### APPLICATION FOR CERTIFICATION

On Behalf of

RedOctane, Inc.

Wireless Drum Kit Controller for Xbox360

Model Number: 95519808 and 95519.808

IC: 7196A-95519808

Prepared for: RedOctane, Inc.

444 Castro Street, Suite #140, Mountain View,

CA94041,U.S.A.

Prepared By: Audix Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Rd., 52 Block, Shenzhen Science & Industrial Park, Nantou, Shenzhen, Guangdong, China

Tel: (0755) 26639496

Report Number : ACS-I10083

Date of Test : Aug.12~Sep.01, 2010

Date of Report : Sep.01, 2010

# TABLE OF CONTENTS

Des	scription	<u>Page</u>
1.	SUMMARY OF STANDARDS AND RESULTS	1-1
	1.1. Description of Standards and Results	1-1
2.	GENERAL INFORMATION	2-1
	2.1. Description of Device (EUT)	2-1
	2.2. Test Facility	2-2
	2.3. Measurement Uncertainty (95% confidence levels, k=2)	
<b>3.</b>	POWER LINE CONDUCTED EMISSION TEST	3-1
4.	RADIATED EMISSION TEST	4-1
	4.1. Test Equipment	
	4.2. Block Diagram of Test Setup	
	4.3. Radiated Emission Limit	
	4.4. EUT Configuration on Test	
	<ul><li>4.5. Operating Condition of EUT</li><li>4.6. Test Procedure</li></ul>	
	<ul><li>4.6. Test Procedure</li></ul>	
5.	CARRIER FREQUENCY SEPARATION TEST	
5.		
	5.1. Test Equipment	
	5.3. Test Results	
6.	20dB Bandwidth Test	
0.	6.1. Test Equipment	
	6.2. Limit	
	6.3. Test Results	
7.	NUMBER OF HOPPING FREQUENCY TEST	7-1
	7.1. Test Equipment	
	7.2. Limit	
	7.3. Test Results	7-1
8.	DWELL TIME TEST	8-1
	8.1. Test Equipment	8-1
	8.2. Limit	8-1
	8.3. Test Results	8-1
9.	MAXIMUM PEAK OUTPUT POWER TEST	9-1
	9.1. Test Equipment	
	9.2. Limit (RSS-210 ISSUE 7 A8.4(4))	
	9.3. Test Procedure	
4.0	9.4. Test Results	
10.	BAND EDGE COMPLIANCE TEST	
	10.1. Test Equipment	
	10.2. Limit	
	10.4. Test Results	
11.	99% BANDWIDTH	
11.	11.1. Test Equipment	
	11.2. Test Results	
12.	DEVIATION TO TEST SPECIFICATIONS	
13.	PHOTOGRAPH OF TEST	
13.	13.1. Photos of Radiated Emission Test	
1.4		
<b>14.</b>	PHOTOGRAPH OF EUT	

### TEST REPORT CERTIFICATION

Applicant : RedOctane, Inc.

Manufacturer : Flextronics Manufacturing (Zhuhai) Co., Ltd. EUT Description : Wireless Drum Kit Controller for Xbox360

MODEL NO. : 95519808

IC : 7196A-95519808

POWER SUPPLY : DC 3V TEST VOLTAGE : DC 3V

Test Procedure Used:

RSS-210, ISSUE 7, June 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 RSS-210, ISSUE 7 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 RSS-210 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:	Aug.12~ Sep.01, 2010

Prepared by: Celia Feng

Celia Feng / Assistant

Reviewer:

Jamy Yu / Supervisor

Jamy 1 u / Supervisor

AUDIX® 信筆科技(深圳)有限公司
Audix Technology (Shenzhen) Co., Ltd.
EMC 部門報告専用章
Stamp only for EMC Dept. Report
Signature:

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.

Description of Test Item	Standard	Results					
Conducted Emission Test	RSS-210, ISSUE 7	N/A					
Radiated Emission Test	RSS-210, ISSUE 7	PASS					
Carrier Frequency Separation Test	RSS-210, ISSUE 7	PASS					
20 dB Bandwidth Test	RSS-210, ISSUE 7	PASS					
Number Of Hopping Frequency Test	RSS-210, ISSUE 7	PASS					
Dwell Time Test	RSS-210, ISSUE 7	PASS					
Maximum Peak Output Power Test	RSS-210, ISSUE 7	PASS					
Band Edge Compliance Test	RSS-210, ISSUE 7	PASS					
99% BandWidth	RSS-210, ISSUE 7	PASS					
N/A is an abbreviation for Not Applicable.							

# 2. GENERAL INFORMATION

### 2.1.Description of Device (EUT)

Product name : Wireless Drum Kit Controller for Xbox360

Model Number : 95519808 and 95519.808

Note: There is no any difference between this two model.

IC : 7196A-95519808

Operation frequency: 2402MHz~2482MHz

Modulation : GMSK

Power Supply : DC 3V

(Note: Batteries were full charged for all the test.)

Applicant : RedOctane, Inc.

444 Castro Street, Suite #140, Mountain View,

CA94041,U.S.A.

Manufacturer : Flextronics Manufacturing (Zhuhai) Co., Ltd.

Flextronics Zhuhai Industrial Park, Xin Qing Science & Technology Park, Building 17, Jin An, Doumen, Zhuhai,

P.R. China, 519180

Date of Test : Aug.12~Sep.01, 2010

Date of Receipt : Jul.28, 2010

Sample Type : Prototype production

# 2.2.Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Rd., 52 Block, Shenzhen

Science & Industrial Park, Nantou, Shenzhen, Guangdong, China

3m Anechoic Chamber : Mar.31, 2009 File on Federal

Communication Commission Registration Number: 90454

3m & 10m Anechoic Chamber : 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

Apr. 01, 2010

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

Test Item	Uncertainty
Uncertainty for Radiation Emission test	4.20 dB (Polarize: V)
in 3m chamber	4.66 dB (Polarize: H)
	2.70 dB
Uncertainty for Radiated Spurious	(Bilog antenna 30M~1000MHz)
Emission test in RF chamber	2.27 dB
	(Horn antenna 1000M~12750MHz)
Uncertainty for Temperature and humidity	2%
test	0.3℃
Uncertainty for Bandwidth test	1x10 <sup>-9</sup>
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and	0.3℃
humidity	2%

