

APPLICATION FOR CERTIFICATION

On Behalf of

Harmonix Music Systems, Inc.

Wii Wireless Dongle

Model Number: WGTSELEA1B

Prepared for : Harmonix Music Systems, Inc.  
625 Massachusetts Ave 2nd Floor Cambridge, MA 02139  
United States

Prepared By : Audix Technology (Shenzhen) Co., Ltd.  
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Report Number : ACS-F08180  
Date of Test : Mar.21~27, 2008  
Date of Report : Mar.31, 2008

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## TEST REPORT CERTIFICATION

Applicant : Harmonix Music Systems, Inc.  
 Manufacturer : Dong Guan Contel Electronics Co., Ltd.  
 EUT Description : Wii Wireless Dongle  
 (A) MODEL NO. : WGTSELEA1B  
 (B) SERIAL NO. : N/A  
 (C) POWER SUPPLY : DC 5V  
 (D) TEST VOLTAGE : DC 5V From PS3

Test Procedure Used:

FCC Rules and Regulations Part 15 Subpart C 2007

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits for radiated and conducted emissions. The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of tests. Also, this report shows that EUT is technically compliant with FCC requirements.

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

Date of Test :

Mar.21~27, 2008

Prepared by :

YoYo Wang

YoYo Wang / Assistant

Reviewer :

Skyle Li

Skyle Li / Engineer



Approved & Authorized Signer:

Ken Lu / Deputy Manager

# 1. SUMMARY OF STANDARDS AND RESULTS

## 1.1. Description of Standards and Results

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

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission Test	FCC Part 15C: 15.207 ANSI C63.4-2003	PASS
Radiated Emission Test	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

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Product name	:	Wii Wireless Dongle
Model Number	:	WGTSELEA1B
Operation frequency	:	2408MHz~2474MHz
Modulation	:	GFSK
Applicant	:	Harmonix Music Systems, Inc. 625 Massachusetts Ave 2nd Floor Cambridge, MA 02139 United States
Manufacturer	:	Dong Guan Contel Electronics Co., Ltd. 2 <sup>nd</sup> Industrial Park, DiChong District, GaoBu Town, Dong Guan City, Guang Dong Province, China
Date of Test	:	Mar.21~27, 2008
Date of Receipt	:	Mar.20, 2008
Sample Type	:	Prototype production

### 2.2. Tested Supporting System Details

#### 2.2.1.TV

EMC CODE	:	ACS-EMC-TV01T
M/N	:	1419A
Manufacturer	:	TCL
Power cord	:	Unshielded,Undetachabled, 1.8m

#### 2.2.2.PS3

Manufacturer	:	SONY
M/N	:	CECHC04

### 2.3. 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 : Jun. 13, 2006 File on Federal  
Communication Commission  
Registration Number: 90454

3m & 10m Anechoic Chamber : Jan. 31, 2007 File on Federal  
Communication Commission  
Registration Number: 794232

EMC Lab. : Accredited by DATech, German  
Registration Number: DAT-P-091/99-01  
Feb. 02, 2004

Accredited by NVLAP, USA  
NVLAP Code: 200372-0  
Apr. 01, 2007

### 2.4. Measurement Uncertainty

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

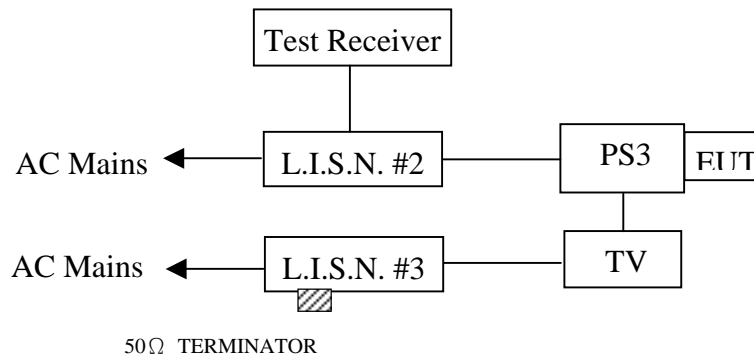
### 3. POWER LINE CONDUCTED EMISSION TEST

#### 3.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	838693/001	Dec.19, 07	1 Year
2.	L.I.S.N.#2	Kyoritsu	KNW-407	8-1636-1	May 11, 07	1 Year
3.	L.I.S.N.#3	EMCO	3825/2	9006-1660	May 11, 07	1 Year
4.	Terminator	Hubersuhner	50Ω	No. 1	May 11, 07	1 Year
5.	RF Cable	Fujikura	3D-2W	LISN Cable 1#	Jan.09, 08	1/2 Year
6.	Coaxial Switch	Anritsu	MP59B	M55367	Jan.09, 08	1/2 Year
7.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100340	Jan.09, 08	1/2 Year

#### 3.2. Block Diagram of Test Setup

##### 3.2.1. Block diagram of connection between the EUT and simulators



(EUT: Wii Wireless Dongle)

#### 3.3. Power Line Conducted Emission Test Limits

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. \* Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

#### 3.4. Configuration of EUT on Test

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

##### 3.4.1. Wii Wireless Dongle (EUT)

Model Number : WGTSELEA1B

Serial Number : N/A

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

### 3.5. Operating Condition of EUT

3.5.1. Setup the EUT as shown in Section 3.2..

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

### 3.6. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via PS3 connected to the power mains through a line impedance stabilization network (L.I.S.N. 2#). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESHS10) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked.

The test result are reported on Section 3.7.

### 3.7. Power Line Conducted Emission Test Results

**PASS.** (All emissions not reported below are too low against the prescribed limits.)

The EUT with the following test modes was tested and selected (mode 1) to read Q.P values and average values, all the test results are listed in next pages.

EUT: Wii Wireless Dongle      Model No. : WGTSELEA1B

Test Date: Mar.27, 2008      Temperature: 23°C      Humidity: 54%

The details of test modes are as follows :

No.	Test Mode	Reference Test Data No.	
		VA	VB
1.	TX Mode	# 1	# 2



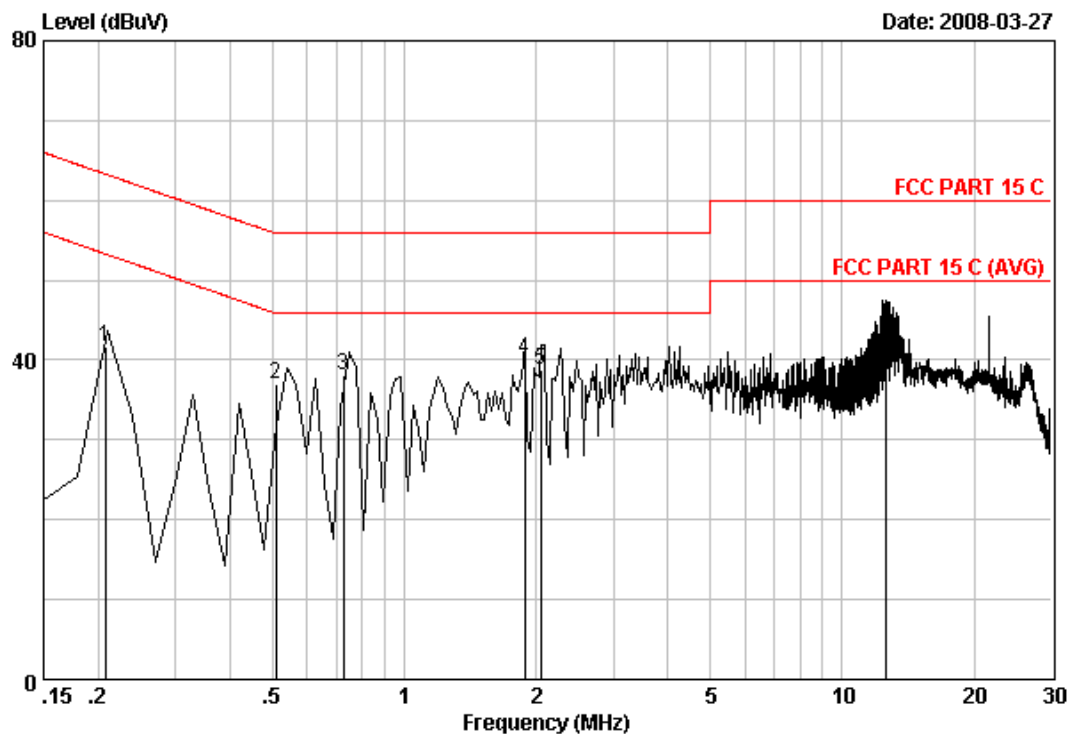


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Data: 1

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Date: 2008-03-27



Site no : AUDIX No.1 Conduction Data no : 1  
Dis./Ant. : -- KMW407 VA (1#)  
Limit : FCC PART 15 C  
Env./Ins. : Temp:23' Humi:54% ESHS10 Engineer :Skyline  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : TX Mode  
Memo :

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.21	0.15	10.15	31.36	41.66	63.30	21.64	QP
2	0.51	0.05	10.14	26.86	37.05	56.00	18.95	QP
3	0.73	0.05	10.14	27.81	38.00	56.00	18.00	QP
4	1.88	0.05	10.15	29.95	40.15	56.00	15.85	QP
5	2.05	0.05	10.15	28.64	38.84	56.00	17.16	QP
6	12.63	0.25	10.27	33.06	43.58	60.00	16.42	QP

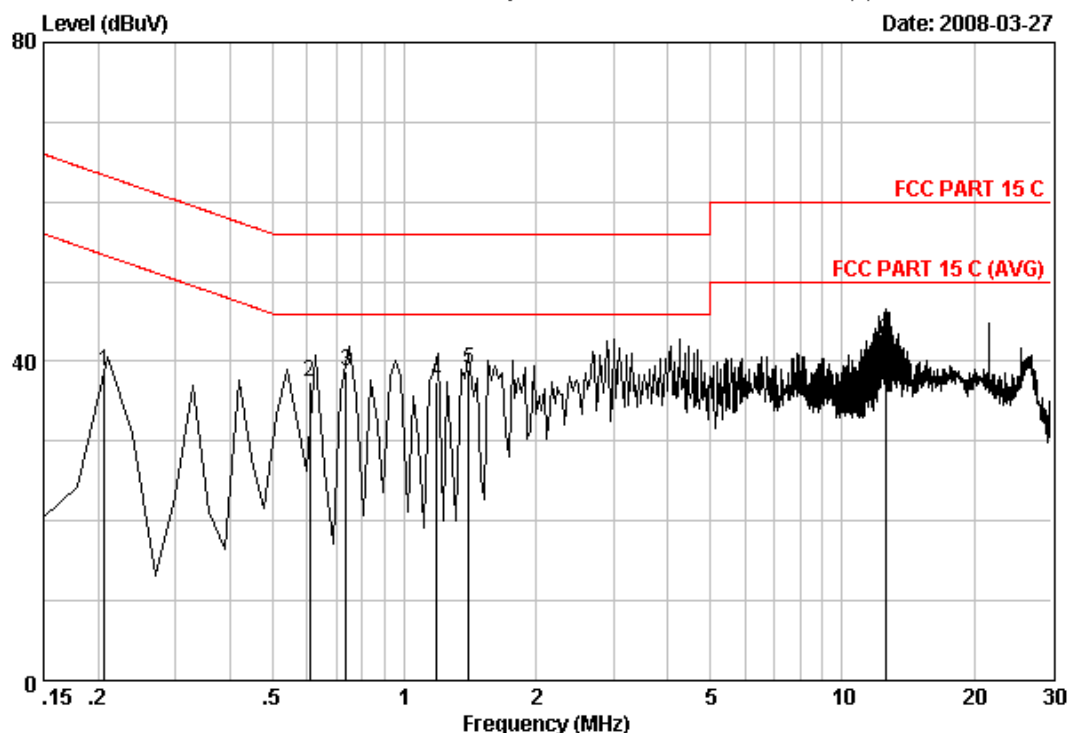
Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.  
2.If the average limit is met when using a quasi-peak detector.  
the EUT shall be deemed to meet both limits and measurement  
with average detector is unnecessary.



