

## FCC ID TEST REPORT

for

Bluetooth Speaker

Model: BLF-BT001

FCC ID: 2AA96BLF-BT001

Prepared for: Shenzhen Baolifeng Opto-Elec Co.,ltd  
2/F, Block C6, Shangchuan Road 35th Zone, Bao'an District,  
Shenzhen, China

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Report Number: TCT131021042F2-2

Date of Test: Oct. 22-Oct. 31, 2013

Date of Report: Oct. 31, 2013

Tested By Beryl Zhao  
Beryl Zhao

Reviewed By Jack Kang  
Jack Kang

*The results detailed in this test report relate only to the specific sample(s) tested. It is the Application's responsibility to ensure that all production units are manufactured with equivalent EMC characteristics. This report is not to be reproduced except in full, without written approval from TCT Testing Technology*

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**1.0 General Information**

## 1.1 Client Information

Application:	Shenzhen Baolifeng Opto-Elec Co.,ltd
Address of Application:	2/F, Block C6, Shangchuan Road 35th Zone, Bao'an District, Shenzhen, China
Manufacturer:	Shenzhen Baolifeng Opto-Elec Co.,ltd
Address of Manufacturer:	2/F, Block C6, Shangchuan Road 35th Zone, Bao'an District, Shenzhen, China

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

Product:	Bluetooth Speaker
Model No.:	BLF-BT001
Additional Model No.:	BLF-BT002, BLF-BT003, BLF-BT004, BLF-BT005, BLF-BT006
Trade Mark:	
Power Supply:	DC 5V via USB line or DC 3.7V via Battery
Test Accessory:	Notebook Computer Trade Mark: acer Model: ZQT
Remark:	--
Model Difference:	--

## 1.3 Test Facility:

Name of Test Lab:	Shenzhen Tongce Testing Lab
Address of Test Lab:	1F, Leinu Watch Building, Fuyong Town, Baoan Dist, Shenzhen, China
Telephone:	13410377511
Fax:	--

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

**FCC Registration Number: 572331**

Shenzhen TCT Testing Technology Co., Ltd., Shenzhen EMC Laboratory: Shenzhen Tongce Testing Lab

The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

Registration Number: 572331

**Industry Canada (IC)**

The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

Registration Number IC: 10668A-1

**2.0 List of Measurement Equipment****2.1 Conducted Emission Test**

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
EMI Test Receiver	ESH3	860905/006	RS	July 07, 2013	July 06, 2014
Spectrum Analyzer	ESA-L1500A	US37451154	HP	July 07, 2013	July 06, 2014
PULSE LIMITER	ESH3-Z2	100281	RS	July 07, 2013	July 06, 2014
LISN	ESH3-Z5	100294	RS	July 07, 2013	July 06, 2014
LISN	ESH3-Z5	100253	RS	July 07, 2013	July 06, 2014
LISN	LS16C	10010947251	AFJ	July 07, 2013	July 06, 2014
LISN (Three Phase)	NSLK 8126	8126453	Schwarebeck	July 07, 2013	July 06, 2014

**2.2 Radiated Emission Test**

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
EMI Test Receiver	ESVD	1026.5506.10	RS	July 08, 2013	July 07, 2014
Coaxial Switch	MP59B	M70585	ANRITSU	N/A	N/A
Spectrum Analyzer	8595E	3441A00893	HP	July 08, 2013	July 07, 2014
Amplifier	8447D	2727A05017	HP	July 08, 2013	July 07, 2014
Bilog Antenna	VULB9163	9163/340	Schwarebeck	July 08, 2013	July 07, 2014
Horn Antenna	BBHA 9120D	9120D-631	Schwarebeck	July 08, 2013	July 07, 2014

### 3.0 Technical Details

#### 3.1 Investigations Requested

Perform Electromagnetic Interference [EMI] tests for FCC Requirement.

