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FEDERAL COMMUNICATIONS COMMISSION  
Registration number: 282399

Report No.: GLEMO090300733RFT-2  
Page: 1 of 17  
FCC ID: BOU-DC912V37SW

## TEST REPORT

**Application No. :** GLEMO090300733RF  
**Applicant:** Philips Consumer Lifestyle.  
**Manufacturer:** Philips Electronics HK Ltd.  
**Factory:** Arts Electronics Co.,Ltd.  
**FCC ID:** BOU-DC912V37SW  
**Frequency Band** 2402-2480MHz

**Equipment Under Test (EUT):**

Name: Docking Entertainment System.  
Model No.: DC912/37  
Trade mark : PHILIPS  
Serial No.: Not supplied by client  
**Standards:** FCC PART 15: 2007  
Please refer to section 2 for further details.  
**Date of Receipt:** 01 February 2008  
**Date of Test:** 22 February to 07 March 2008  
**Date of Issue:** 10 March 2008

<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:

Stephen Guo  
Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. 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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Test Summary

Transmitter:			
Test	Test Requirement	Standard Paragraph	Result
Field Strength of Fundamental	FCC PART 15 :2007	Section 15.249 (a)	PASS
Field 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
Conducted Emission (150KHz to 30MHz)	FCC PART 15 :2007	Section 15.207	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>	<b>1</b>
<b>2 TEST SUMMARY</b>	<b>2</b>
<b>3 CONTENTS</b>	<b>3</b>
<b>4 GENERAL INFORMATION</b>	<b>4</b>
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 EQUIPMENTS USED DURING TEST</b>	<b>6</b>
<b>6 TEST RESULT</b>	<b>7</b>
6.1 E.U.T. OPERATION .....	7
6.2 TEST PROCEDURE & MEASUREMENT DATA .....	8
6.2.1 Test in transmitting mode .....	8
6.2.2 Occupied Bandwidth & Band Edge .....	12
6.2.3 Conducted Emissions Mains Terminals, 150kHz to 30MHz .....	15-17

## 4 General Information

### 4.1 Client Information

Applicant Name: Philips Consumer Lifestyle.  
Applicant Address: 3029 E.Governor John Sevier Hwy.Knoxville,TN 37914.  
Manufacturer: Philips Electronics HK Ltd.  
Manufacturer Address: 5/F., Hong Kong Science Park, 5 Science Park East Avenue, Shatin, N.T., Hong Kong.  
Factory: Arts Electronics Co.,Ltd.  
Factory Address: NO.1, SHANGXING LU, SHANGJIAO COMMUNITY, CHANGAN TOWN, DONGGUAN CITY, GUANGDONG PROVINCE CHINA.

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

Product Name: Docking Entertainment System.  
Model: DC912/37  
Power Supply: 120Vac 60Hz for Host&Subwoofer  
Adaptor: PART NO :PAT075A29UL  
Input:100-240V~50/60Hz 1.6A;Output:29.0 Vdc 2.5A for Host.  
Power Cord: 1.8mX 2 wires unscreened AC mains cable

### 4.3 Description of EUT operation

Type of Modulation FHSS(GFSK)  
Frequency Band 2402MHz ~ 2480MHz  
Antenna Type Integrate Antenna

### 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:

- **NVLAP – Lab Code: 200611-0**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

- **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

## 5 Equipments Used during Test

RE in Chamber						
No:	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	N/A	N/A
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	28-01-2009	28-01-2010
EMC0056	EMI Test Receiver	Rohde & Schwarz	ESCI	10036	14-07-2008	14-07-2009
N/A	EMI Test Software	Audix	E3	N/A	N/A	N/A
EMC0514	Coaxial cable	SGS	N/A	N/A	04-12-2008	04-12-2009
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	12-08-2008	12-08-2009
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	12-08-2008	12-08-2009
EMC0517	Horn Antenna	Rohde & Schwarz	HF906	100095	12-08-2008	12-08-2009
EMC0040	Spectrum Analyzer	Rohde & Schwarz	FSP30	100324	05-12-2008	05-12-2009
EMC0520	0.1-1300 MHz Pre-Amplifier	HP	8447D OPT 010	2944A0625 2	11-03-2009	11-03-2010
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A0164 9	11-03-2009	11-03-2010
EMC0075	310N Amplifier	Sonama	310N	272683	10-09-2008	10-09-2009
EMC0523	Active Loop Antenna	EMCO	6502	00042963	09-08-2008	09-08-2010
EMC0530	10m Semi- Anechoic Chamber	ETS	N/A	N/A	10-08-2008	10-08-2009