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Data: 2

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Site no : AUDIX No.1 Conduction Data no : 2  
 Dis./Ant. : -- KNW407 VB (1#)  
 Limit : FCC PART 15 C  
 Env./Ins. : Temp:23' Humi:54% ESHS10 Engineer :Skyle  
 EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
 Power Rating : DC 5V From PS3 Input 120V/60Hz  
 Test Mode : TX Mode  
 Memo :

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.21	0.15	10.15	28.54	38.84	63.34	24.50	QP
2	0.61	0.05	10.14	27.25	37.44	56.00	18.56	QP
3	0.74	0.05	10.14	28.60	38.79	56.00	17.21	QP
4	1.18	0.04	10.15	27.32	37.51	56.00	18.49	QP
5	1.40	0.04	10.15	28.78	38.97	56.00	17.03	QP
6	12.54	0.25	10.27	32.09	42.61	60.00	17.39	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.  
 2.If the average limit is met when using a quasi-peak detector.  
 the EUT shall be deemed to meet both limits and measurement  
 with average detector is unnecessary.

## 4. RADIATED EMISSION TEST

### 4.1. Test Equipment

Frequency rang: 30~1000MHz

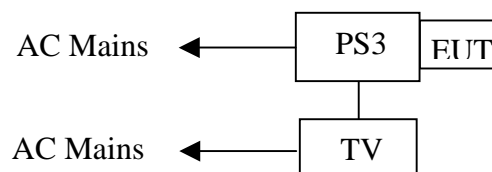
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	Dec.20.07	1/2 Year
2.	EMI Spectrum	Agilent	E7403A	MY42000106	May 11, 07	1 Year
3.	Test Receiver	Rohde & Schwarz	ESVS20	830350/005	Dec.19, 07	1 Year
4.	Amplifier	HP	8447D	2944A04738	Jan.09, 08	1/2 Year
5.	Bilog Antenna	Schaffner	CBL6111C	2598	Feb.21, 08	1 Year
6.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.1	Jan.09, 08	1/2 Year
7.	RF Cable	MIYAZAKI	5D-2W	3# Chamber No.2	Jan.09, 08	1/2 Year
8.	RF Cable	FUJIKURAw	RG-55/U	3# Chamber No.3	Jan.09, 08	1/2 Year
9.	RF Cable	FUJIKURA	RG-55/U	3# Chamber No.4	Jan.09, 08	1/2 Year
10.	Coaxial Switch	Anritsu	MP59B	M73989	Jan.09, 08	1/2 Year

Frequency rang: above 1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	MY41440292	May 11, 07	1 Year
2.	Amp	HP	8449B	3008A00863	May 11, 07	1 Year
3.	Antenna	EMCO	3115	9607-4877	Jan. 23, 07	1.5 Year
4.	Antenna	EMCO	3116	00060088	May 28, 07	1 Year
5.	HF Cable	Hubersuhne	Sucoflex104	-	May 11, 07	1 Year

### 4.2. Block Diagram of Test Setup

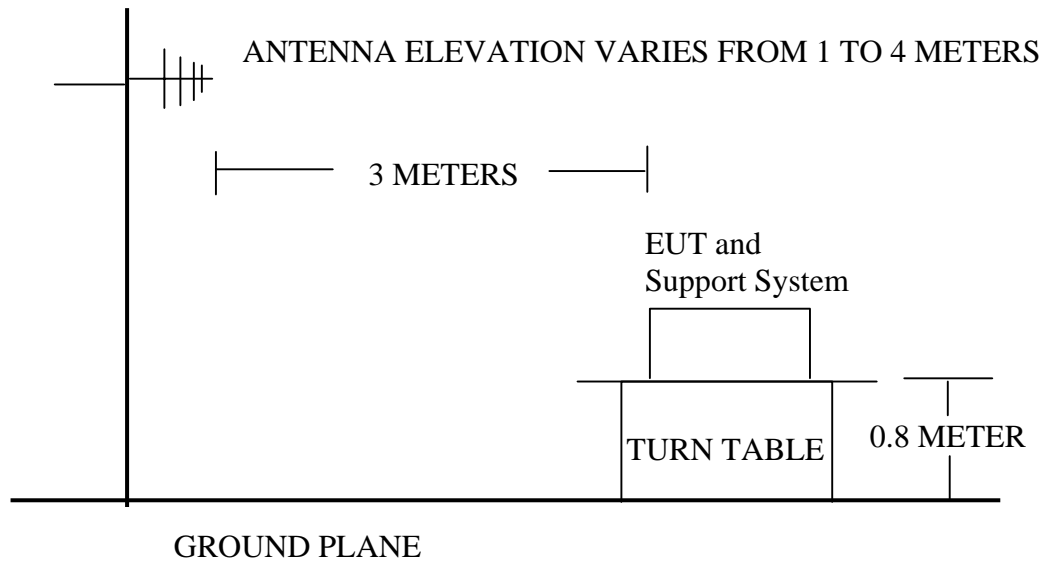
#### 4.2.1. Block Diagram of connection between EUT and simulators



**(EUT: Wii Wireless Dongle)**

#### 4.2.2. Anechoic Chamber Setup Diagram

##### ANTENNA TOWER



#### 4.3. Radiated Emission Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Local Oscillator:	3	114.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 94.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	
Above 1000	3	Other: 74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

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

#### 4.4. EUT Configuration on Test

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

##### 4.4.1. Wii Wireless Dongle (EUT)

Model Number : WGTSELEA1B

Serial Number : N/A

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

## 4.6. Test Procedure

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

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

The bandwidth of the VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emission above 1GHz

The frequency ranges from 30MHz to 10<sup>th</sup>harmonic (25GHz) are checked.

The test modes (TX Mode) are tested in Anechoic Chamber and all the scanning waveforms are reported with antenna in horizontal and vertical polarization on Section 4.7.

## 4.7. Radiated Emission Test Results

### **PASS.**

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

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 120kHz RBW below 1GHz and a Peak and Average detector with 1MHz RBW above 1GHz,

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 300kHz VBW below 1GHz and a Peak detector with 1MHz VBW above 1GHz, A average detector with 10Hz VBW above 1GHz if used.

The radiated emissions from 18GHz to 25 GHz were Peak measured and complied with average limits, so the average level was deemed to meet average limits.

Test Date: Mar.21~23, 2008      Temperature: 23℃      Humidity: 54%

The details of test modes are as follows :

Test Mode	Frequency (MHz)	Test Mode	Reference Test Data No.	
			Horizontal	Vertical
1.	30~1000	Tx 2408MHz	#19	#20
2.		Tx 2440MHz	#22	#21
3.		Tx 2474MHz	#23	#24
4.	1000~18000	Tx 2408MHz	#7	#8
5.		Tx 2440MHz	#9	#10
6.		Tx 2474MHz	#12	#11
7.	18000~25000	Tx 2408MHz	#32	#31
8.		Tx 2440MHz	#33	#34
9.		Tx 2474MHz	#36	#35

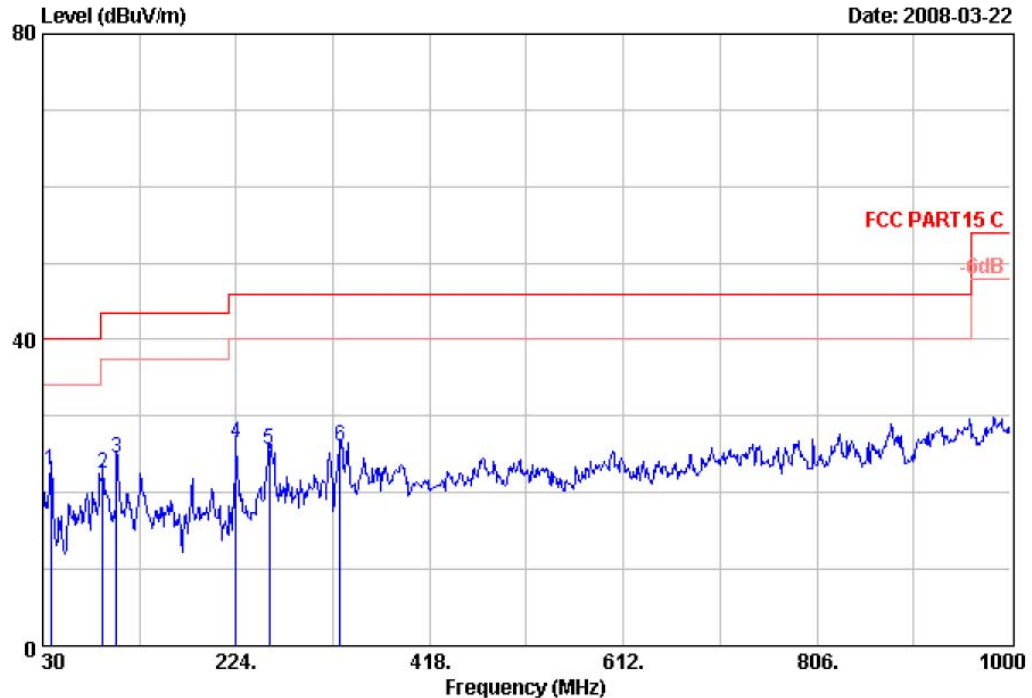


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Data: 19

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Date: 2008-03-22



Site no. : RF Chamber Data no. : 19  
Dis. / Ant. : 3m 2598 Ant. pol. : HORIZONTAL  
Limit : FCC PART15 C  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2408MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	37.76	15.34	0.70	7.01	23.05	40.00	16.95	QP
2	90.14	9.00	1.20	12.38	22.58	43.50	20.92	QP
3	103.72	10.96	1.30	12.19	24.45	43.50	19.05	QP
4	224.00	10.62	1.97	13.93	26.52	46.00	19.48	QP
5	256.98	13.48	2.12	9.93	25.53	46.00	20.47	QP
6	327.79	14.46	2.40	9.20	26.06	46.00	19.94	QP