#### 3.2 Test Standards

FCC Part 15 Subpart B:2012

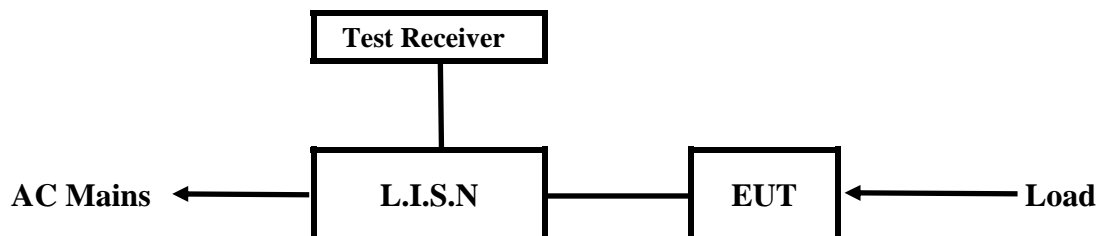
Note: In this test Report, the test data represents the worst-case configuration for E.U.T.

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

No.	Item	MU
1.	Temperature	$\pm 0.1^{\circ}\text{C}$
2.	Humidity	$\pm 1.0\%$
3.	Spurious emissions, conducted	$\pm 3.70\text{dB}$
4.	All emissions, radiated	$\pm 4.50\text{dB}$

## 4.0 Power Line Conducted Emission Test

#### 4.1 Schematics of the test



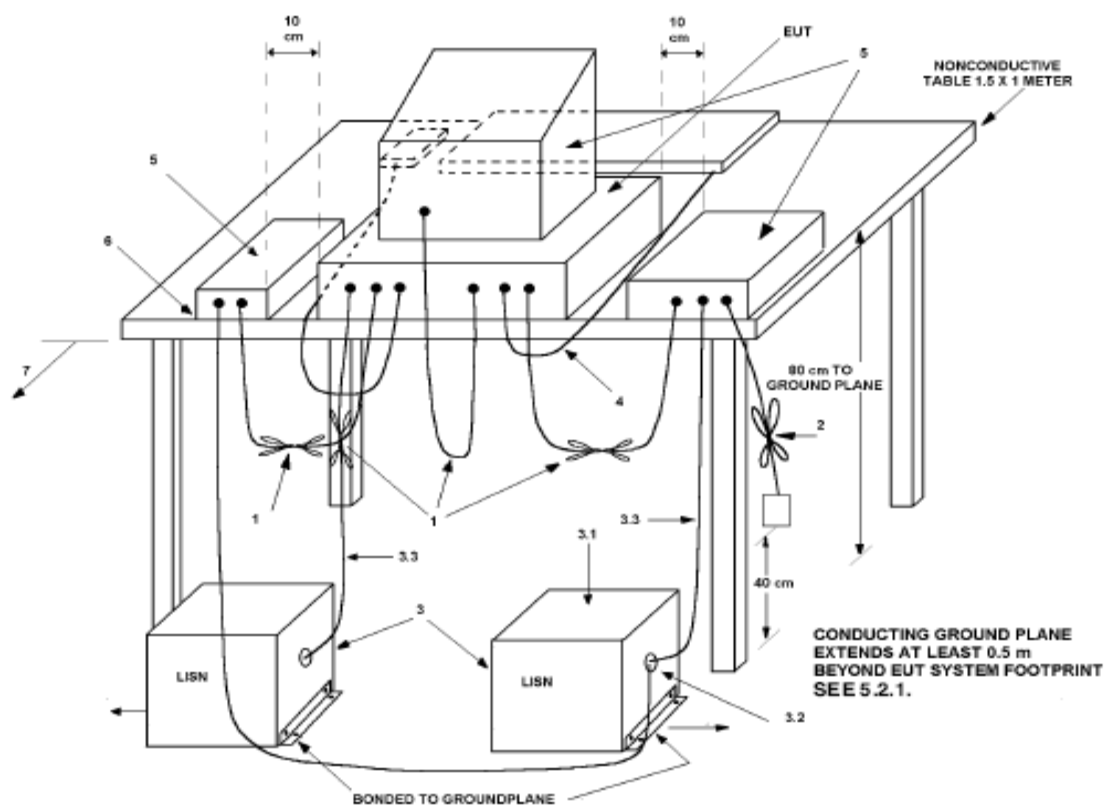
EUT: Equipment Under Test

## 4.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2009. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2009.

