



# Test Report

**Applicant:** Betterway Electronic Co.,Ltd.

**Address of Applicant:** Aote Mansion Northern Suburb Industrial Zone, Enping City, Guangdong Province, China.

**Equipment Under Test (EUT):**

EUT Name: Portable wireless PA amplifier

Model No.: SH-120B, SH-130, SH-210, SH-222, SH-221, AWP6040, HS-330, HS-120B, SR-120, AWP6040R, AWP6045, SH-330

Serial No.: Not supplied by client

**Standards:** FCC PART15 SUBPART B:2006

**Date of Receipt:** Mar 30, 2007

**Date of Test:** Apr 01, 2007

**Date of Issue:** Apr 12, 2007

**Test Result :** **PASS\***

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

  
Henly.xie / 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.

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.

The test report prepared by:

Guangzhou Huesent Testing Service Co.,Ltd.

Self-ordained 68# courtyard, No.91, Dongguan Zhuang Road, Guangzhou, China.

Tel: 86-20-87221453 Fax: 86-20-87221905

<http://www.hst.org.cn> E-mail: [hst@hst.org.cn](mailto:hst@hst.org.cn)



## 2. Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2006	ANSI C63.4:2003	Class B	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART 15, SUBPART B: 2006	ANSI C63.4:2003	Class B	PASS

**Remark:**

Tests were performed for one model SH-130 only, since the other models (SH-120B、SH-210、SH-222、SH-221、AWP6040、HS-330、HS-120B、SR-120、AWP6040R、AWP6045、SH-330) were electrical identified and same function to SH-130, with difference being the model name and outer figure.



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## 4. General Information

### 4.1 Client Information

Applicant: Betterway Electronic Co.,Ltd  
Address of Applicant: Aote Mansion Northern Suburb Industrial Zone, Enping  
City, Guangdong Province, China.

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

EUT Name: Portable wireless PA amplifier  
Item No.: SH-120B, SH-130, SH-210, SH-222, SH-221, AWP6040, HS-330,  
HS-120B, SR-120, AWP6040R, AWP6045, SH-330  
Serial No.: Not supplied by client

### 4.3 Details of E.U.T.

Power Supply: 110VAC 60Hz for receiver  
Power Cord: N/A

### 4.4 Description of Support Units

The EUT has been tested with a signal generator.

### 4.5 Standards Applicable for Testing

The customer requested FCC tests for Portable wireless PA amplifier  
The standard used was FCC PART 15, SUBPART B, CLASS B (2006)

### 4.6 Test Location

Guangzhou Huesent Testing Service Co., Ltd.  
Self-ordained 68# courtyard, No.91, Dongguanzhuang Road, Guangzhou, China.  
Tel: 86-20-87221905, Fax: 86-20-87223892  
All tests were subcontract to the laboratory following-  
Guangdong Electronic & Electrical Products Inspection and Supervision Institute.  
Address: 45 Cunnan Street, Shayongnan, Sanyuanli District Guangzhou,  
FCC- Registration No: 597719 in Jan 18, 2005  
CNAS- Accreditation No: L 0307, issued in Mar 2, 2006  
CQC Authorized Subcontract Lab V-016

### 4.8 Deviation from Standards

None.

### 4.9 Abnormalities from Standard Conditions

None.



## 5. Equipments Used during Test

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL.NO	SER NO	Cal. date
70-137	EMI TEST RECEIVER	R & S	ESIB7	100192	2007.03.30
/	PULSE LIMITER	R & S	ESH3-Z2	100300	2007.03.30
37-021	LISN	R & S	ESH3-Z5		2007.03.30
70-136	ULTRALOG ANTENNAS	R & S	HL-562	100172	2003.08.19
74-008	CHAMBER	ETS-LINDREN	CACT-3	/	2004.07.16
74-007	SHIELDING ROOM	ETS-LINDREN	Celltype	/	2005.05.25
10-049	Signal generator	Anritsu	MG3602A	M17634	2006.09.30



## 6. Test Results

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

Test Requirement: FCC Part 15 B  
Test Method: ANSI C63.4  
Class / Severity: Class B  
Detector: Peak for pre-scan (9kHz Resolution Bandwidth)  
Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit  
Test Date: Apr 04,2007

#### 6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 25.0°C

Humidity:62% RH

Atmospheric Pressure: 1012mBar

EUT Operation:

Pretest in all mode to find worse case.