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

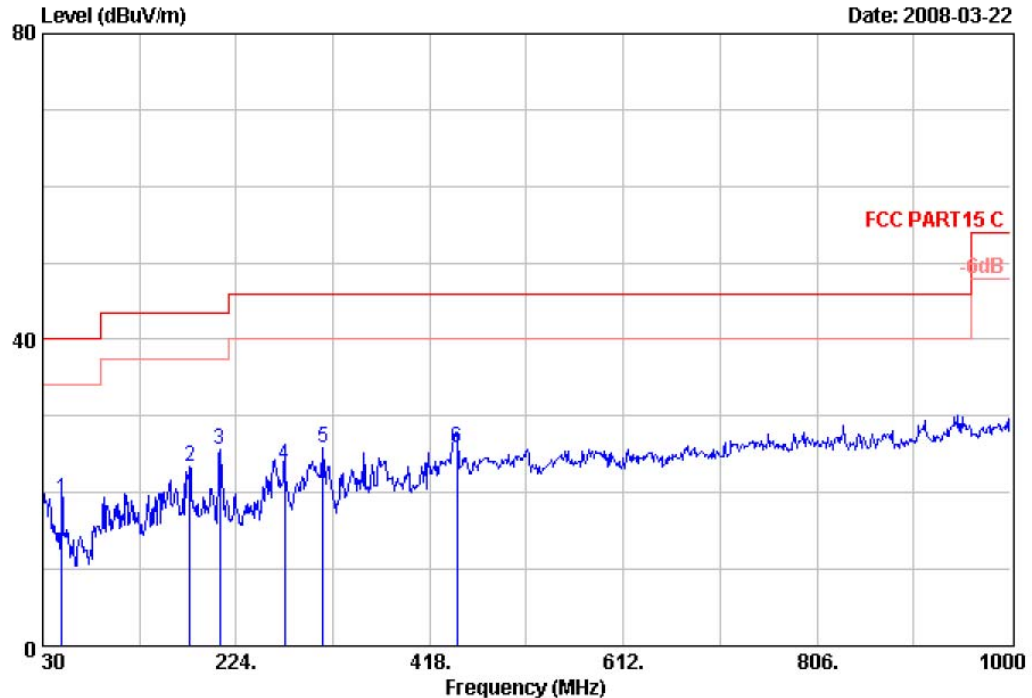


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Data: 20

File: D:\2008 report data\ACS8Q416R1.EMI (36)

Date: 2008-03-22



Site no. : RF Chamber Data no. : 20  
Dis. / Ant. : 3m 2598 Ant. pol. : VERTICAL  
Limit : FCC PART15 C  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2408MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	49.40	9.27	0.91	9.01	19.19	40.00	20.81	QP
2	177.44	9.45	1.77	12.10	23.32	43.50	20.18	QP
3	207.51	10.35	1.89	13.49	25.73	43.50	17.77	QP
4	272.50	13.40	2.20	8.06	23.66	46.00	22.34	QP
5	311.30	13.92	2.34	9.49	25.75	46.00	20.25	QP
6	445.16	17.10	2.79	6.05	25.94	46.00	20.06	QP

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



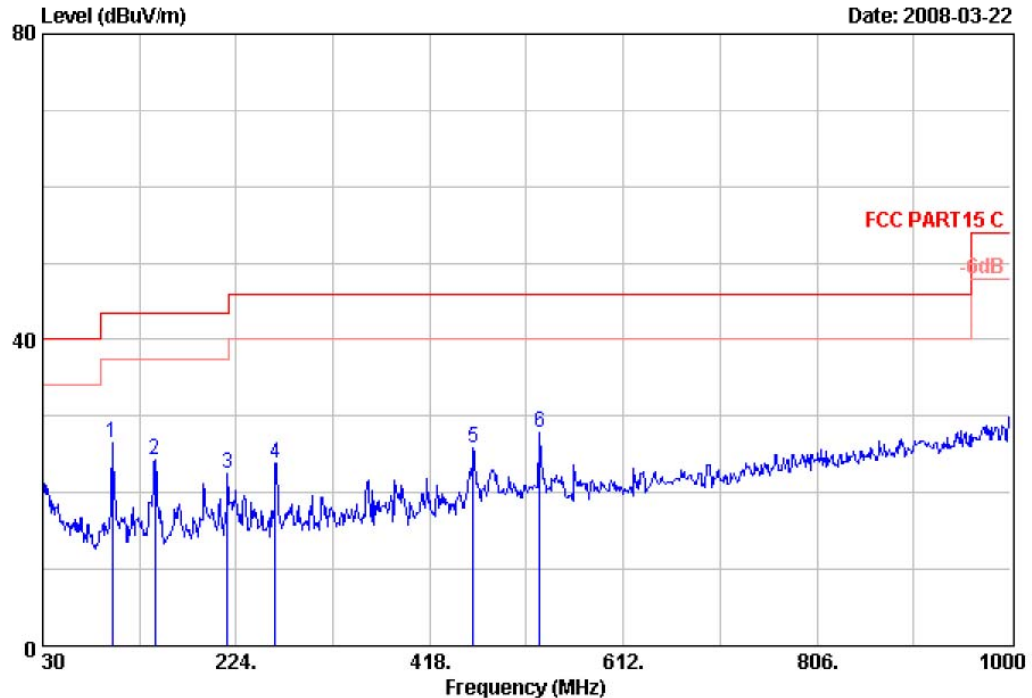


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Date: 2008-03-22



Site no. : RF Chamber Data no. : 22  
Dis. / Ant. : 3m 2598 Ant. pol. : HORIZONTAL  
Limit : FCC PART15 C  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2440MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	99.84	10.40	1.30	14.78	26.48	43.50	17.02	QP
2	142.52	11.95	1.54	10.84	24.33	43.50	19.17	QP
3	215.27	10.00	1.97	10.61	22.58	43.50	20.92	QP
4	262.80	14.02	2.12	7.78	23.92	46.00	22.08	QP
5	461.65	17.48	2.85	5.61	25.94	46.00	20.06	QP
6	528.58	18.40	3.04	6.51	27.95	46.00	18.05	QP

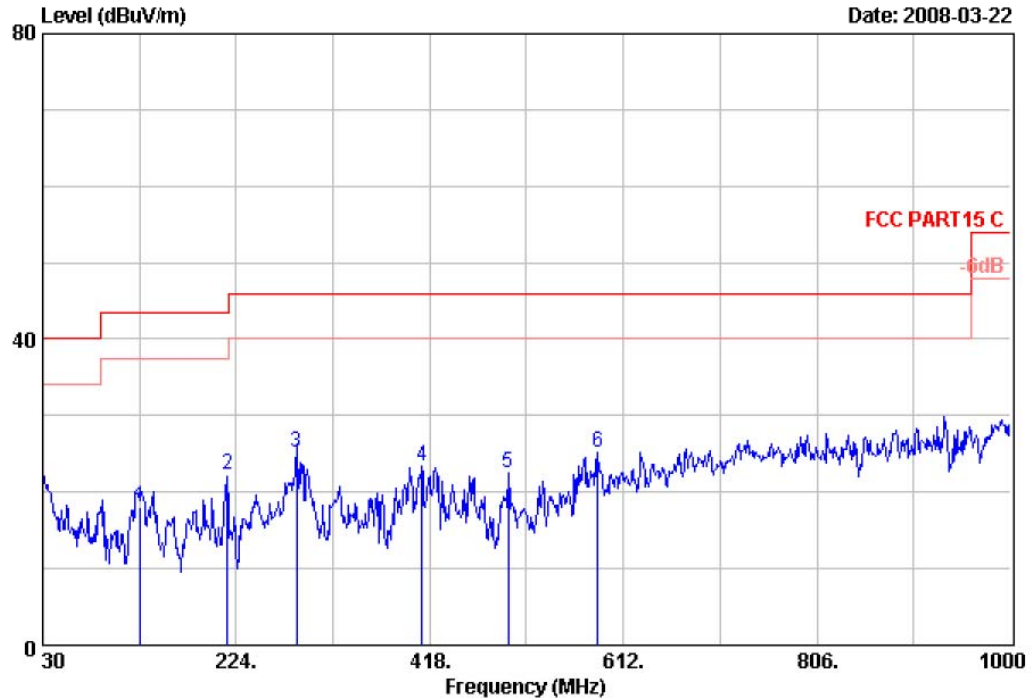
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 21 File: D:\2008 report data\ACS8Q416R1.EMI (36)

Date: 2008-03-22



Site no. : RF Chamber Data no. : 21  
Dis. / Ant. : 3m 2598 Ant. pol. : VERTICAL  
Limit : FCC PART15 C  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2440MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	127.97	11.98	1.42	4.67	18.07	43.50	25.43	QP
2	215.27	10.00	1.97	10.33	22.30	43.50	21.20	QP
3	284.14	13.38	2.20	9.68	25.26	46.00	20.74	QP
4	410.24	17.00	2.65	3.83	23.48	46.00	22.52	QP
5	496.57	18.10	2.99	1.35	22.44	46.00	23.56	QP
6	586.78	19.64	3.18	2.44	25.26	46.00	20.74	QP

