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FEDERAL COMMUNICATIONS COMMISSION  
Registration number: 282399

Report No.: GLEMR070501270RF  
Page: 1 of 18  
FCC ID: VCQ7E000833

## TEST REPORT

**Application No. :** GLEMR070501270RF

**Applicant:** ZICPLAY SA

**FCC ID:** VCQ7E000833

**Frequency Band** 2.402GHz to 2.480GHz

**Equipment Under Test (EUT):**

Name: EWOO

Model No.: EWOO

**Standards:** FCC PART 15C: 2007

Please refer to section 2 for further details.

**Date of Receipt:** 11 May 2007

**Date of Test:** 11 to 30 May 2007

**Date of Issue:** 31 May 2007

<b>Test Result :</b>	<b>PASS *</b>
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In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Jerry Chen  
Manager

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf  
This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



## 2 Test Summary

Test	Test Requirement	Stanadard Paragraph	Result
Flied Strength of Fundamental	FCC PART 15 :2007	Section 15.249 (a)	PASS
Flied Strength of Unwanted Emissions	FCC PART 15 :2007	Section 15.249 (a) Section 15.249 (d)	PASS
Occupied Bandwidth	FCC PART 15 :2007	Section 15.249	PASS
Band Edges	FCC PART 15 :2007	Section 15.249 (d)	PASS

Remark:

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

### **3 Contents**

	Page
<b>1 COVER PAGE</b>	1
<b>2 TEST SUMMARY</b>	2
<b>3 CONTENTS</b>	3
<b>4 GENERAL INFORMATION</b>	4
4.1 CLIENT INFORMATION .....	4
4.2 GENERAL DESCRIPTION OF E.U.T .....	4
4.3 DESCRIPTION OF EUT OPERATION .....	4
4.4 STANDARDS APPLICABLE FOR TESTING .....	4
4.5 TEST LOCATION.....	4
4.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER .....	4
4.7 TEST FACILITY.....	5
<b>5 TEST RESULTS</b>	6
5.1 TEST INSTRUMENTS.....	6
5.2 E.U.T. OPERATION.....	7
5.3 TEST PROCEDURE & MEASUREMENT DATA.....	8
5.3.1 Radiated Emissions .....	8
5.3.2 Occupied Bandwidth & Band Edge .....	13-18

## 4 General Information

### 4.1 Client Information

Applicant Name: ZICPLAY SA  
Applicant Address: Le Trési 6B, 1028 Préverenges - Switzerland

### 4.2 General Description of E.U.T.

Product Name: EWOO  
Model: EWOO  
Power Supply: Tx: 3.7V DC inside rechargeable battery  
Rx:Input:100-240V~50/60Hz  
Output:5.0V~700mA  
Power Cord: N/A  
Emission Designation: F1D

### 4.3 Description of EUT operation

The EUT have a remote controller and the music station for iPod. The remote controller with 2.4GHz carrier and show the status of the iPod.

### 4.4 Standards Applicable for Testing

The standard used was FCC PART 15, SUBPART C (2007) section 15.249.

### 4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory, No.198 Kezhu Road, Science Town Economic& Technology Development District Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

### 4.6 Other Information Requested by the Customer

None.



## 4.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC – Registration No.: 282399**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002. With the above and NVLAP's accreditation, SGS-CSTC is an authorized test laboratory for the DoC process.

- **Industry Canada (IC)**

The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620B-1.

