



APPLICATION FOR CERTIFICATION

On Behalf of

Mad Catz Inc

Wii REACTOR Motion Controller w/MP /Wii REACTOR Motion Controller

Model Number: 57267/57266

FCC ID: P25A957267B1011C

Prepared for : Mad Catz Inc
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Diego,California,92108,USA

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Report Number : ACS-F11075
Date of Test : Mar.23~28, 2011
Date of Report : Apr.12, 2011

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FCC ID: P25A957267B1011C

TEST REPORT CERTIFICATION

Applicant : Mad Catz Inc
 EUT Description : Wii REACTOR Motion Controller w/MP /Wii REACTOR Motion Controller
 MODEL NO. : 57267/57266
 FCC ID : P25A957267B1011C
 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 is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

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 : Mar.23~ 28, 2011 Report of date: Apr.12, 2011

Prepared by : Blove Ye Reviewer by : [Signature]
 Blove Ye / Assistant Sunny Lu / Senior Assistant



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 15: 15.207 ANSI C63.10 :2009	PASS
Radiated Emission Test	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10 :2009	PASS
Carrier Frequency Separation Test	FCC Part 15: 15.247(a)(1) ANSI C63.10 :2009	PASS
20dB Bandwidth Test	FCC Part 15: 15.215 ANSI C63.10 :2009	PASS
Number Of Hopping Frequency Test	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 :2009	PASS
Dwell Time Test	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 :2009	PASS
Maximum Peak Output Power Test	FCC Part 15: 15.247(b)(1)\ ANSI C63.10 :2009	PASS
Band Edge Compliance Test	FCC Part 15: 15.247(d) ANSI C63.10 :2009	PASS
Antenna requirement	FCC Part 15: 15.203	PASS

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product name : Wii REACTOR Motion Controller w/MP /Wii
REACTOR Motion Controller

Model Number : 57267/57266
The difference between EUT 1, and EUT 2 as below:
EUT 1: 57267 With gyroscope.
EUT 2: 57266 Without gyroscope.

FCC ID : P25A957267B1011C

Operation frequency : 2402MHz~2480MHz

Modulation : GFSK

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

Date of Test : Mar.23~28, 2011

Date of Receipt : Mar.22, 2011

Sample Type : Prototype production

2.2. Test information

The test software “bluesuite.exe” was used to control EUT work in Continuous TX mode, and select test channel.

Tested mode, channel, and data rate information			
Mode	data rate (Mbps)	Channel	Frequency (MHz)
Tx Mode GFSK modulation	1	Low :CH 0	2402
	1	Middle: CH39	2441
	1	High: CH78	2480

2.3. Block diagram of connection between the EUT and simulators

EUT

(EUT: Wii REACTOR Motion Controller w/MP /Wii REACTOR Motion Controller)

2.4. 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 : Dec. 30, 2009 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
 Mar.31, 2012

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

Test Item	Uncertainty
Uncertainty for Radiation Emission test in 3m chamber	4.20 dB (Polarize: V)
	4.66 dB (Polarize: H)
Uncertainty for Radiated Spurious Emission test in RF chamber	2.70 dB(Bilog antenna 30M~1000MHz)
	2.27 dB(Horn antenna 1000M~12750MHz)
Uncertainty for Conduction Spurious emission test	2.12 dB
Uncertainty for Output power test	0.97 dB
Uncertainty for Power density test	2.21 dB
Uncertainty for Frequency range test	1×10^{-9}
Uncertainty for Bandwidth test	1×10^{-9}
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and humidity	0.3°C
	2%

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

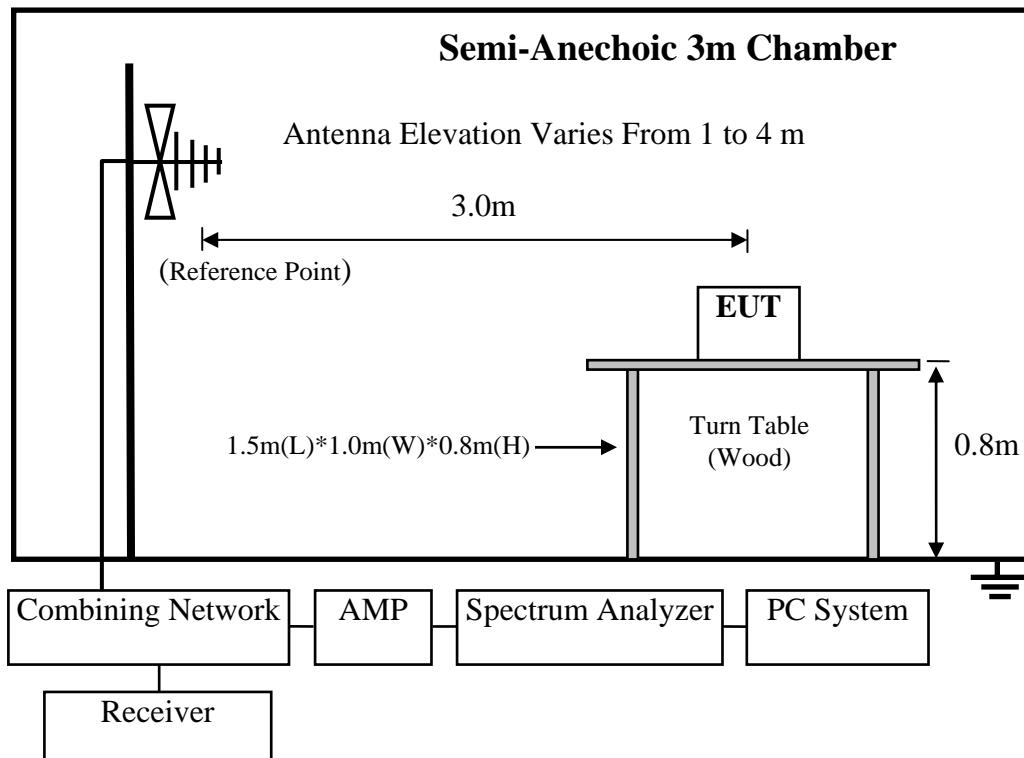
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.06,10	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 10	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 10	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 10	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2598	Oct.26, 10	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

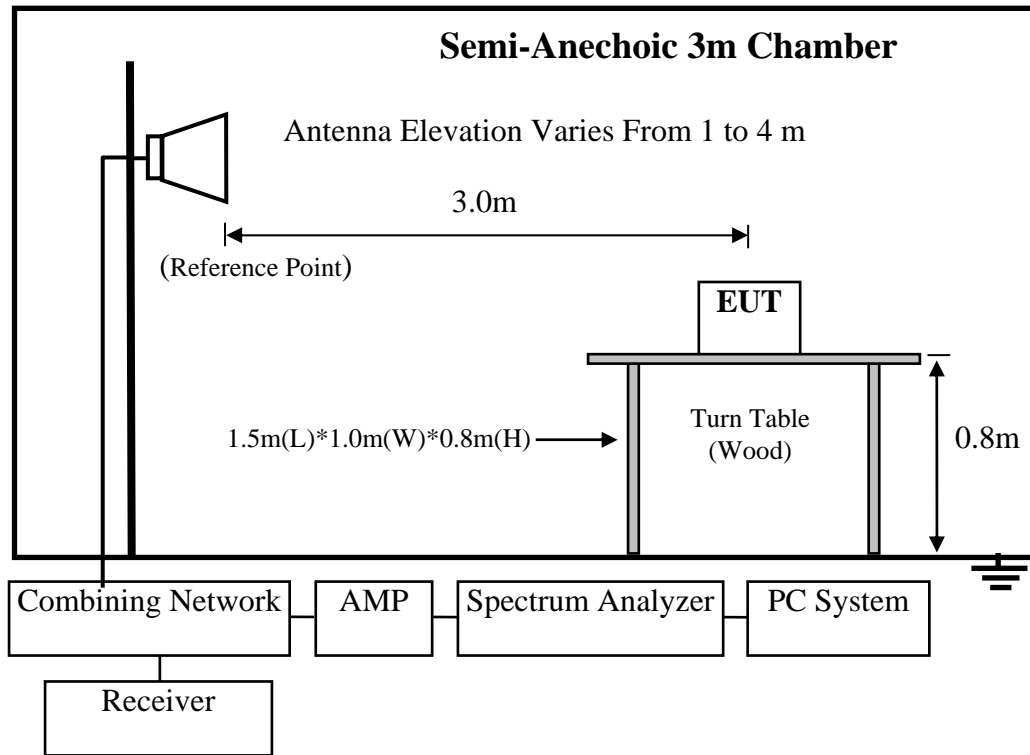
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 10	1 Year
2	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 09	1.5 Year
3	Horn Antenna	EMCO	3116	00060089	Nov.25, 09	1.5 Year
4	Amplifier	Agilent	8449B	3008A00863	May.08, 10	1 Year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

For frequency range 30MHz-1000MHz



For frequency range 1GHz-18GHz



4.3. Radiated Emission Limit

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 960MHz	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
¹ 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	(²)

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. Wii REACTOR Motion Controller w/MP /Wii REACTOR Motion Controller(EUT)

Model Number : 57267/57266
 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, and VBW is set at 10Hz, RBW is set at 1MHz for average emissions measurements 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

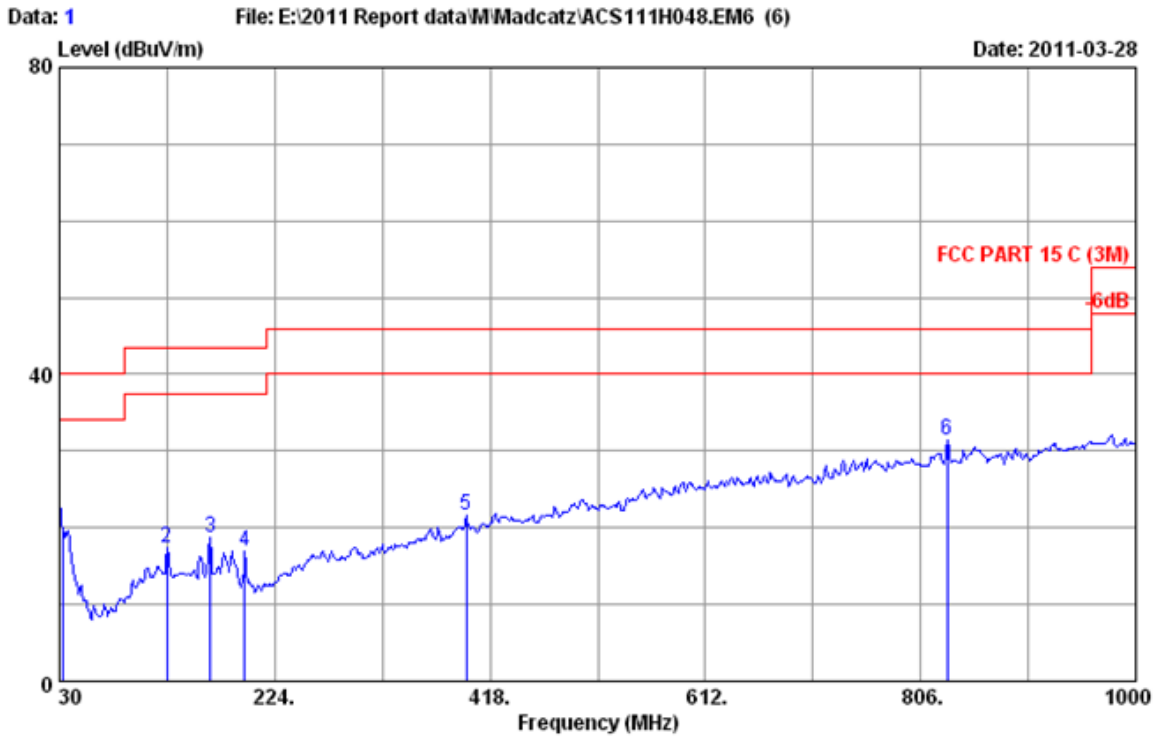
PASS

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

Note: The points 2402MHz, 2441MHz, 2480MHz are fundamental emissions of device, and no need to comply with the radiated emissions limit, just for reference in here.

Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

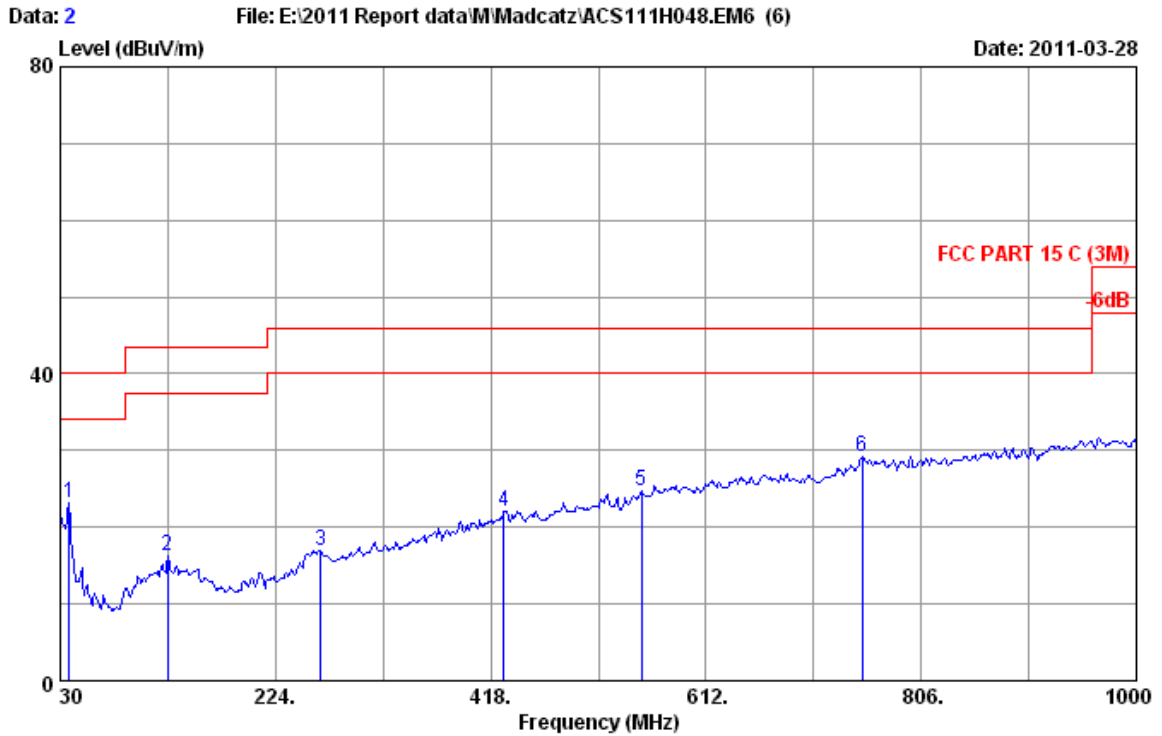
Frequency: 30MHz~1GHz



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 : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power rating : DC 3V
 Test Mode : Tx
 M/N: 57267

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	32.910	18.32	0.63	0.94	19.89	40.00	20.11	QP
2	127.000	12.14	1.13	4.08	17.35	43.50	26.15	QP
3	165.800	10.60	1.32	6.81	18.73	43.50	24.77	QP
4	196.840	9.82	1.69	5.53	17.04	43.50	26.46	QP
5	396.660	16.37	2.90	2.24	21.51	46.00	24.49	QP
6	830.250	22.20	4.99	4.21	31.40	46.00	14.60	QP