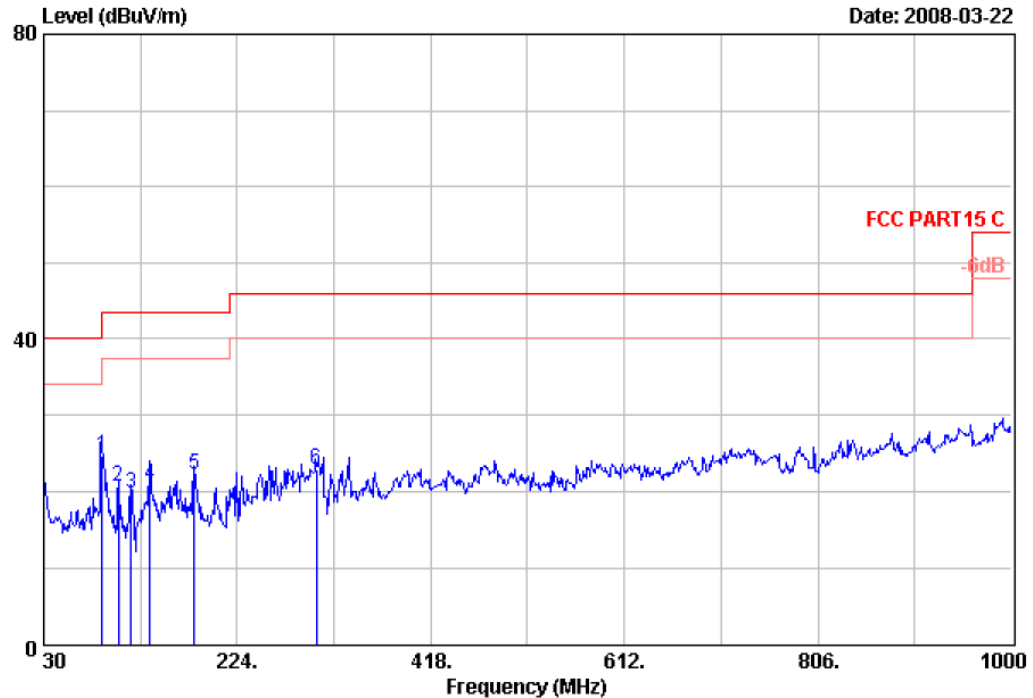
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 23 File: D:\2008 report data\C\ACS8Q416R1.EMI (36)

Date: 2008-03-22



Site no. : RF Chamber Data no. : 23  
Dis. / Ant. : 3m 2598 Ant. pol. : HORIZONTAL  
Limit : FCC PART15 C  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2474MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	88.20	8.76	1.20	14.76	24.72	43.50	18.78	QP
2	104.69	11.10	1.30	8.26	20.66	43.50	22.84	QP
3	117.30	11.74	1.42	6.73	19.89	43.50	23.61	QP
4	136.70	11.94	1.54	7.57	21.05	43.50	22.45	QP
5	181.32	9.28	1.77	11.25	22.30	43.50	21.20	QP
6	303.54	13.87	2.28	6.74	22.89	46.00	23.11	QP

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

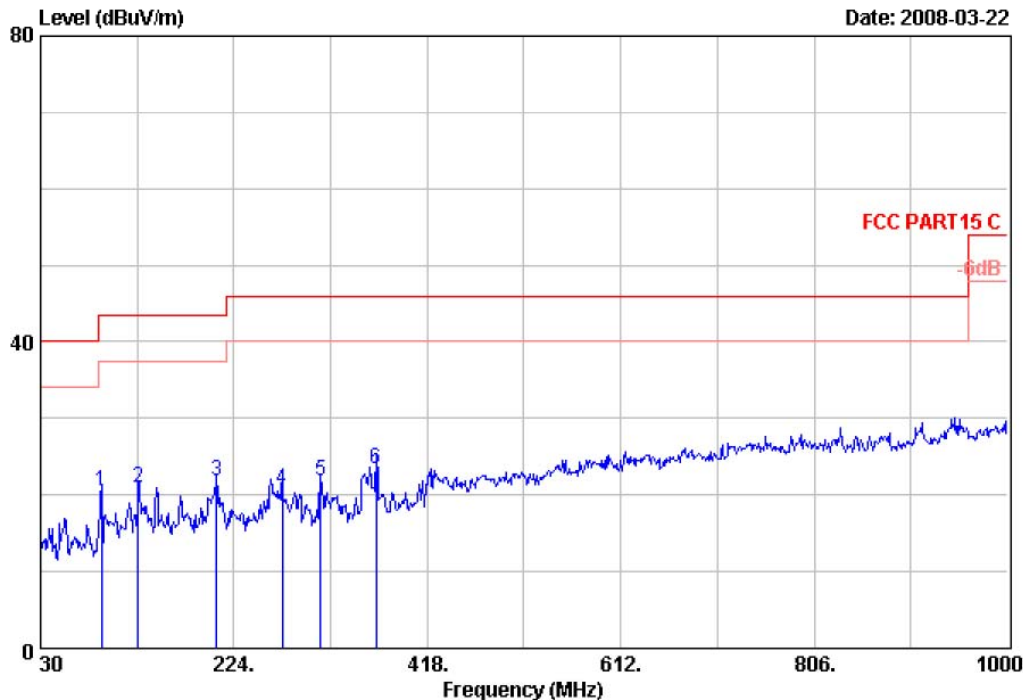


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Data: 24

File: D:\2008 report data\C\ACS8Q416R1.EMI (36)

Date: 2008-03-22



Site no. : RF Chamber Data no. : 24  
Dis. / Ant. : 3m 2598 Ant. pol. : VERTICAL  
Limit : FCC PART15 C  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2474MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	91.11	9.14	1.20	10.15	20.49	43.50	23.01	QP
2	127.97	11.98	1.42	7.51	20.91	43.50	22.59	QP
3	206.54	10.33	1.89	9.59	21.81	43.50	21.69	QP
4	272.50	13.40	2.20	5.06	20.66	46.00	25.34	QP
5	311.30	13.92	2.34	5.49	21.75	46.00	24.25	QP
6	366.59	15.43	2.53	5.53	23.49	46.00	22.51	QP

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

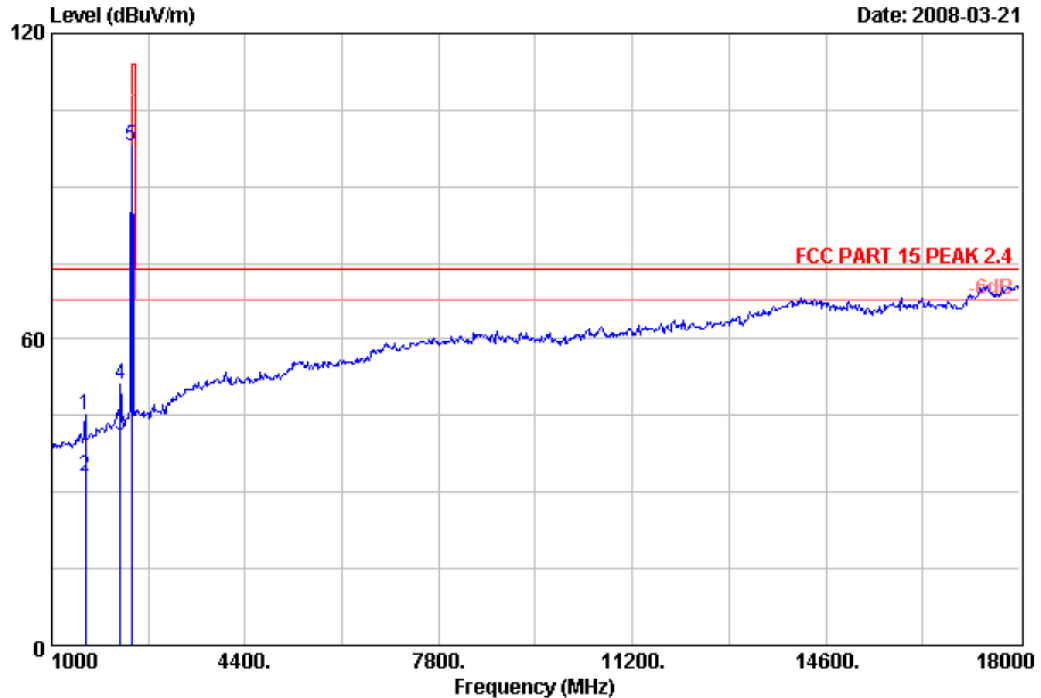


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Data: 7

File: D:\2008 report data\C\ACS8Q416R1.EMI (12)

Date: 2008-03-21



Site no. : RF Chamber Data no. : 7  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 PEAK 2.4  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2408MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1595.00	25.91	5.43	49.58	45.26	74.00	28.74	Peak
2	1595.00	25.91	5.43	37.54	33.22	54.00	20.78	Average
3	2207.00	28.54	6.51	41.35	41.16	54.00	12.84	Average
4	2207.00	28.54	6.51	51.41	51.22	74.00	22.78	Peak
5	2408.00	29.03	6.73	97.32	97.90	114.00	16.10	Peak

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

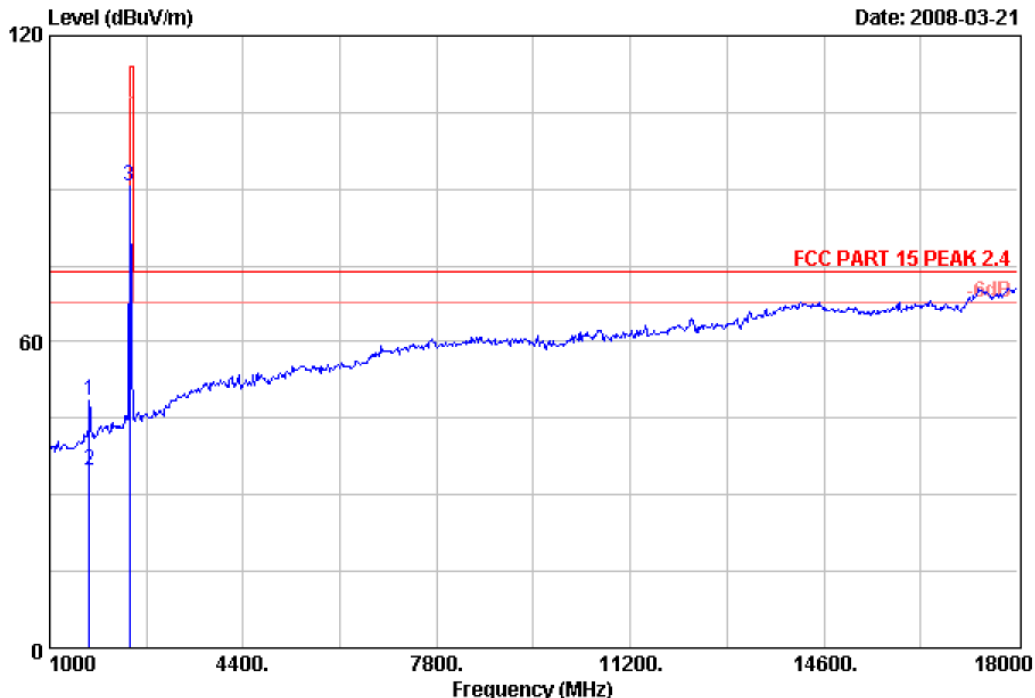


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Postcode:518057

Data: 8

File: D:\2008 report data\C\ACS8Q416R1.EMI (12)