Date of Registration: Jan 15, 2007. Valid until Jan 15, 2009

## 5 Test Results

### 5.1 Test Instruments

No:	Test Equipment	Manufactory	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal. due Date (dd-mm-yy)
EMC0039	Temperature Chamber	TERCHY	MHG-800RR	0118	05-12-2006	05-12-2007
EMC0009	D.C. Power Supply	Insteck	PS-3030	9862036	Check when used	
EMC0007	DMM	Fluke	73	70671122	27-09-2006	27-09-2007
EMC0006	DMM	Fluke	73	70681569	27-09-2006	27-09-2007
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	06-03-2007	06-03-2008
EMC0530	10m Semi- Anechoic Chamber	ETS	N/A	N/A	22-08-2006	22-08-2007
EMC0502	Biconical Antenna (Rx)	Rohde & Schwarz	HK116	100032	12-08-2007	12-08-2008
EMC0503	Biconical Antenna (Tx)	Rohde & Schwarz	HK116	100033	12-08-2007	12-08-2008
EMC0504	Log-Perd. Dipole Antenna (Rx)	Rohde & Schwarz	HL223	100039	12-08-2007	12-08-2008
EMC0505	Log-Perd. Dipole Antenna (Tx)	Rohde & Schwarz	HL223	100040	12-08-2007	12-08-2008
EMC0517	Horn Antenna (Rx)	Rohde & Schwarz	HF906	100095	12-08-2007	12-08-2008
EMC0519	Bilog Type Antenna	Schaffner Chase	CBL6143	5070	12-08-2007	12-08-2008
EMC0520	0.1-1300 MHz Pre Amplifier	HP	8447D OPT 010	2944A06252	28-03-2007	28-03-2008
EMC0521	1-26.5GHz Pre Amplifier	Agilent	8449B	3008A01649	28-03-2007	28-03-2008
EMC0507	Antenna Mask (Tx)	HD-GmbH	AS620M	620/408	N/A	N/A
EMC0508	Antenna Mask (Rx)	HD-GmbH	MA240	240/619	N/A	N/A
EMC0509	Turntable	HD-GmbH	DT430	N/A	N/A	N/A
EMC0510	Turntable & Antenna Mask Controller	HD-GmbH	HD100	N/A	N/A	N/A
EMC0512	EMI Test Software	Rohde & Schwarz	ES-K1	N/A	N/A	N/A
EMC0511	Coaxial cable	Rohde & Schwarz	N/A	N/A	04-11-2006	03-11-2007
EMC0514	Coaxial cable	Rohde & Schwarz	N/A	N/A	04-11-2006	03-11-2007
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	05-12-2006	05-12-2007
EMC0040	Spectrum Analyzer	Rohde & Schwarz	FSP30	100324	05-12-2006	05-12-2007
EMC0516	Signal Generator	Rohde & Schwarz	SMR20	100416	16-07-2007	16-07-2008
EMC0032	Radio Communication Monitor	Rohde & Schwarz	CMS54	100137	20-12-2006	20-12-2007
EMC0904	Power Meter	Rohde & Schwarz	NRVS	825770/074	16-07-2007	16-07-2008
EMC0905	Power Sensor	Rohde & Schwarz	NRV-Z5	825802/013	16-07-2007	16-07-2008
EMC0906	Dual Directional Coupler	Werlatone Inc.	C1795	6634	20-11-2006	20-11-2007
EMC1508	Audio Analyzer	Rohde & Schwarz	UPL	100855	11-09-2006	11-09-2007
EMC1005	Digital Oscilloscope	Tektronix	TDS3012	B015508	16-07-2007	16-07-2008
EMC0523	Active Loop Antenna	EMCO	6502	00042963	09-08-2006	09-08-2008

## 5.2 E.U.T. Operation

Input voltage: 120V~60Hz

Operating Environment:

Temperature: 24 °C~26°C

Humidity: 53 % RH~62 % RH

Atmospheric Pressure: 996 ~ 1006 mbar

Test frequencies: According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom

Test frequency is the lowest channel 2402MHz , middle channel 2440MHz and highest channel 2480MHz.

## 5.3 Test Procedure & Measurement Data

### 5.3.1 Radiated Emissions

#### 5.3.1.1 Test in transmitting mode

<b>Test Requirement:</b>	FCC Part15 C Section 15.249(a) & (d)
<b>Test Method:</b>	Based on FCC Part15 C Section 15.249 & ANSI C63.4
<b>Test Date:</b>	24 May 2006
<b>Measurement Distance:</b>	3m (Semi-Anechoic Chamber)
<b>Frequency range</b>	30 MHz – 25GHz for transmitting mode. Test instrumentation resolution bandwidth 120 kHz (30 MHz - 1000 MHz), 1 MHz (1000 M – 25GHz)
<b>Operation:</b>	Receive antenna scan height 1 - 4 m, polarization Vertical/ Horizontal

**Requirements:**

FCC Part 15.249(a)

Fundamental Frequency (MHz)	Field Strength of Fundamental (dB <sub>u</sub> V/m @ 3m)	Field Strength of Harmonics and Spurious Emissions (dB <sub>u</sub> V/m @ 3m)
902 to 928	94.0	54.0
2400 to 2483.5	94.0	54.0
5725 to 5875	94.0	54.0
24000 to 24250	108.0	68.0

FCC Part 15.249(d)