Conducted Emission						
No:	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
EMC0306	Shielding Room	Zhong Yu	8 x 3 x 3.8 m <sup>3</sup>	N/A	N/A	N/A
EMC0102	LISN	Schaffner Chase	MNZ050D/1	1421	14-12-2008	14-12-2009
EMC0118	Two-line v-netwok	Rohde & Schwarz	ENV216	3560.6550. 02	28-07-2008	28-07-2009
EMC0506	EMI Test Receiver	Rohde & Schwarz	ESCS30	100085	14-12-2008	14-12-2009
EMC0107	Coaxial Cable	SGS	2m	N/A	26-11-2008	26-11-2009
EMC0106	Voltage Probe	SGS	N/A	N/A	N/A	N/A
EMC0120	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	20550	21-02-2009	21-02-2010
EMC0121	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	20549	21-02-2009	21-02-2010
EMC0122	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	20548	21-02-2009	21-02-2010

General used equipment						
No:	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
EMC0006	DMM	Fluke	73	70681569	23-12-2008	23-12-2009
EMC0007	DMM	Fluke	73	70671122	23-12-2008	23-12-2009

## 6 Test Result

### 6.1 E.U.T. Operation

Input voltage:	120Vac 60Hz
Operating Environment:	
Temperature:	26°C
Humidity:	56% RH
Atmospheric Pressure:	1005mbar
EUT Operation:	<p>The program used to control the EUT for staying in continuous transmitting and receiving mode is programmed by manufacturer. Channel lowest (2402MHz), middle (2440MHz) and highest (2480MHz) are chosen for full testing.</p> <p>Test the Subwoofer in transmitting mode.</p>

## 6.2 Test Procedure & Measurement Data

### 6.2.1 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>	March 05 2008
<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, a turntable rotate through 360° in the horizontal plane and it is used to support the test sample at 0.8m above the ground plane.

#### Requirements:

##### FCC Part 15.249(a)

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m @ 3m)	Field Strength of Harmonics (dBuV/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 range of the EUT is 2402MHz ~ 2480MHz.

The limit for average field strength dB $\mu$ V/m for the fundamental frequency = 94.0 dB $\mu$ V/m.

The limit for Peak field strength dB $\mu$ V/m for the fundamental frequency = 114.0 dB $\mu$ V/m.

No fundamental is allowed in the restricted bands.

The limit for average field strength dB $\mu$ V/m for the harmonics = 54.0 dB $\mu$ V/m.