# 3. POWER LINE CONDUCTED EMISSION TEST

According to Paragraph (f) of RSS-210, 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	1 1					
I	3#Chamber	AUDIX	N/A	N/A	Dec.05,09	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 10	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 10	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 10	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2598	Dec.14, 09	1 Year
6	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 10	1 Year
7	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 10	1 Year

Frequency rang: above 1000MHz

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

# 4.2.Block Diagram of Test Setup

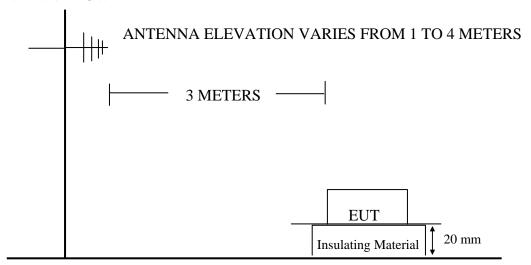
4.2.1. Block diagram of connection between the EUT and simulators

EUT

(EUT: Wireless Drum Kit Controller for Xbox360)

#### 4.2.2. In Anechoic Chamber

#### ANTENNA TOWER



**GROUND PLANE** 

### 4.3. Radiated Emission Limit

(RSS-210 ISSUE 7 Clause 2.7 Table 2)

FREQUENCY	DISTANCE	FIELD STRENGTHS LIMIT			
MHz	Meters	μV/m	$dB(\mu V)/m$		
30 ~ 88	3	100	40.0		
88 ~ 216	3	150	43.5		
216 ~ 960	3	200	46.0		
960 ~ 1000	3	500	54.0		
Above 1000	3	74.0 dB(µV)/m (Peak)			
		$54.0  dB(\mu V)/m  (Average)$			

Remark : (1) Emission level  $dB\mu V = 20 \log Emission level \mu V/m$ 

- (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. Wireless Drum Kit Controller for Xbox360 (EUT)

Model Number : 95519808 Serial Number : N/A

4.4.2. Support Equipment : As Tested Supporting System Detail, in Section 2.3.

### 4.5. Operating Condition of EUT

- 4.5.1. Setup the EUT and simulator as shown as 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 / RX Mode) and test it.

### 4.6.Test Procedure

EUT and its simulators are placed on 20mm thick insulating material 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.

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

The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz

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

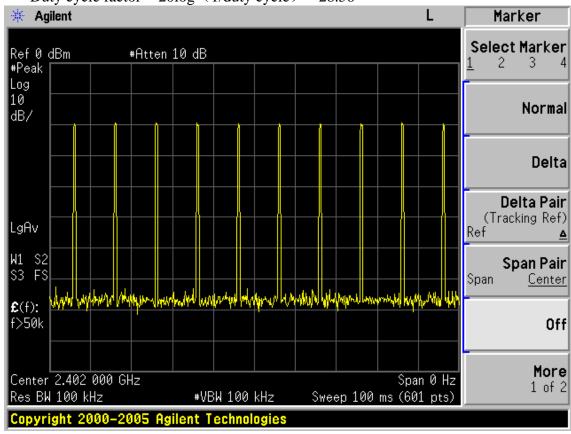
The frequency range from 30MHz to 10<sup>th</sup> harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

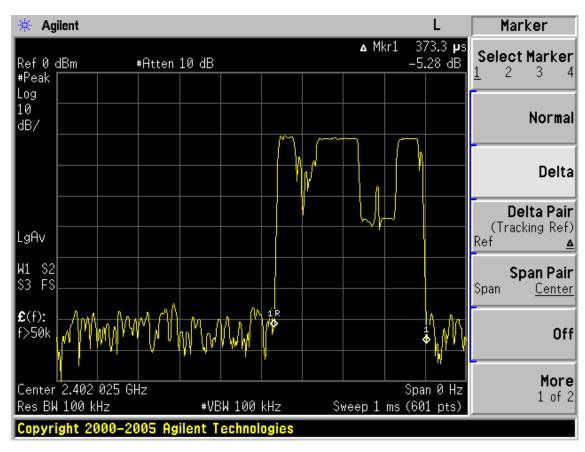
### 4.7. Radiated Emission Test Results

PASS.

Note: The duty cycle factor for calculate average level is 28.56dB, and average limit is 20dB below peak limit, so if peak measured level comply with peak limit, the average level was deemed to comply with average limit.

Duty cycle: 0.3733ms\*10/100ms \*100% = 3.733% Duty cycle factor = 20log (1/duty cycle) = 28.56



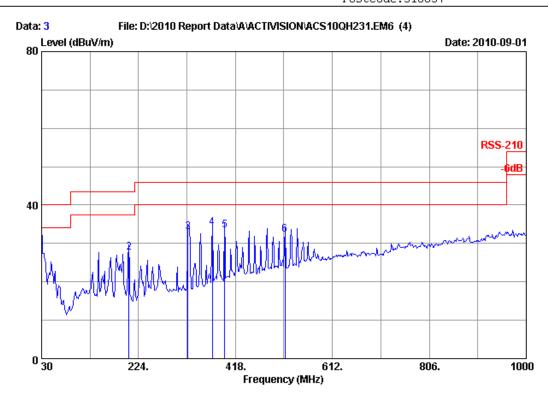


#### Frequency: 30MHz~1GHz



No.6 Ke Feng Road,Block 52, ShenZhen Science & Industry Park Noutou,ShenZhen,GuangDong,China

Tel:+86-755-26639495-7 Fax:+86-755-26632877 Postcode:518057



Site no. : 3m Chamber Data no. : 3

Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : HORIZONTAL

Limit : RSS-210 Env. / Ins. : 24\*C/56%

Env. / Ins. : 24\*C/56% Engineer : Paul Tian

EUT : Wireless Drum Kit Controller for Xbox

Power rating : DC 3V Test Mode : Tx Mode 76405800

No	. Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
1	30.000	20.00	0.61	11.32	31.93	40.00	8.07	QP	
2	204.600	10.10	1.76	15.84	27.70	43.50	15.80	QP	
3	322.940	14.26	2.58	16.10	32.94	46.00	13.06	QP	
4	371.440	15.52	2.79	15.84	34.15	46.00	11.85	QP	
5	396.660	16.37	2.90	14.06	33.33	46.00	12.67	QP	
6	516.940	18.37	3.64	10.21	32.22	46.00	13.78	QP	

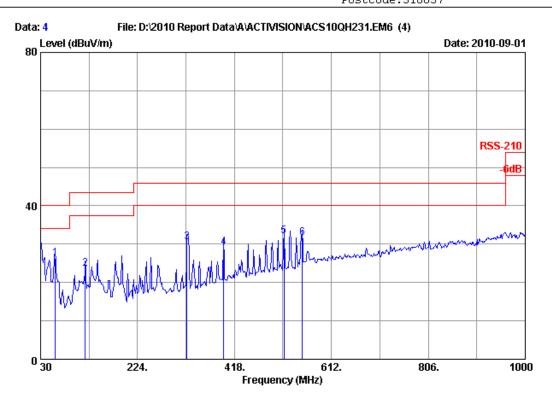
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.



