

# FCC TEST REPORT

For  
Ubang Industry (HK) Limited

Bluetooth Speaker  
Model No.: YB-801, YB-802, YB-803, YB-804, YB-805, YB-806

**Test Report Number : ESTSZ140801213F-1**

**FCC ID: 2ADBS-YB801**



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# 1 - GENERAL INFORMATION

## 1.1 Product Description for Equipment Under Test (EUT)

### Client Information

Applicant: Ubang Industry (HK) Limited  
 Address of applicant: RM 20A KIU FU COMM BLDG 300 LOCKHART RD WAN CHAI, HONGKONG  
 Manufacturer: Ubang Industry (HK) Limited  
 Address of manufacturer: RM 20A KIU FU COMM BLDG 300 LOCKHART RD WAN CHAI, HONGKONG

### General Description of E.U.T

EUT Description: Bluetooth Speaker  
 Trade Name: Ubang Industry  
 Model No.: YB-801, YB-802, YB-803, YB-804, YB-805, YB-806  
 Rating: DC 3.7V or DC 5V via Adapter  
 Test Power Supply: DC 3.7V  
 Frequency: 13.56 MHz

Remark: *The models of EUT are identical except appearance of equipment. Unless otherwise specified, all tests were performed on model YB-801 to represent the other similar models.*

## 1.2 Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with FCC Rules and Regulations Part 15 Subpart C 15.225: 2012

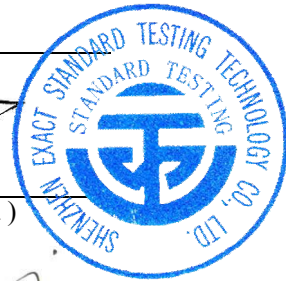
The objective of the manufacturer is to demonstrate compliance with the described above standards. Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of SHENZHEN EXACT STANDARD TESTING TECHNOLOGY CO., LTD..

Date of Test : Sept. 18~30, 2014

Prepared by : *Yoyo Deng*  
 (Engineer: Yoyo Deng )

Reviewer : *[Signature]*  
 (Project Manager: Charles Liu )

Approved & Authorized Signer : *[Signature]*  
 (Manager: Ronnie Liu )



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### **1.3 Test Methodology**

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

The maximum emission levels emanating from the device are compared to the FCC Part 15 Subpart C limits for radiation emissions and the measurement results contained in this test report show that EUT is to be technically compliant with FCC requirements.

Global United Technology Service Co., Ltd at 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, China

### **1.4 Test Facility**

All measurement required was performed at laboratory of Global United Technology Service Co., Ltd at 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, China

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

FCC – Registration No.: 600491

Global United Technology Service Co., Ltd 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 600491.

The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

**1.5 Test Equipment List and Details**

Equipment	Manufacturer	Model#	Serial #	Data of Cal.	Due Data
3m Semi-Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS201	Mar. 30 2014	Mar. 30 2015
Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS202	N/A	N/A
Spectrum Analyzer	Agilent	E4440A	GTS533	Dec. 06, 2013	Dec. 05, 2014
EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Mar. 30 2014	Mar. 30 2015
EMI Test Software	AUDIX	E3	N/A	N/A	N/A
Coaxial Cable	GTS	N/A	GTS400	Apr. 01 2014	Apr. 01 2015
Coaxial Cable	GTS	N/A	GTS401	Apr. 01 2014	Apr. 01 2015
Coaxial Cable	GTS	N/A	GTS402	Apr. 01 2014	Apr. 01 2015
Coaxial Cable	GTS	N/A	GTS407	Apr. 01 2014	Apr. 01 2015
Coaxial Cable	GTS	N/A	GTS408	Apr. 01 2014	Apr. 01 2015
BiConiLog Antenna (26-3000MHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS204	Feb. 26 2014	Feb. 26 2015
Pre-amplifier(0.1-3000MHz)	HP	8347A	GTS210	Aug. 03 2014	Aug. 03 2015
Double-ridged horn (1-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS205	Feb. 26 2014	Feb. 26 2015
Pre-amplifier(1-18GHz)	Rohde & Schwarz	8349B	GTS224	Mar. 30 2014	Mar. 30 2015
Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	GTS250	Oct. 28 2013	Oct. 28 2014
Barometer	ChangChun	DYM3	GTS251	Feb. 26 2014	Feb. 26 2015
Shielding Room	ZhongYu Electron	7.0(L)*3.0(W)*3.0(H)	GTS206	Apr. 10 2014	Apr. 10 2015
EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS208	Sept. 14 2014	Sept. 14 2015
10dB Pulse Limiter	Rohde & Schwarz	N/A	GTS209	Sept. 14 2014	Sept. 14 2015
LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS207	Apr. 14 2014	Apr. 14 2015
Coaxial Cable	GTS	N/A	GTS406	Apr. 01 2014	Apr. 01 2015
Loop Antenna	ETS-Lindgren	6502	00082431	Apr. 14 2014	Apr. 14 2015
Double-ridged horn (15-26.5GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA-9170	GTS211	Apr. 01 2014	Apr. 01 2015