Test Voltage: 120V~, 60Hz

### Block diagram of Test setup



#### 4.3 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2009

- 1) Setup the EUT and simulators as shown on the following
- 2) Enable AF signal and confirm EUT active to normal condition

#### 4.4 Test Equipment

Please refer to the Section 2

#### 4.5 Power line conducted Emission Limit

Frequency(MHz)	Class A Limits (dBμV)		Class B Limits (dBμV)	
	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
0.15 ~ 0.50	79.0	66.0	66.0~56.0*	56.0~46.0*
0.50 ~ 5.00	73.0	60.0	56.0	46.0
5.00 ~ 30.00	73.0	60.0	60.0	50.0

- Notes:
1. \*Decreasing linearly with logarithm of frequency.
  2. The tighter limit shall apply at the transition frequencies

#### 4.6 Photo documentation of the test set-up

Please refer to the Section 7

#### 4.7 Test specification:

Environmental conditions: Temperature: 24° C Humidity: 51% Atmospheric pressure: 103kPa

Frequency range: 0.15 MHz – 30 MHz

#### 4.8 Test result

Min. limit margin 7.62dB at 0.4282 MHz

The requirements are FULFILLED

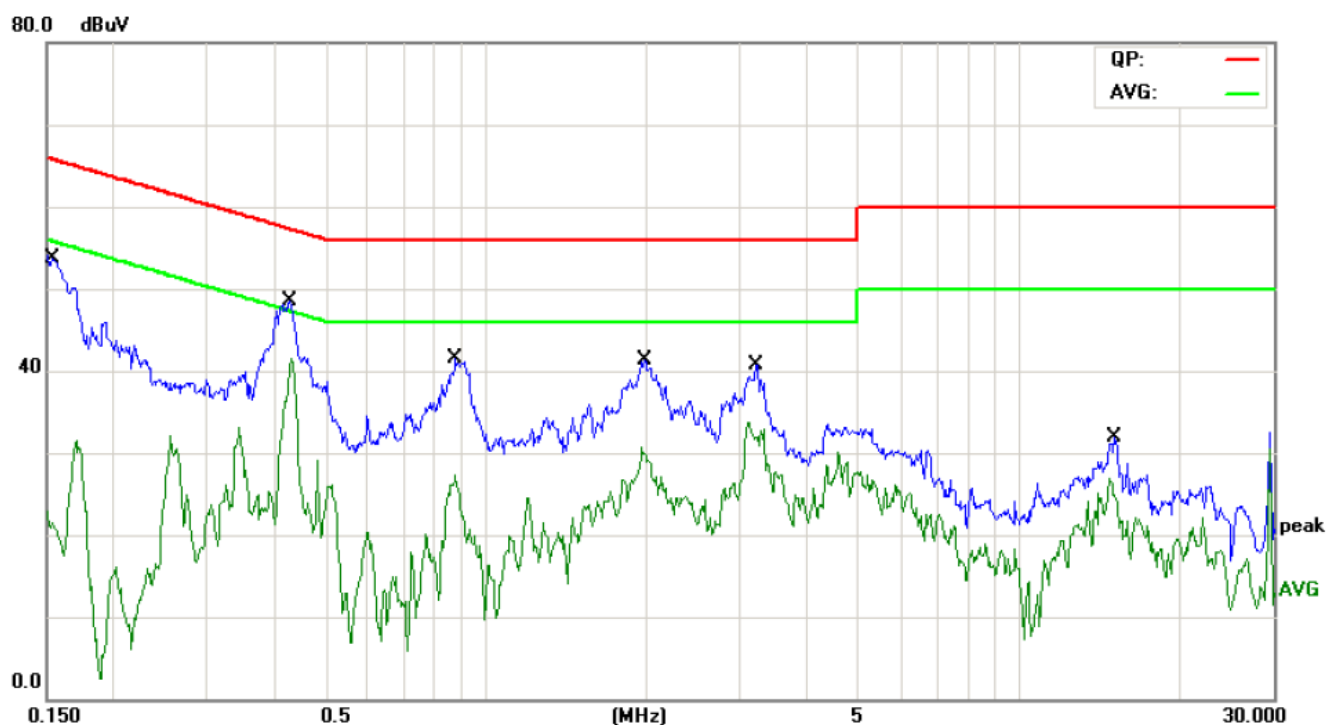
Remarks: According to the FCC part 15 Subpart B:2012



**A Conducted Emission on Line Terminal of the power line (150kHz to 30MHz)**

EUT Description:	Bluetooth Speaker
Operation Mode:	Data Transfer mode
Tested By:	Beryl Zhao
Test date:	Oct. 30, 2013
Test Result:	PASS

Start Frequency	Stop Frequency	Step	IF BW	Detector	Final M-Time
0.15MHz	30MHz	4.5KHz	10KHz	QP+AV	1s