No.6 Ke Feng Road, Block 52, ShenZhen Science & Industry Park Noutou, ShenZhen, GuangDong, China Tel:+86-755-26639495-7

Fax:+86-755-26632877 Postcode:518057



Site no. : 3m Chamber Data no. : 4

Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : VERTICAL

Limit : RSS-210
Env. / Ins. : 24\*C/56% Engineer : Paul Tian

EUT : Wireless Drum Kit Controller for Xbox

Power rating : DC 3V Test Mode : Tx Mode 76405800

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
1	59.100	6.22	0.84	19.31	26.37	40.00	13.63	QP	
2	119.240	11.86	1.13	10.54	23.53	43.50	19.97	QP	
3	322.940	14.26	2.58	13.78	30.62	46.00	15.38	QP	
4	396.660	16.37	2.90	9.96	29.23	46.00	16.77	QP	
5	516.940	18.37	3.64	10.04	32.05	46.00	13.95	QP	
6	553.800	19.32	3.85	8.38	31.55	46.00	14.45	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

Tx Mode



No.6 Ke Feng Road, Block 52, ShenZhen Science & Industry Park Noutou, ShenZhen, GuangDong, China Tel:+86-755-26639495-7 Fax:+86-755-26632877 Postcode:518057

# File: E:\2010 report data\A\Activision\ACS10QH231-1.EM6 (24) Level (dBuV/m) Date: 2010-08-12 RSS-210 PEAK 60 0 1000 4400. 7800. 11200. 14600. 18000 Frequency (MHz)

Site no. : 10m Chamber Data no. : 1

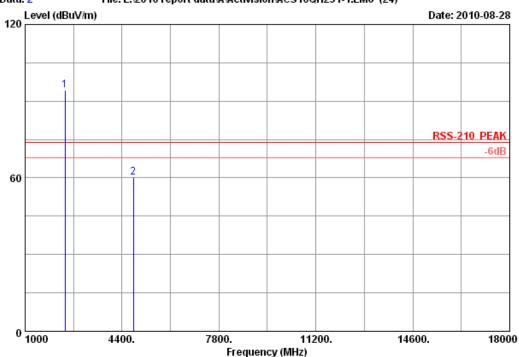
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : RSS-210 PEAK Env. / Ins. : 23\*C/54% Engineer : Leo-Li : Wireless Drum Kit Controller for Xbox 360 EUT

: DC 3V Power Test mode : Tx 2402MHz M/N : 95519808







Site no. : 10m Chamber Data no. : 2
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li
EUT : Wireless Drum Kit Controller for Xbox 360

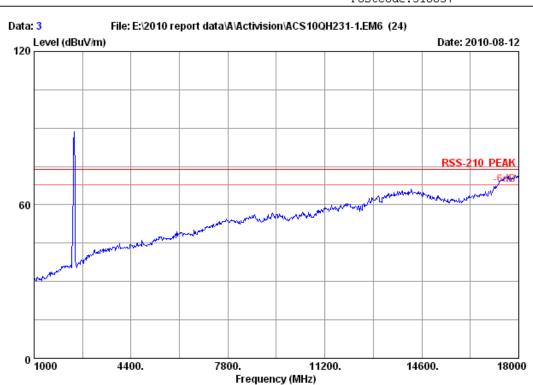
Power : DC 3V Test mode : Tx 2402MHz M/N : 95519808

	•		Factor	Reading (dBuV)	Limits	_	Remark	
_	2402.000 4804.000	 		94.06 50.26	 74.00 74.00	-20.31 13.92	Peak 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. : 10m Chamber Data no. : 3

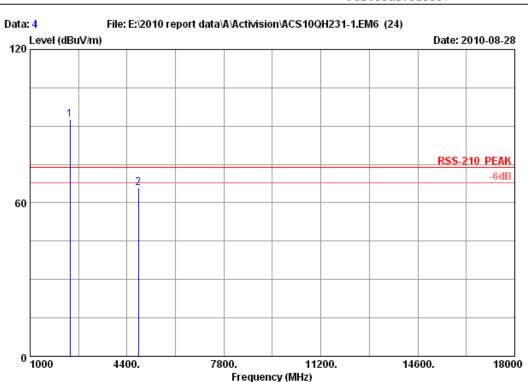
Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li
EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Tx 2402MHz M/N : 95519808





Site no. : 10m Chamber Data no. : 4

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li
EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Tx 2402MHz M/N : 95519808

	•		Factor	Reading (dBuV)	Limits	_	Remark	
_	2402.000 4804.000	 		92.19 56.19	 74.00 74.00	-18.44 7.99	Peak Peak	

#### Remarks:

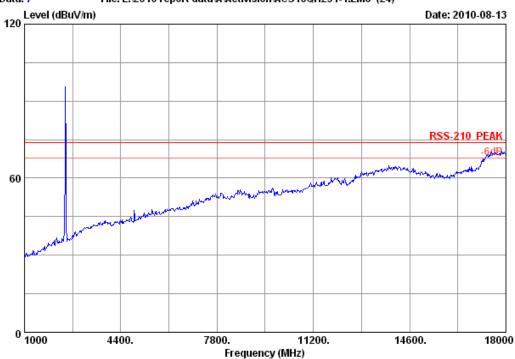
- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.