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

**Remark:**

The fundamental frequency of the EUT is between 2400 to 2483.5MHz

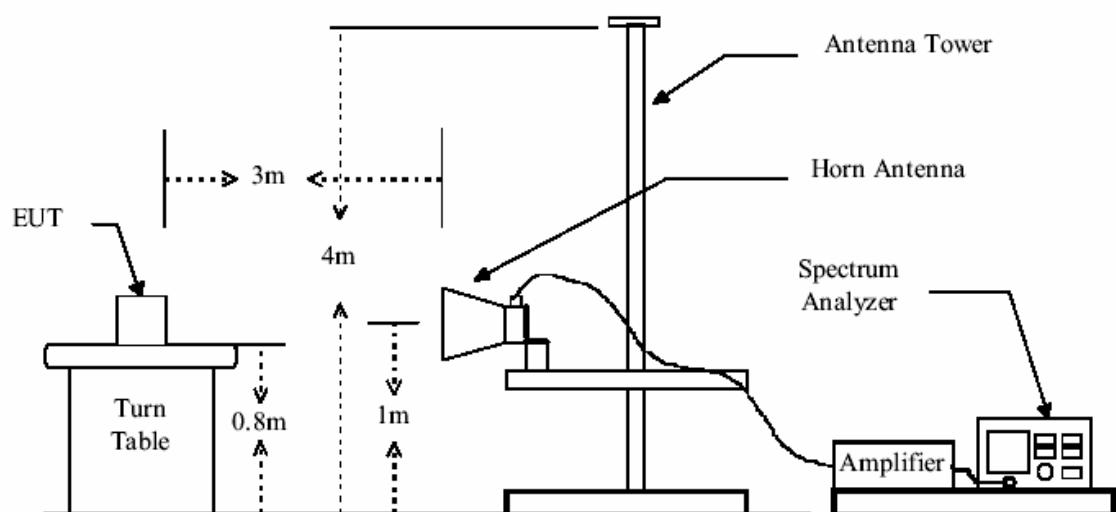
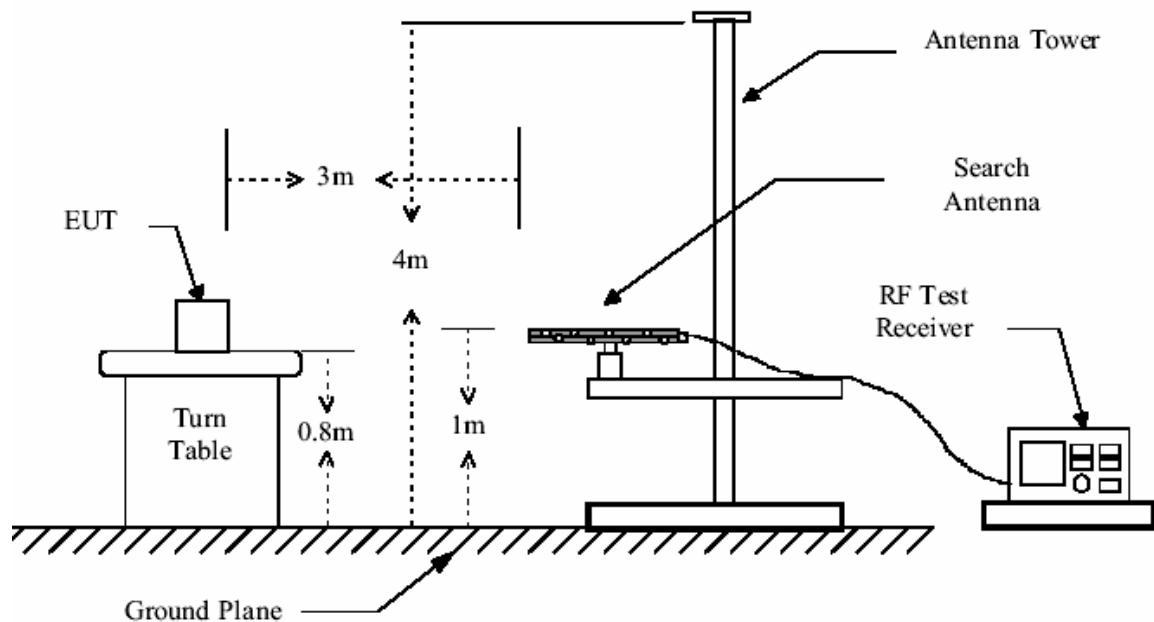
The limit for average field strength dB<sub>u</sub>V/m for the fundamental frequency = 94.0 dB<sub>u</sub>V/m.

No fundamental is allowed in the restricted bands.

The limit for average field strength dB<sub>u</sub>V/m for the harmonics = 54.0 dB<sub>u</sub>V/m.

Spurious in the restricted bands must be less than 44.0 dB<sub>u</sub>V/m or 54.0 dB<sub>u</sub>V/m in 15.209. Here is 54.0 dB<sub>u</sub>V/m according to FCC Part 15.249(d).

**Test Procedure:** The procedure used was ANSI Standard C63.4-2006. The receive was scanned from 30MHz to 25GHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported.