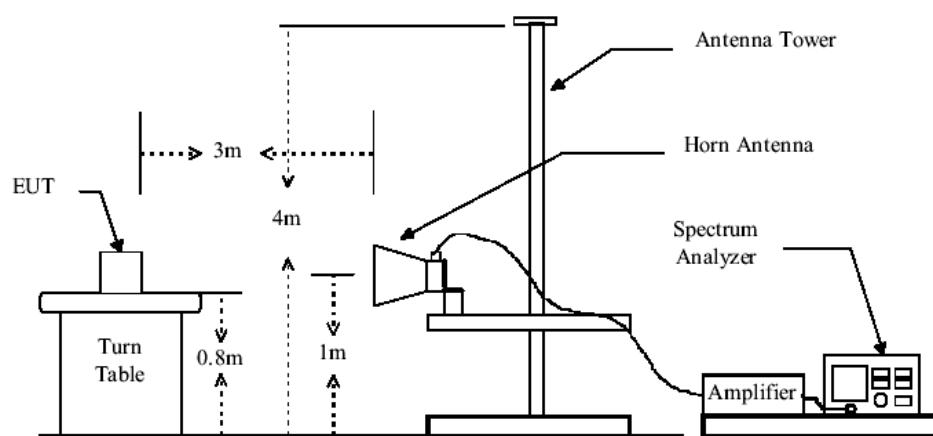
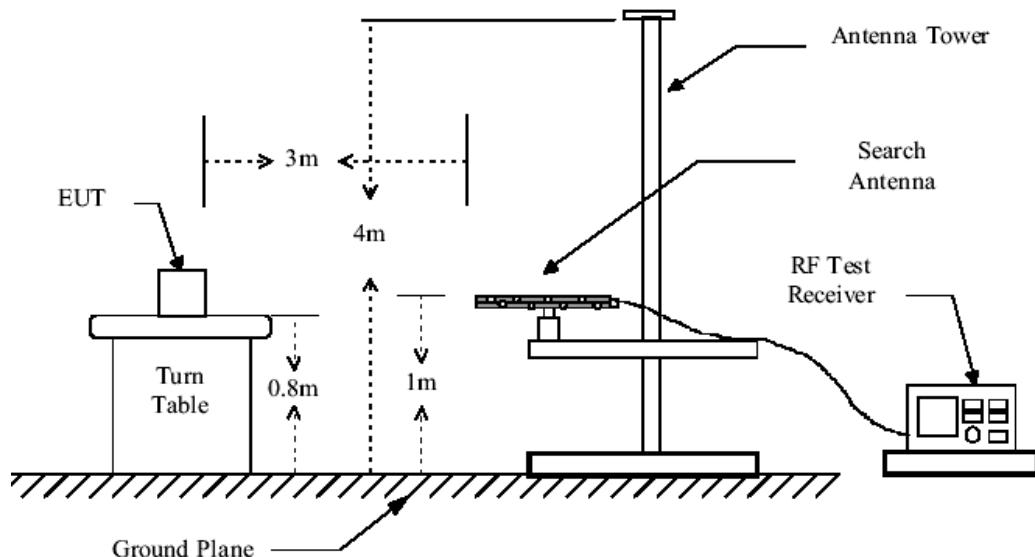
The limit for peak field strength dB $\mu$ V/m for the harmonics = 74.0 dB $\mu$ V/m.

Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or 54.0 dB $\mu$ V/m in 15.209. Here the limit for the other emission is 54.0 dB $\mu$ V/m.

**Test Procedure:** The procedure used was ANSI Standard C63.4-2003. 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:





SGS-CSTC Standards Technical Services Co., Ltd.  
GuangZhou Branch Testing Center

Report No.: GLEMO090300733RFT-2  
Page: 10 of 17  
FCC ID:BOU-DC912V37SW

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 Subwoofer:**

1. Test in Channel lowest (2402MHz), keep in continuously transmitting status.

(a) Antenna polarization: Horizontal

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2402.000	94.7	28.6	4.6	34.8	93.1	114.0	-20.9	PEAK
2402.000	92.7	28.6	4.6	34.8	91.1	94.0	-2.9	AVERAG
4804.000	48.0	33.2	6.9	33.0	55.1	74.0	-19.0	PEAK
4804.000	44.7	33.2	6.9	33.0	51.8	54.0	-2.2	AVERAG

(b) Antenna polarization: Vertical

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2401.900	94.7	28.6	4.6	34.8	93.1	114.0	-20.9	PEAK
2401.900	92.8	28.6	4.6	34.8	91.2	94.0	-2.8	AVERAG
4804.800	51.2	33.2	6.9	33.0	58.3	74.0	-15.7	PEAK
4804.800	43.7	33.2	6.9	33.0	50.8	54.0	-3.2	AVERAG

2. Test in Channel middle (2440MHz), keep in continuously transmitting status.

(a) Antenna polarization: Horizontal

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2440.000	94.7	28.7	4.6	34.7	93.3	114.0	-20.8	PEAK
2440.000	93.0	28.7	4.6	34.7	91.5	94.0	-2.5	AVERAG
4880.240	48.6	33.3	7.2	33.0	56.1	74.0	-17.9	PEAK
4880.240	44.0	33.3	7.2	33.0	51.5	54.0	-2.5	AVERAG