No.6 Ke Feng Road, Block 52, ShenZhen Science & Industry Park Noutou, ShenZhen, GuangDong, China Tel:+86-755-26639495-7

Fax:+86-755-26632877 Postcode:518057

#### File: E:\2010 report data\A\Activision\ACS10QH231-1.EM6 (24)



Site no. : 10m Chamber

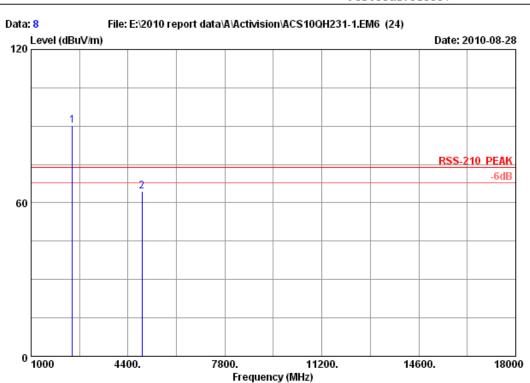
Data no. : 7 Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115(0911)

: RSS-210 PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Leo-Li EUT : Wireless Drum Kit Controller for Xbox 360

: DC 3V Power Test mode : Tx 2442MHz M/N: 95519808





Site no. : 10m Chamber Data no. : 8

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li EUT : Wireless Drum Kit Controller for Xbox 360

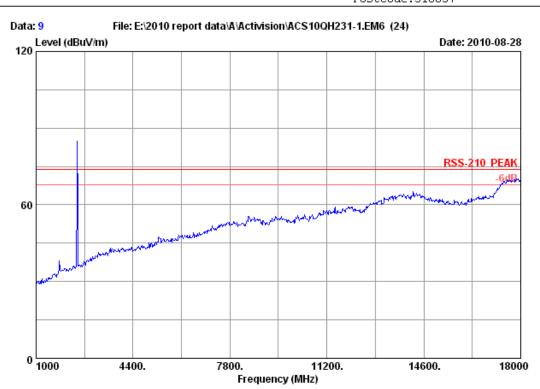
Power : DC 3V Test mode : Tx 2442MHz M/N : 95519808

	Ant. Cable			Amp.	Amp. Emission					
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m	) (dB)		
1	2442.000	29.47	7.50	36.61	89.76	90.12	74.00	-16.12	Peak	
2	4884.000	34.41	10.71	35.03	54.29	64.38	74.00	9.62	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. : 10m Chamber Data no. : 9
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

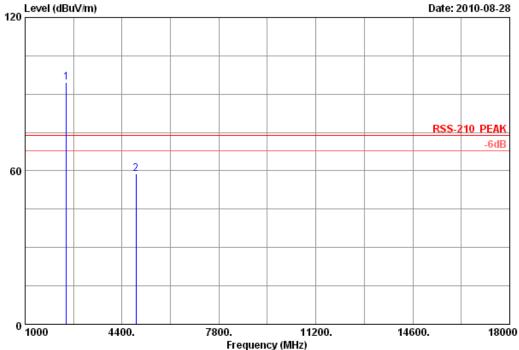
Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li
EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Tx 2442MHz M/N : 95519808







Site no. : 10m Chamber Data no. : 10 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li : Wireless Drum Kit Controller for Xbox 360

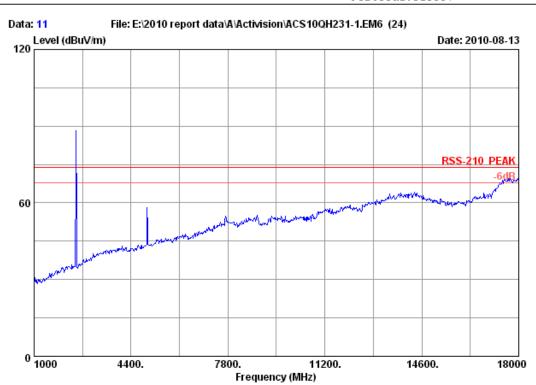
Power : DC 3V : Tx 2442MHz Test mode M/N : 95519808

	-	Factor	loss	Reading (dBuV)	Limits	_	Remark	
_	2442.000 4884.000			 94.16 48.64	 74.00 74.00	-20.52 15.27	Peak 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. : 10m Chamber Data no. : 11

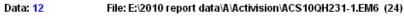
Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

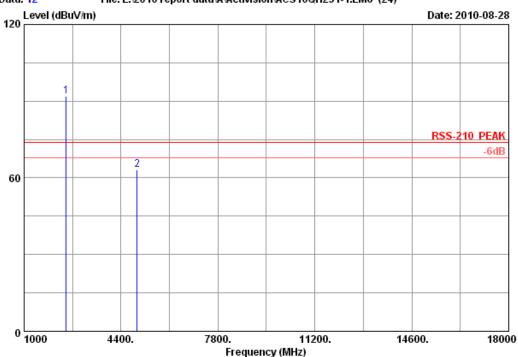
Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li
EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Tx 2482MHz M/N : 95519808







Site no. : 10m Chamber Data no. : 12

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li : Wireless Drum Kit Controller for Xbox 360

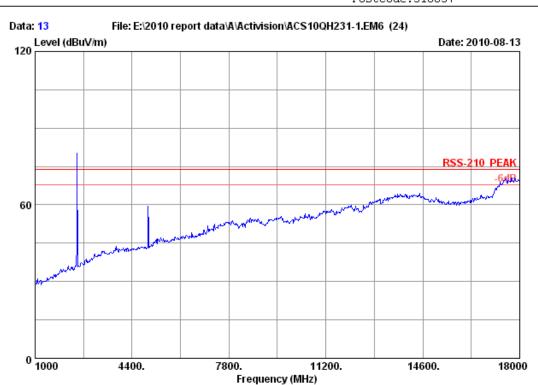
Power : DC 3V Test mode : Tx 2482MHz M/N : 95519808

	•		Factor	Reading (dBuV)	Limits	_	Remark	
_	2482.000 4964.000	 		91.42 52.69	 74.00 74.00	-17.89 10.92	Peak 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.





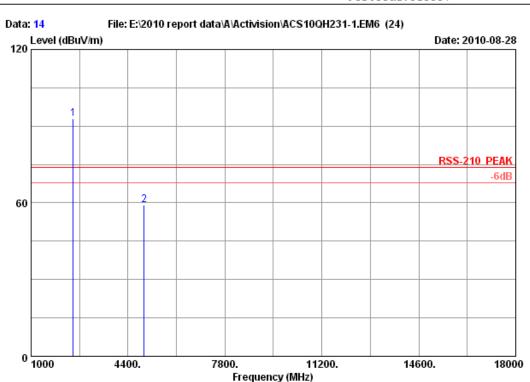
Site no. : 10m Chamber Data no. : 13
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Tx 2482MHz M/N : 95519808





Site no. : 10m Chamber Data no. : 14
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li
EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V
Test mode : Tx 2482MHz
M/N : 95519808

	•		Factor	Reading (dBuV)	Limits	_	Remark	
_	2482.000 4964.000	 		92.54 48.67	 74.00 74.00	-19.01 14.94	Peak 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.