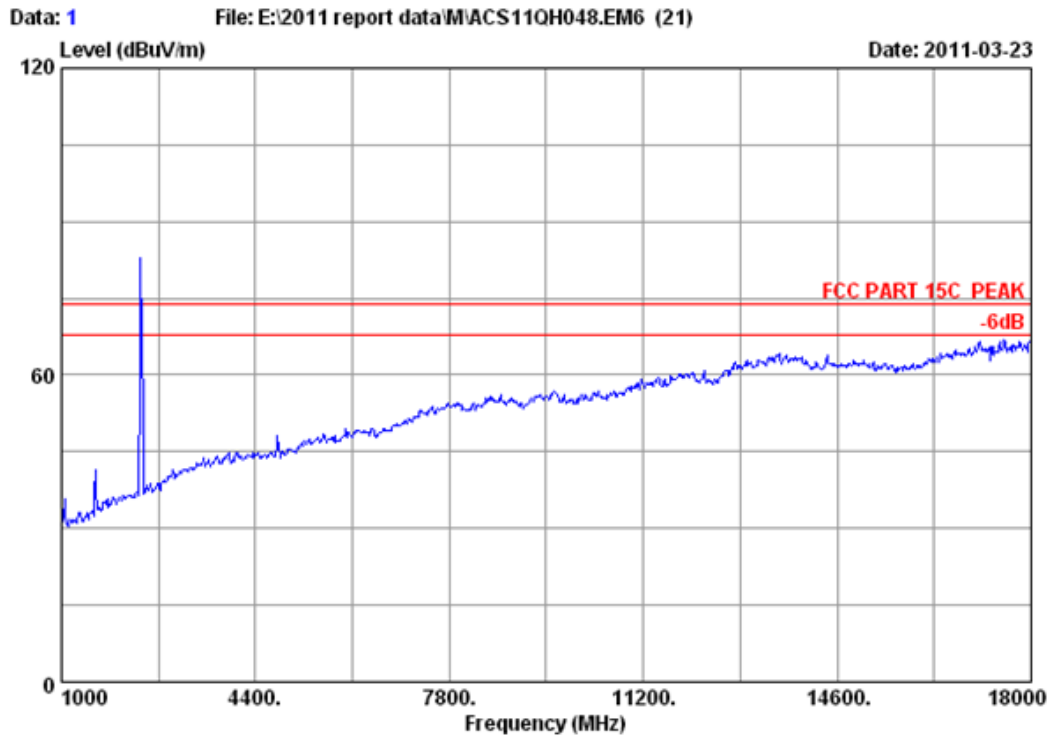
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



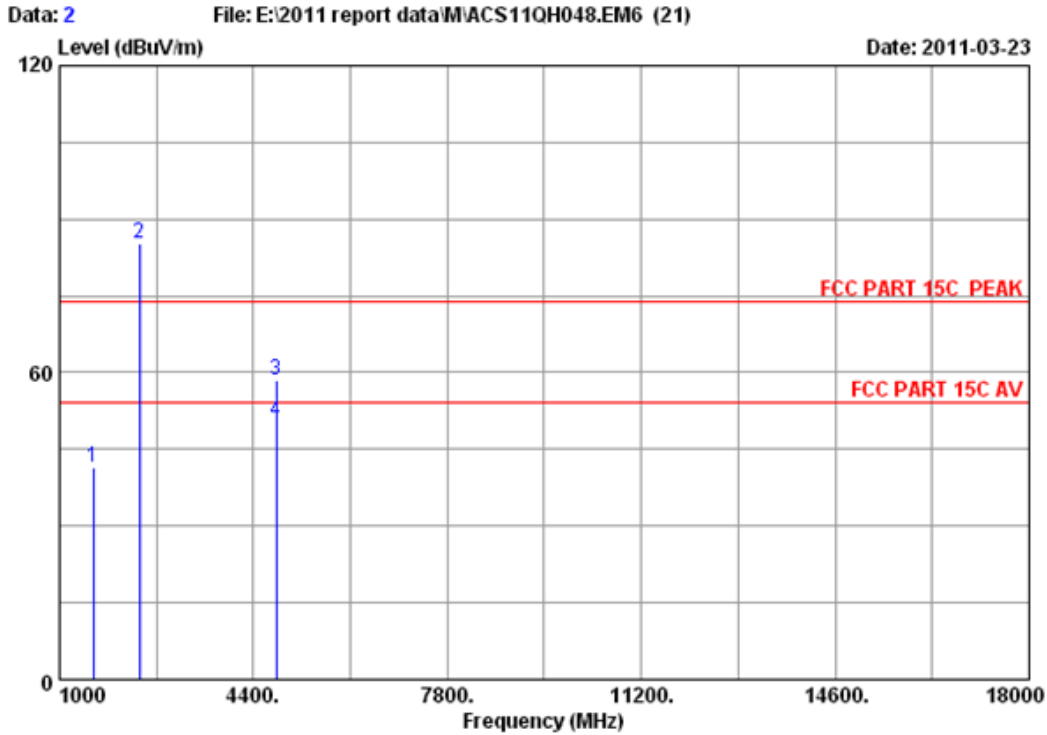
Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power rating : DC 3V
 Test Mode : Tx
 M/N: 57267

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	37.760	15.58	0.67	6.92	23.17	40.00	16.83	QP
2	127.000	12.14	1.13	3.05	16.32	43.50	27.18	QP
3	264.740	13.80	2.26	0.82	16.88	46.00	29.12	QP
4	429.640	17.50	3.10	1.54	22.14	46.00	23.86	QP
5	553.800	19.32	3.85	1.63	24.80	46.00	21.20	QP
6	752.650	22.00	4.71	2.54	29.25	46.00	16.75	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

Site no. : 3m Chamber Data no. : 1
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 22.4'C/41% Engineer : Paul Tian
EUT : Wii REACTOR Motion Controller w/MP
Power : DC 3V
Test mode : 2402MHz Tx Mode
M/N : 57267



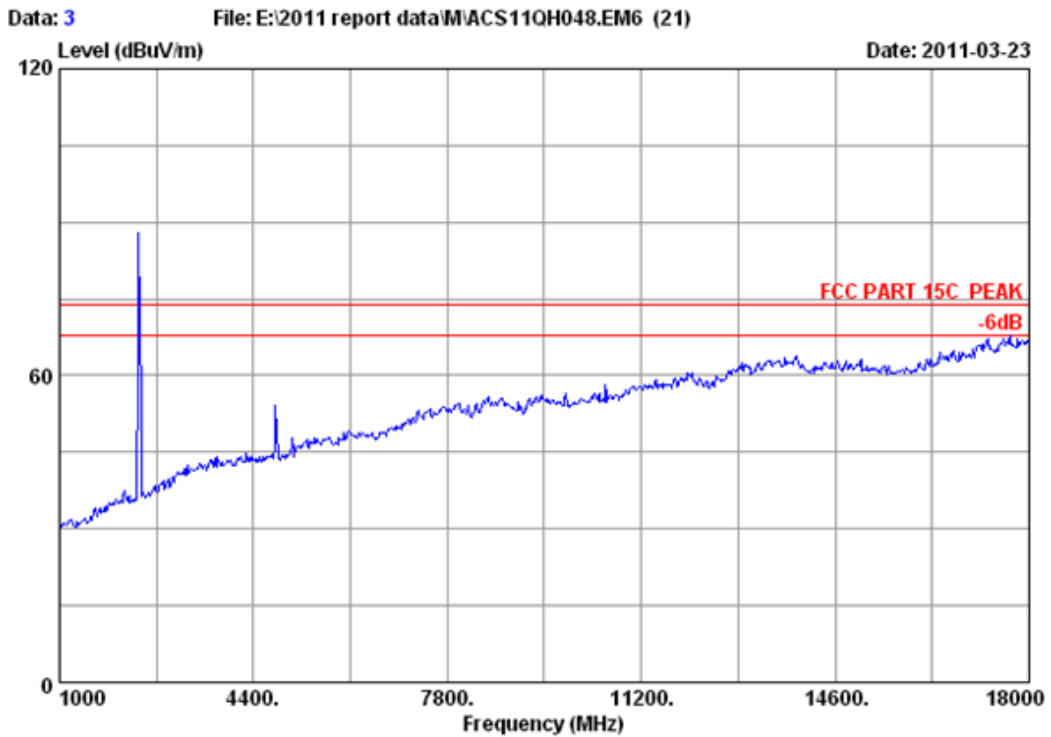
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Site no.       : 3m Chamber           Data no. : 2
Dis. / Ant.   : 3m 3115(0911)        Ant. pol. : VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 22.4'C/41%          Engineer  : Paul Tian
EUT           : Wii REACTOR Motion Controller w/MP
Power         : DC 3V
Test mode     : 2402MHz Tx Mode
M/N           : 57267
    
```

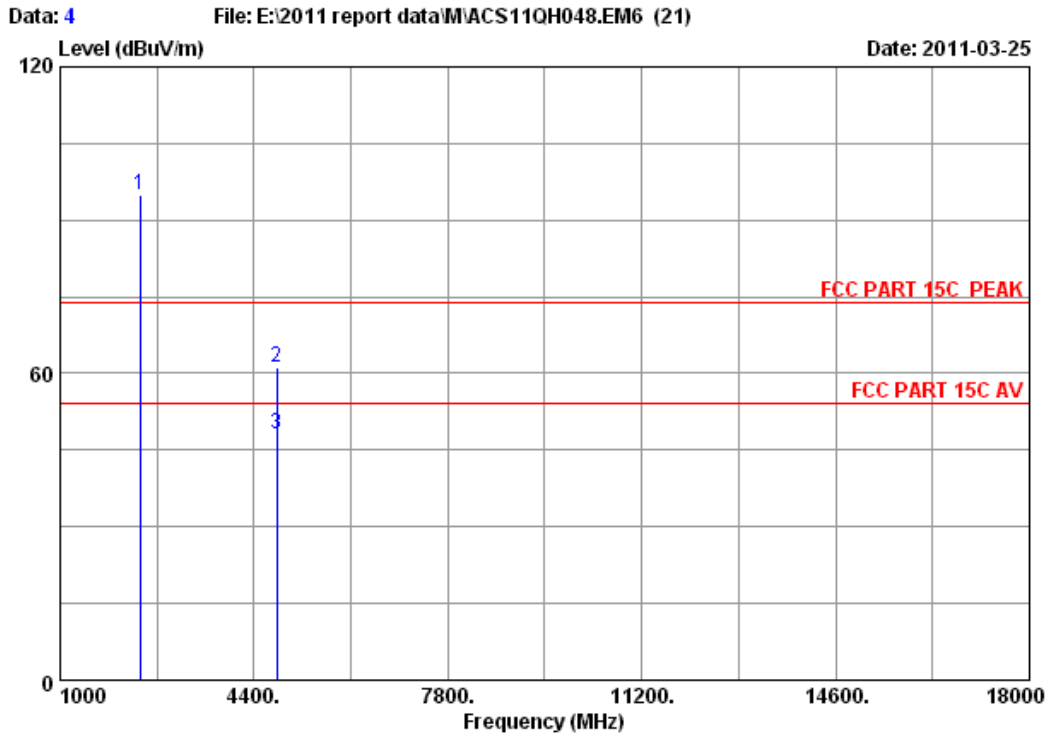
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1595.000	26.96	5.88	36.95	45.72	41.61	74.00	32.39	Peak
2	2402.000	29.44	7.43	36.62	85.09	85.34	74.00	-11.34	Peak
3	4804.000	34.30	10.62	35.10	48.55	58.37	74.00	15.63	Peak
4	4804.000	34.30	10.62	35.10	40.80	50.62	54.00	3.38	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.



Site no.	: 3m Chamber	Data no. :	3
Dis. / Ant.	: 3m 3115(0911)	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.4'C/41%	Engineer :	Paul Tian
EUT	: Wii REACTOR Motion Controller w/MP		
Power	: DC 3V		
Test mode	: 2402MHz Tx Mode		
M/N	: 57267		



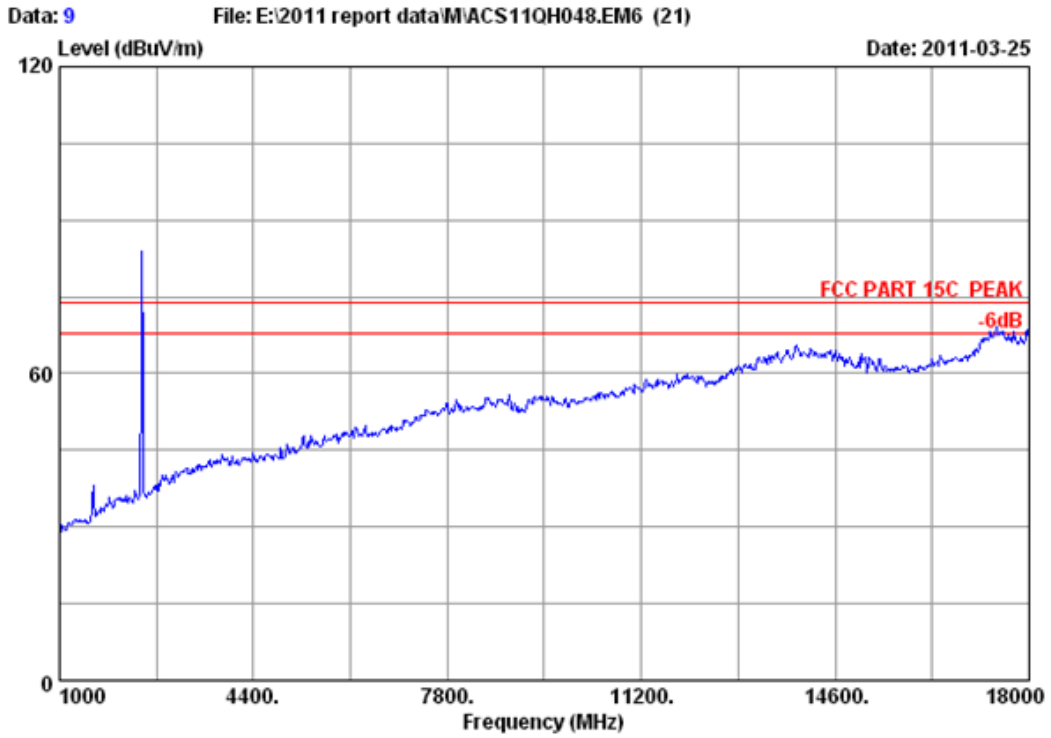
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Site no.      : 3m Chamber           Data no. : 4
Dis. / Ant.  : 3m 3115(0911)        Ant. pol. : HORIZONTAL
Limit        : FCC PART 15C PEAK
Env. / Ins.  : 22.4'C/41%           Engineer  : Paul Tian
EUT          : Wii REACTOR Motion Controller w/MP
Power        : DC 3V
Test mode    : 2402MHz Tx Mode
M/N         : 57267
    
```

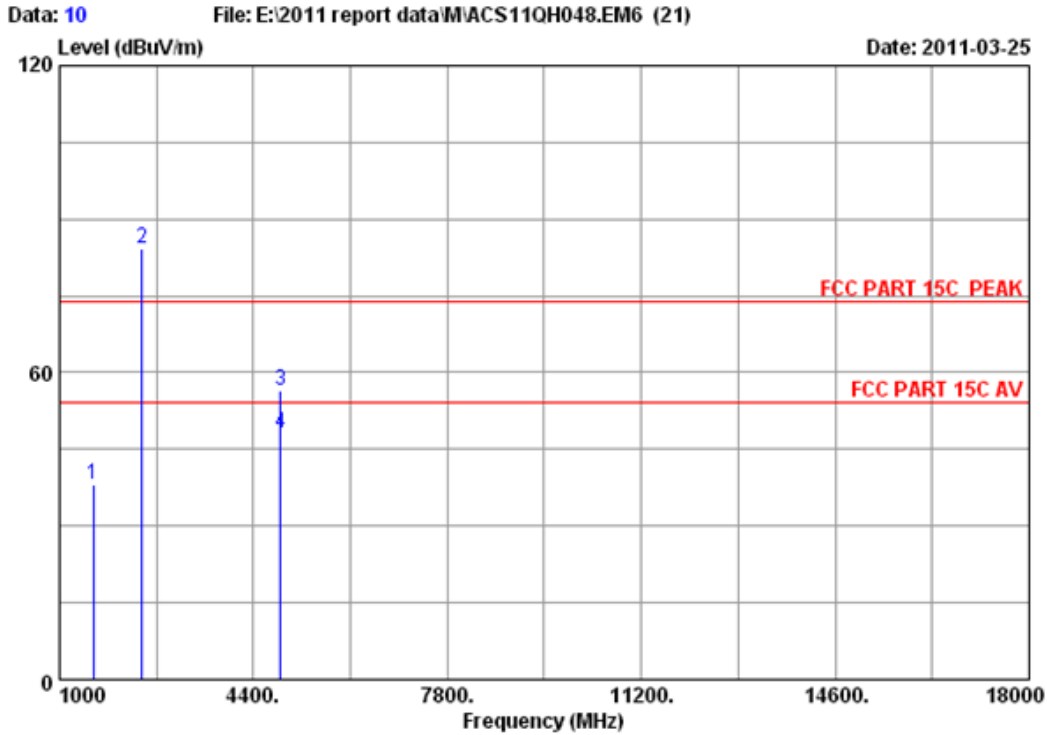
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2402.000	29.44	7.43	36.62	94.55	94.80	74.00	-20.80	Peak
2	4804.000	34.30	10.62	35.10	51.39	61.21	74.00	12.79	Peak
3	4804.000	34.30	10.62	35.10	38.28	48.10	54.00	5.90	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.