(b) Antenna polarization: Vertical

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2440.000	94.9	28.7	4.6	34.7	93.4	114.0	-20.6	PEAK
2440.000	93.0	28.7	4.6	34.7	91.5	94.0	-2.5	AVERAG
4880.160	47.9	33.3	7.2	33.0	55.4	74.0	-18.6	PEAK
4880.160	43.6	33.3	7.2	33.0	51.1	54.0	-2.9	AVERAG

3. Test in Channel highest (2480MHz), keep in continuously transmitting status.

(a) Antenna polarization: Horizontal

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2479.900	94.9	28.8	4.7	34.7	93.6	114.0	-20.4	PEAK
2479.900	92.7	28.8	4.7	34.7	91.4	94.0	-2.6	AVERAG
4960.600	48.0	33.4	7.3	32.9	55.7	74.0	-18.3	PEAK
4960.600	43.4	33.4	7.3	32.9	51.2	54.0	-2.8	AVERAG

(b) Antenna polarization: Vertical

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
2479.900	94.5	28.8	4.7	34.7	93.2	114.0	-20.8	PEAK
2479.900	92.7	28.8	4.7	34.7	91.5	94.0	-2.5	AVERAG
4960.500	47.8	33.4	7.3	32.9	55.6	74.0	-18.5	PEAK
4960.500	43.6	33.4	7.3	32.9	51.4	54.0	-2.6	AVERAG

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.

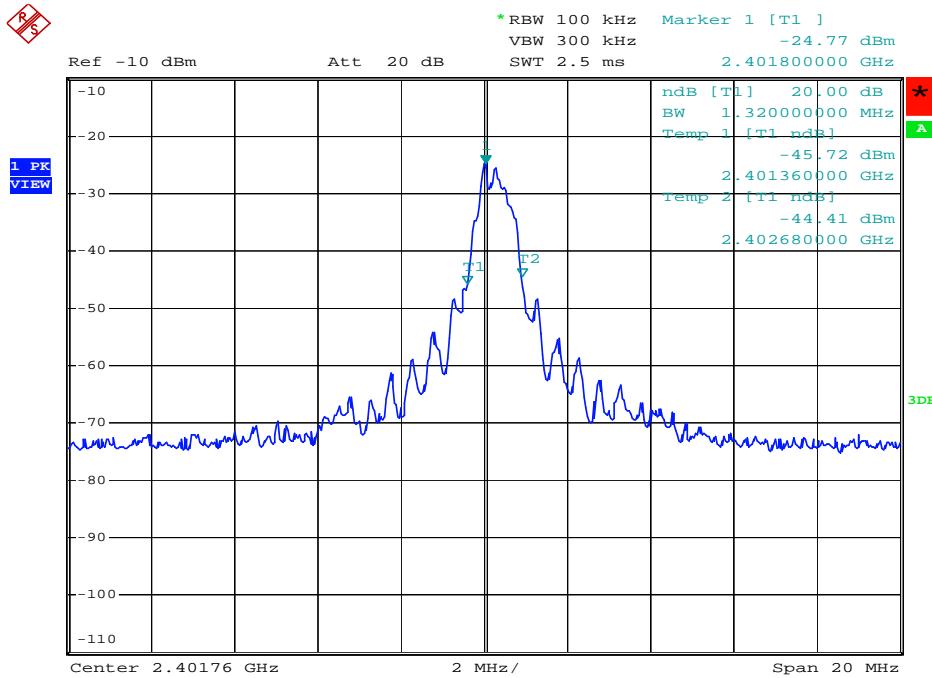
**TEST RESULTS: The unit does meet the FCC requirements.**