Compliance test was performed in charging mode and Louder mode.

#### 6.1.2 Plan View of Test Setup

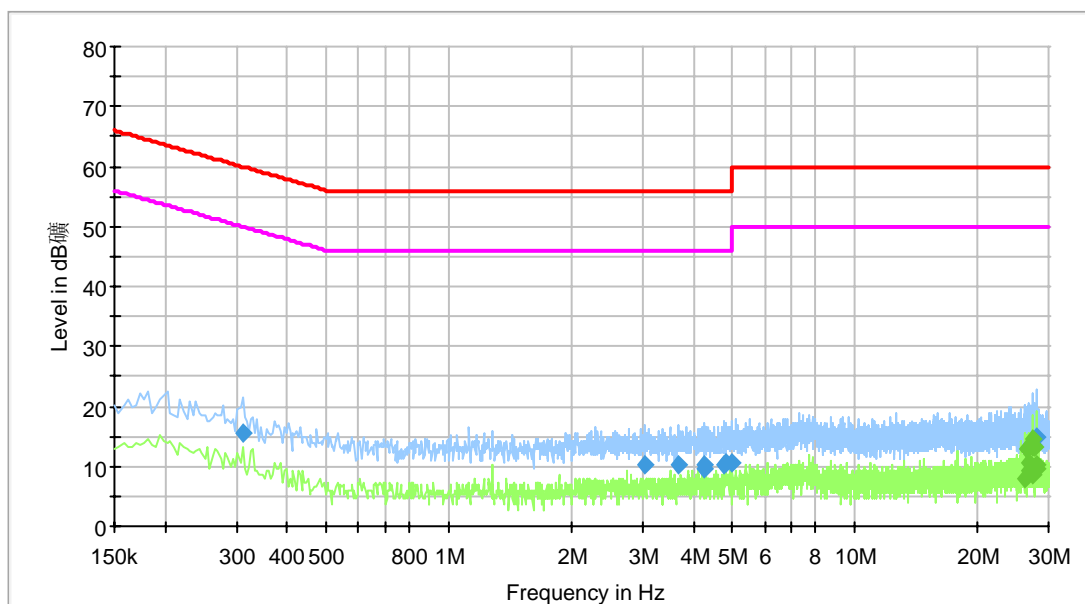
#### 6.1.3 Measurement Data

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 emission were detected when Peak measurement level is over Average Limit.