Site no. : 3m Chamber Data no. : 9
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : 22.4'C/41% Engineer : Paul Tian
EUT : Wii REACTOR Motion Controller w/MP
Power : DC 3V
Test mode : 2441MHz Tx Mode
M/N : 57267



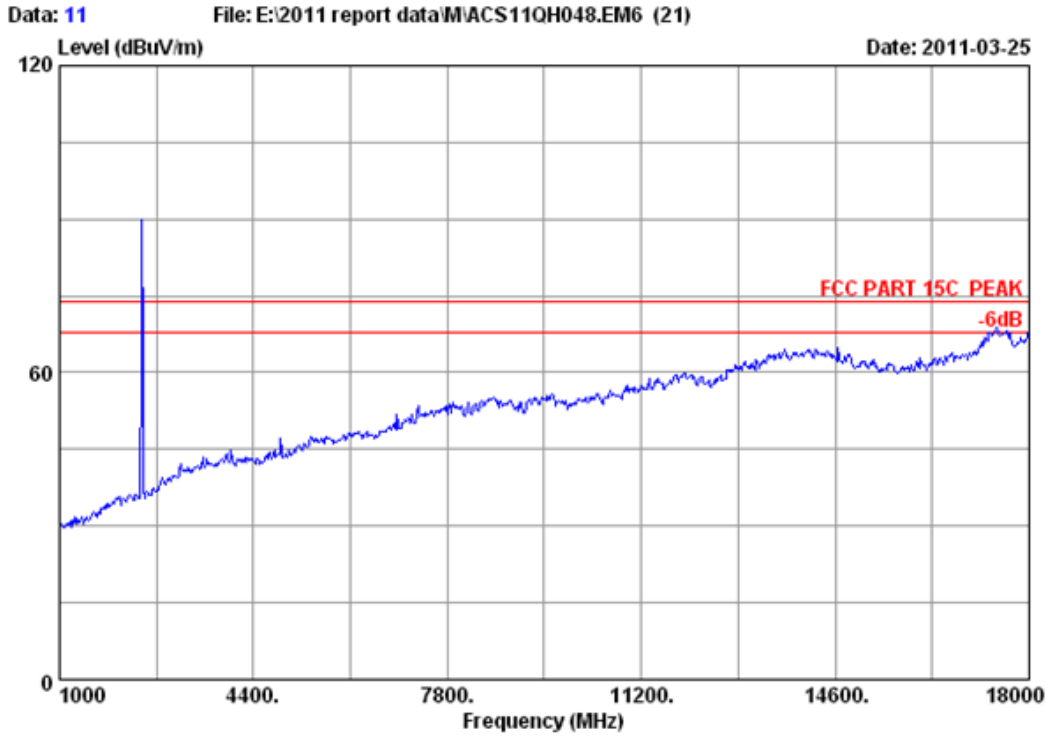
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Site no.       : 3m Chamber           Data no. : 10
Dis. / Ant.   : 3m 3115(0911)       Ant. pol.: VERTICAL
Limit         : FCC PART 15C PEAK
Env. / Ins.   : 22.4'C/41%         Engineer : Paul Tian
EUT           : Wii REACTOR Motion Controller w/MP
Power         : DC 3V
Test mode     : 2441MHz Tx Mode
M/N          : 57267
    