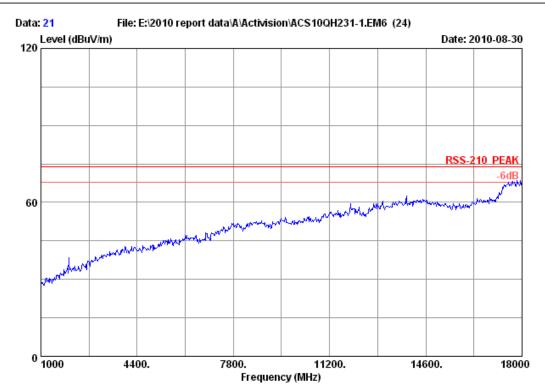
#### Rx Mode



No.6 Ke Feng Road, Block 52, ShenZhen Science & Industry Park Noutou, ShenZhen, GuangDong, China Tel:+86-755-26639495-7

Fax:+86-755-26632877

Postcode:518057



Site no. : 10m Chamber

Data no. : 21 Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115(0911)

: RSS-210 PEAK Limit

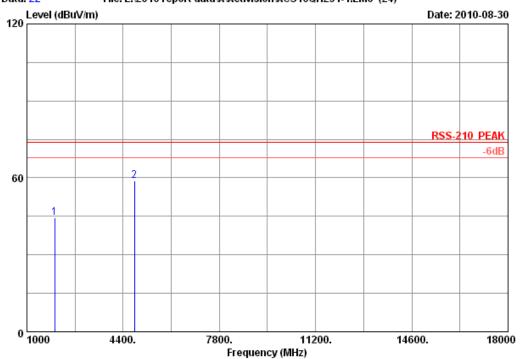
Env. / Ins. : 23\*C/54% Engineer : Leo-Li EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Rx Mode M/N : 95519808



Postcode:518057

Data: 22 File: E:\2010 report data\A\Activision\ACS10QH231-1.EM6 (24)



Site no. : 10m Chamber Data no. : 22

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li
EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Rx Mode M/N : 95519808

	Ant. Cable Amp.			Amp.	Emission					
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	1986.000	29.11	6.63	36.70	45.43	44.47	74.00	29.53	Peak	
2	4804.000	34.30	10.62	35.10	48.93	58.75	74.00	15.25	Peak	

#### Remarks

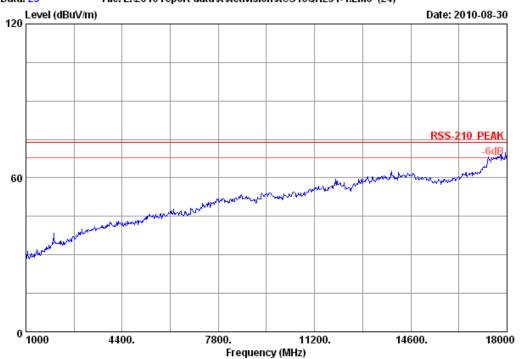
- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.



No.6 Ke Feng Road, Block 52, ShenZhen Science & Industry Park Noutou, ShenZhen, GuangDong, China Tel:+86-755-26639495-7

Fax:+86-755-26632877 Postcode:518057





Site no. : 10m Chamber

Data no. : 23 Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115(0911)

: RSS-210 PEAK Limit

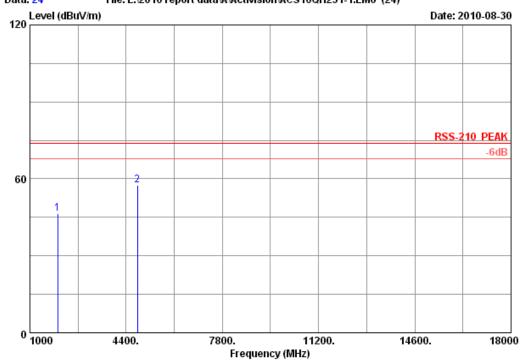
Env. / Ins. : 23\*C/54% Engineer : Leo-Li EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Rx Mode M/N : 95519808



Postcode:518057

ata: 24 File: E:\2010 report data\A\activision\ACS10QH231-1.EM6 (24)



Site no. : 10m Chamber Data no. : 24

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : RSS-210 PEAK

Env. / Ins. : 23\*C/54% Engineer : Leo-Li
EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Rx Mode M/N : 95519808

	Ant. Cable Amp.			Amp.	Emission					
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
										_
1	1986.000	29.11	6.63	36.70	47.43	46.47	74.00	27.53	Peak	
2	4804.000	34.30	10.62	35.10	47.57	57.39	74.00	16.61	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.

# 5. CARRIER FREQUENCY SEPARATION TEST

### 5.1.Test Equipment

Iten	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 10	1 Year

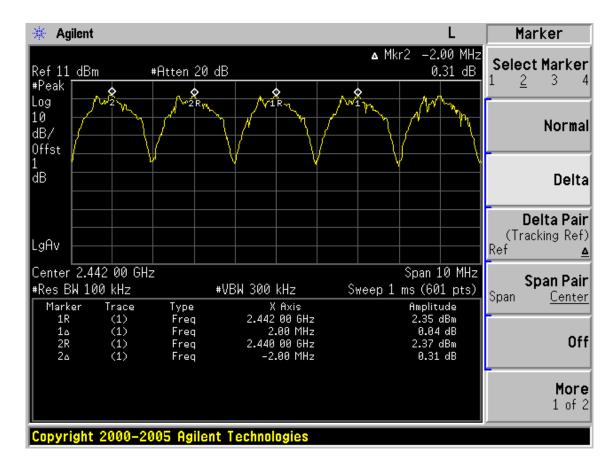
### 5.2.Limit

Frequency hopping systems shall have hopping channel carrier frequency separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater. 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: Wireless Drum Kit Controller for Xbox 360							
M/N: 95519808							
Test date:2010-08-16	Humidity:53%						
Tested by:Paul Tian							

Channel separation	Conclusion			
2.00MHz	PASS			



# 6. 20dB Bandwidth Test

# 6.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.
						Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 10	1 Year

# 6.2.Limit

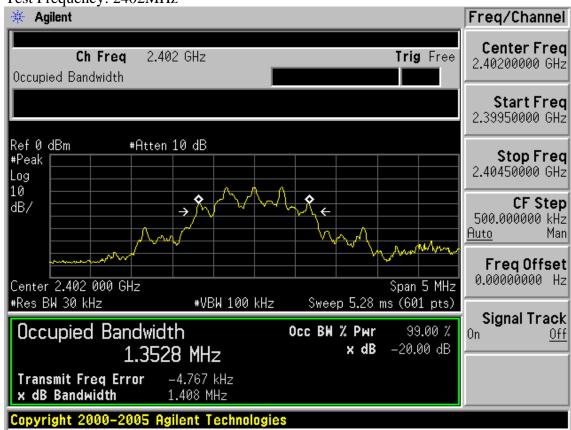
The transmitter output was coupled to a spectrum analyzer via a antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