Date: 2008-03-21



Site no. : RF Chamber Data no. : 8  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : VERTICAL  
Limit : FCC PART 15 PEAK 2.4  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2408MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1697.00	26.45	5.64	51.87	48.39	74.00	25.61	Peak
2	1697.00	26.45	5.64	38.34	34.86	54.00	19.14	Average
3	2408.00	29.03	6.73	90.11	90.69	114.00	23.31	Peak

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

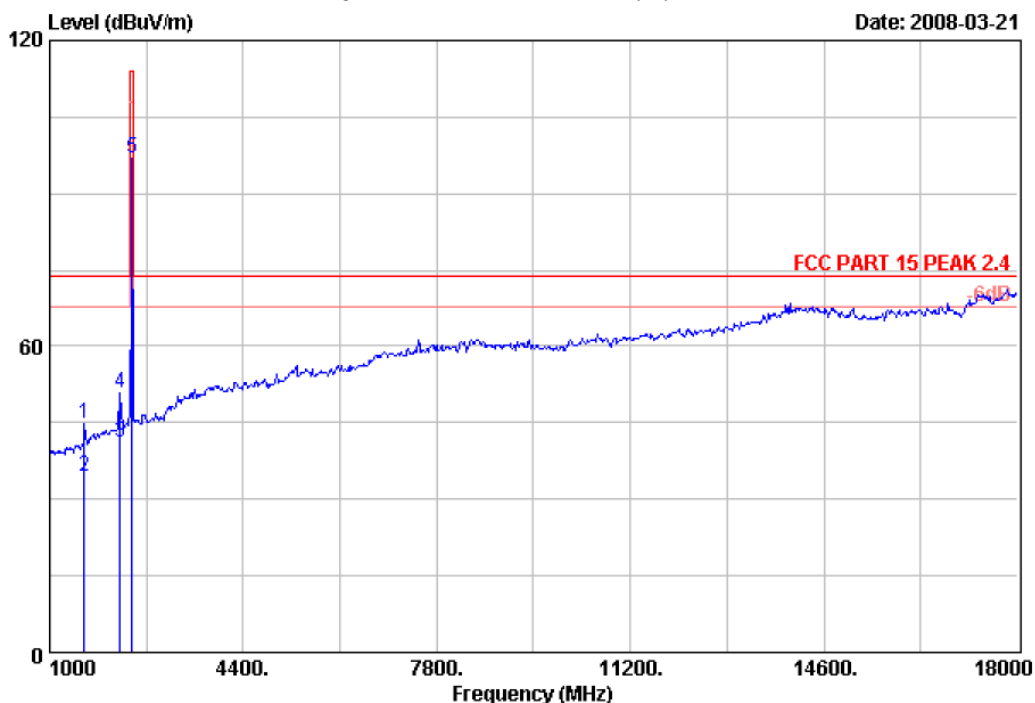


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Data: 9

File: D:\2008 report data\C\ACS8Q416R1.EMI (12)

Date: 2008-03-21



Site no. : RF Chamber Data no. : 9  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 PEAK 2.4  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2440MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1612.00	26.00	5.46	49.01	44.81	74.00	29.19	Peak
2	1612.00	26.00	5.46	38.52	34.32	54.00	19.68	Average
3	2241.00	28.62	6.53	41.10	41.03	54.00	12.97	Average
4	2241.00	28.62	6.53	50.94	50.87	74.00	23.13	Peak
5	2440.00	29.11	6.80	96.22	96.96	114.00	17.04	Peak

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

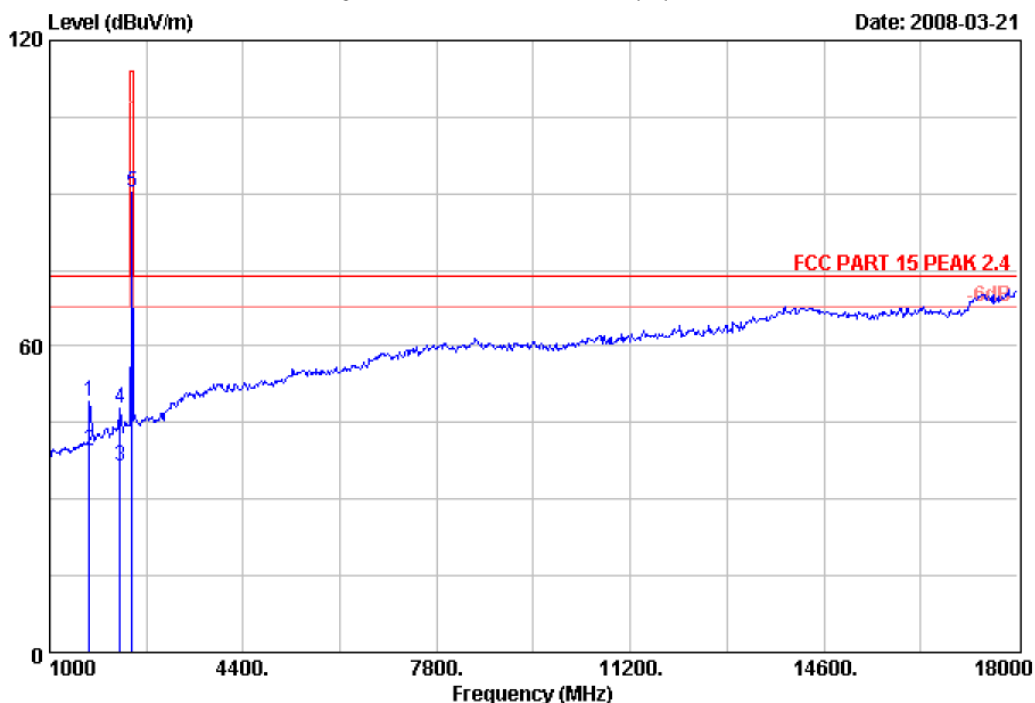


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Data: 10

File: D:\2008 report data\C\ACS8Q416R1.EMI (12)

Date: 2008-03-21



Site no. : RF Chamber Data no. : 10  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : VERTICAL  
Limit : FCC PART 15 PEAK 2.4  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2440MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1697.00	26.45	5.64	52.46	48.98	74.00	25.02	Peak
2	1697.00	26.45	5.64	43.02	39.54	54.00	14.46	Average
3	2241.00	28.62	6.53	36.41	36.34	54.00	17.66	Average
4	2241.00	28.62	6.53	47.79	47.72	74.00	26.28	Peak
5	2440.00	29.11	6.80	89.56	90.30	114.00	23.70	Peak

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



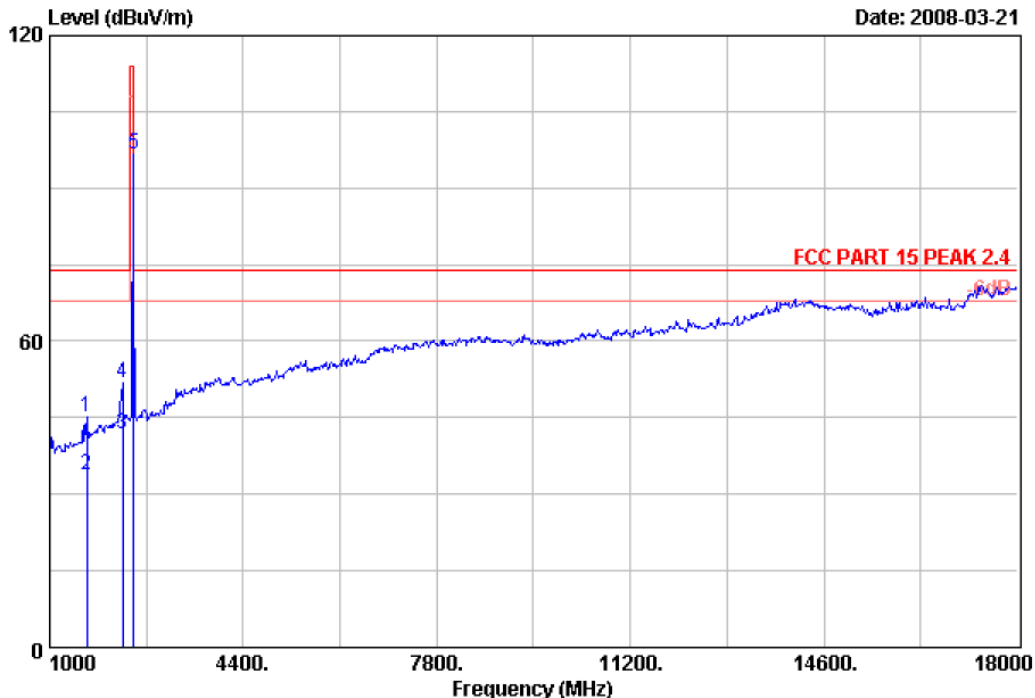


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Data: 12

File: D:\2008 report data\C\ACS8Q416R1.EMI (12)

Date: 2008-03-21



Site no. : RF Chamber Data no. : 12  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 PEAK 2.4  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2474MHz  
Memo :

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1646.00	26.18	5.53	48.95	45.05	74.00	28.95	Peak
2	1646.00	26.18	5.53	37.53	33.63	54.00	20.37	Average
3	2275.00	28.71	6.58	41.74	41.81	54.00	12.19	Average
4	2275.00	28.71	6.58	51.71	51.78	74.00	22.22	Peak
5	2474.00	29.19	6.87	95.62	96.52	114.00	17.48	Peak