```

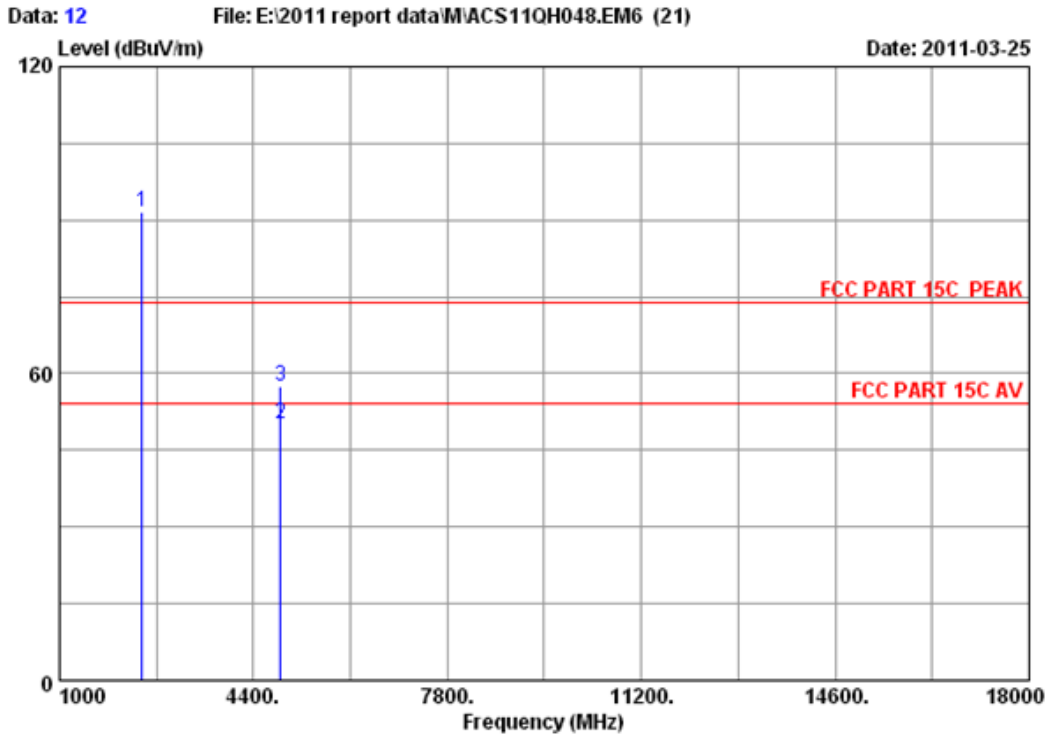
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1595.000	26.96	5.88	36.95	42.31	38.20	74.00	35.80	Peak
2	2441.000	29.47	7.50	36.61	84.03	84.39	74.00	-10.39	Peak
3	4882.000	34.41	10.71	35.03	46.36	56.45	74.00	17.55	Peak
4	4882.000	34.41	10.71	35.03	38.17	48.26	54.00	5.74	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.



Site no.	: 3m Chamber	Data no. :	11
Dis. / Ant.	: 3m 3115(0911)	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.4'C/41%	Engineer :	Paul Tian
EUT	: Wii REACTOR Motion Controller w/MP		
Power	: DC 3V		
Test mode	: 2441MHz Tx Mode		
M/N	: 57267		

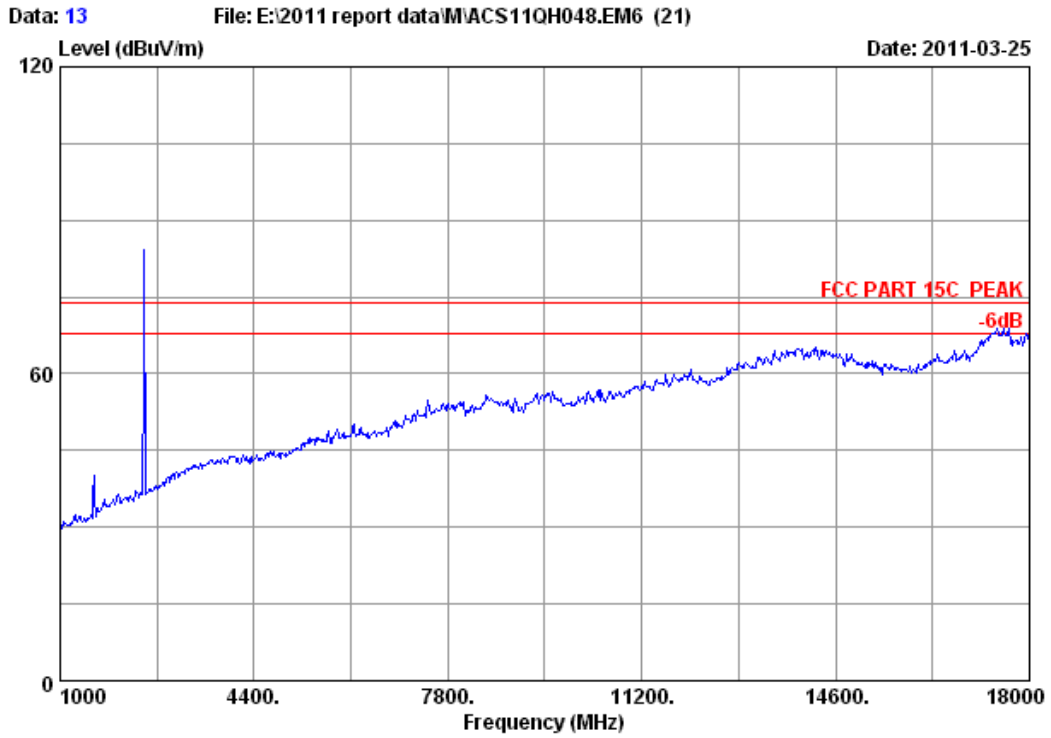


Site no. : 3m Chamber Data no. : 12
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.4'C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2441MHz Tx Mode
 M/N : 57267

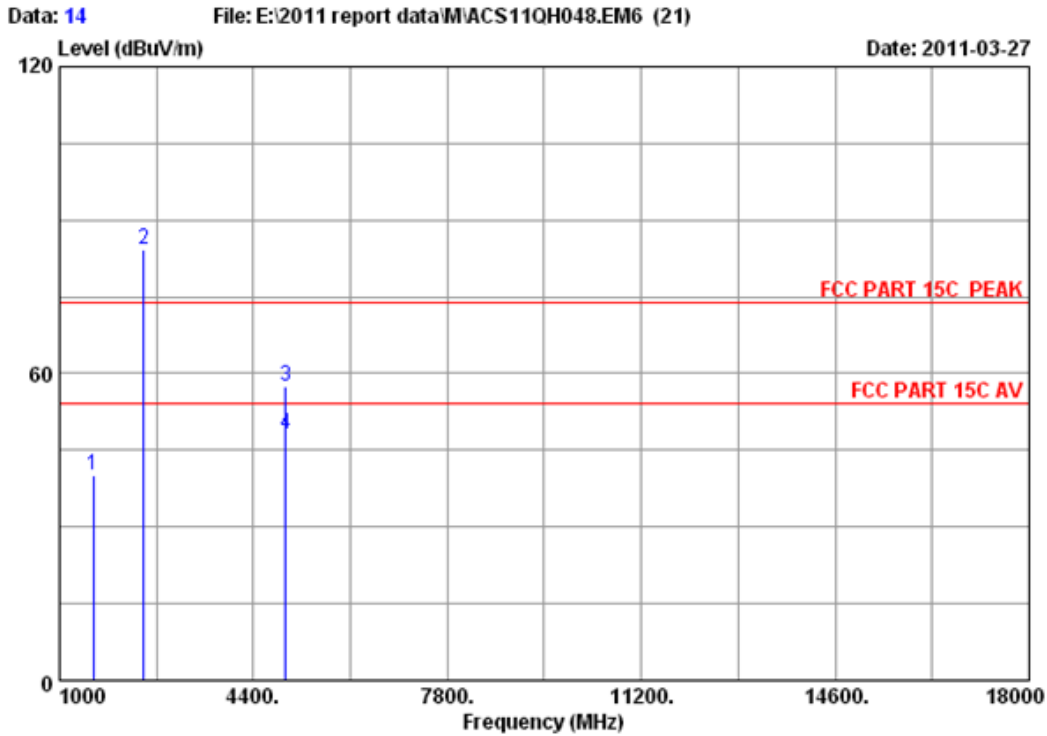
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2441.000	29.47	7.50	36.61	91.07	91.43	74.00	-17.43	Peak
2	4882.000	34.41	10.71	35.03	40.08	50.17	54.00	3.83	Average
3	4882.000	34.41	10.71	35.03	47.31	57.40	74.00	16.60	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.



Site no.	: 3m Chamber	Data no. :	13
Dis. / Ant.	: 3m 3115(0911)	Ant. pol. :	VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.4'C/41%	Engineer :	Paul Tian
EUT	: Wii REACTOR Motion Controller w/MP		
Power	: DC 3V		
Test mode	: 2480MHz Tx Mode		
M/N	: 57267		

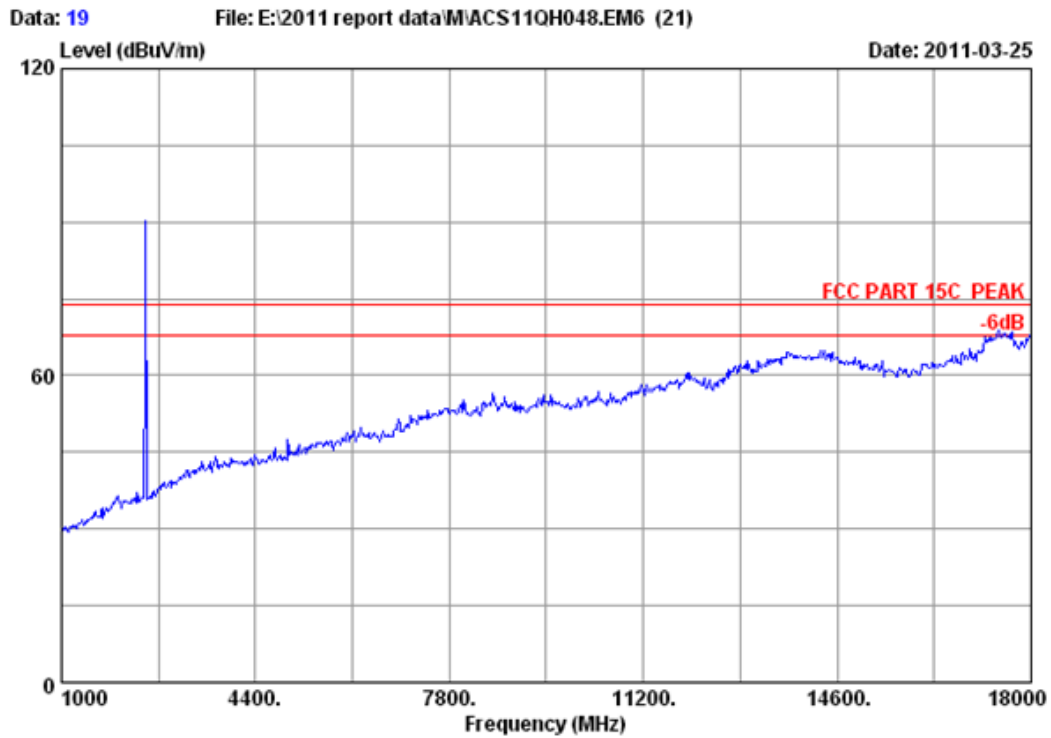


Site no. : 3m Chamber Data no. : 14
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.4'C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2480MHz Tx Mode
 M/N : 57267

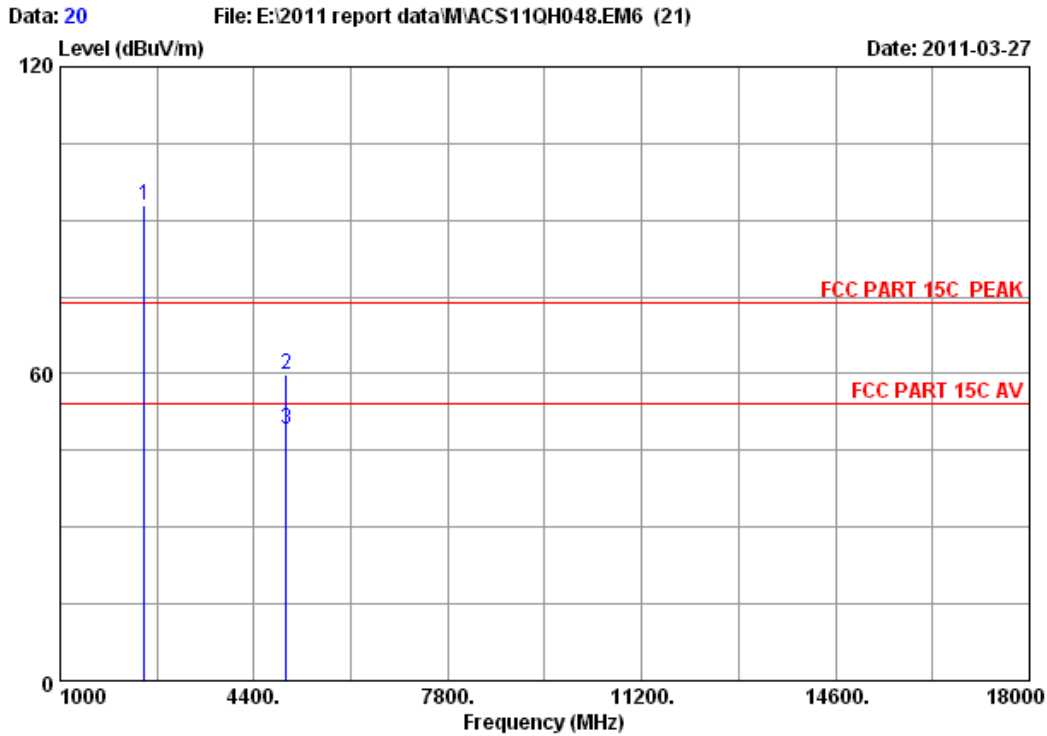
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1595.000	26.96	5.88	36.95	44.15	40.04	74.00	33.96	Peak
2	2480.000	29.49	7.58	36.60	83.77	84.24	74.00	-10.24	Peak
3	4960.000	34.54	10.80	34.95	46.99	57.38	74.00	16.62	Peak
4	4960.000	34.54	10.80	34.95	37.87	48.26	54.00	5.74	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.



Site no.	: 3m Chamber	Data no. :	19
Dis. / Ant.	: 3m 3115(0911)	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 22.4'C/41%	Engineer :	Paul Tian