### 6.3. Test Results

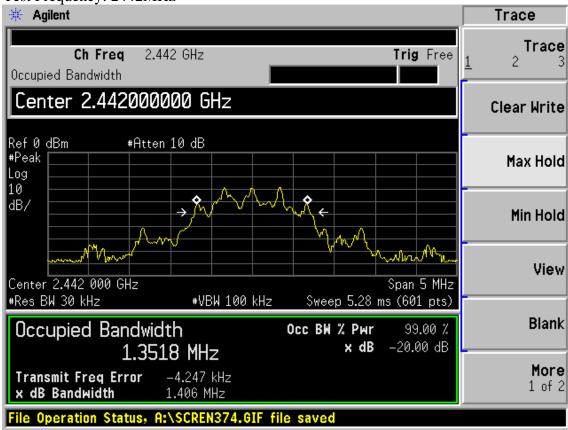
EUT: Wireless Drum Kit Controller for Xbox 360							
M/N: 95519808							
Test date:2010-08-27							
Tested by:Paul Tian Test site: RF site Temperature: 25 °C							

Frequency	20% bandwidth (KHz)	Limit (KHz)				
2402	1408	N/A				
2442	1406	N/A				
2482	1404	N/A				
Conclusion: PASS						

Test Frequency: 2402MHz



Test Frequency: 2442MHz



Test Frequency: 2482MHz



# 7. NUMBER OF HOPPING FREQUENCY TEST

# 7.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May, 08, 10	1 Year

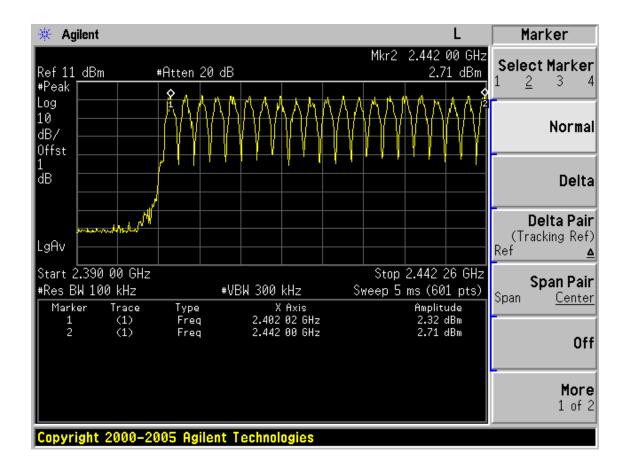
### 7.2.Limit

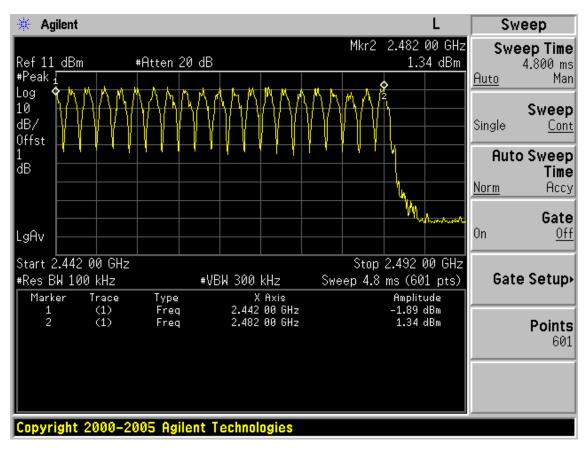
Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

### 7.3.Test Results

EUT: Wireless Drum Kit Controller for Xbox 360		
M/N: 95519808		
Test date:2010-08-16	Pressure:100.6 kpa	Humidity:53%
Tested by:Paul Tian	Test site: RF site	Temperature:25 °C

Number of channel	Limit	Conclusion
41	>=15	PASS





# 8. DWELL TIME TEST

# 8.1.Test Equipment

Iten	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May, 08, 10	1 Year

### 8.2.Limit

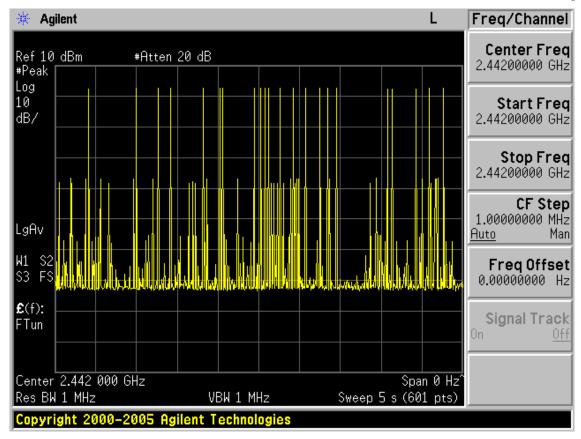
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

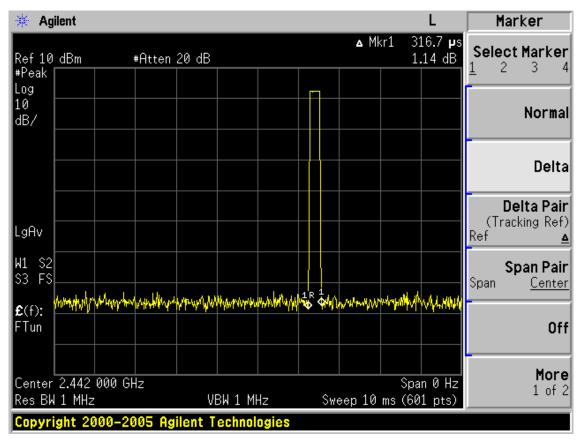
### 8.3. Test Results

EUT: Wireless Drum Kit Controller for Xbox 360		
M/N: 95519808		
Test date:2010-08-16	Pressure:100.6 kpa	Humidity:53%
Tested by:Paul Tian	Test site: RF site	Temperature:25 ℃

dwell time	Limit	Conclusion
22hops/5s*0.4*41chanels*0.3167ms =22.85ms	<400ms	PASS

Note: All the lower levels were signal from receiver's, and should not considered in here.