### 6.2.2 Occupied Bandwidth & Band Edge

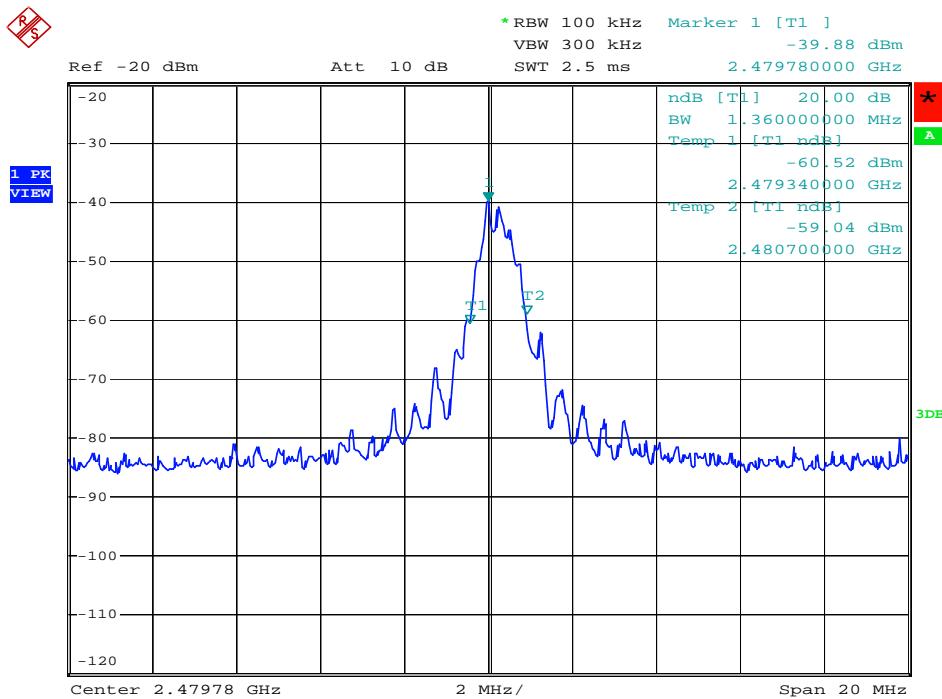
Test Requirement: FCC Part 15 C Section 15.249  
Test Method: ANSI C63.4 and FCC Part 2.1049  
Operation within the band 2400-2483.5MHz  
Test Date: 05 March 2008  
Requirements: 15.249 (d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 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.

**For Subwoofer:****The occupied bandwidth as below:**

Lowest Channel:2402MHz:

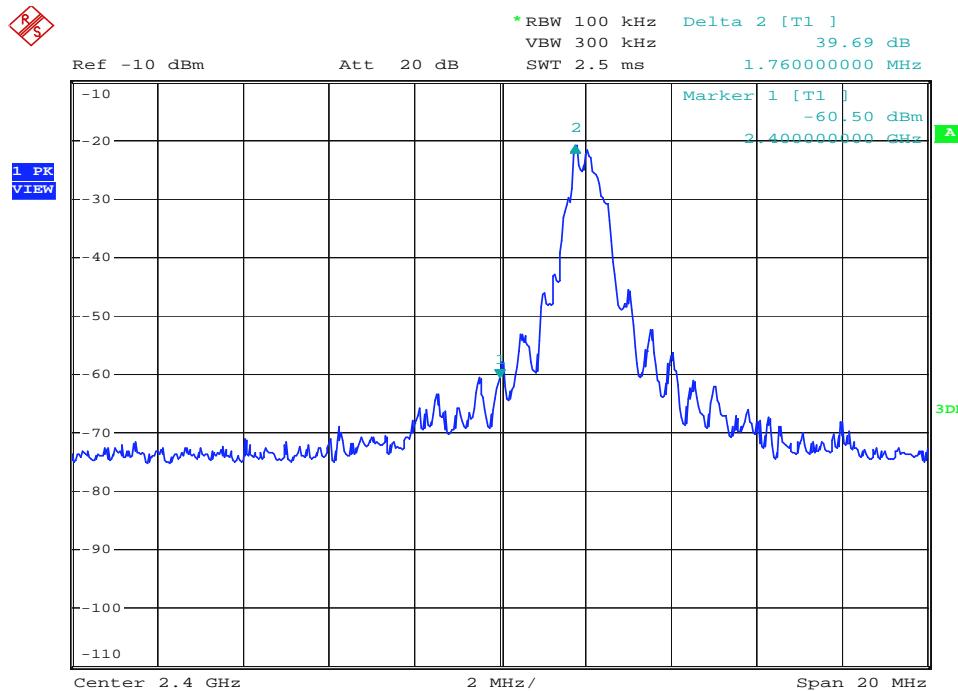


Highest Channel 2480MHz:

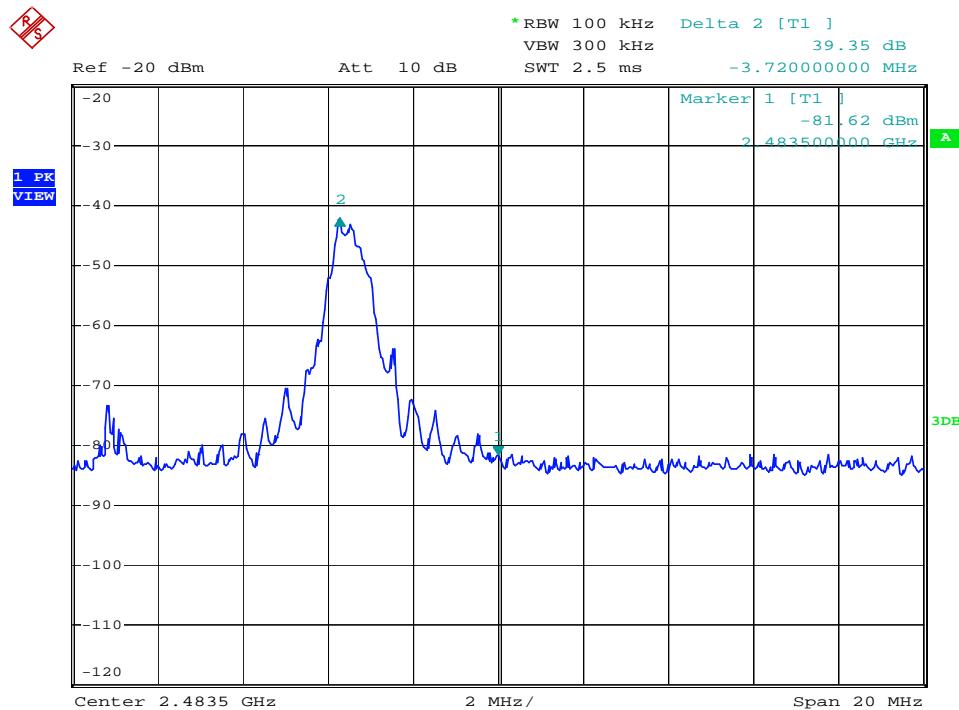


The Band Edge Emission as below:

Lowest Band Edge 2400MHz



Highest Band Edge 2483.5MHz



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

The worst case is average value 51.8dB<sub>UV</sub>/m at frequency 4804.040MHz, it's below the limits 54.0 dB<sub>UV</sub>/m base Section 15.209 .

For the maximum.field strength of Lower Edges:2400MHz is 58.4dB<sub>UV</sub>/m(peak value).

For the maximum field strength of Upper Edges:2483.5MHz is 50.6dB<sub>UV</sub>/m(peak value).

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

### 6.2.3 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement: FCC Part15.207  
Test Method: ANSI C63.4  
Test Date: February 26 2008  
Frequency Range: 150KHz to 30MHz  
Detector: Peak for pre-scan (9kHz Resolution Bandwidth)  
Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit

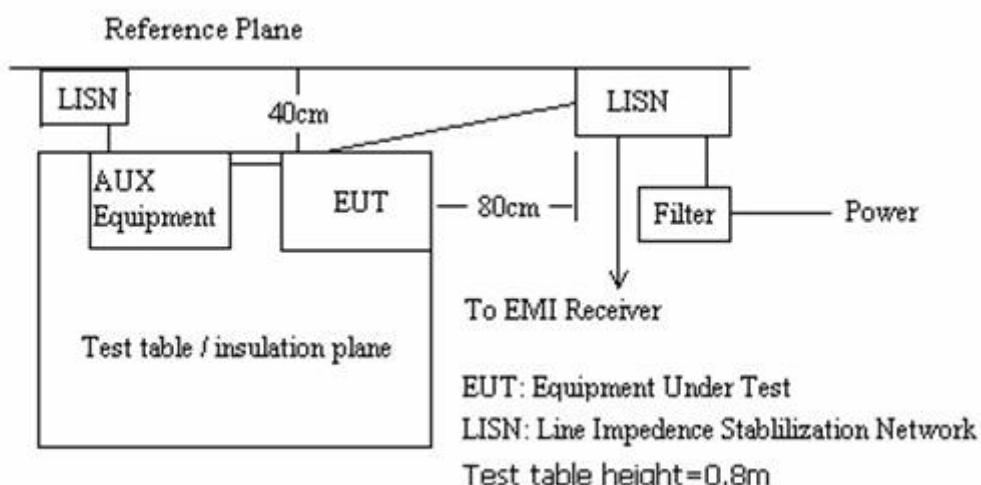
#### 6.2.3.1 E.U.T. Operation

Operating Environment:

Temperature: 20.0 °C      Humidity: 50 % RH      Atmospheric Pressure: 1005 mbar

EUT Operation: Test the Subwoofer in transmitting mode.

#### 6.2.3.2 Plan View of Test Setup



#### 6.2.3.3 Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

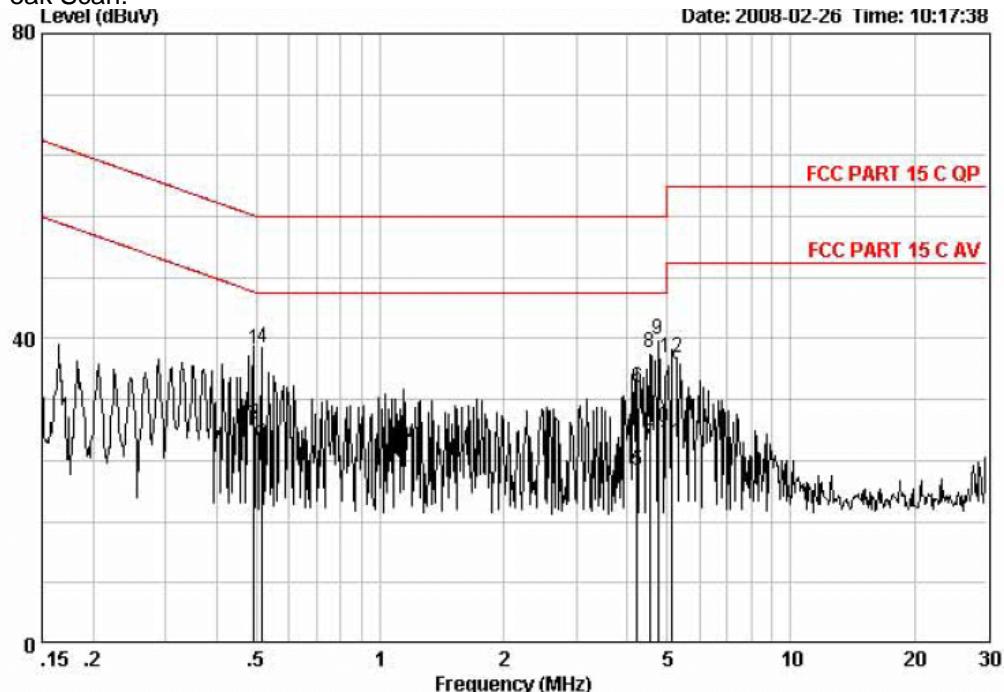
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

The following Quasi-Peak and Average measurements were performed on the EUT on February 26 2008

**Subwoofer:**

Live Line:

Peak Scan:



Quasi-peak and Average measurement:

Freq	Read	Cable	LISN	Limit	Over	Over	Remark
	Level	Loss	Factor				
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.491	28.70	0.00	9.95	38.65	56.14	-17.49	QP
0.491	18.81	0.00	9.95	28.76	46.14	-17.38	AVERAGE
0.516	16.28	0.00	9.94	26.22	46.00	-19.78	AVERAGE
0.516	28.94	0.00	9.94	38.88	56.00	-17.12	QP
4.224	12.89	0.06	9.70	22.65	46.00	-23.35	AVERAGE
4.224	23.90	0.06	9.70	33.66	56.00	-22.34	QP
4.525	16.35	0.07	9.70	26.12	46.00	-19.88	AVERAGE
4.525	28.28	0.07	9.70	38.05	56.00	-17.95	QP
4.746	30.04	0.07	9.69	39.81	56.00	-16.19	QP
4.746	18.56	0.07	9.69	28.33	46.00	-17.67	AVERAGE
5.139	16.55	0.08	9.69	26.32	50.00	-23.68	AVERAGE
5.139	27.62	0.08	9.69	37.39	60.00	-22.61	QP

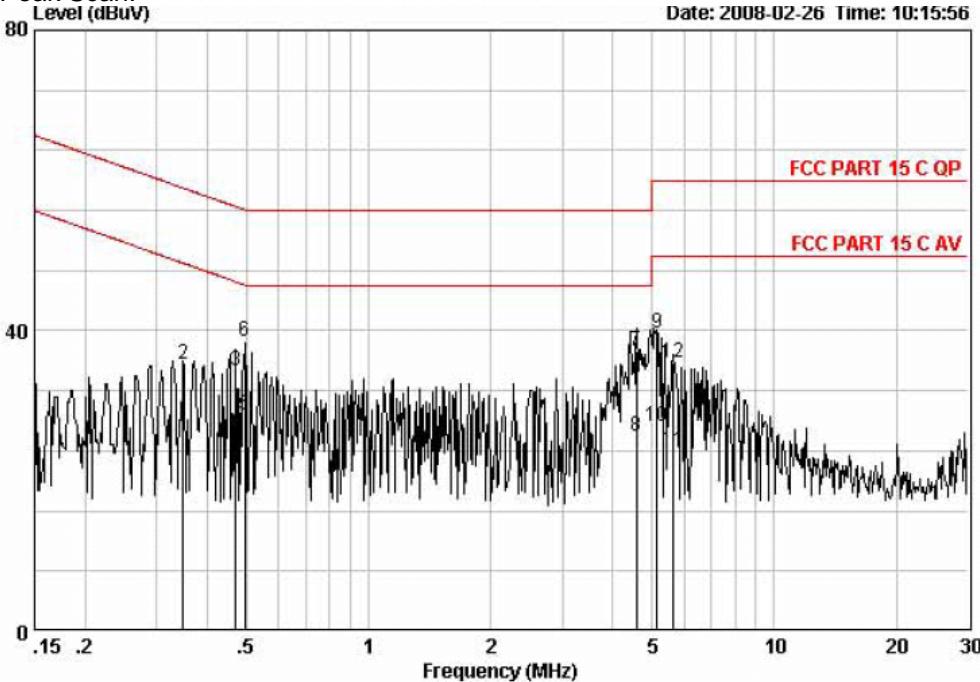
Neutral Line

Peak Scan:

80

40

0



Quasi-peak and Average measurement:

Freq	Read	Cable	LISN	Limit	Over	Remark
	Level	Loss	Factor			
MHz	dBuV	dB	dB	dBuV	dBuV	dB
0.348	15.71	0.00	9.92	25.63	49.00	-23.38 AVERAGE
0.348	25.62	0.00	9.92	35.54	59.00	-23.47 QP
0.471	24.78	0.00	9.94	34.72	56.49	-21.78 QP
0.471	14.93	0.00	9.94	24.87	46.49	-21.63 AVERAGE
0.494	18.88	0.00	9.94	28.82	46.10	-17.28 AVERAGE
0.494	28.74	0.00	9.94	38.68	56.10	-17.42 QP
4.574	27.44	0.07	9.72	37.23	56.00	-18.77 QP
4.574	16.18	0.07	9.72	25.97	46.00	-20.03 AVERAGE
5.139	29.96	0.08	9.71	39.75	60.00	-20.25 QP
5.139	17.45	0.08	9.71	27.24	50.00	-22.76 AVERAGE
5.653	14.14	0.08	9.72	23.94	50.00	-26.06 AVERAGE
5.653	25.92	0.08	9.72	35.72	60.00	-24.28 QP