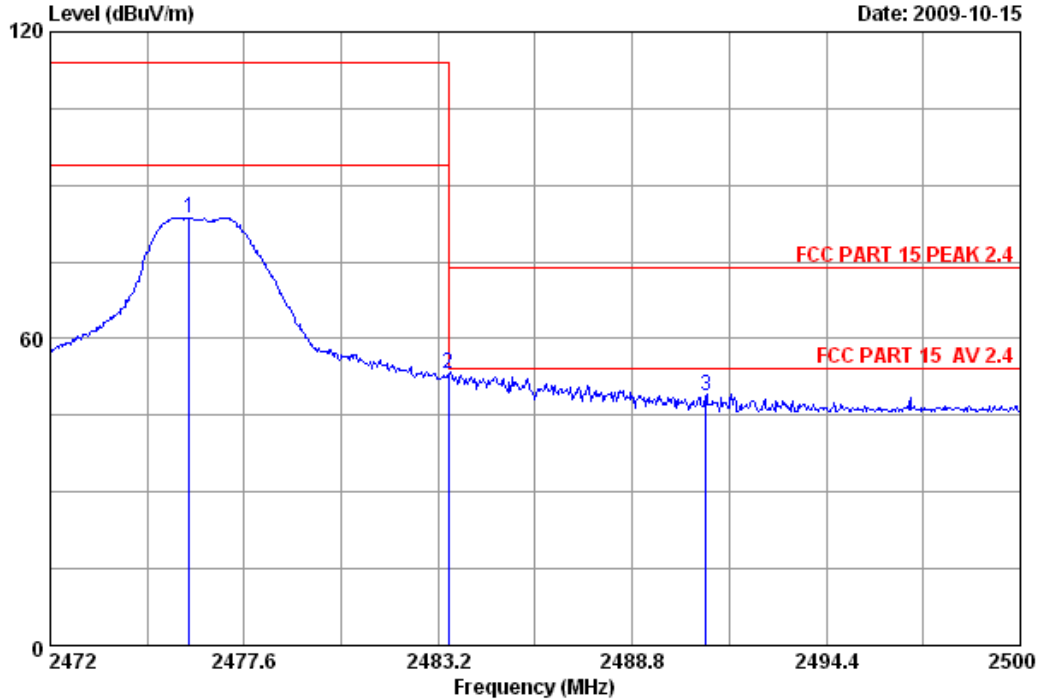
Remarks:

- 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\MMad Catz\ACS9QH275C.EM6 (36)



Site no. : 3m Chamber Data no. : 16
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 PEAK 2.4
 Env. / Ins. : 23°C/54% Engineer : Power Feng
 EUT : Wireless Z-Chuk for Nintendo Wii
 Power : DC 3.3V
 Test mode : Tx 2476MHz
 M/N : M/N: 57461

	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	2476.000	28.58	8.76	35.97	82.20	83.57	114.00	30.43	Peak
2	2483.500	28.58	8.94	35.97	51.48	53.03	74.00	20.97	Peak
3	2490.928	28.60	8.94	36.00	47.26	48.80	74.00	25.20	Peak

Remarks:

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

6. 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
2.	Attenuator	Agilent	8491B	MY39262165	May.08, 09	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May.08, 09	1 Year