EUT	: Wii REACTOR Motion Controller w/MP		
Power	: DC 3V		
Test mode	: 2480MHz Tx Mode		
M/N	: 57267		



Site no. : 3m Chamber Data no. : 20
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.4'C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2480MHz Tx Mode
 M/N : 57267

	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	29.49	7.58	36.60	92.31	92.78	74.00	-18.78	Peak
2	4960.000	34.54	10.80	34.95	49.36	59.75	74.00	14.25	Peak
3	4960.000	34.54	10.80	34.95	38.69	49.08	54.00	4.92	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, 10	1 Year
2.	RF Cable	Hubersuhner	SUCOFLE X102	28618/2	May.08,10	1Year

5.2. Limit

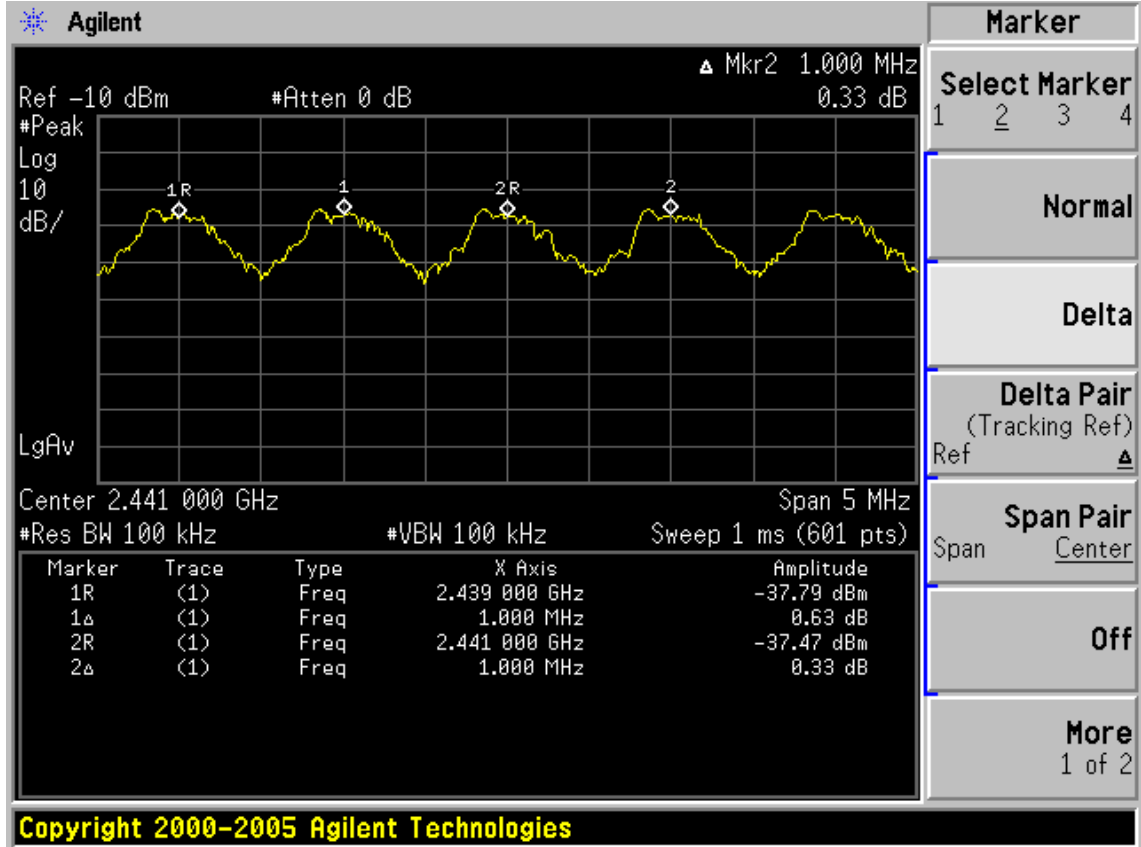
Frequency hopping systems shall have hopping channel carrier frequency separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

5.3. Test Results.

EUT: Wii REACTOR Motion Controller w/MP /Wii REACTOR Motion Controller		
M/N: 57267		
Test date:2011-03-28	Pressure:100.6 kpa	Humidity:53%
Tested by:Sunny Lu	Test site: RF site	Temperature:25 °C

Mode	Channel separation	Conclusion
GFSK	1.00MHz	PASS

Mode: GFSK



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.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,10	1Year

6.2. Limit

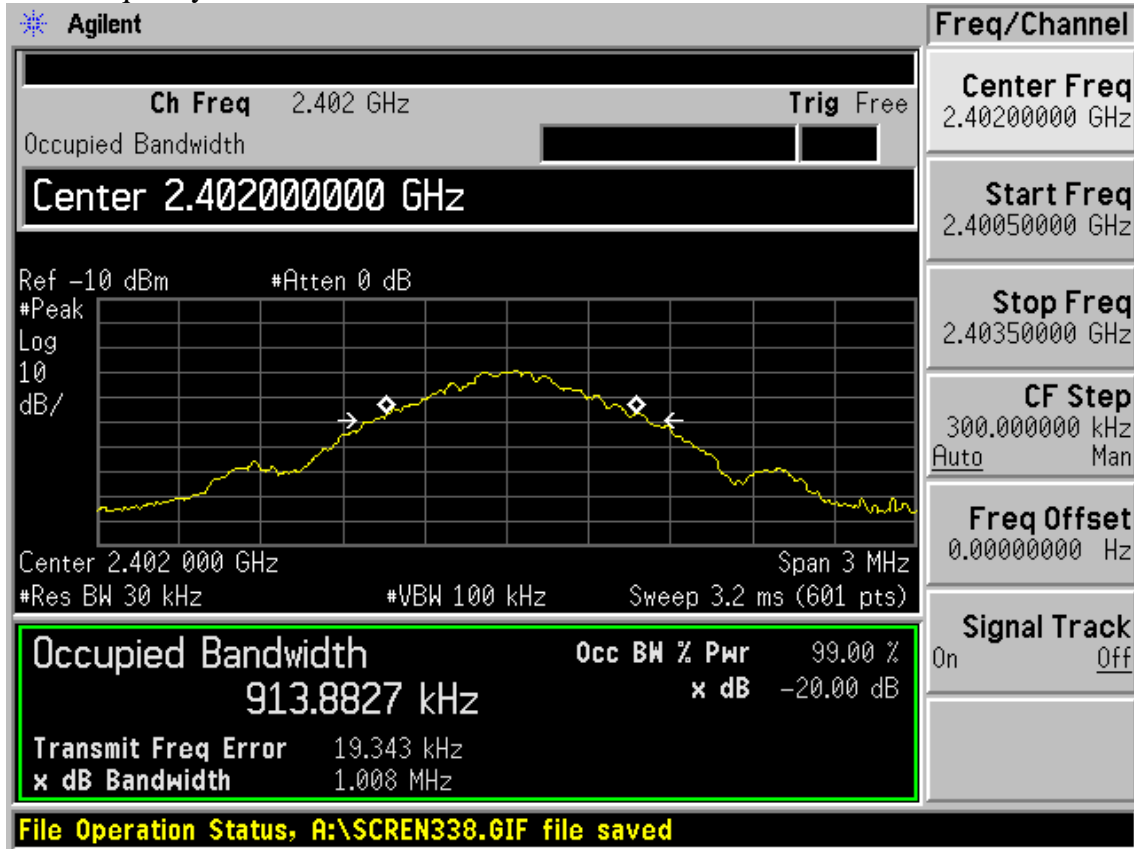
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific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

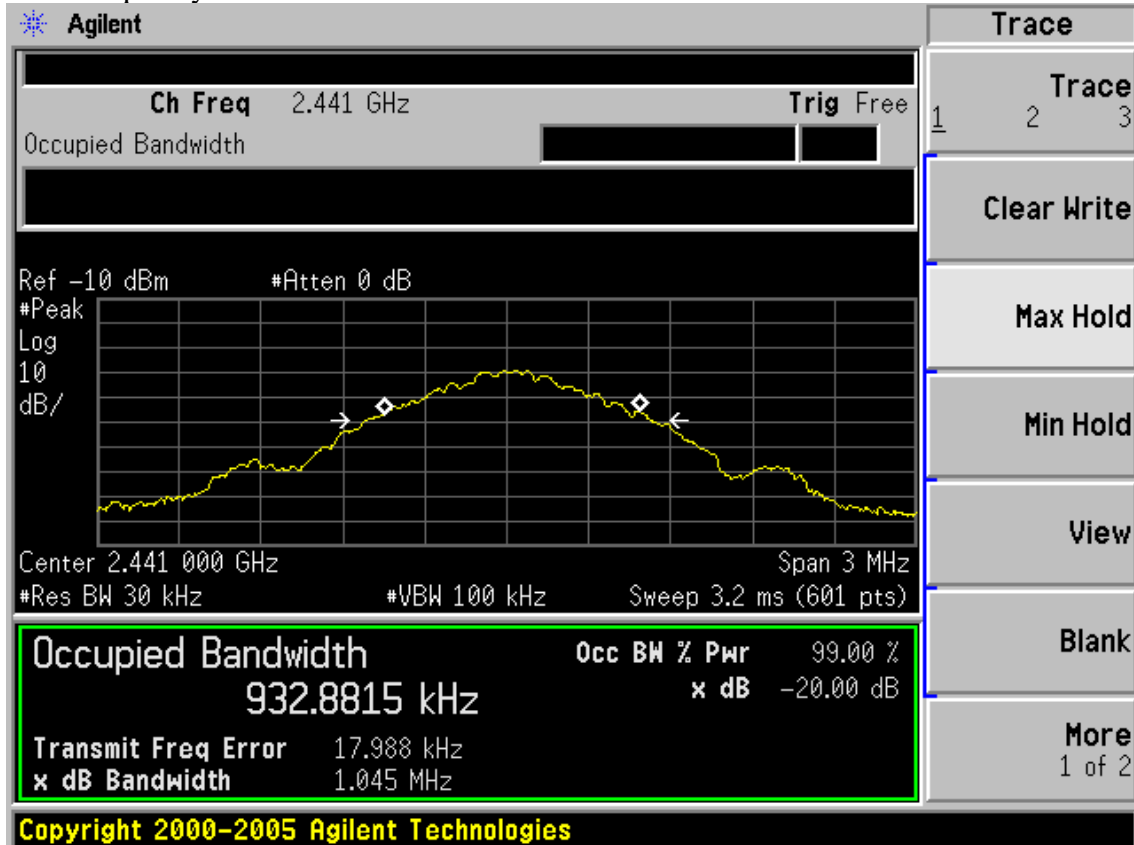
EUT: Wii REACTOR Motion Controller w/MP		
M/N: 57267		
Test date:2011-3-27	Pressure:100.5 kpa	Humidity:35 %
Tested by: Paul Tian	Test site: RF site	Temperature : 22.7 °C

Frequency	20dB bandwidth (KHz)	Limit (KHz)
2402	1008	>500
2441	1045	>500
2480	1053	>500
Conclusion : PASS		

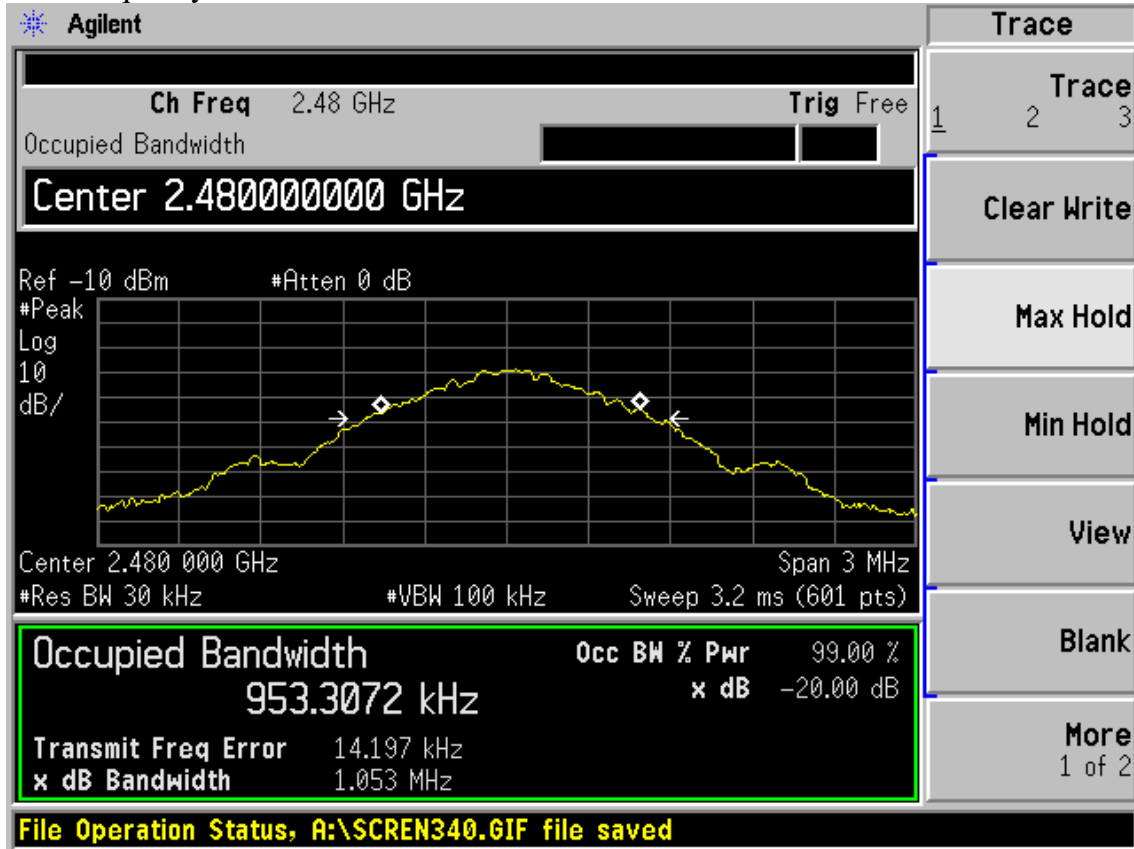
Test Frequency: 2402MHz



Test Frequency: 2441MHz



Test Frequency: 2480MHz



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	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May,08, 10	1Year

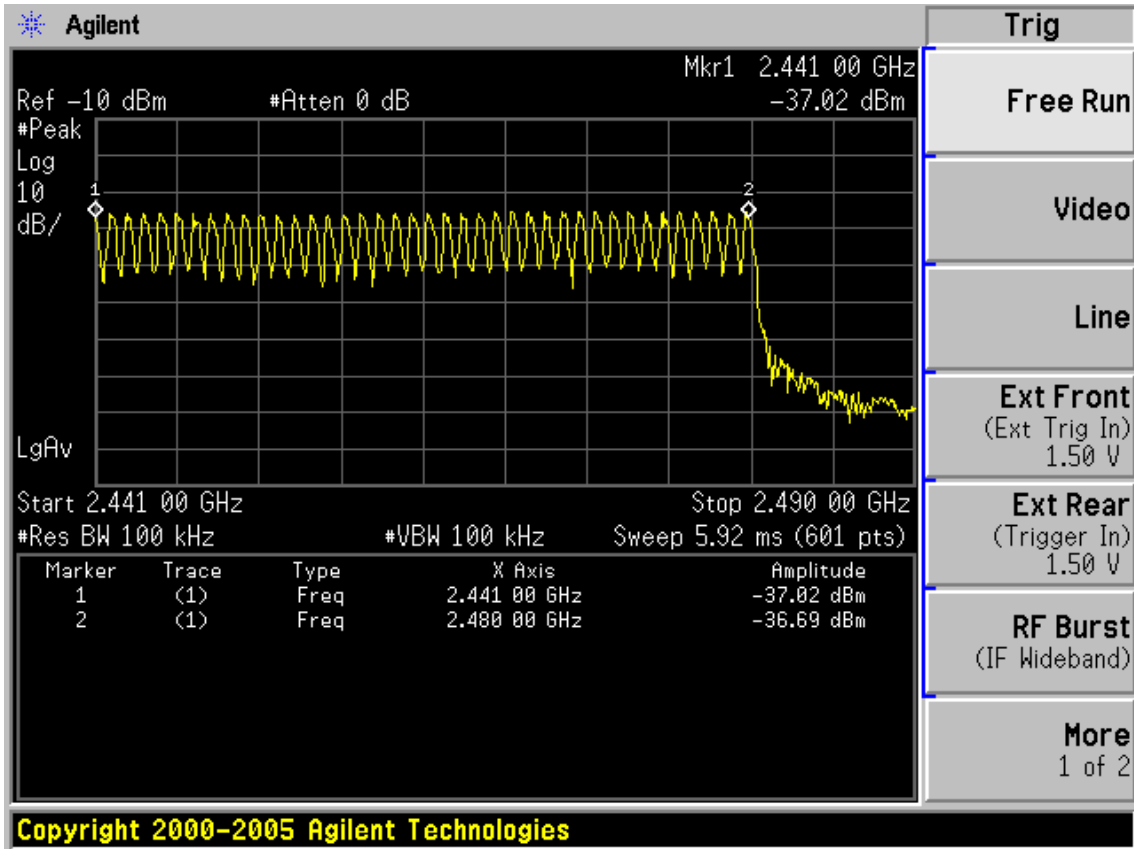
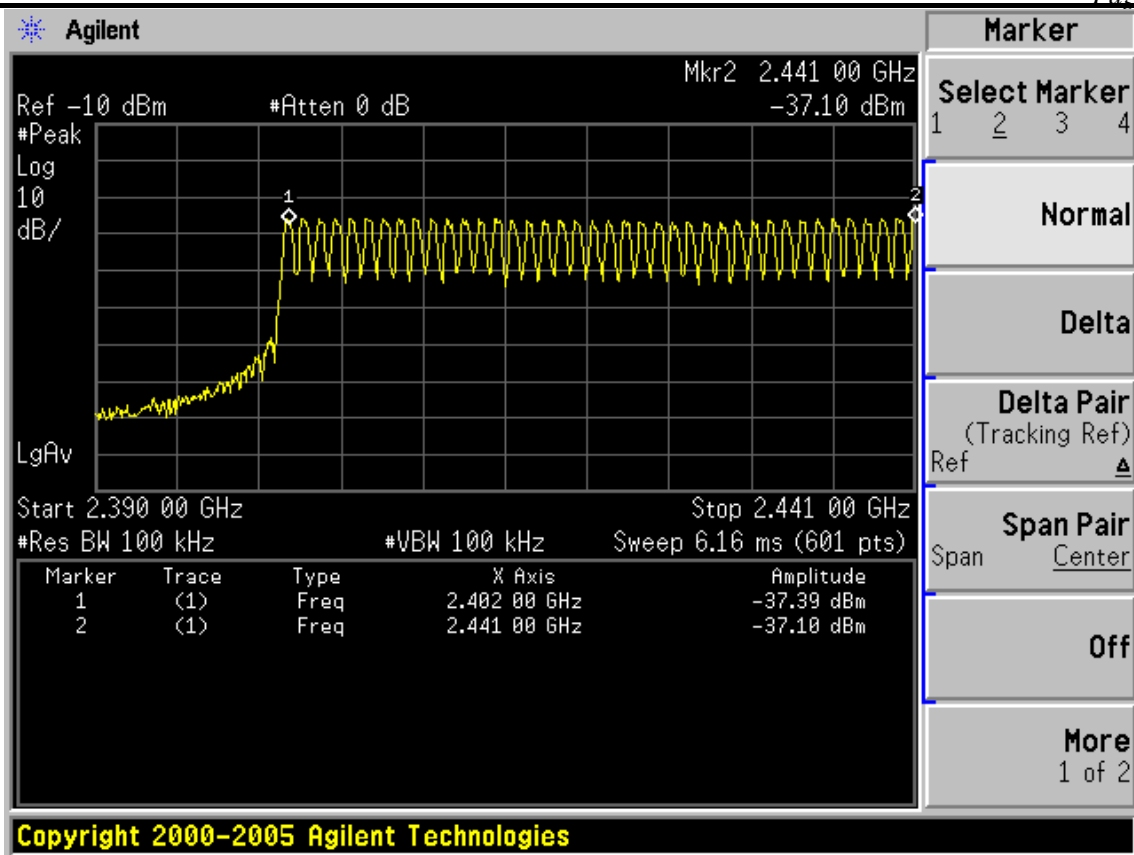
7.2. Limit

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

7.3. Test Result

EUT: Wii REACTOR Motion Controller w/MP /Wii REACTOR Motion Controller		
M/N: 57267		