**Test Configuration:**

The field strength is calculated by adding the Antenna Factor, Cable Factor & Peramplifier . The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Peramplifier Factor

The following test results were performed on the EUT:

1.lowest channel 2402MHz

Fundamental emission

<b>Test Frequency (GHz)</b>	<b>Measuring Level (dBuV/m)</b>		<b>Limits (dBuV/m)</b>	<b>Margin (dB)</b>	
	Vertical	Horizontal		Vertical	Horizontal
2.402	96.7	96.6	114.0	17.3	17.4
<b>Average Measurement</b>					
2.402	59.8	57.8	94.0	34.2	36.2

(2). Harmonics & Spurious Emissions

<b>Test Frequency (GHz)</b>	<b>Measuring Level (dBuV/m)</b>		<b>Limits (dBuV/m)</b>	<b>Margin (dB)</b>	
	Vertical	Horizontal		Vertical	Horizontal
1. 4.804	35.6	36.8	74.0	38.4	37.2
2. 7.206	34.3	35.3	74.0	39.7	38.7
3. 9.608	36.3	36.9	74.0	37.7	37.1
4. 12.010	35.2	35.8	74.0	38.8	38.2
<b>Average Measurement</b>					
5. 4.804	33.4	34.5	54.0	20.6	19.5
6. 7.206	34.2	32.4	54.0	19.8	21.6
7. 9.608	32.6	34.7	54.0	21.4	19.3
8. 12.010	34.4	35.1	54.0	19.6	18.9

Remark:

- 1). According to 15.249 (e) As shown in Section 15.35(b), for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.
- 2) Sweep from 30MHz to 25GHz, find the max radiated emissions and record it, when the emissions are too weak to be detected, it will not be reported.

The following test results were performed on the EUT:

1. Middle channel 2440MHz

Fundamental emission

<b>Test Frequency (GHz)</b>	<b>Peak Measurement</b>		<b>Limits (dBuV/m)</b>	<b>Margin (dB)</b>	
	Vertical	Horizontal		Vertical	Horizontal
2.440	98.5	97.3	114.0	15.5	16.7
<b>Average Measurement</b>					
2.440	62.3	59.8	94.0	31.7	34.2

(2). Harmonics & Spurious Emissions

<b>Test Frequency (GHz)</b>	<b>Peak Measurement</b>		<b>Limits (dBuV/m)</b>	<b>Margin (dB)</b>	
	Vertical	Horizontal		Vertical	Horizontal
9. 4.880	36.2	36.5	74.0	37.8	37.5
10. 7.320	37.3	36.9	74.0	36.7	37.1
11. 9.760	36.1	36.1	74.0	37.9	37.9
12. 12.200	37.4	36.7	74.0	36.6	37.3
<b>Average Measurement</b>					
13. 4.880	34.3	34.2	54.0	19.7	19.8
14. 7.320	34.2	34.3	54.0	19.8	19.7
15. 9.760	35.2	34.8	54.0	18.8	19.2
16. 12.200	34.9	35.0	54.0	19.1	19.0

Remark:

- 1). According to 15.249 (e) As shown in Section 15.35(b), for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.
- 2) Sweep from 30MHz to 25GHz, find the max radiated emissions and record it, when the emissions are too weak to be detected, it will not be reported.

The following test results were performed on the EUT:

2. Highest channel 2480MHz

Fundamental emission

Test Frequency (GHz)	Peak Measurement		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
2.480	96.0	95.8	114.0	18.0	18.2
Average Measurement					
2.480	58.6	56.7	94.0	35.4	37.3

(2). Harmonics & Spurious Emissions

Test Frequency (GHz)	Peak Measurement		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
17. 4.960	35.2	35.3	74.0	38.8	38.7
18. 7.440	35.8	34.6	74.0	38.2	39.4
19. 9.920	35.3	36.2	74.0	38.7	37.8
20. 12.400	37.2	37.1	74.0	36.8	36.9
Average Measurement					
21. 4.960	33.3	34.1	54.0	20.7	19.9
22. 7.440	32.9	33.5	54.0	21.1	20.5
23. 9.920	32.1	34.7	54.0	21.9	19.3
24. 12.400	34.6	35.4	54.0	19.4	18.6

Remark:

- 1). According to 15.249 (e) As shown in Section 15.35(b), for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.
- 2) Sweep from 30MHz to 25GHz, find the max radiated emissions and record it, when the emissions are too weak to be detected, it will not be reported.