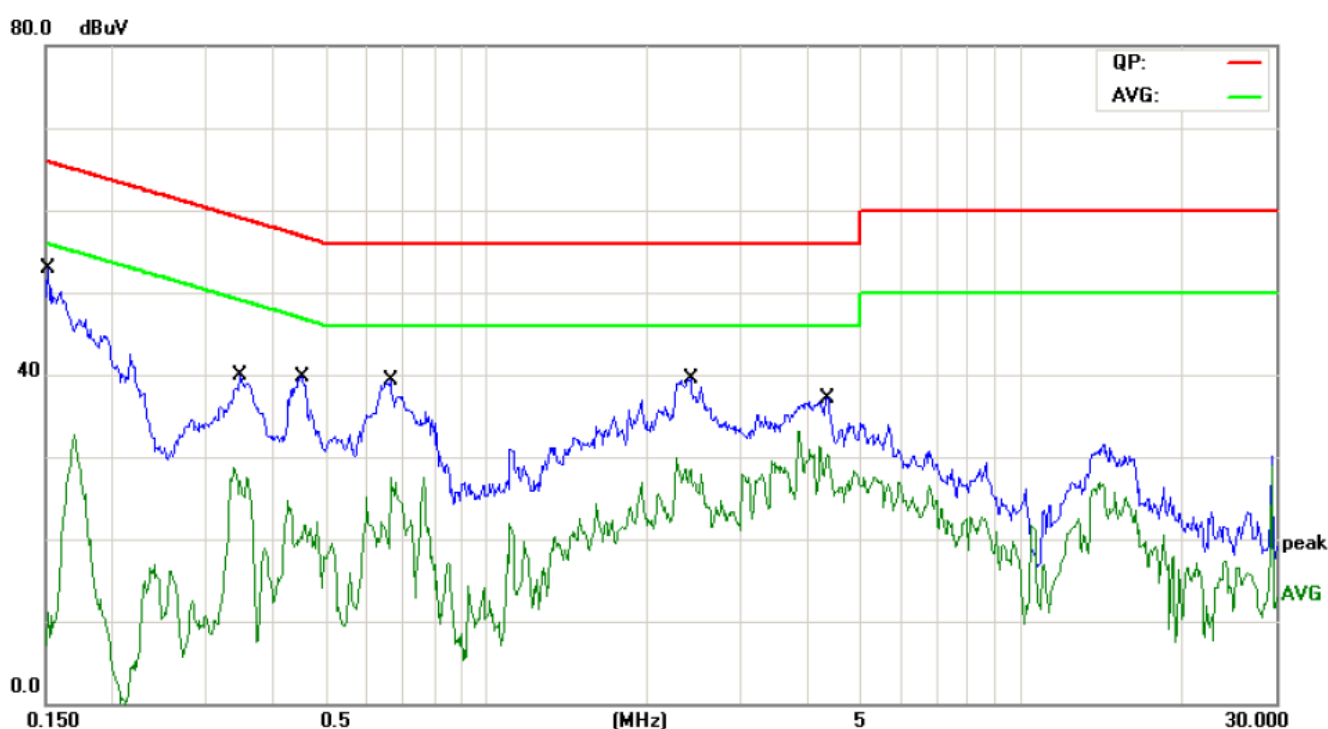


Frequency (MHz)	Reading(dBμV)				Limit (dBμV)	
	Live		Neutral		Quasi-peak	
	Quasi-peak	Average	Quasi-peak	Average		
0.1539	53.70	21.67	--	--	65.78	55.78
0.4282	48.55	39.67	--	--	57.29	47.29
0.8760	41.43	26.84	--	--	56.00	46.00
1.9858	41.25	28.89	--	--	56.00	46.00
3.2226	40.78	32.16	--	--	56.00	46.00
15.0898	31.87	26.55	--	--	60.00	50.00

**B Conducted Emission on Neutral Terminal of the power line (150kHz to 30MHz)**

EUT Description:	Bluetooth Speaker
Operation Mode:	Data Transfer mode
Tested By:	Beryl Zhao
Test date:	Oct. 30, 2013
Test Result:	PASS

Start Frequency	Stop Frequency	Step	IF BW	Detector	Final M-Time
0.15MHz	30MHz	4.5KHz	10KHz	QP+AV	1s