Test date:2011-03-28	Pressure:100.6 kpa	Humidity:53%
Tested by: Sunny Lu	Test site: RF site	Temperature:25 °C

Number of channel	Limit	Conclusion
79	≥ 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	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May,08, 10	1Year

8.2.Limit

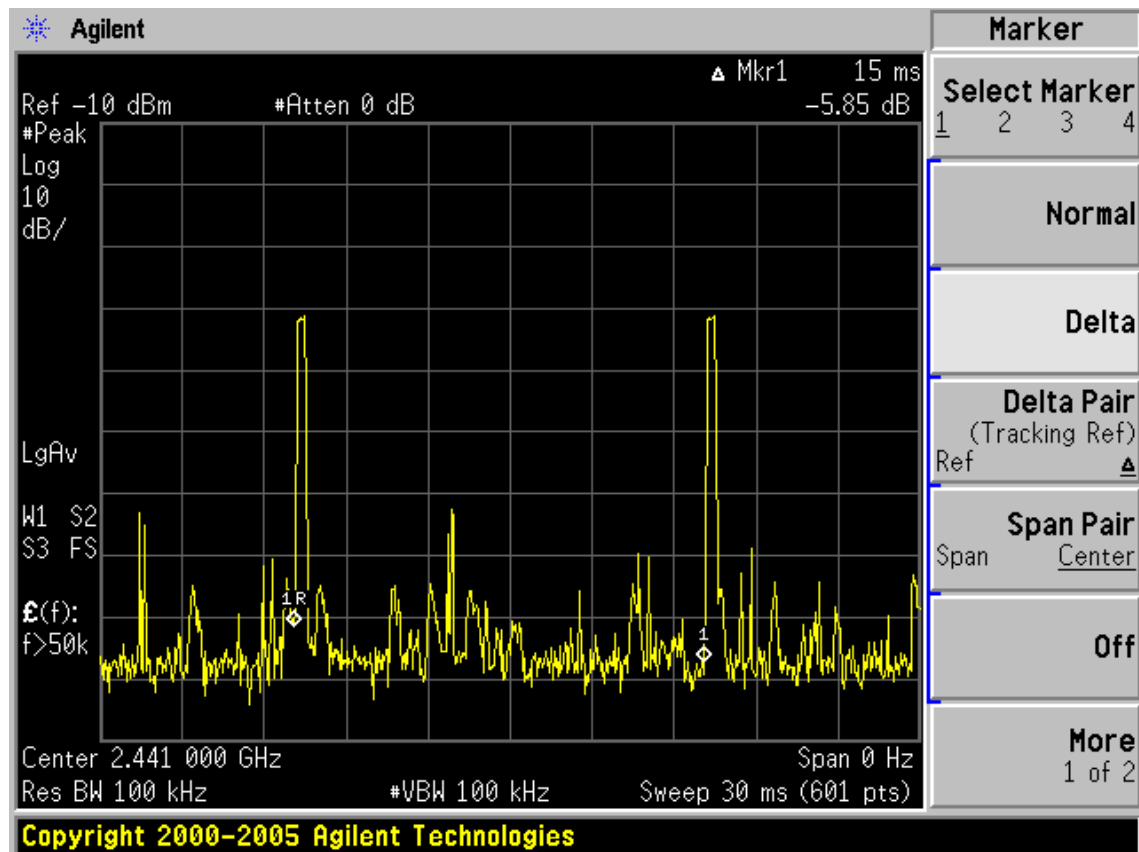
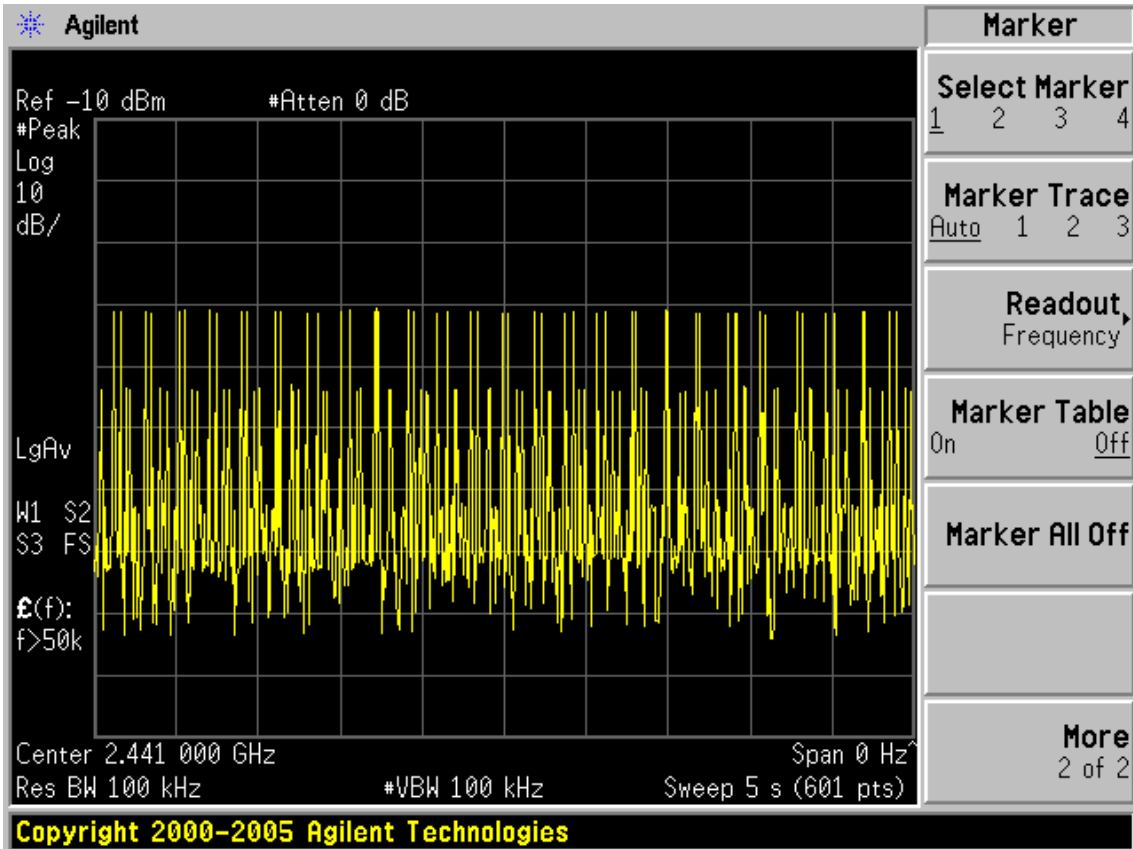
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

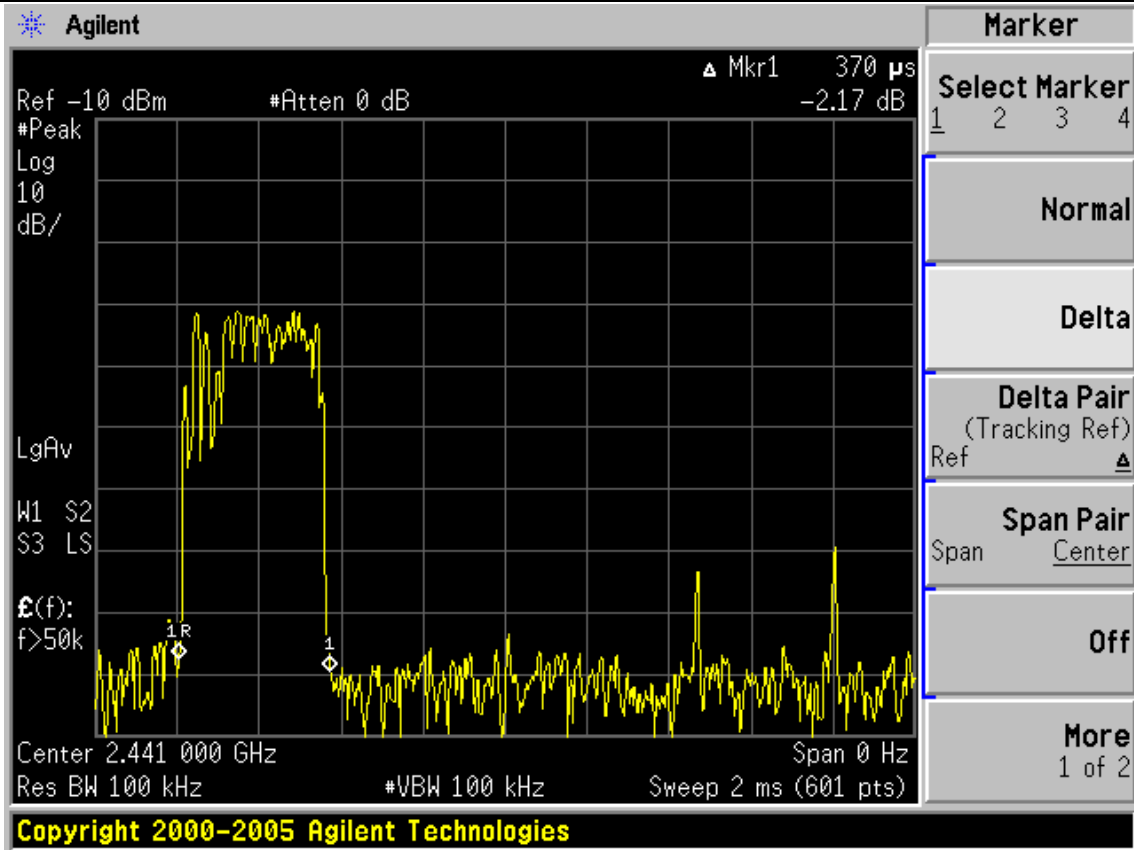
8.3. Test Results

EUT: Wii REACTOR Motion Controller w/MP /Wii REACTOR Motion Controller		
M/N: 57267		
Test date: 2011-03-28	Pressure:100.6 kpa	Humidity:53%
Tested by: Sunny Lu	Test site: RF site	Temperature:25 °C

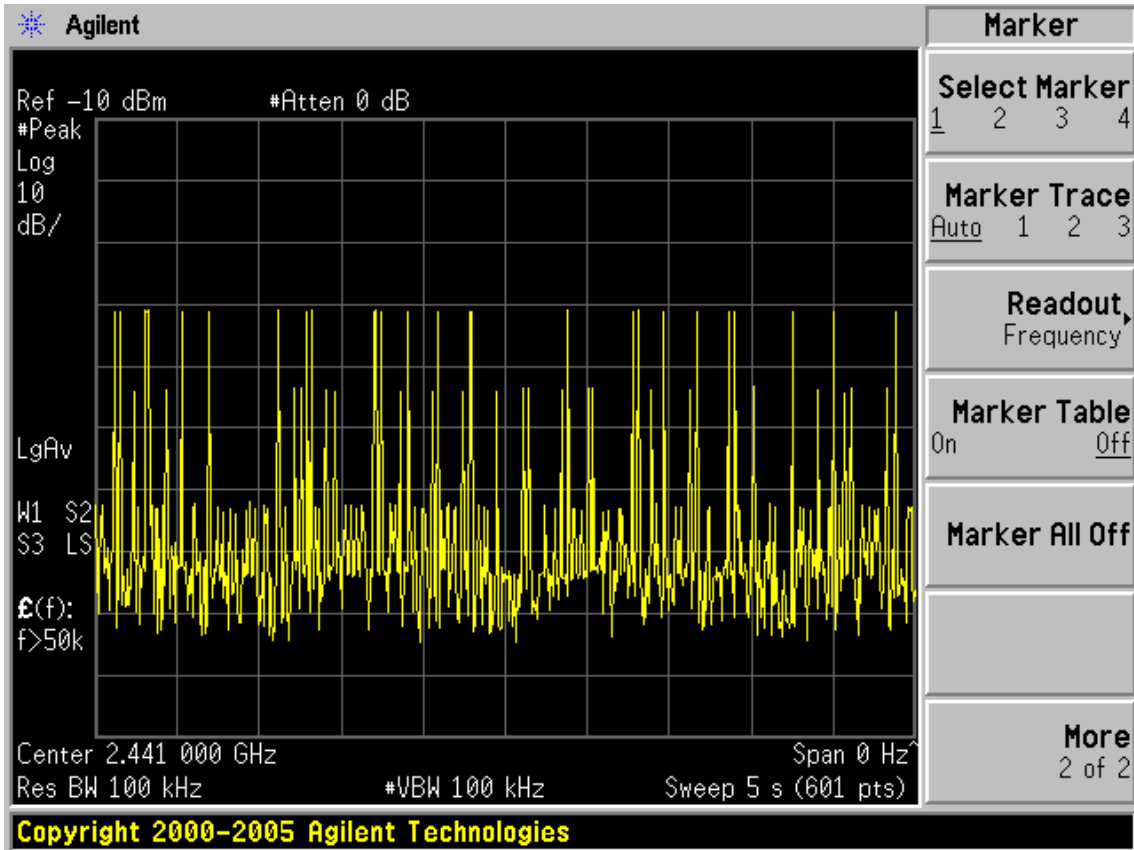
Mode	dwell time	Limit
DH1	$49\text{hops}/5\text{s} * 0.4 * 79\text{chanel s} * 0.37\text{ms} = 114.58\text{ms}$	<400ms
DH3	$24\text{hops}/5\text{s} * 0.4 * 79\text{chanel s} * 1.7\text{ms} = 257.85\text{ms}$	<400ms
DH5	$20\text{hops}/5\text{s} * 0.4 * 79\text{chanel s} * 3.033\text{ms} = 383.37\text{ms}$	<400ms
Conclusion: PASS		

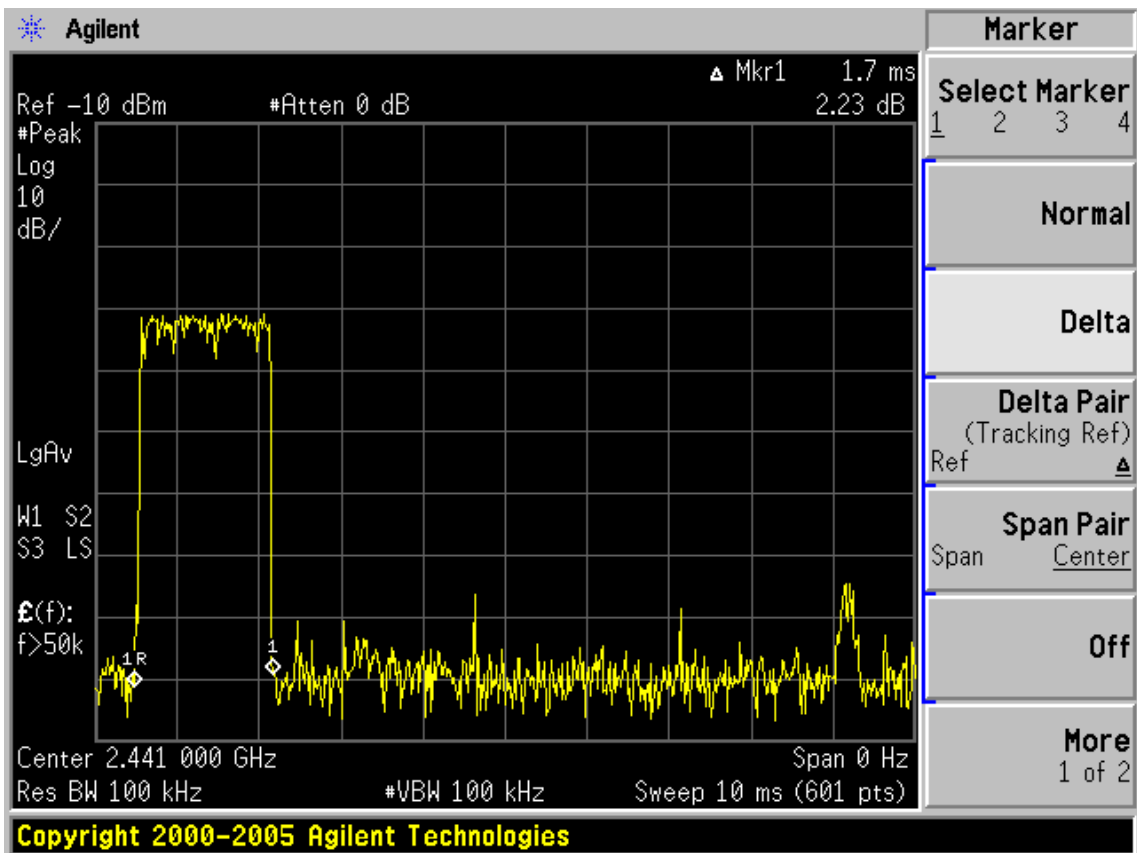
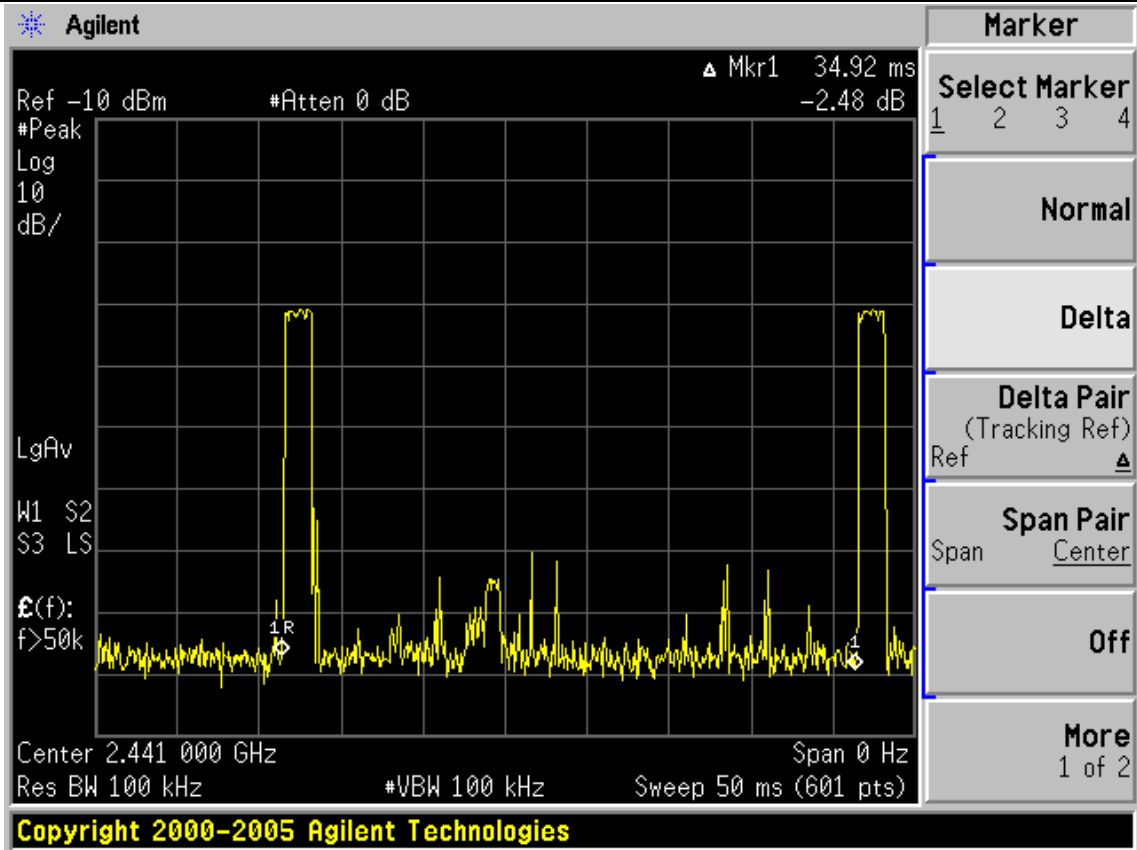
DH 1



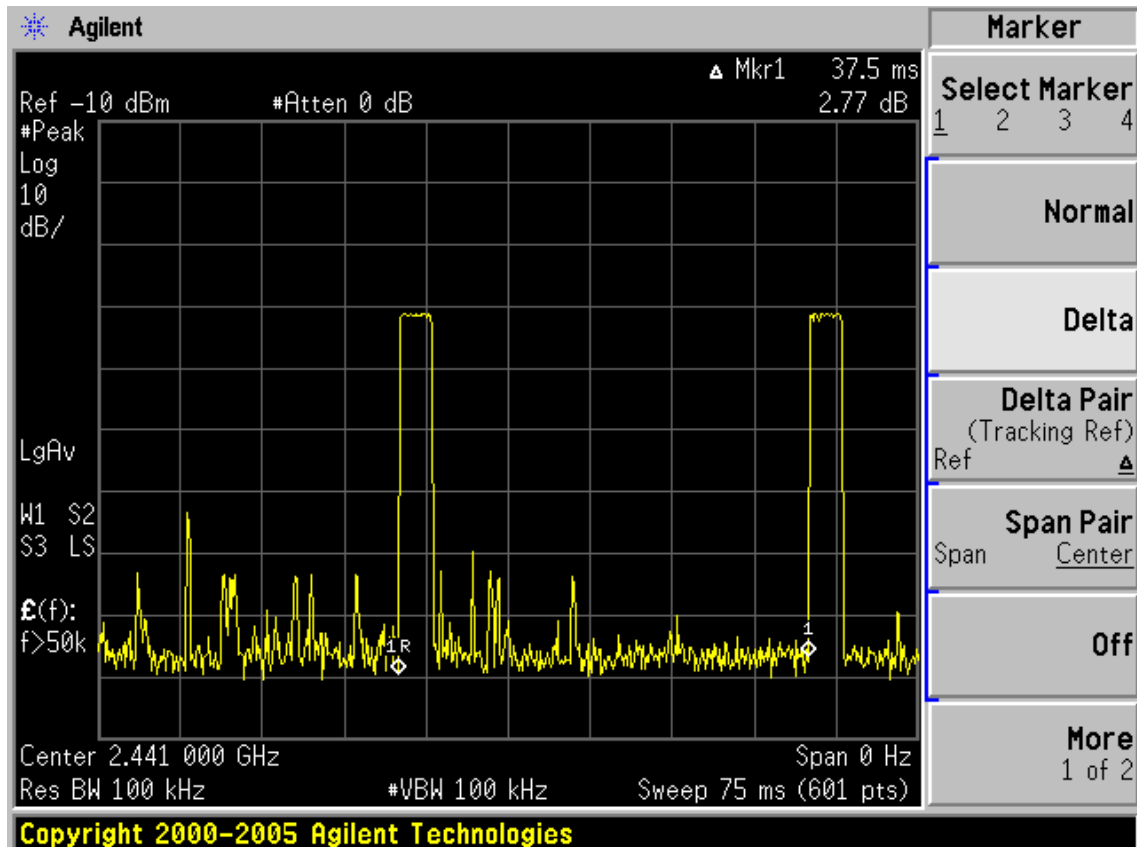
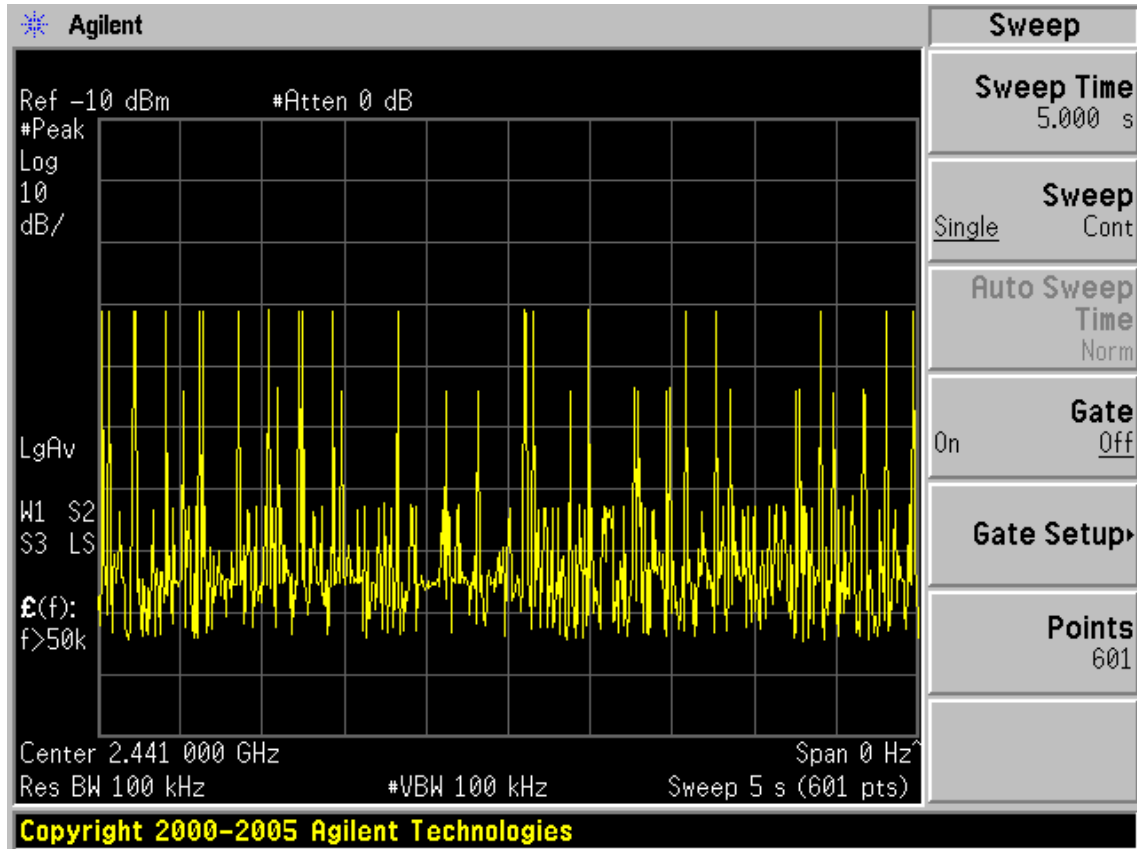


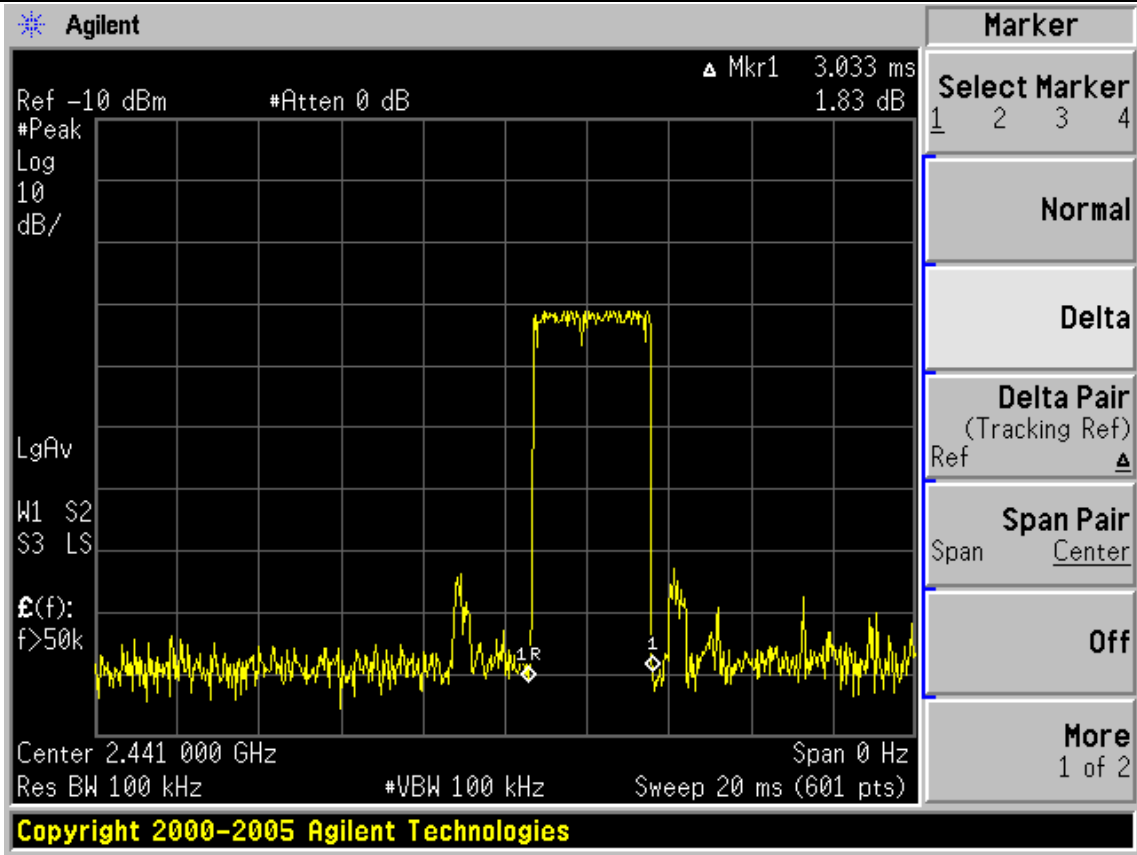
DH3





DH5





9. MAXIMUM PEAK OUTPUT POWER TEST

9.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May.08, 10	1 Year
2.	Spectrum Analyzer	Agilent	E4446A	US44300459	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, Connected the EUT's antenna port to Spectrum analyzer
- 2, Set Spectrum analyzer's RBW=2MHz, VBW=3MHz, measure the PK output power of device.

Note: The cable loss was offset into measure device as an amplitude offset.

9.4. Test Results

EUT: Wii REACTOR Motion Controller w/MP		
M/N: 57267		
Test date:2011-3-27	Pressure:100.5 kpa	Humidity:35 %
Tested by: Paul Tian	Test site: RF site	Temperature : 23.1 °C

Frequency	Output power (dBm)	Limit (dBm)
2402	-1.92	30
2442	-5.16	30
2482	-3.70	30
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.

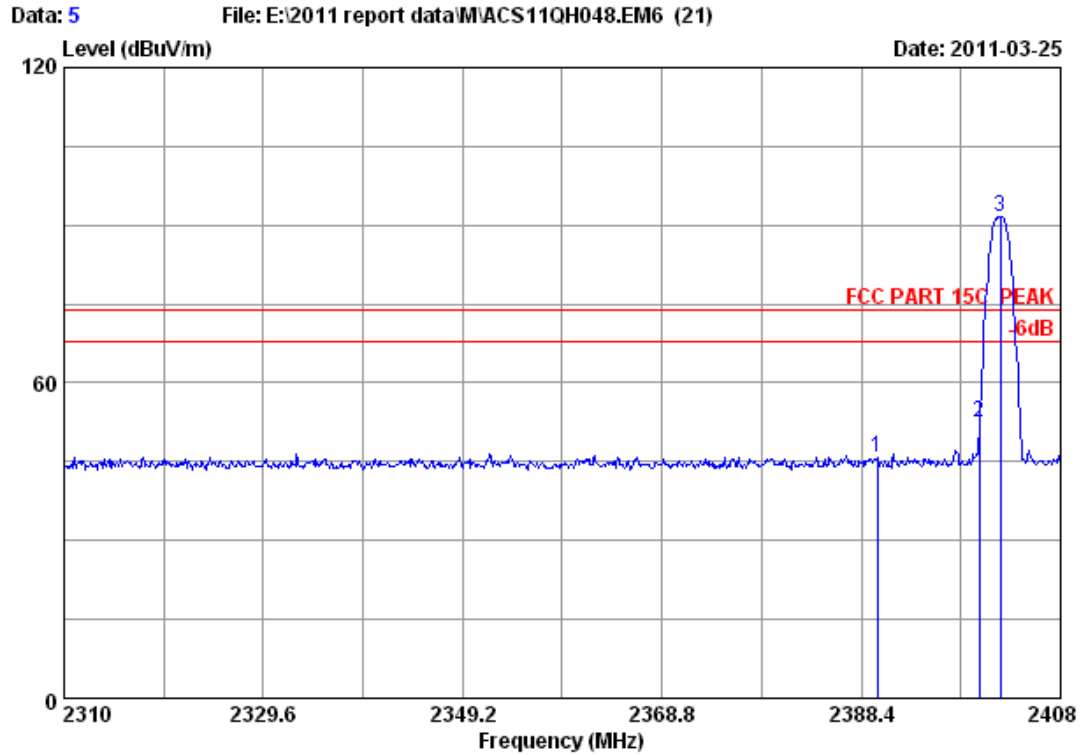
10.3. Test Produce

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) Average: RBW=1MHz; VBW=10Hz, PK detector, Sweep =AUTO