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

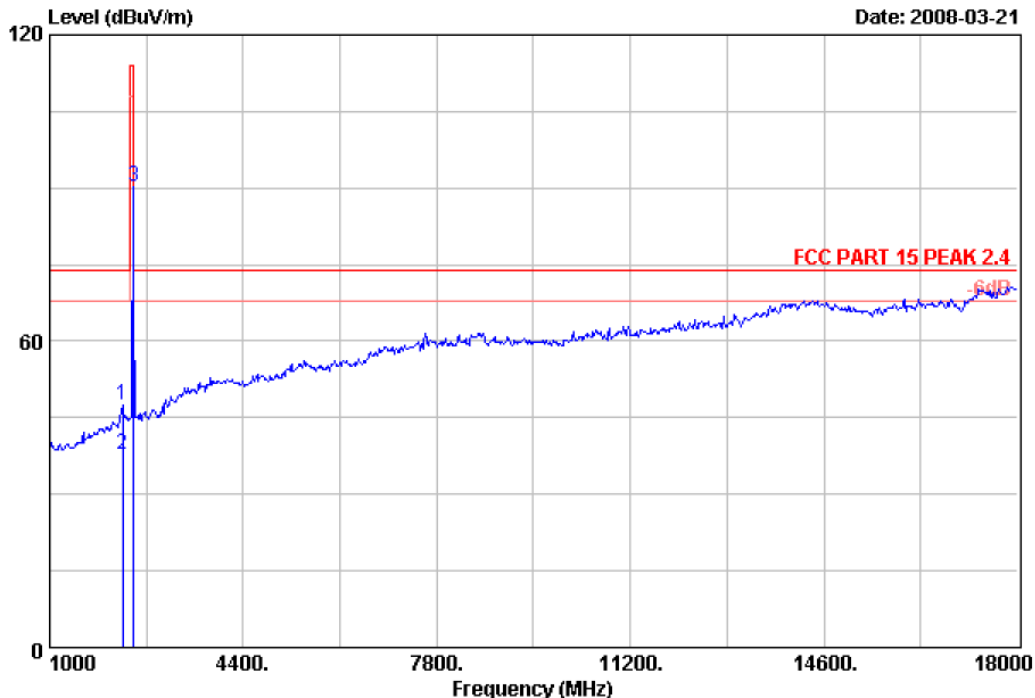


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Data: 11

File: D:\2008 report data\C\ACS8Q416R1.EMI (12)

Date: 2008-03-21



Site no. : RF Chamber Data no. : 11  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : VERTICAL  
Limit : FCC PART 15 PEAK 2.4  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2474MHz  
Memo :

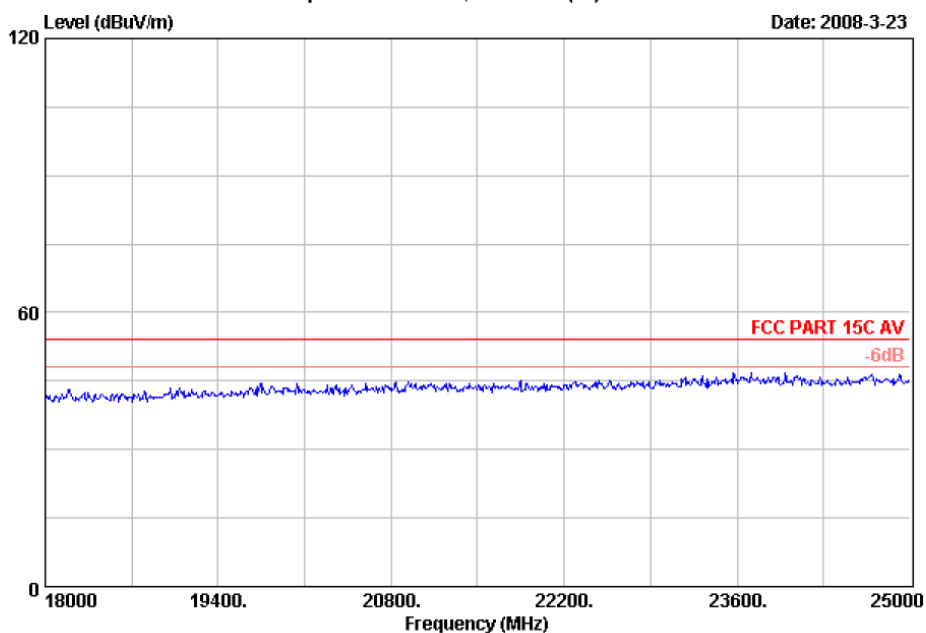
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2275.00	28.71	6.58	47.29	47.36	74.00	26.64	Peak
2	2275.00	28.71	6.58	37.83	37.90	54.00	16.10	Average
3	2474.00	29.19	6.87	89.33	90.23	114.00	23.77	Peak

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



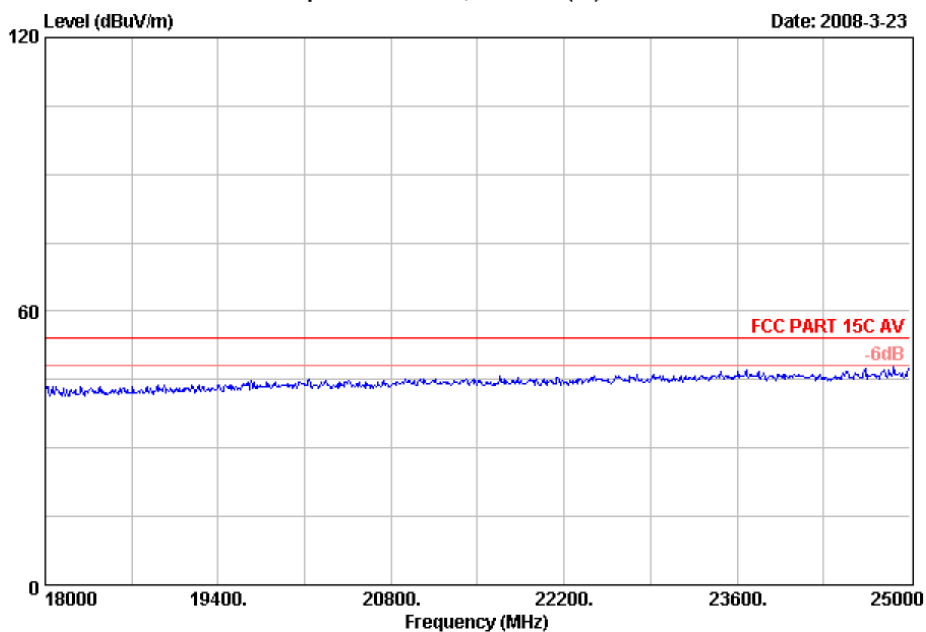
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Postcode:518057

Data: 32 File: D:\2008 report data\C\ACS8Q416R1.EMI (36)



Site no. : 3m Chamber Data no. : 32  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C AV  
Env. / Ins. : 23°C/54% Engineer : Skylе  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2408MHz

Data: 31 File: D:\2008 report data\C\ACS8Q416R1.EMI (36)

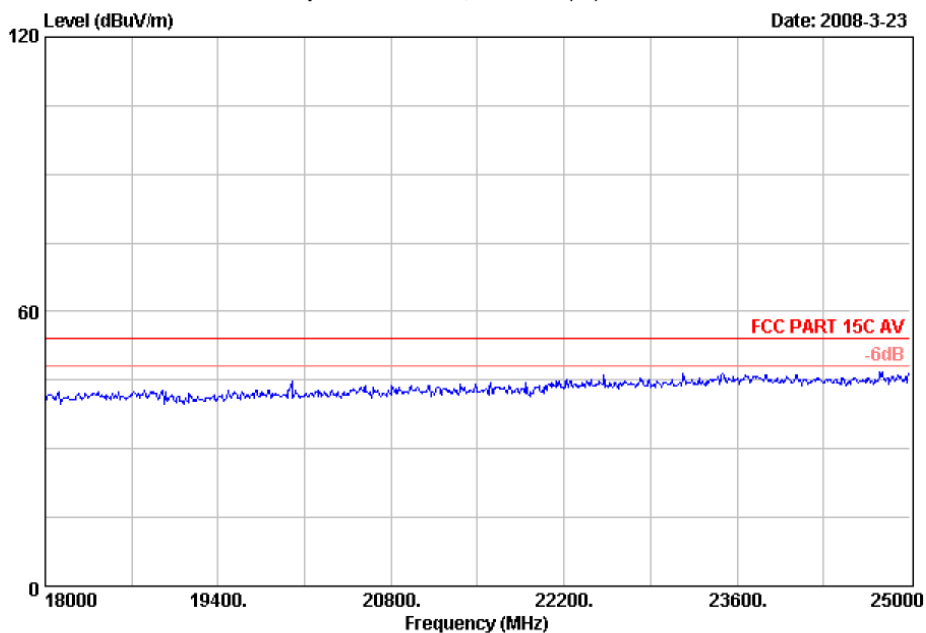


Site no. : 3m Chamber Data no. : 31  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : VERTICAL  
Limit : FCC PART 15C AV  
Env. / Ins. : 23°C/54% Engineer : Skylе  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : Tx 2408MHz



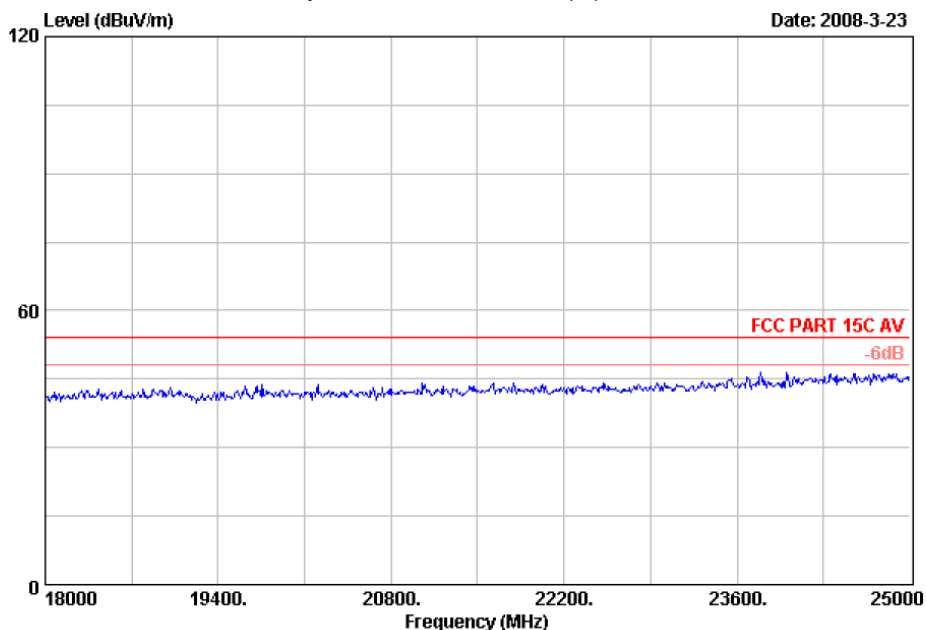
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Data: 33 File: D:\2008 report data\C\ACS8Q416R1.EMI (36)



Site no. : 3m Chamber Data no. : 33  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C AV  
Env. / Ins. : 23°C/54% Engineer : Skyle  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : TX 2440MHz

Data: 34 File: D:\2008 report data\C\ACS8Q416R1.EMI (36)