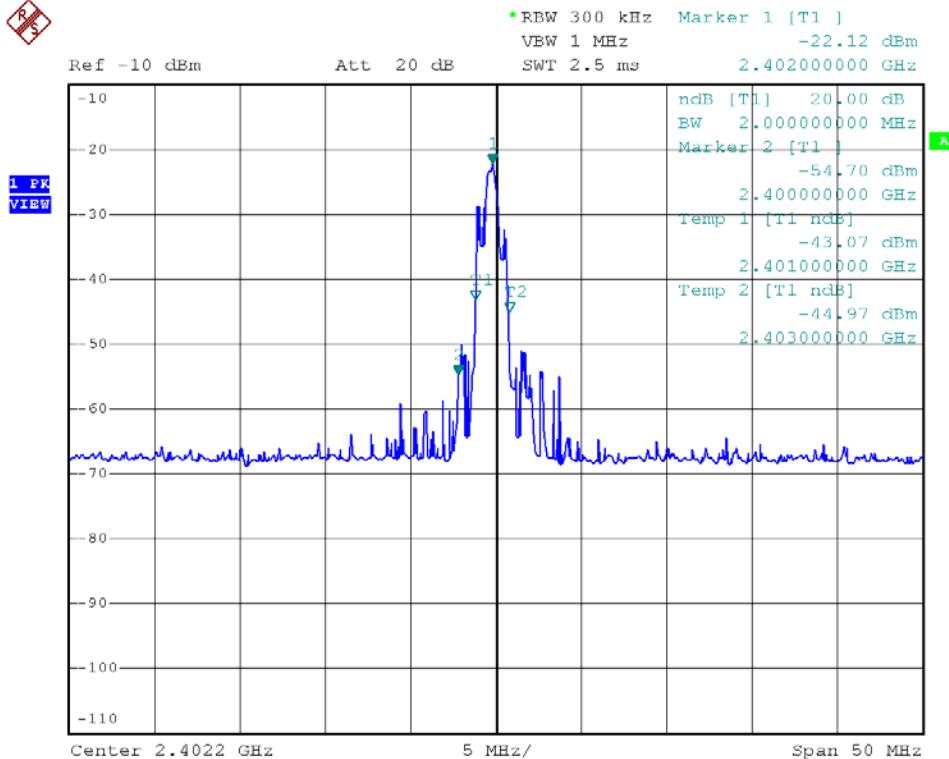
**TEST RESULTS: The unit does meet the FCC requirements.**

### 5.3.2 Occupied Bandwidth & Band Edge

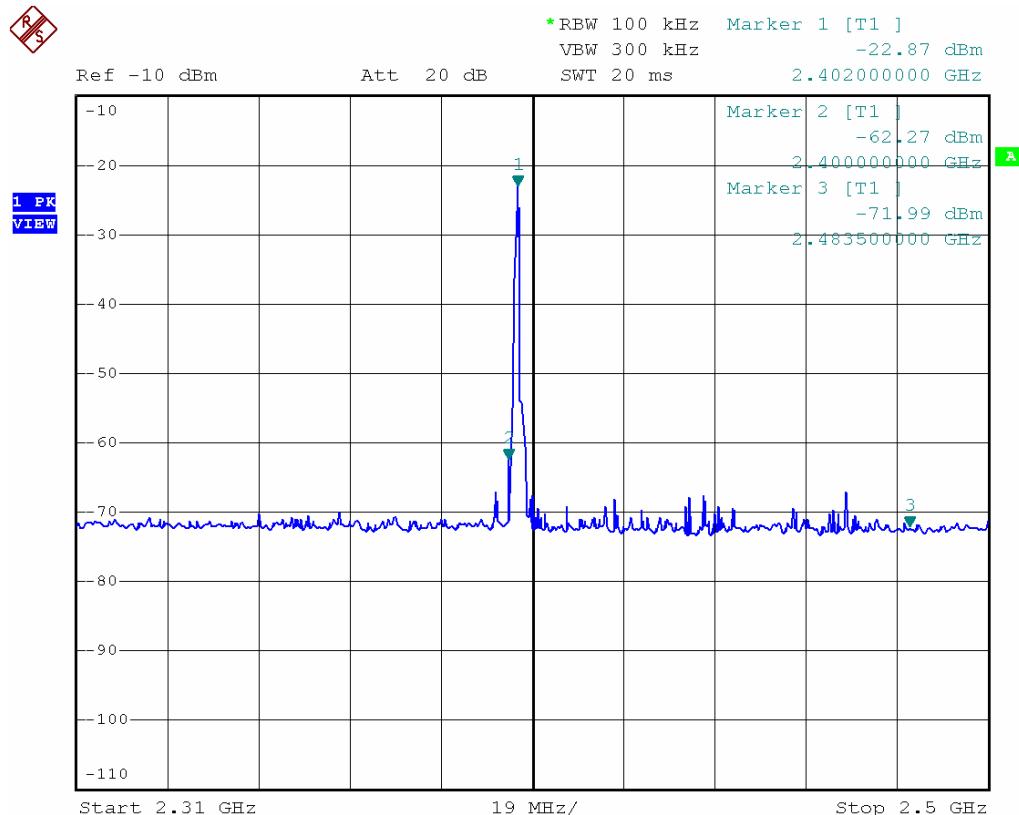
Test Requirement: FCC Part 15 C Section 15.249  
Test Method: ANSI C63.4 and FCC Part 2.1049  
Operation within the band 2.4000 – 2.4835GHz  
Test Date: 24 May 2007  
Requirements: 15.249 (d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.  
Method of measurement: A small sample of the transmitter output was fed into the Spectrum Analyzer and the attached plot was taken.