### 9. MAXIMUM PEAK OUTPUT POWER TEST

# 9.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 10	1 Year
2.	Horn Antenna	EMCO	3115	9510-4580	Nov.19, 09	1.5 Year
3.	Horn Antenna	EMCO	3115	9607-4877	Nov. 25, 09	1.5 Year
4.	Signal Generator	HP	83732B	VS34490501	May.08, 10	1 Year
5.	Amplifier	Agilent	8491B	MY39262165	May.08, 10	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX 102	28620/2	May,08, 10	1 Year
7.	RF Cable	Hubersuhner	SUCOFLEX 102	271471/4	May,08, 10	1 Year
8.	RF Cable	Hubersuhner	SUCOFLEX 102	29086/2	May,08, 10	1 Year
9.	RF Cable	Hubersuhner	SUCOFLEX 102	271473/4	May,08, 10	1 Year
10.	RF Cable	Hubersuhner	SUCOFLEX 102	29091/2	May,08, 10	1 Year

### 9.2.Limit (RSS-210 ISSUE 7 A8.4(4))

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, the e.i.r.p. shall not exceed 4W.

#### 9.3. Test Procedure

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

# 9.4.Test Results

Conclusion: PASS

EUT: Wireless Drum Kit Controller for Xbox 360					
M/N:95519808					
Test date:2010-08-27	Pressure:100.6 kpa	Humidity:53%			
Tested by: Paul Tian Test site: RF site Temperature:25 °C					

Frequency (MHz)	Test Antenna polarization	Maximum field strength (dBuV/m)	SG Level (dBm)	Cable loss (dB)	Antenna Gain (dBi)	Result (dBm)	
2402	Н	93.64	-5.6	5.75	8.90	-2.45	
2402	V	95.67	-1.81	5.75	8.90	1.34	
2442	Н	92.12	-6.81	5.77	8.91	-3.67	
2 <del>44</del> 2	V	96.65	-0.69	5.77	8.91	2.45	
2482	Н	93.65	-4.7	5.78	8.94	-1.54	
2482	V	95.05	-2.27	5.78	8.94	0.89	
Note: Result = SG level –Cable loss + Antenna Gain							
Limit: 21dBm							

### 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

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under Section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Tables 2 and 3 is not required.

#### 10.3.Test Produce

For upper band emissions that are up to two bandwidths(2MHz) away (2483.5MHz to 2485.5MHz) from the band-edge use below produce:

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

For emissions above two bandwidths away from the band-edge use below produce:

- 1. EUT and its simulators are placed on 20mm thick insulating material above ground in the chamber and turned on in continuously transmitting mode.
- 2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
  - (a) PEAK: RBW=1MHz; VBW=3MHz, PK detector, Sweep=AUTO
  - (b) This device is pulse modulated, a duty cycle factor was used to calculate average level based measured peak level.

#### 10.4.Test Results

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

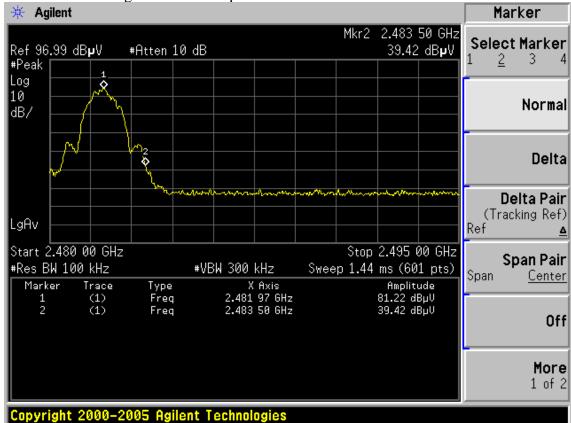
Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

Emissions in two bandwidths away from the band-edge

СН	Frequency (MHz)	Maximum PK Fundamental level (dBuV/m)	Marker delta (dB) (Note2)	PK band edge level (dBuV/m)	PK Limit (dBuV/m)	Result
High 2482MHz	2483.5	93.36	41.80	51.56	74	PASS

Marker delta =81.22-39.42 = 41.80dB

Band edge marker delta-plot:

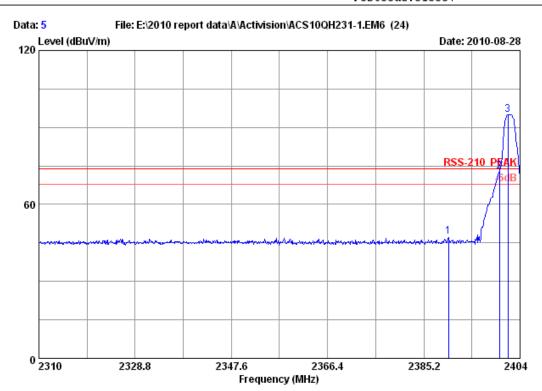


#### For emissions above two bandwidths away from the band-edge



No.6 Ke Feng Road, Block 52, ShenZhen Science & Industry Park Noutou, ShenZhen, GuangDong, China

Tel:+86-755-26639495-7 Fax:+86-755-26632877 Postcode:518057



Site no. : 10m Chamber

Data no. : 5 Ant. pol. : VERTICAL Dis. / Ant. : 3m 3115(0911)

: RSS-210 PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Leo-Li EUT : Wireless Drum Kit Controller for Xbox 360

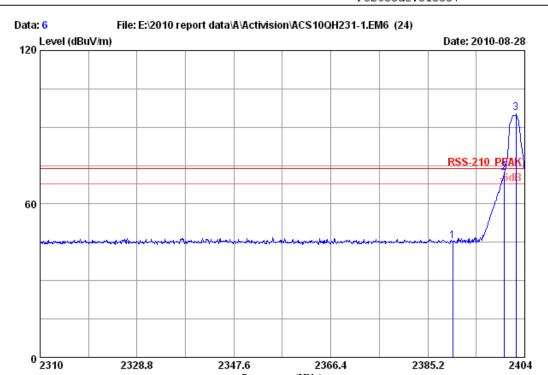
Power : DC 3V Test mode : Tx 2402MHz M/N : 95519808

		Ant.	Cable	Amp.		Emissio:	n			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/r	n) (dB)		
1	2390.000	29.44	7.39	36.62	47.21	47.42	74.00	26.58	Peak	
2	2400.000	29.44	7.43	36.62	72.63	72.88	74.00	1.12	Peak	
3	2401.650	29.44	7.43	36.62	94.61	94.86	74.00	-20.86	Peak	