### Live Line- Charging mode:

#### Peak Scan

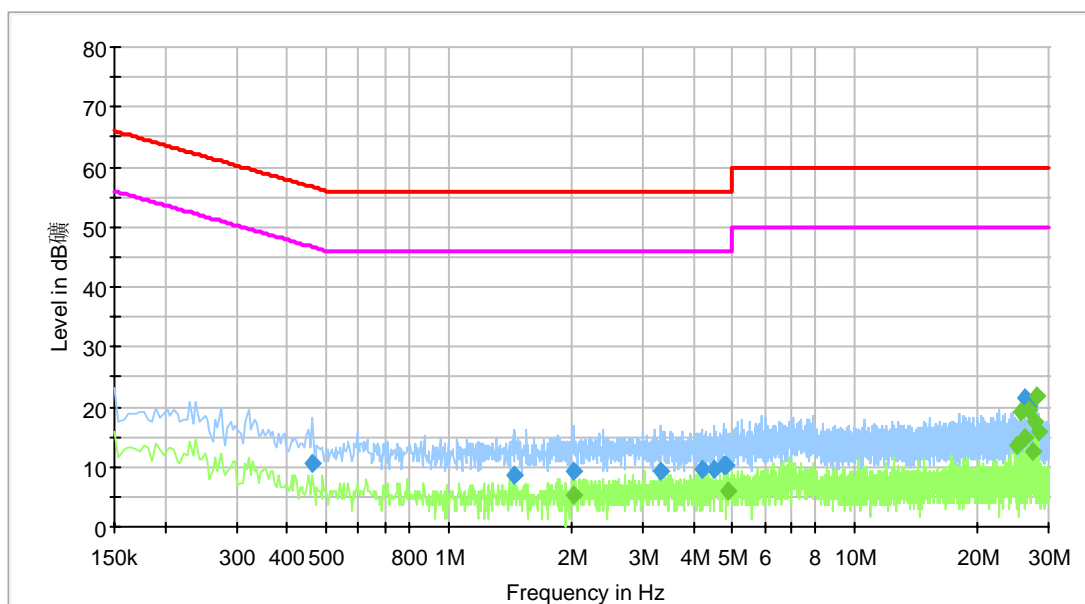


#### Quasi-peak and Average measurement

No significant, since the value were similar as background and all the Peak level were 40dB lower than the average limit.

### Neutral Line- Charging mode:

#### Peak Scan

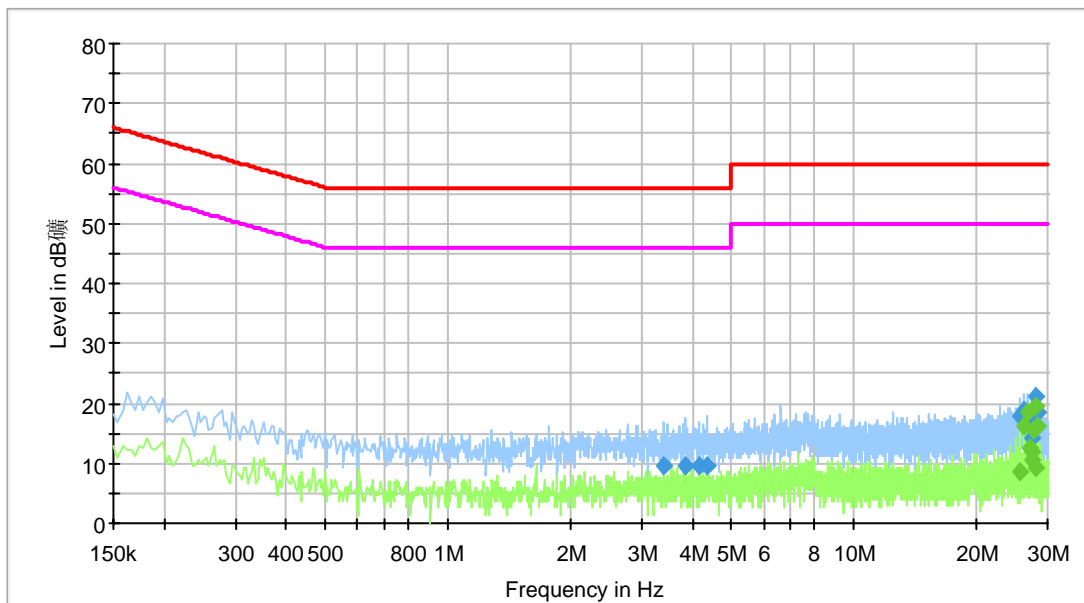


#### Quasi-peak and Average measurement

No significant, since the value were similar as background and all the Peak level were 40dB lower than the average limit.