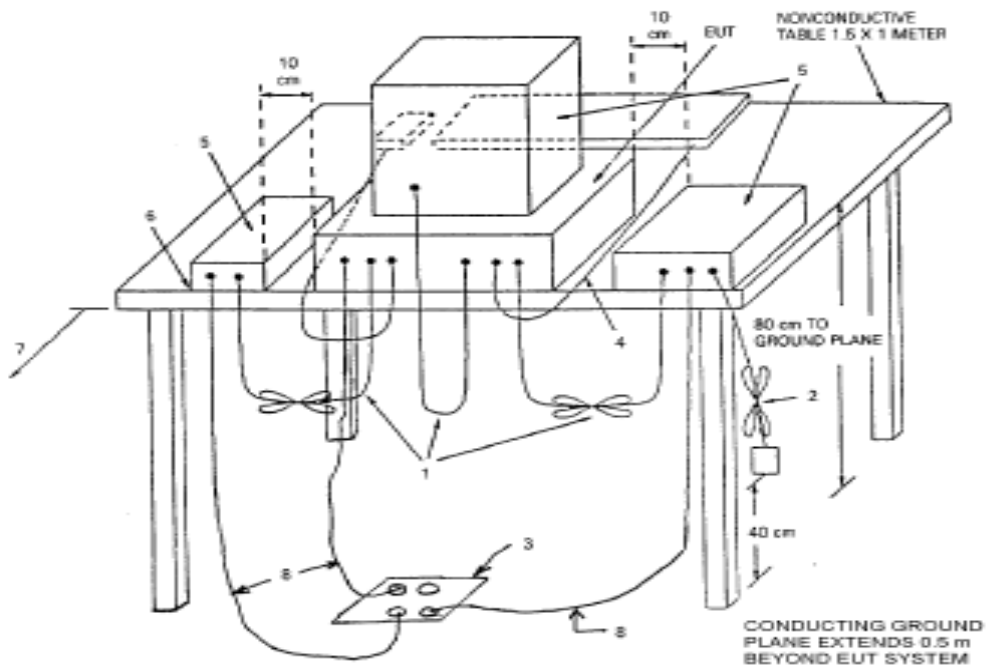
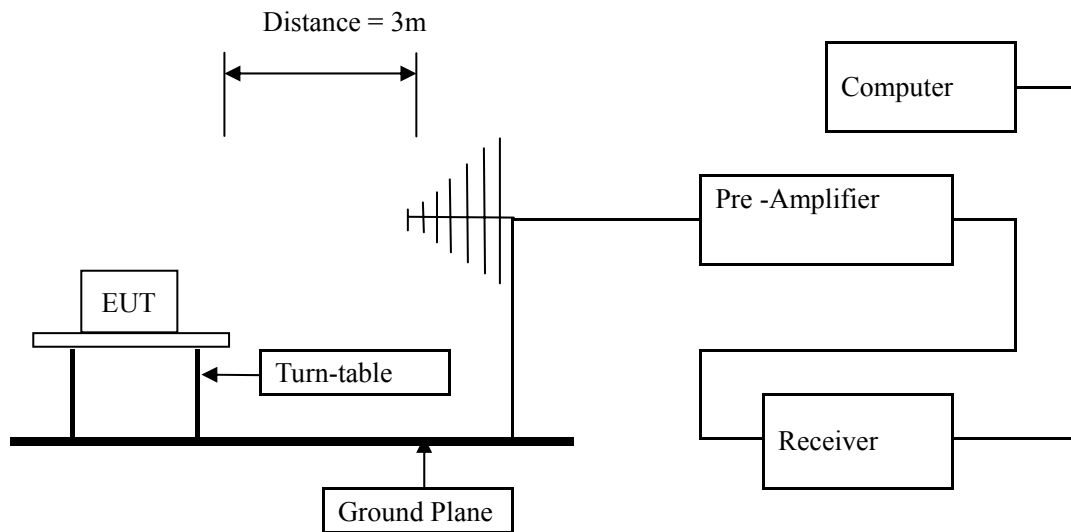
Frequency (MHz)	Reading(dBμV)				Limit (dBμV)	
	Live		Neutral		Quasi-peak	
	Quasi-peak	Average	Quasi-peak	Average		
0.1516	--	--	52.86	12.05	65.91	55.91
0.3462	--	--	39.99	27.36	59.05	49.05
0.4515	--	--	39.77	20.16	56.85	46.85
0.6611	--	--	39.39	26.84	56.00	46.00
2.4089	--	--	39.45	28.37	56.00	46.00
4.3594	--	--	37.09	29.06	56.00	46.00

## 5.0 Radiated Emission Test

### 5.1 Test Method and test Procedure:

- 1) The EUT was tested according to ANSI C63.4 –2009.
- 2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2009.
- 3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- 4) The antenna polarization: Vertical polarization and Horizontal polarization.