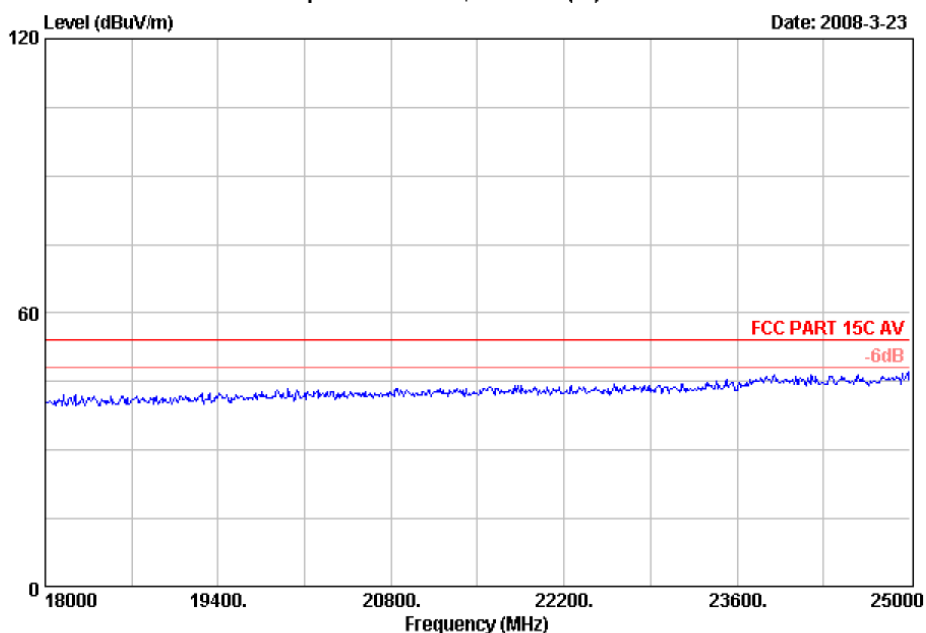


Site no. : 3m Chamber Data no. : 34  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : VERTICAL  
Limit : FCC PART 15C AV  
Env. / Ins. : 23°C/54% Engineer : Skyle  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : TX 2440MHz



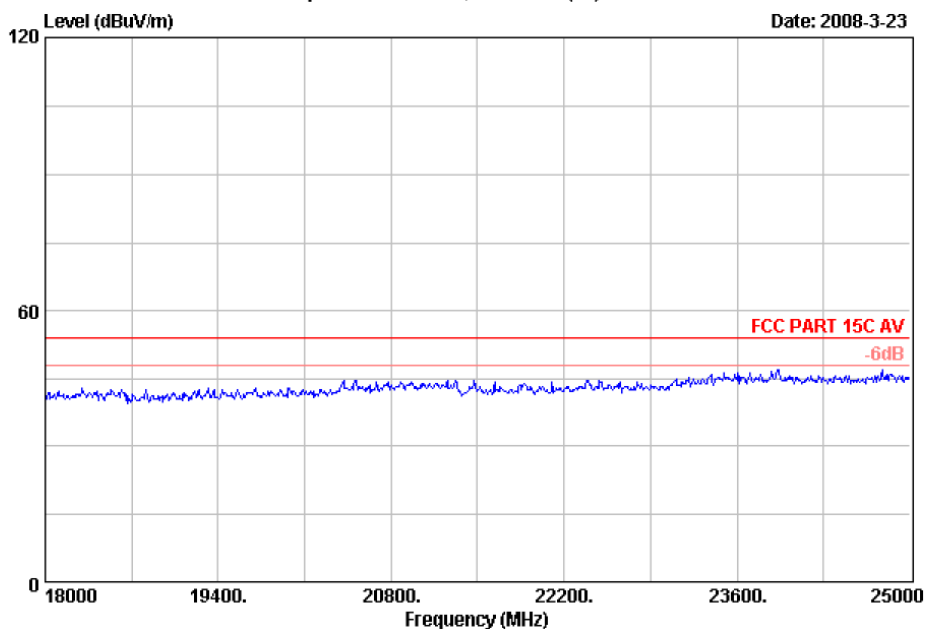
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Fax:+86-755-26632877  
Postcode:518057

Data: 36 File: D:\2008 report data\C\ACS8Q416R1.EMI (36)



Site no. : 3m Chamber Data no. : 36  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : HORIZONTAL  
Limit : FCC PART 15C AV  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : TX 2474MHz

Data: 35 File: D:\2008 report data\C\ACS8Q416R1.EMI (36)

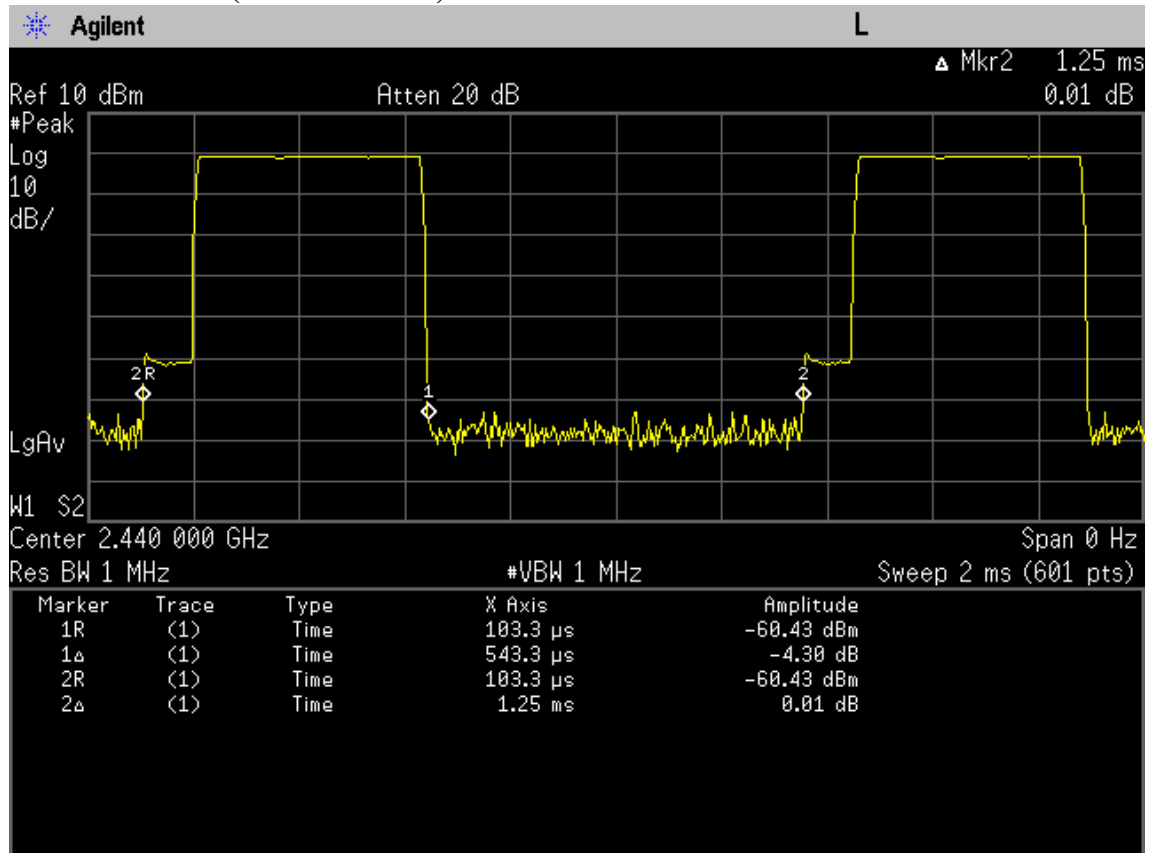


Site no. : 3m Chamber Data no. : 35  
Dis. / Ant. : 3m 3115 FACTOR Ant. pol. : VERTICAL  
Limit : FCC PART 15C AV  
Env. / Ins. : 23°C/54% Engineer : Power  
EUT : Wii Wireless Dongle M/N:WGTSELEA1B  
Power Rating : DC 5V From PS3 Input 120V/60Hz  
Test Mode : TX 2474MHz

#### 4.8. Duty Cycle

$$\text{Duty factor} = 10 \log (1/x) = 3.62$$

$$X = \text{Tx on}/(\text{Tx on} + \text{Tx off}) = 543.3/1250 = 0.435$$



Fundamental AV Level correct result:

Freq (MHz)	Ant. Plo.	Peak Level (dBUV/m)	PDCF (dB)	AV Level (dBUV/m)	AV Limit (dBUV/m)	Margin (dB)
2408.0	H	97.90	11.13	86.77	94	7.23
2408.0	V	90.69	11.13	79.56	94	14.44
2440.0	H	96.96	11.13	85.83	94	8.17
2440.0	V	93.30	11.13	82.17	94	11.83
2474.0	H	96.52	11.13	85.39	94	8.16
2474.0	V	90.23	11.13	79.1	94	14.90

NOTE: PDCF(Pulse desensitization correction factor) = 20log(Duty cycle)  
AV Level = Peak Level - PDCF