**Live Line- Louder mode:**

**Peak Scan**

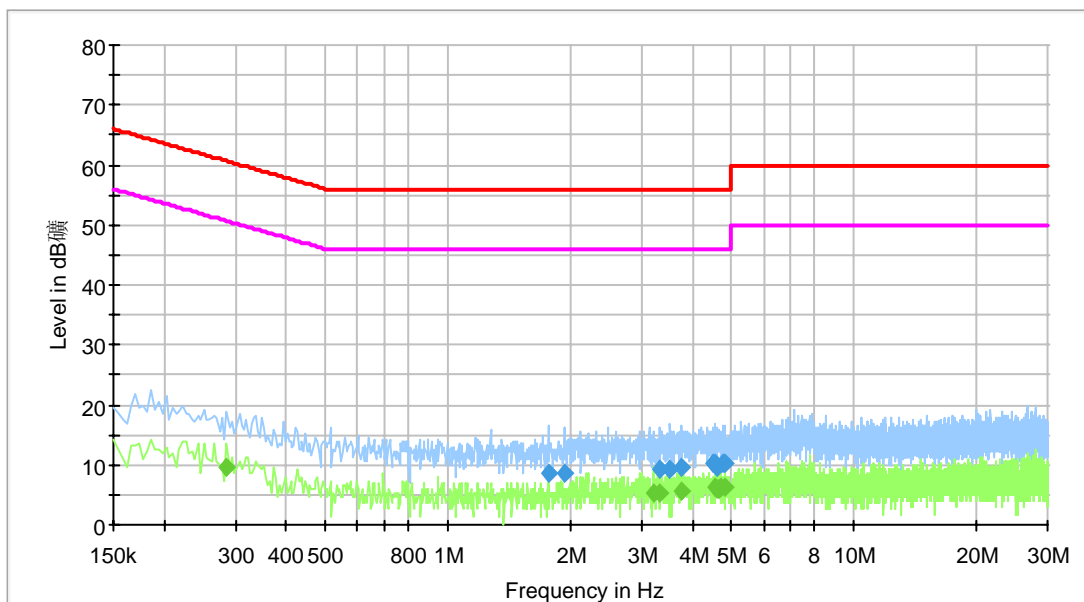


**Quasi-peak and Average measurement**

No significant, since the value were similar as background and all the Peak level were 40dB lower than the average limit.

**Neutral Line- Louder mode:**

**Peak Scan**



**Quasi-peak and Average measurement**

No significant, since the value were similar as background and all the Peak level were 40dB lower than the average limit.



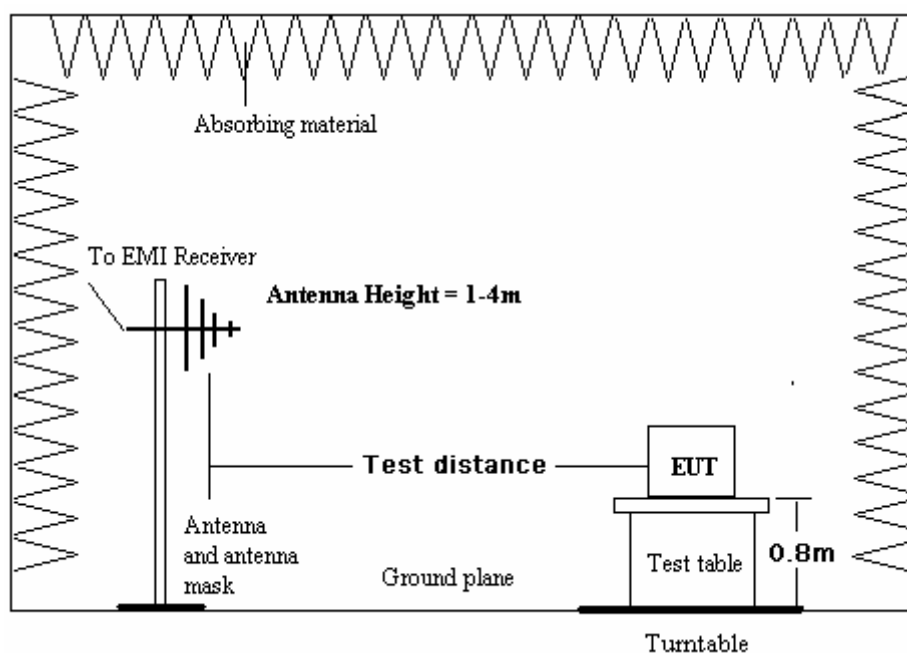
## 6.2 Radiated Emissions, 30MHz to 1GHz

Test Requirement: FCC Part15 B  
Test Method: ANSI C63.4  
Class: Class B  
Detector: Peak for pre-scan (120kHz resolution bandwidth)  
Quasi-Peak if maximised peak within 6dB of limit  
Test Date: Apr 04,2007

### 6.2.1 E.U.T. Operation

Operating Environment:  
Temperature:24.0°C Humidity:52% RH Atmospheric Pressure:1012mBar  
EUT Operation:  
Pretest in all mode to find worse case.  
Compliance test was performed in charging mode and Louder mode.  
FM microphone was simulated by a signal generator with 37.5kHz frequency modulation by 1kHz audio signal.