#### Block diagram of Test setup



## 5.2 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2009

## 5.3 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Frequency Range (MHz)	Distance (m)	Field strength (dBμV/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

- Note:
- 1) The frequency spectrum from 30MHz to 8GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120KHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK.
  - 2) Measurements were made at 3 meters.
  - 3) If measurement is not made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula  $Ld1 = Ld2 * (d2/d1)$

## 5.4 Photo documentation of the test set-up

Please refer to the Section 7

## 5.5 Test Equipment:

Please refer to the Section 2

## 5.6 Test specification:

Environmental conditions: Temperature 26° C Humidity: 56% Atmospheric pressure: 103kPa

## 5.7 Test result

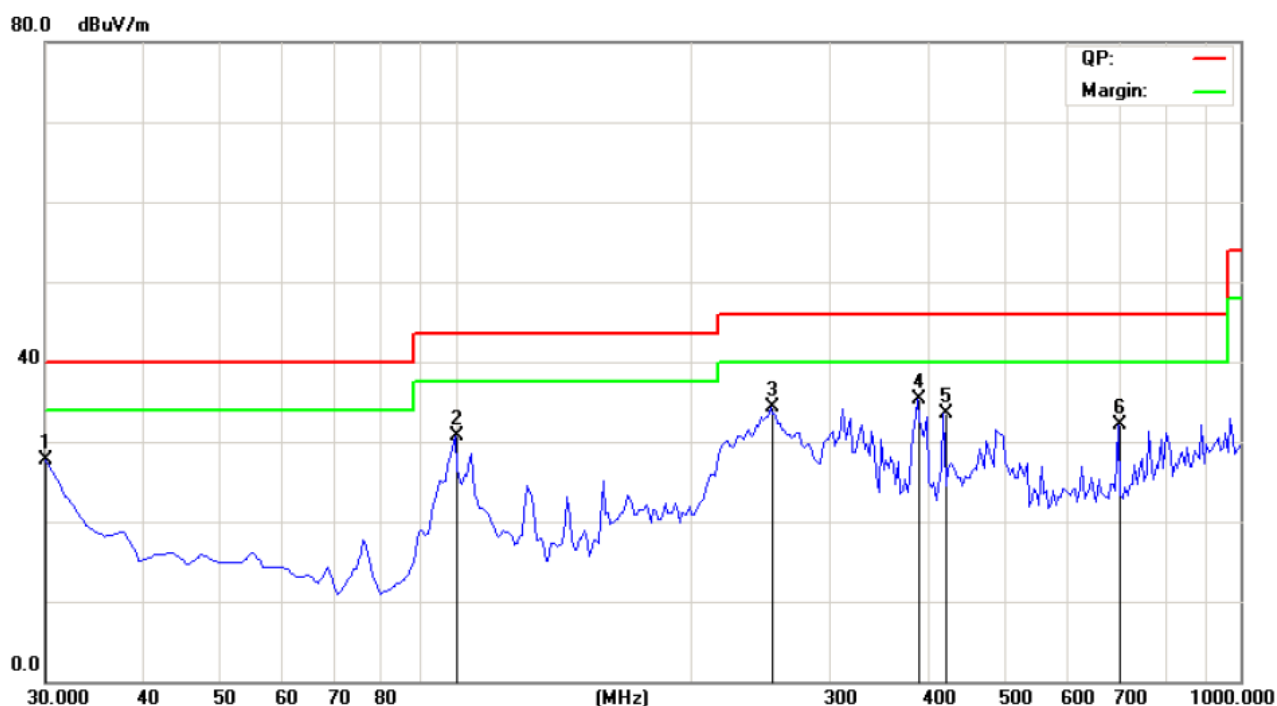
Min. limit margin 8.50dB at 35.8316 MHz

The requirements are FULFILLED