1.lowest channel 2402MHz

(i)The occupied bandwidth as below:



## (ii) Band Edge:



The test result for the Emissions radiated outside of the specified frequency bands , please refer the section 5.3.1 of this report.

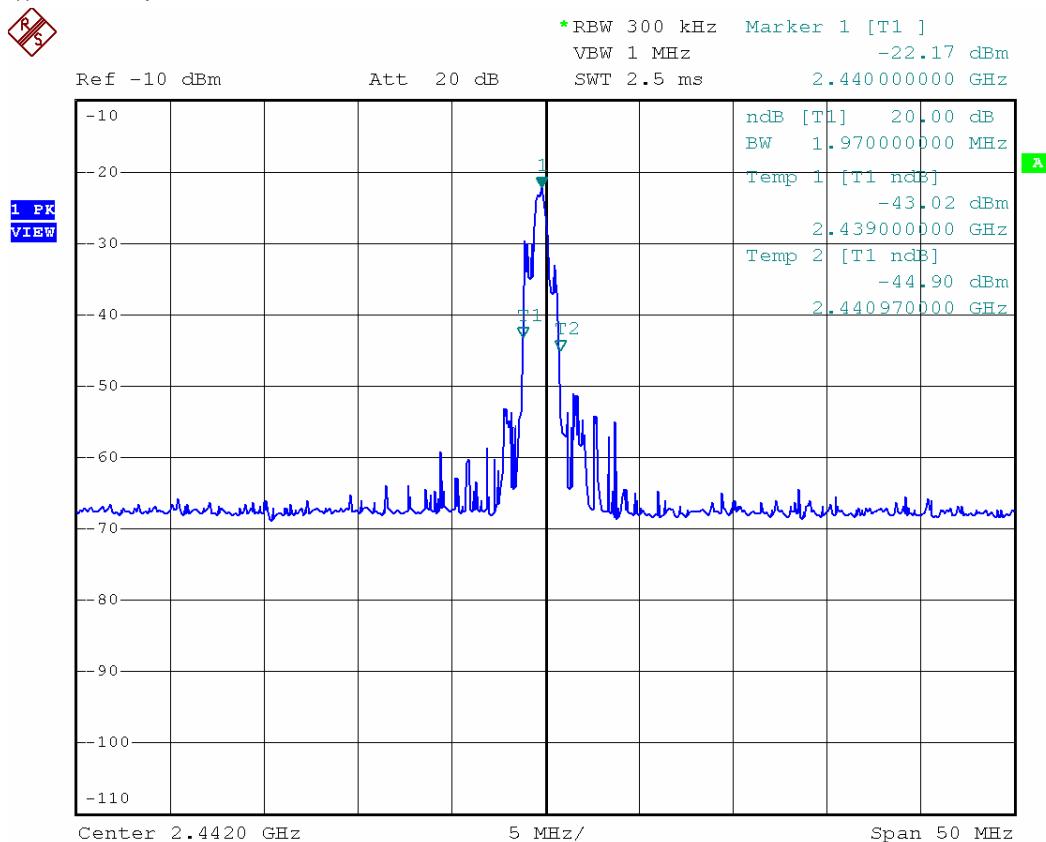
The worst case is peak value 53.6dB<sub>UV</sub>/m at frequency 2.39GHz, it's below the limits 74.0 dB<sub>UV</sub>/m base Section 15.209 .

For the field strength of Lower Edges:2.4000GHz is 56.7dB<sub>UV</sub>/m(peak value).