10.4. Test Results

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

Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

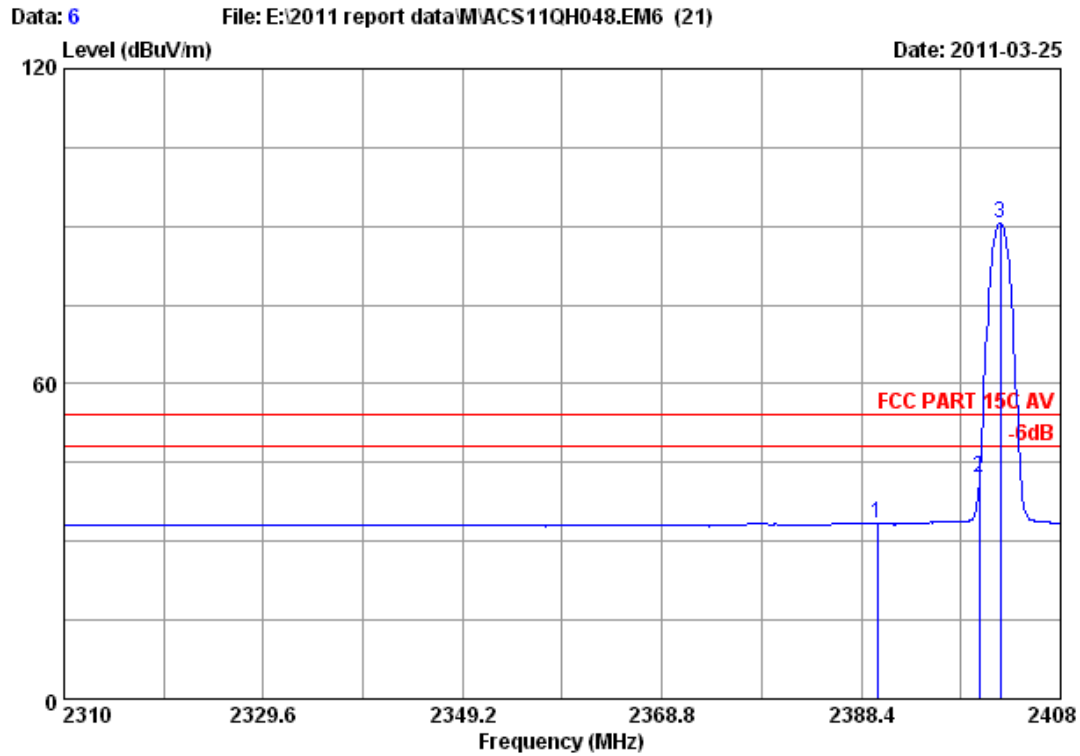


Site no. : 3m Chamber Data no. : 5
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.4°C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2402MHz Tx Mode
 M/N : 57267

	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	2390.000	29.44	7.39	36.62	45.43	45.64	74.00	28.36	Peak
2	2400.000	29.44	7.43	36.62	52.11	52.36	74.00	21.64	Peak
3	2402.120	29.44	7.43	36.62	91.23	91.48	74.00	-17.48	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.

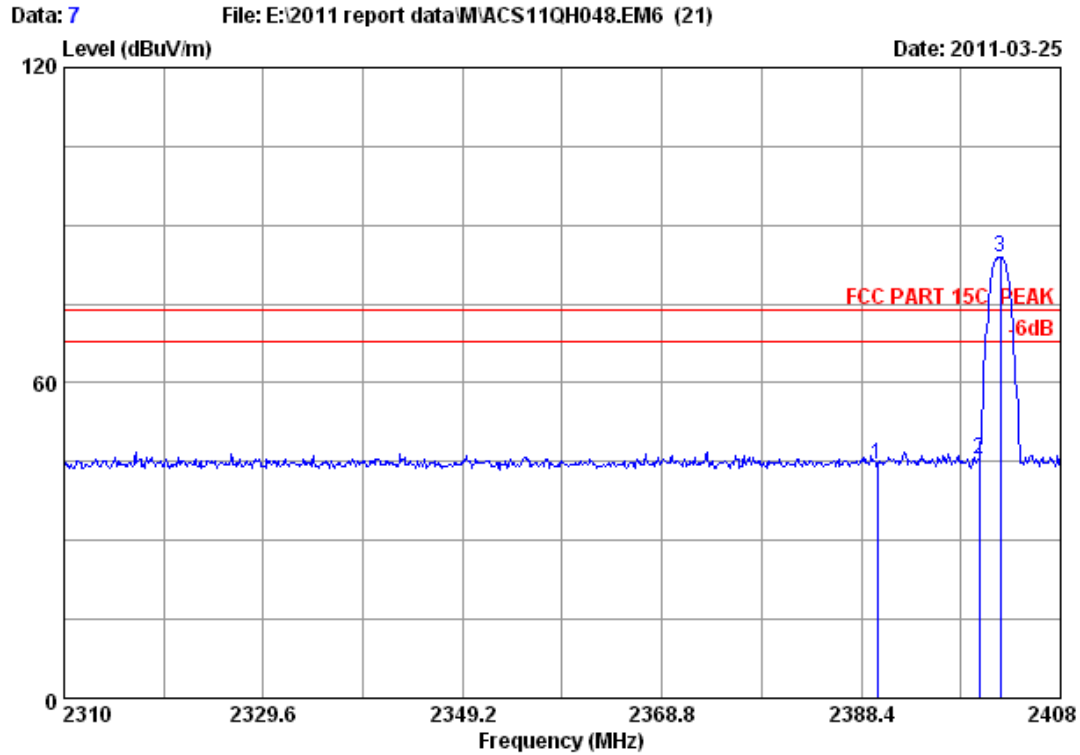


Site no. : 3m Chamber Data no. : 6
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.4°C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2402MHz Tx Mode
 M/N : 57267

	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	2390.000	29.44	7.39	36.62	33.09	33.30	54.00	20.70	Average
2	2400.000	29.44	7.43	36.62	41.92	42.17	54.00	11.83	Average
3	2402.120	29.44	7.43	36.62	90.24	90.49	54.00	-36.49	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.

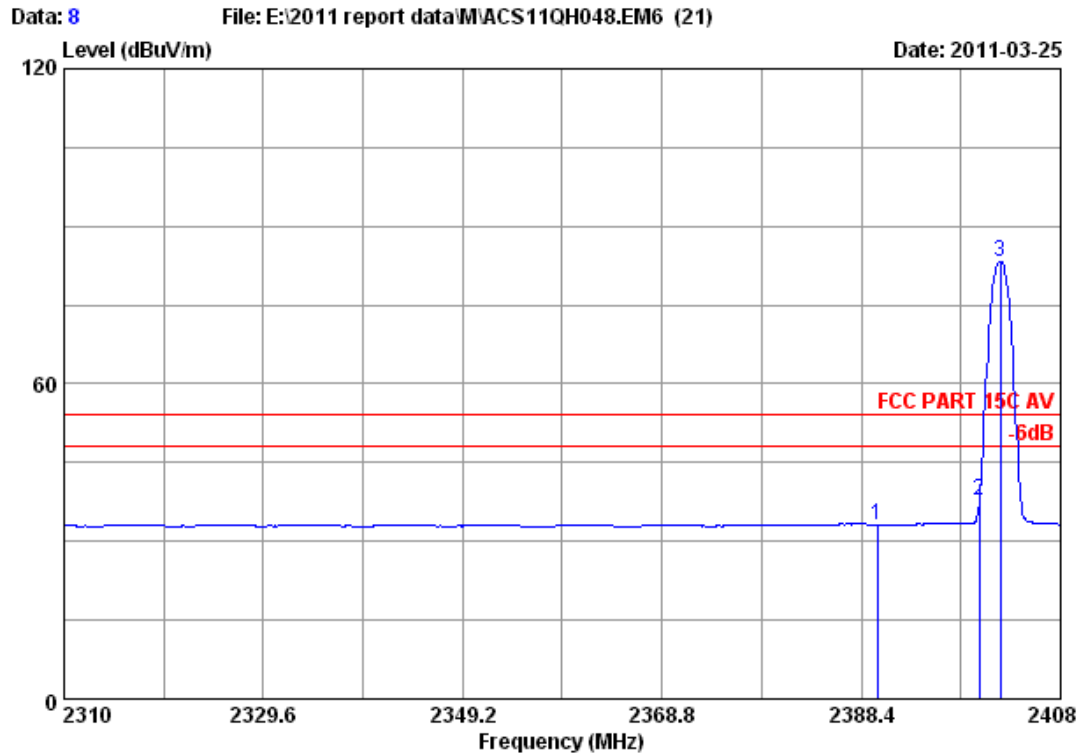


Site no. : 3m Chamber Data no. : 7
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.4°C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2402MHz Tx Mode
 M/N : 57267

	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	2390.000	29.44	7.39	36.62	44.22	44.43	74.00	29.57	Peak
2	2400.000	29.44	7.43	36.62	45.26	45.51	74.00	28.49	Peak
3	2402.120	29.44	7.43	36.62	83.57	83.82	74.00	-9.82	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.

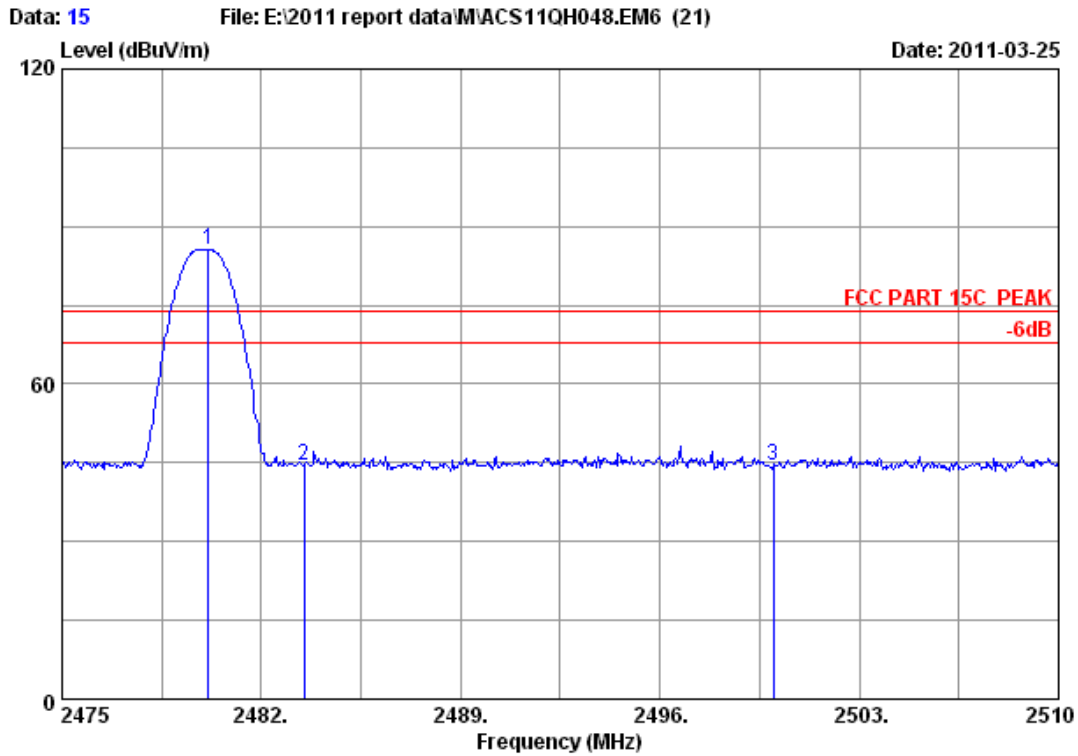


Site no. : 3m Chamber Data no. : 8
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.4°C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2402MHz Tx Mode
 M/N : 57267

	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	2390.000	29.44	7.39	36.62	32.99	33.20	54.00	20.80	Average
2	2400.000	29.44	7.43	36.62	37.61	37.86	54.00	16.14	Average
3	2402.120	29.44	7.43	36.62	83.11	83.36	54.00	-29.36	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.

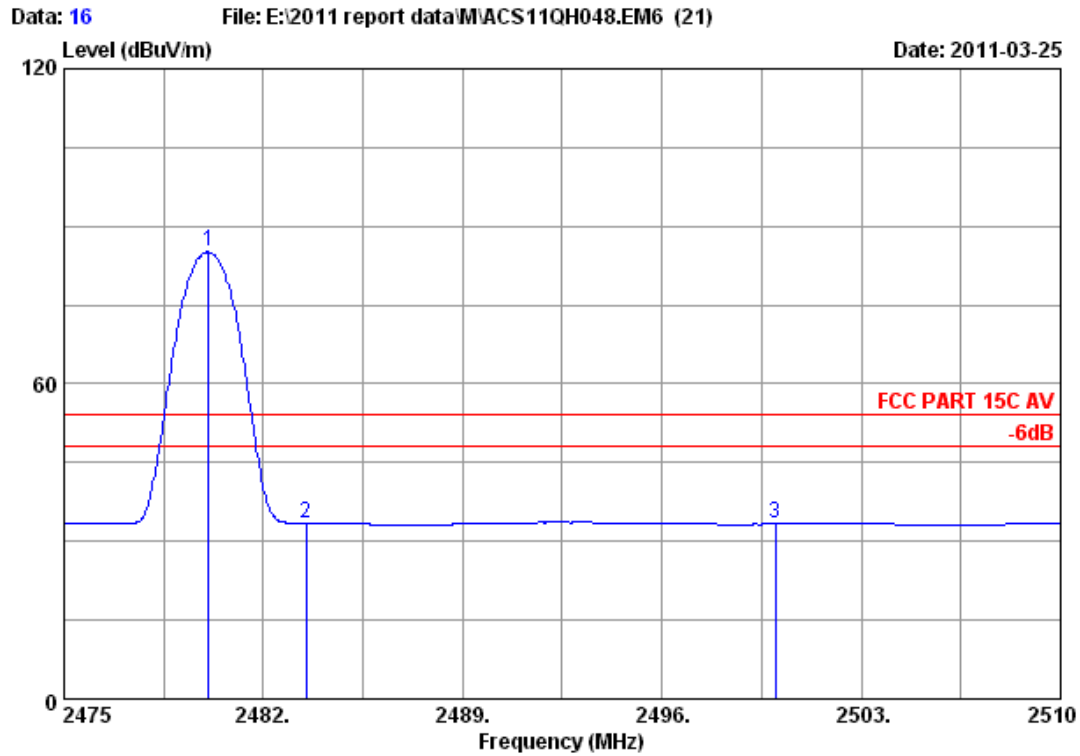


Site no. : 3m Chamber Data no. : 15