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



No.6 Ke Feng Road, Block 52, ShenZhen Science & Industry Park Noutou, ShenZhen, GuangDong, China Tel:+86-755-26639495-7 Fax:+86-755-26632877 Postcode:518057



Site no. : 10m Chamber Data no. : 6

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115(0911)

Frequency (MHz)

Limit : RSS-210 PEAK Env. / Ins. : 23\*C/54% Engineer : Leo-Li EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Tx 2402MHz : 95519808 M/N

		Ant.	Cable	Amp.		Emissio:	n			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/n	n) (dB)		
1	2390.000	29.44	7.39	36.62	45.12	45.33	74.00	28.67	Peak	
2	2400.000	29.44	7.43	36.62	72.11	72.36	74.00	1.64	Peak	
3	2402.308	29.44	7.43	36.62	95.43	95.68	74.00	-21.68	Peak	

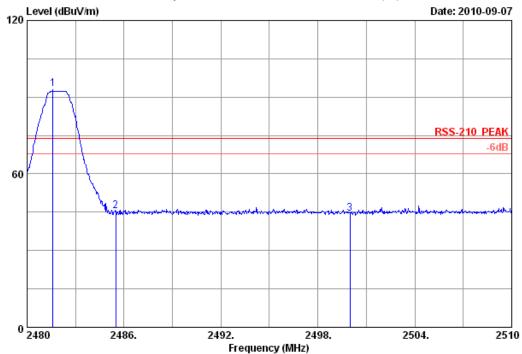
#### Remarks:

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



No.6 Ke Feng Road, Block 52, ShenZhen Science & Industry Park Noutou, ShenZhen, GuangDong, China Tel:+86-755-26639495-7 Fax:+86-755-26632877 Postcode:518057





Site no. : 3m Chamber Data no. : 16

Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : RSS-210 PEAK Env. / Ins. : 23\*C/54% Engineer : Leo-Li EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Tx 2482MHz : 95519808 M/N

		Ant.	Cable	Amp.		Emissio:	n			
	-				Reading (dBuV)			_	Remark	
	(Mnz)	(GD/M)	(ub)	(ав)	(авау)	(авау/ш)	цавау/п 	, (ab) 		
1	2481.590	29.49	7.58	36.60	92.89	93.36	74.00	-19.36	Peak	
2	2485.500	29.49	7.58	36.60	44.91	45.38	74.00	28.62	Peak	
3	2500.000	29.50	7.62	36.60	44.01	44.53	74.00	29.47	Peak	

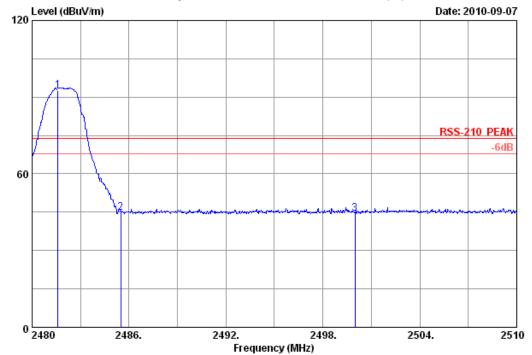
#### Remarks:

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



No.6 Ke Feng Road, Block 52, ShenZhen Science & Industry Park Noutou, ShenZhen, GuangDong, China Tel:+86-755-26639495-7 Fax:+86-755-26632877 Postcode:518057





Site no. : 3m Chamber Data no. : 15

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115(0911)

Limit : RSS-210 PEAK Env. / Ins. : 23\*C/54% Engineer : Leo-Li EUT : Wireless Drum Kit Controller for Xbox 360

Power : DC 3V Test mode : Tx 2482MHz : 95519808 M/N

		Ant.	Cable	Amp.		Emissio:	n			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m	) (dB)		
1	2481.590	29.49	7.58	36.60	92.20	92.67	74.00	-18.67	Peak	
2	2485.500	29.49	7.58	36.60	44.33	44.80	74.00	29.20	Peak	
3	2500.000	29.50	7.62	36.60	43.99	44.51	74.00	29.49	Peak	

#### Remarks:

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

# 11. 99% BANDWIDTH

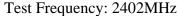
# 11.1.Test Equipment

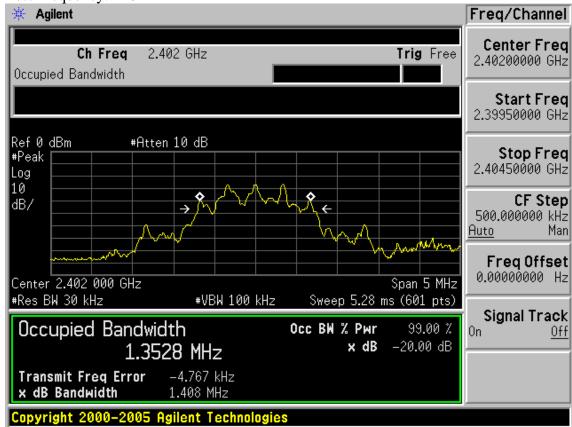
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 10	1 Year

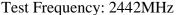
# 11.2.Test Results

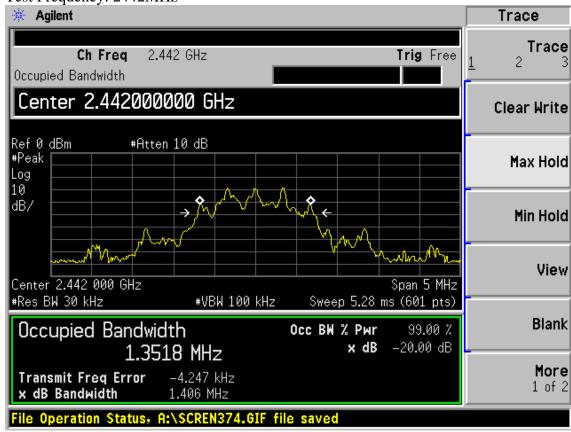
EUT: Wireless Drum Kit Controller for Xbox 360					
M/N: 95519808					
Test date:2010-08-27	Pressure:100.5 kpa	Humidity:57 %			
Tested by:Paul Tian	Test site: RF site	Temperature: 25 °C			

Frequency	99% bandwidth (KHz)	Limit (KHz)				
2402	1352.8	N/A				
2442	1351.8	N/A				
2482	1351.1	N/A				
Conclusion: PASS						









Test Frequency: 2482MHz



# 12.DEVIATION TO TEST SPECIFICATIONS

[NONE]