### 6.2.2 Test Setup

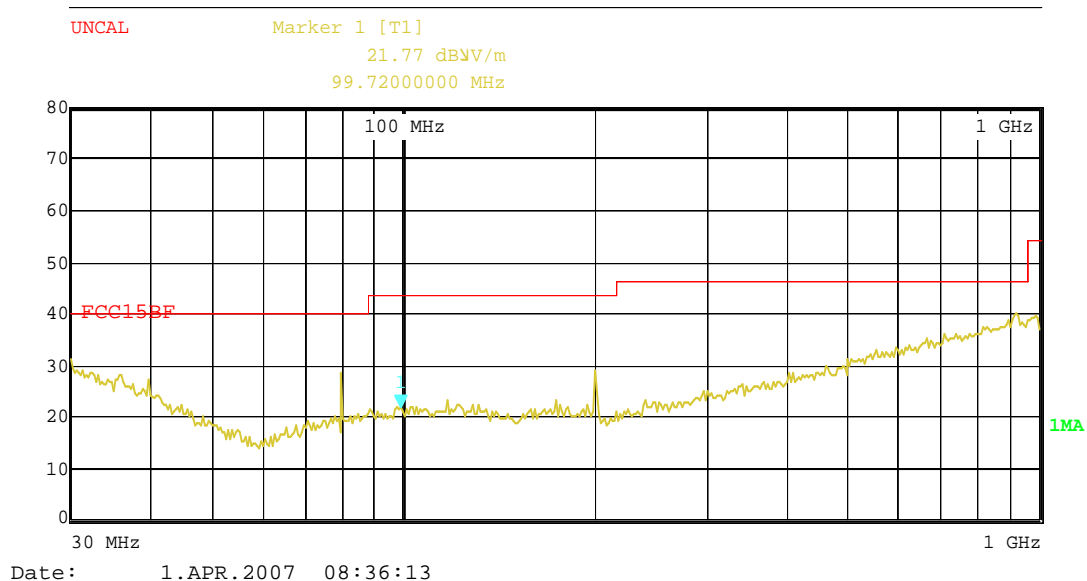


### 6.2.3 Measurement Data

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bilog antenna with 2 orthogonal polarities

### Vertical—charging mode:

#### Peak scan

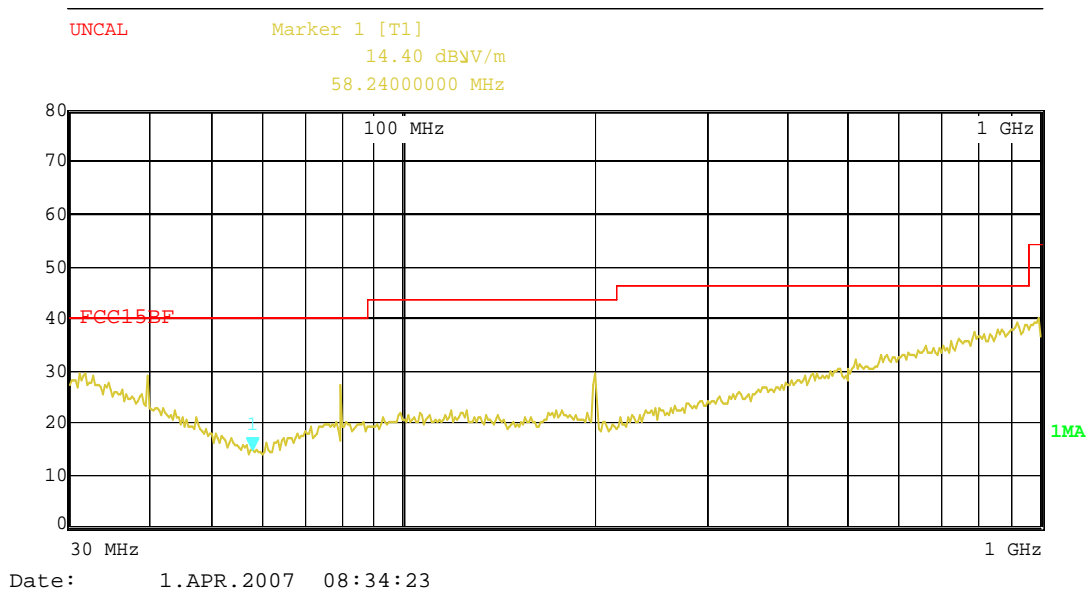


#### Quasi-peak measurement

The values are similar as background and emissions attenuated more than 20 dB below the permissible value are not reported.