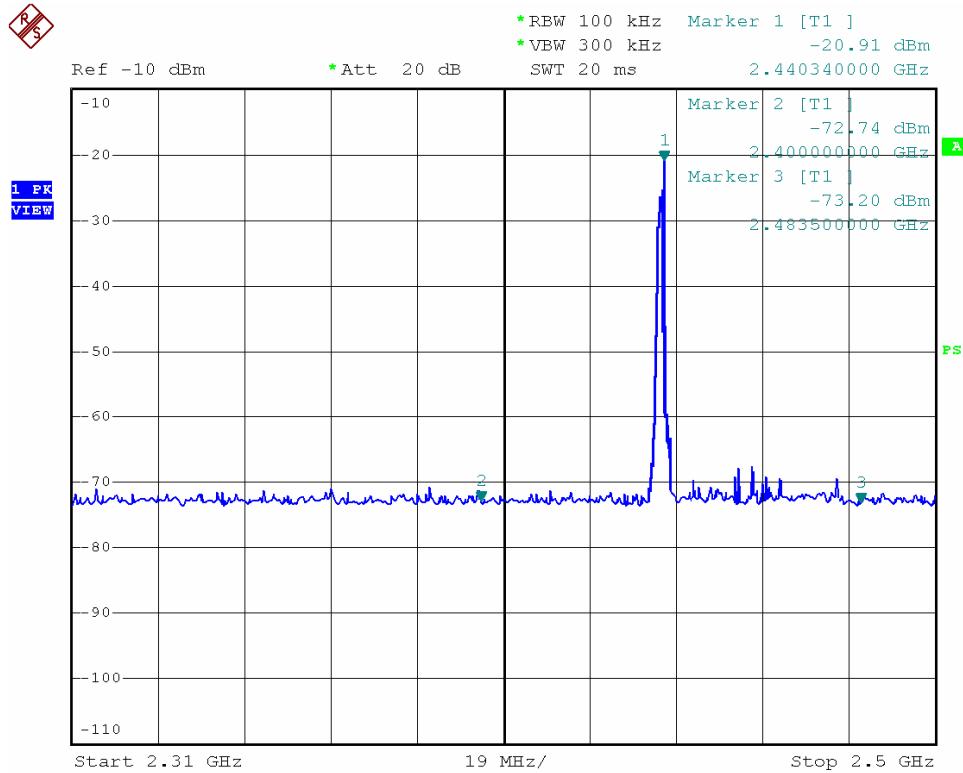
For the field strength of Upper Edges:2.4835GHz is 49.3dB<sub>UV</sub>/m(peak value).

## 2. Middle channel 2440MHz

(i) The occupied bandwidth as below:



## (ii) Band Edge:



The test result for the Emissions radiated outside of the specified frequency bands , please refer the section 5.3.1 of this report.

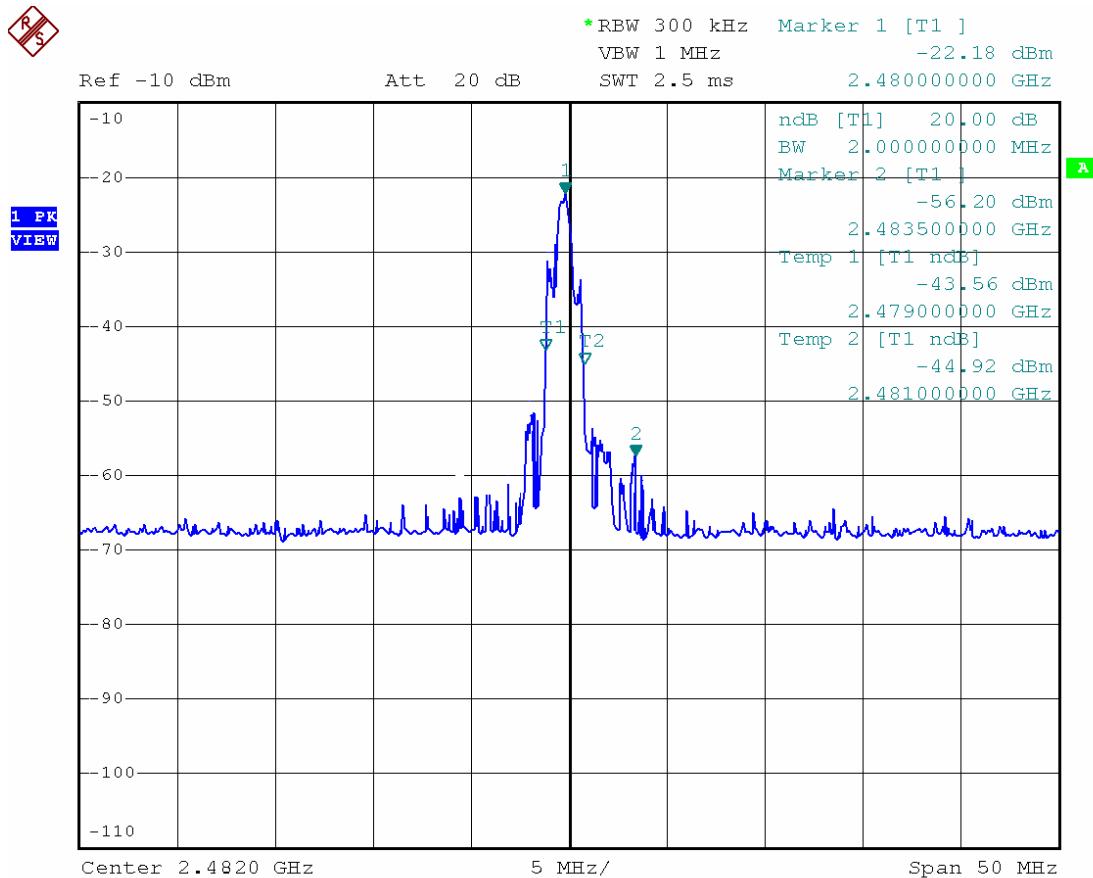
The worst case is peak value 51.6dB<sub>UV</sub>/m at frequency 2.5GHz, it's below the limits 74.0 dB<sub>UV</sub>/m base Section 15.209 .