## 5. BANDEDGE COMPLIANCE TEST

### 5.1. Test Equipment

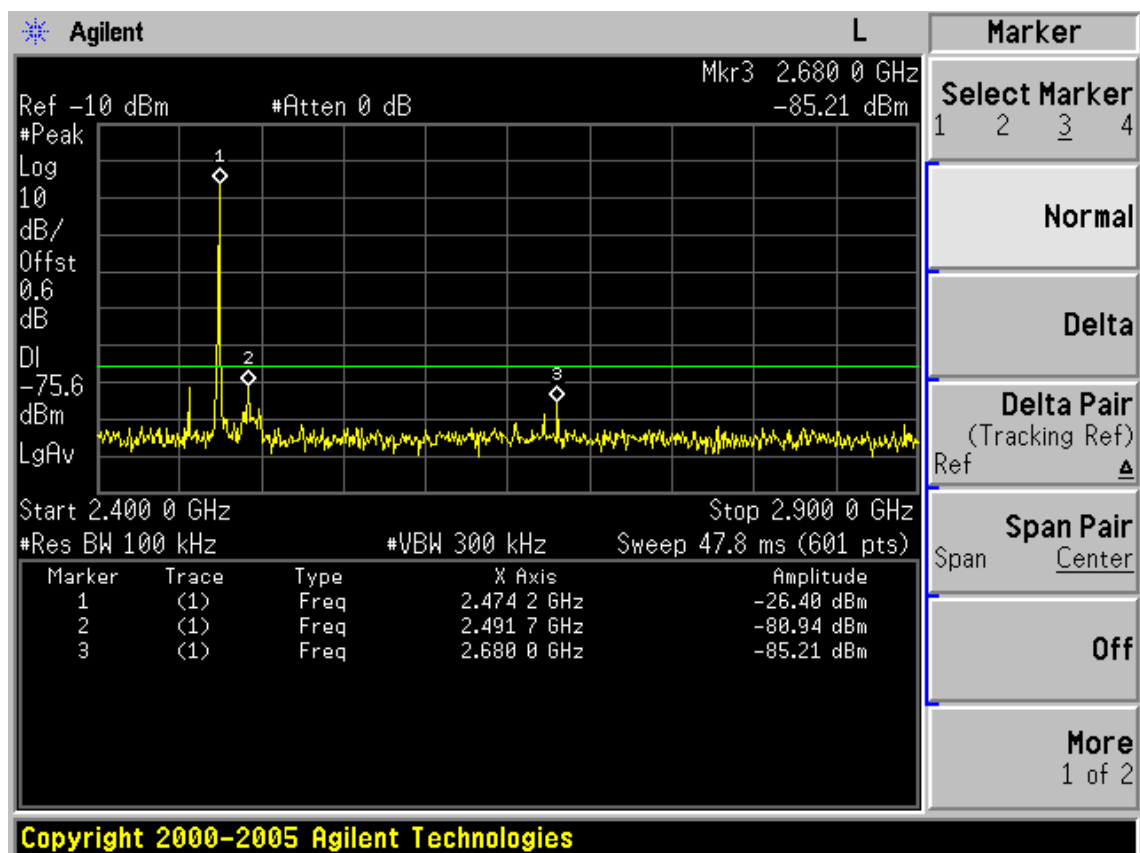
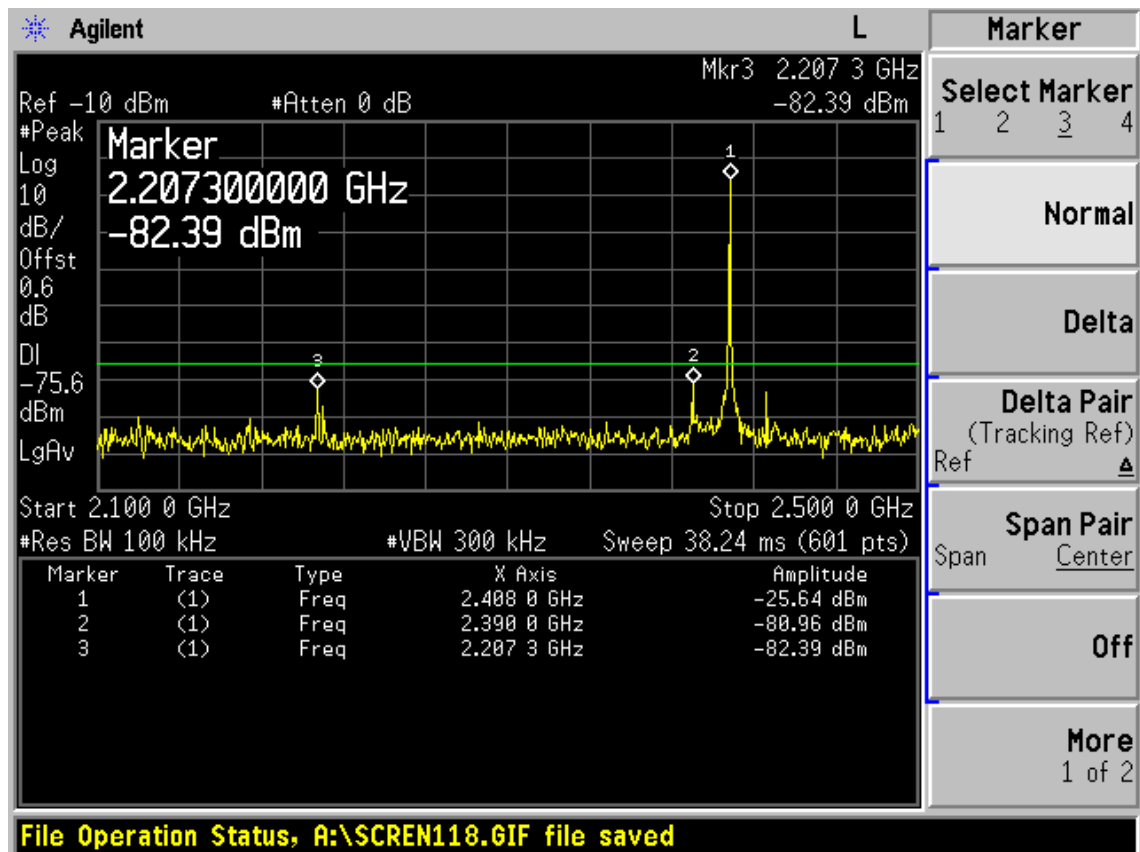
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4407B	MY41440292	May 11, 07	1 Year
2.	Amp	HP	8449B	3008A00863	May 11, 07	1 Year
3.	Antenna	EMCO	3115	9607-4877	Jan. 23, 07	1.5 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May 11, 07	1 Year

### 5.2. Test Information

EUT:	Wii Wireless Dongle
M/N:	WGTSELEA1B
Test Date:	Mar.21, 2008
Ambient Temperature:	23°C
Relative Humidity:	54%
Test standard:	FCC PART 15C: 15.249
Test mode:	Transmitting
Test Frequency:	Low: 2408MHz    High: 2474MHz
Test By:	Skyle

### 5.3. Test Results

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





## 6. 20DB BANDWIDTH TEST

### 6.1. Test Equipment

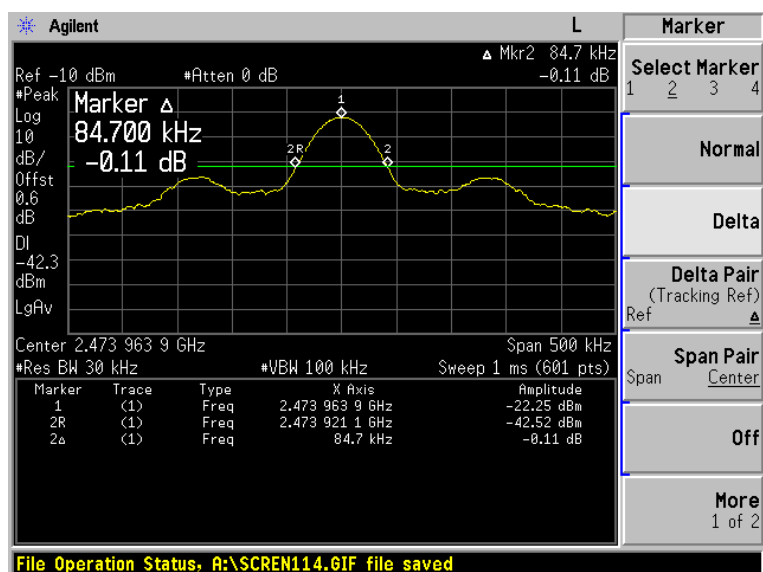
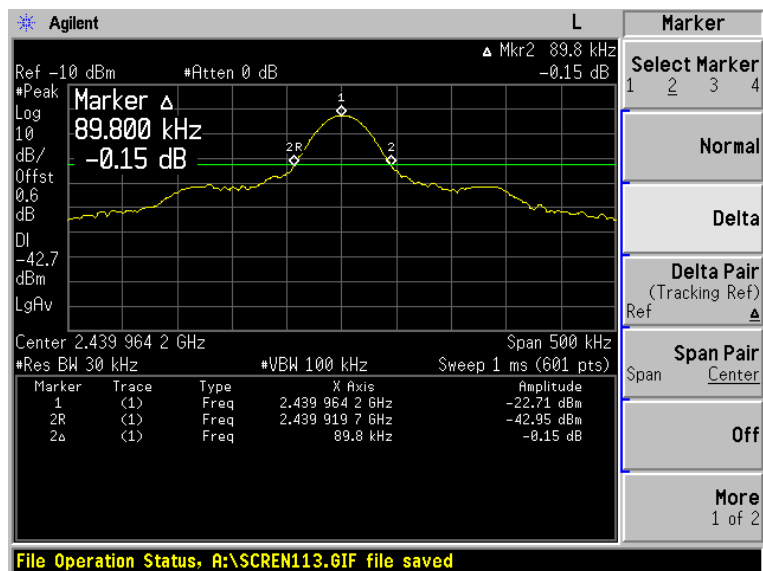
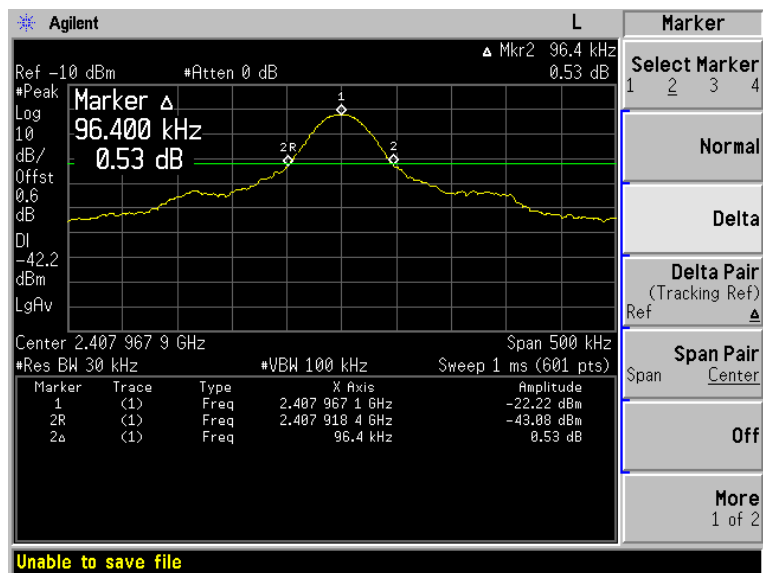
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4407B	MY41440292	May 11, 07	1 Year
2.	Amp	HP	8449B	3008A00863	May 11, 07	1 Year
3.	Antenna	EMCO	3115	9607-4877	Jan. 23, 07	1.5 Year
4.	HF Cable	Hubersuhne	Sucoflex104	-	May 11, 07	1 Year

### 6.2. Test Information

EUT:	Wii Wireless Dongle
M/N:	WGTSELEA1B
Test Date:	Mar.21, 2008
Ambient Temperature:	23°C
Relative Humidity:	54%
Test standard:	FCC PART 15C: 15.215
Test mode:	Transmitting
Test Frequency:	Low: 2408MHz Mid: 2440MHz High: 2474MHz
Test By:	Skyle

### 6.3. Test Results

CH	20dB Bandwidth (kHz)	Limit (kHz)	Conclusion
(Low)	96.4	---	PASS
(Mid)	89.8	---	PASS
(High)	84.7	---	PASS



## **7. DEVIATION TO TEST SPECIFICATIONS**

[ NONE]