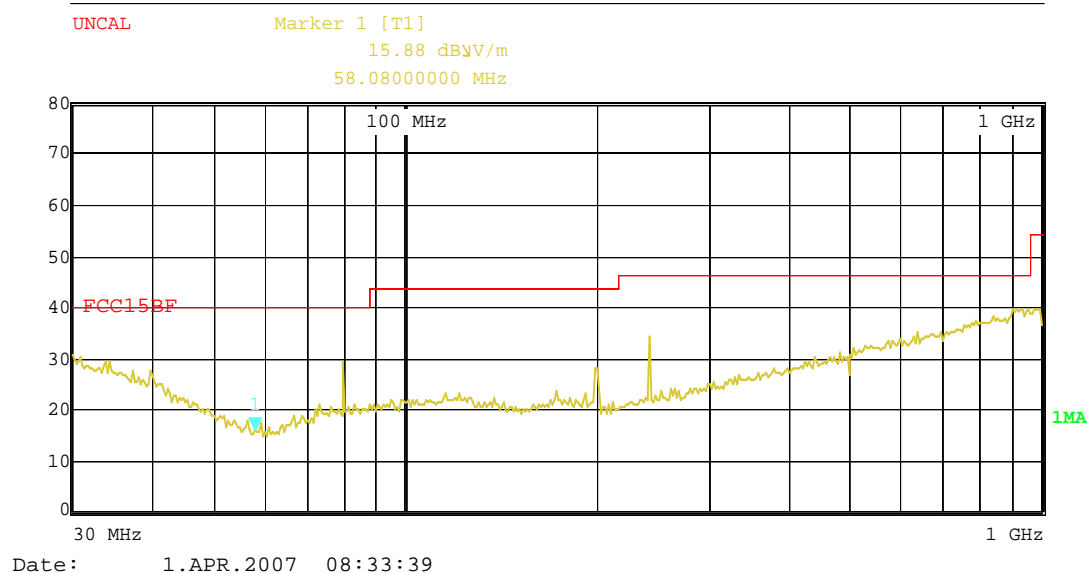
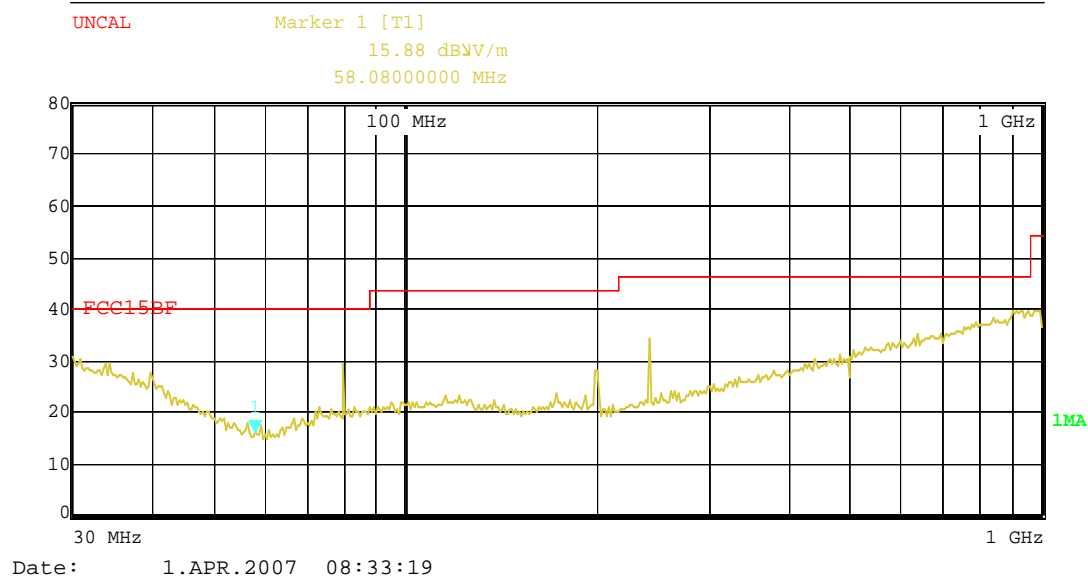
### Horizontal—Charging mode:

#### Peak scan



#### Quasi-peak measurement

The values are similar as background and emissions attenuated more than 20 dB below the permissible value are not reported.