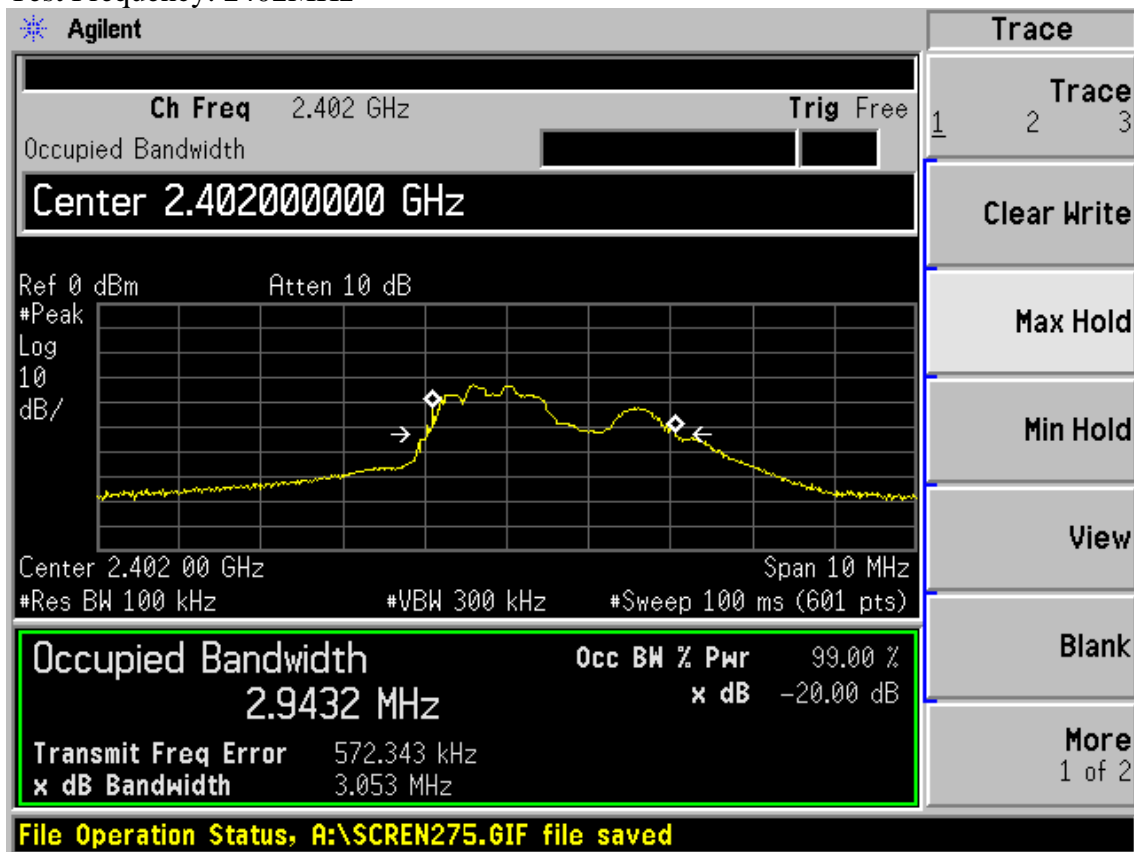
6.2. Limit

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.