Remarks: According to the FCC part 15 Subpart B:2012

**A. Radiated Emission In Horizontal (30MHz----1000MHz)**

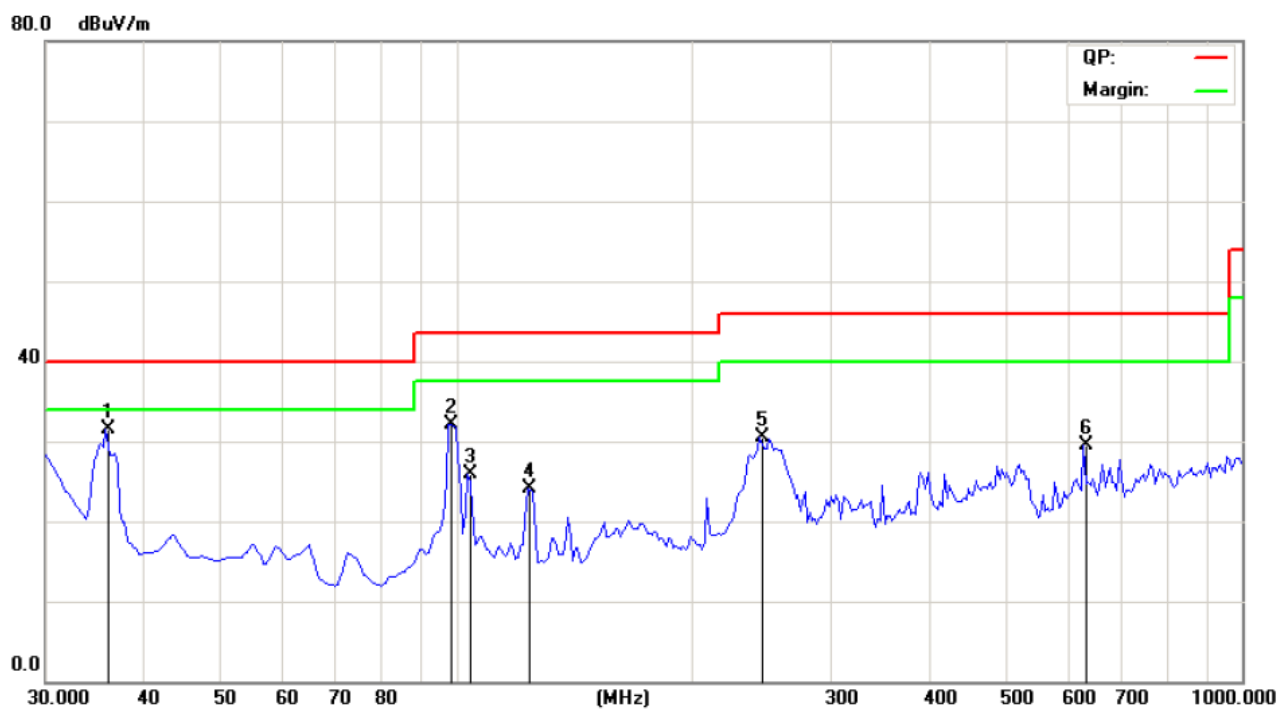
EUT Description:	Bluetooth Speaker
Operation Mode:	Data Transfer mode
Tested By:	Beryl Zhao
Test date:	Oct. 30, 2013
Test Result:	PASS



Frequency (MHz)	Level@3m (dBμV/m)	Antenna Polarity	Limit@3m (dBμV/m)
30.0000	27.75	H	40.00
99.9800	30.66	H	43.50
253.5471	34.23	H	46.00
389.6191	35.32	H	46.00
420.7214	33.53	H	46.00
700.6413	32.13	H	46.00

**B. Radiated Emission In Vertical (30MHz----1000MHz)**

EUT Description:	Bluetooth Speaker
Operation Mode:	Data Transfer mode
Tested By:	Beryl Zhao
Test date:	Oct. 30, 2013
Test Result:	PASS



Frequency (MHz)	Level@3m (dB $\mu$ V/m)	Antenna Polarity	Limit@3m (dB $\mu$ V/m)
35.8316	31.50	V	40.00
98.0361	32.16	V	43.50
103.8676	25.91	V	43.50
123.3066	24.12	V	43.50
243.8276	30.45	V	46.00
630.6612	29.51	V	46.00

**6.0 FCC Label**

**FCC ID: 2AA96BLF-BT001**

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.