For the field strength of Lower Edges:2.4000GHz is 48.7dB<sub>UV</sub>/m(peak value).

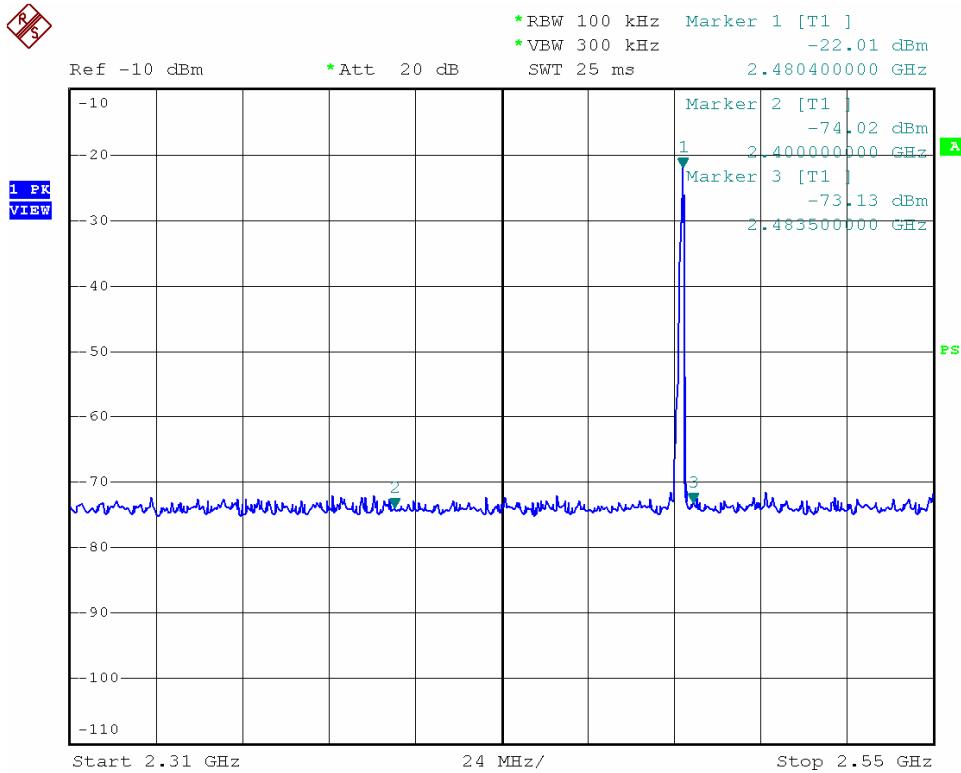
For the field strength of Upper Edges:2.4835GHz is 52.6dB<sub>UV</sub>/m(peak value).

## 3. Highest channel 2480MHz

(i) The occupied bandwidth as below:



## (ii) Band Edge:



The test result for the Emissions radiated outside of the specified frequency bands , please refer the section 5.3.1 of this report.

The worst case is peak value 52.7dB<sub>u</sub>V/m at frequency 2.5GHz, it's below the limits 74.0 dB<sub>u</sub>V/m base Section 15.209 .

For the field strength of Lower Edges:2.4000GHz is 50.2dB<sub>u</sub>V/m(peak value).

For the field strength of Upper Edges:2.4835GHz is 56.8dB<sub>u</sub>V/m(peak value).

**The results: The unit does meet the FCC requirements.**