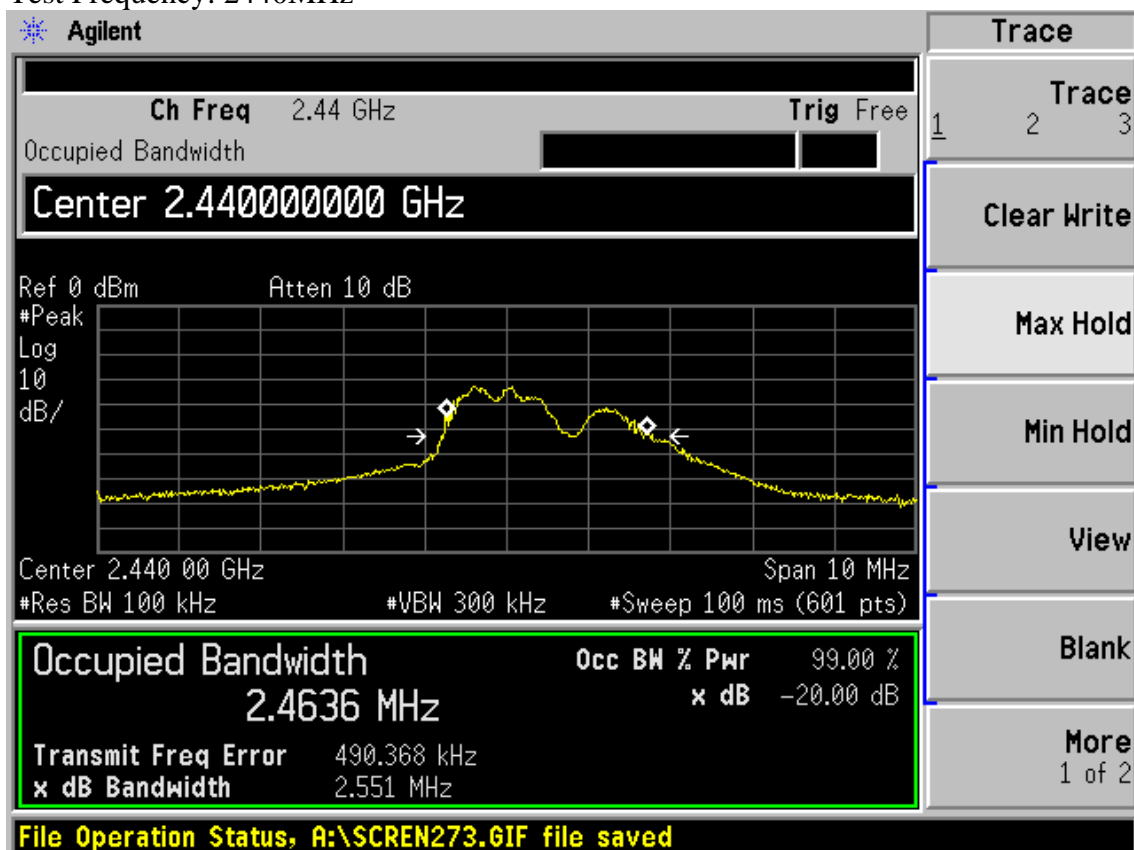
6.3. Test Results

CH	20dB Bandwidth (MHz)	99% Bandwidth (MHz)	Conclusion
(Low)	3.053	2.9432	PASS
(Mid)	2.551	2.4636	PASS
(High)	2.334	2.2653	PASS

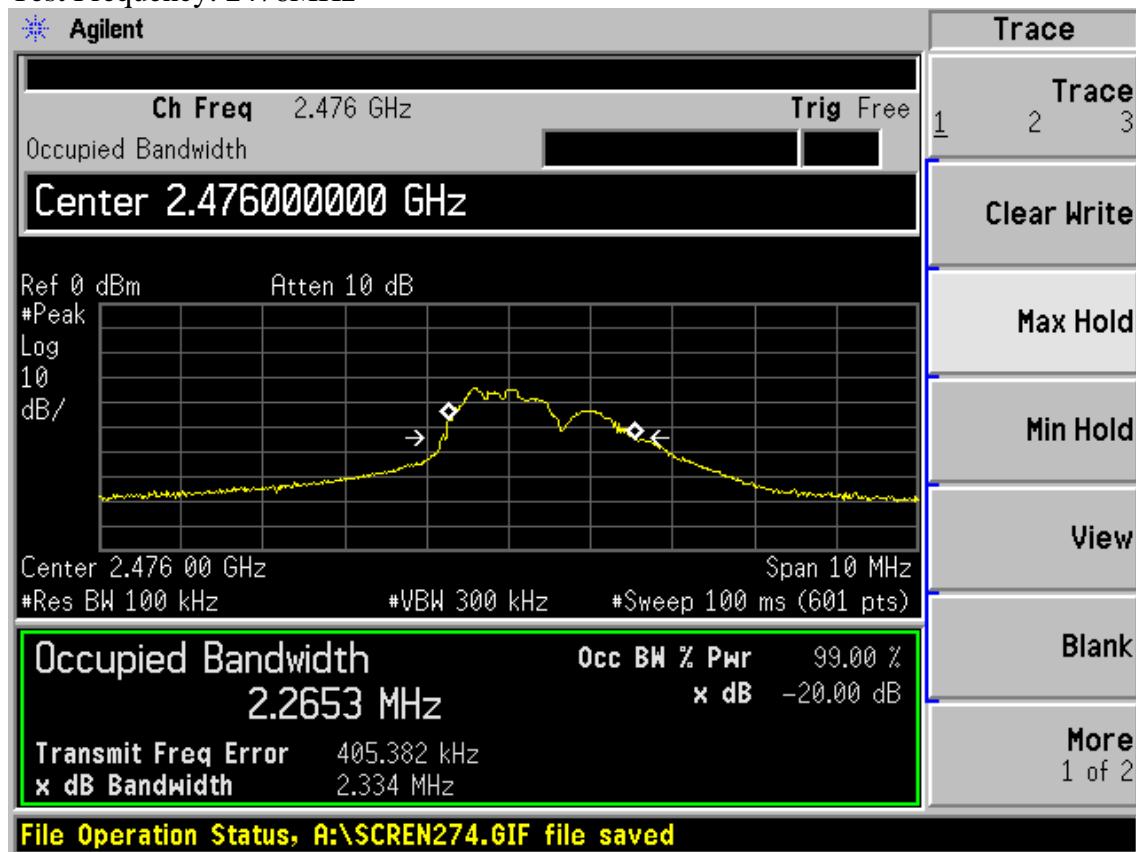
Test Frequency: 2402MHz



Test Frequency: 2440MHz



Test Frequency: 2476MHz



7. DEVIATION TO TEST SPECIFICATIONS

[NONE]