**Vertical—Louder mode:****Peak scan****Horizontal—Louder mode:****Peak scan**

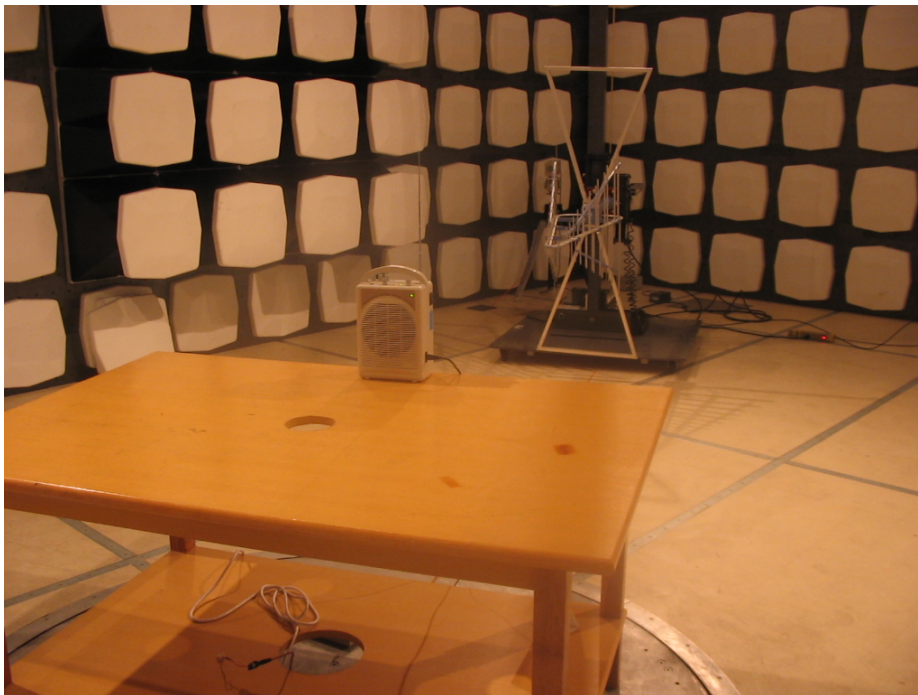
<b>Quasi-peak measurement</b>						
Signal carrier frequency: 174MHz						
Frequency MHz	Factor (dB/m)	Read data (dBuV)	Level dBuV/m	Limit dBuV/m	Margin (dB)	Ant. polarity
184.600	10.9	14.3	25.2	43.5	18.3	V
184.600	10.1	11.3	21.4	43.5	22.1	H
Signal carrier frequency: 195MHz						
Frequency MHz	Factor (dB/m)	Read data (dBuV)	Level dBuV/m	Limit dBuV/m	Margin (dB)	Ant. polarity
205.600	12.3	14.6	26.9	43.5	16.6	V
205.600	11.7	12.3	24.0	43.5	18.5	H
Signal carrier frequency: 216MHz						
Frequency MHz	Factor (dB/m)	Read data (dBuV)	Level dBuV/m	Limit dBuV/m	Margin (dB)	Ant. polarity
226.600	15.1	14.4	29.4	43.5	14.4	V
226.600	14.2	13.8	28.0	43.5	15.5	H
The values are similar as background and emissions attenuated more than 20 dB below the permissible value are not reported.						