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.4'C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2480MHz Tx Mode
 M/N : 57267

	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	2480.145	29.49	7.58	36.60	85.10	85.57	74.00	-11.57	Peak
2	2483.500	29.49	7.58	36.60	44.12	44.59	74.00	29.41	Peak
3	2500.000	29.50	7.62	36.60	43.95	44.47	74.00	29.53	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.

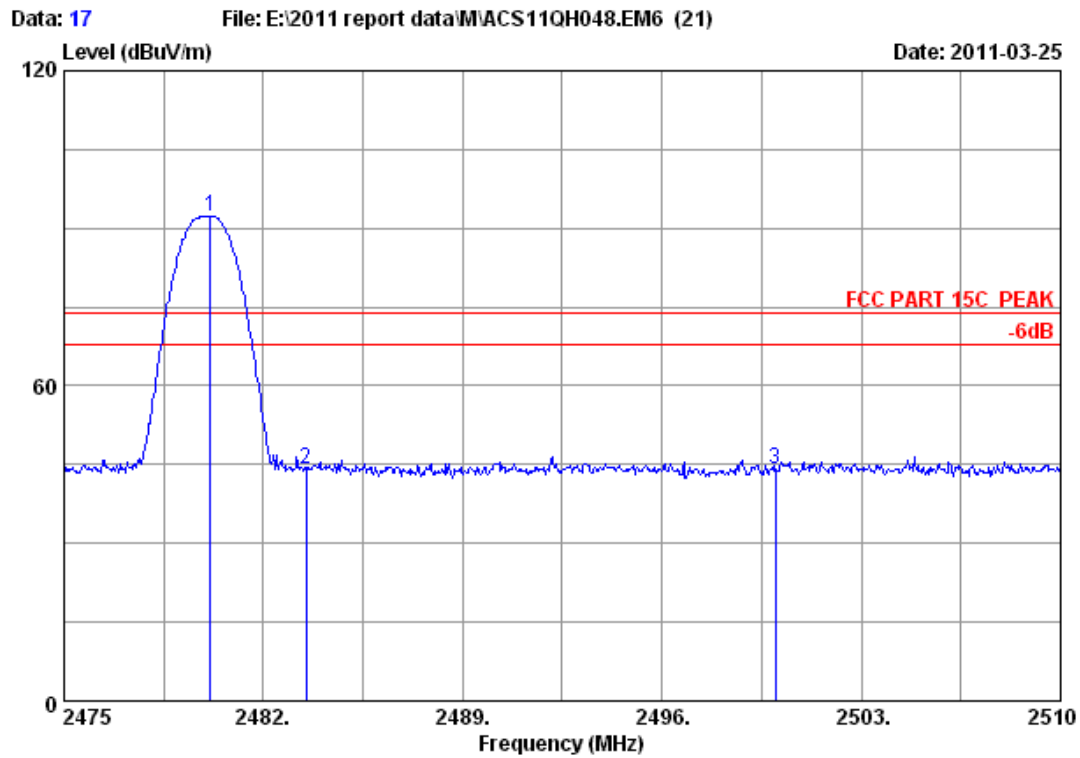


Site no. : 3m Chamber Data no. : 16
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.4'C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2480MHz Tx Mode
 M/N : 57267

	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	2480.075	29.49	7.58	36.60	84.61	85.08	54.00	-31.08	Average
2	2483.500	29.49	7.58	36.60	32.96	33.43	54.00	20.57	Average
3	2500.000	29.50	7.62	36.60	32.81	33.33	54.00	20.67	Average

Remarks:

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

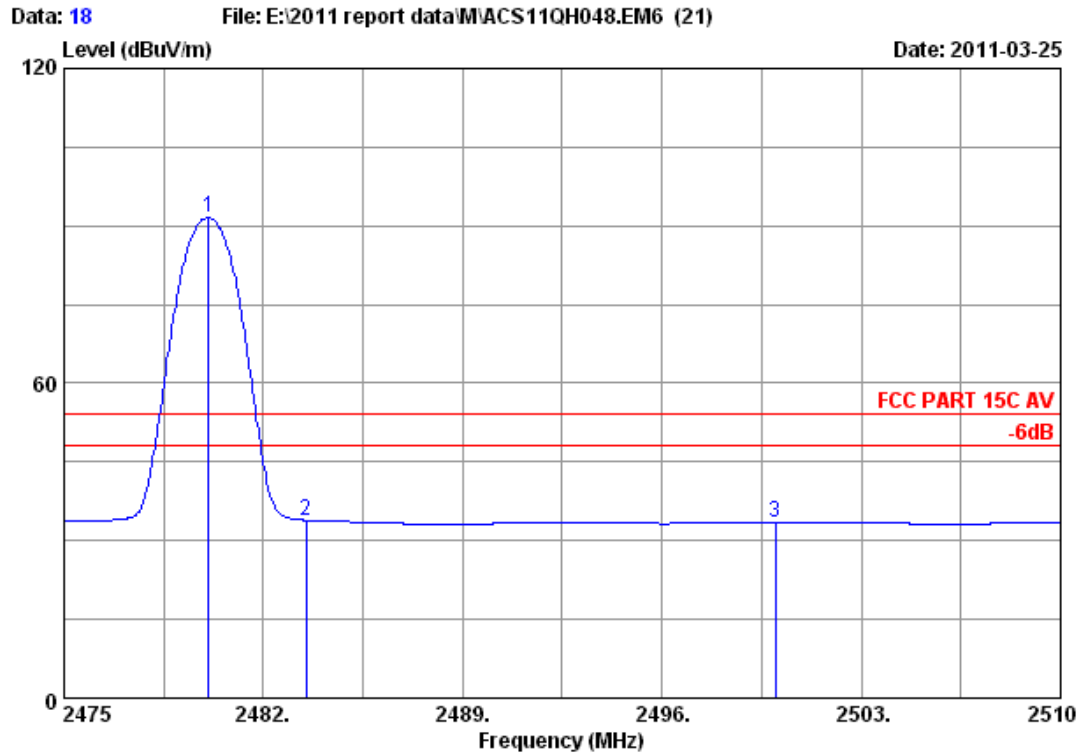


Site no. : 3m Chamber Data no. : 17
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 22.4°C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2480MHz Tx Mode
 M/N : 57267

	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	2480.145	29.49	7.58	36.60	91.84	92.31	74.00	-18.31	Peak
2	2483.500	29.49	7.58	36.60	43.77	44.24	74.00	29.76	Peak
3	2500.000	29.50	7.62	36.60	43.72	44.24	74.00	29.76	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.



Site no. : 3m Chamber Data no. : 18
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 22.4°C/41% Engineer : Paul Tian
 EUT : Wii REACTOR Motion Controller w/MP
 Power : DC 3V
 Test mode : 2480MHz Tx Mode
 M/N : 57267

	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	2480.075	29.49	7.58	36.60	91.04	91.51	54.00	-37.51	Average
2	2483.500	29.49	7.58	36.60	33.41	33.88	54.00	20.12	Average
3	2500.000	29.50	7.62	36.60	32.83	33.35	54.00	20.65	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.

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 antenna used for this product is a integral Patch antenna that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of this antenna is only 0dBi.



12.DEVIATION TO TEST SPECIFICATIONS

[NONE]