## 7. Photographs

### 7.1 Conducted Emission Test Setup



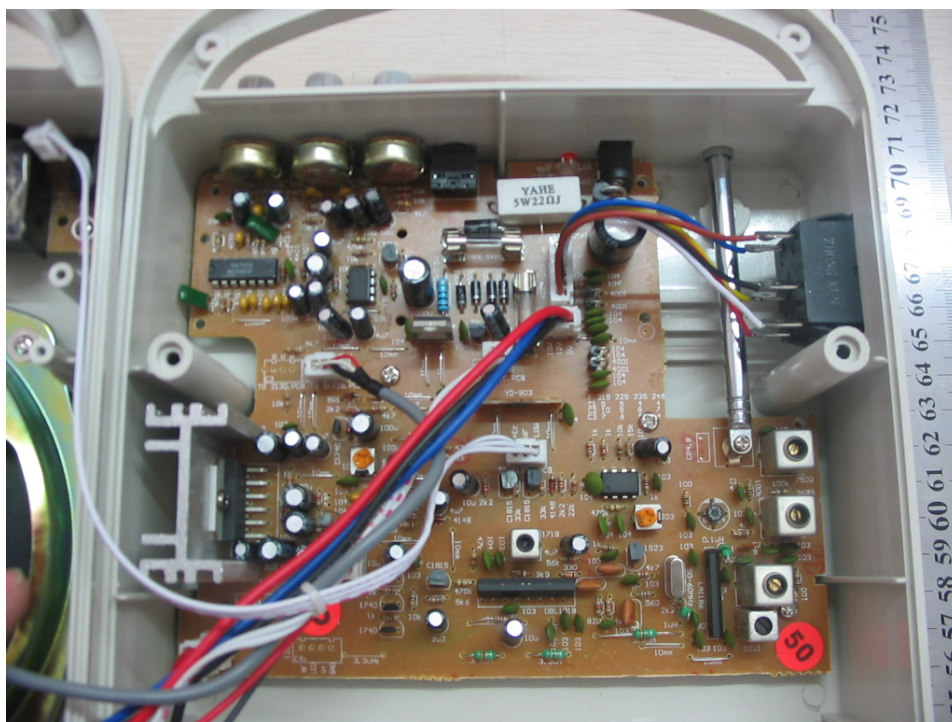
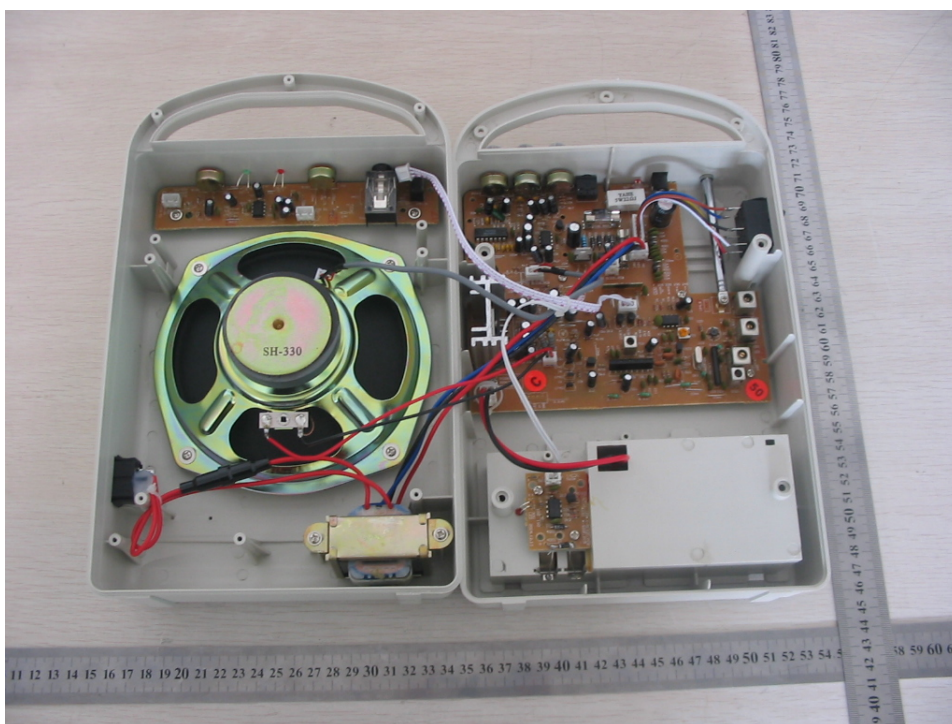
### 7.2 Radiated Emission Test Setup





### 7.3 EUT Constructional Details





\*\*\*End of Report\*\*\*