## 2 TEST CONFIGURATION

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### 2.1 Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

### 2.2 EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by manufacture, can let the EUT being normal operation.

### 2.3 Special Accessories

As shown in section 2.5, interface cable used for compliance testing is shielded as normally supplied by **Ubang Industry (HK) Limited** and its respective support equipment manufacturers.

### 2.4 Equipment Modifications

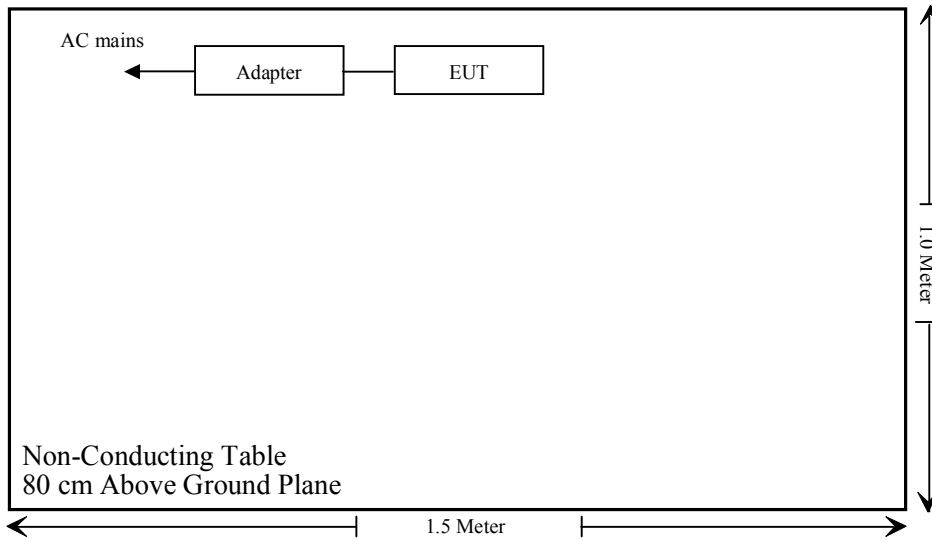
The EUT tested was not modified by EST.

### 2.5 Basic Test Setup Block Diagram

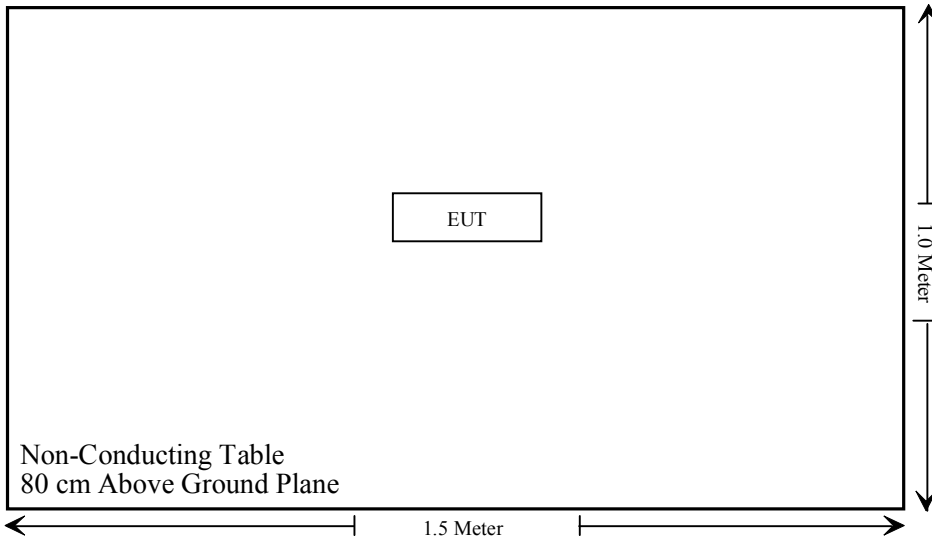
#### 2.5.1 Setup on the tabletop

Adapter:	Model: NBT-0500500EU Input: AC 100-240V, 50/60Hz
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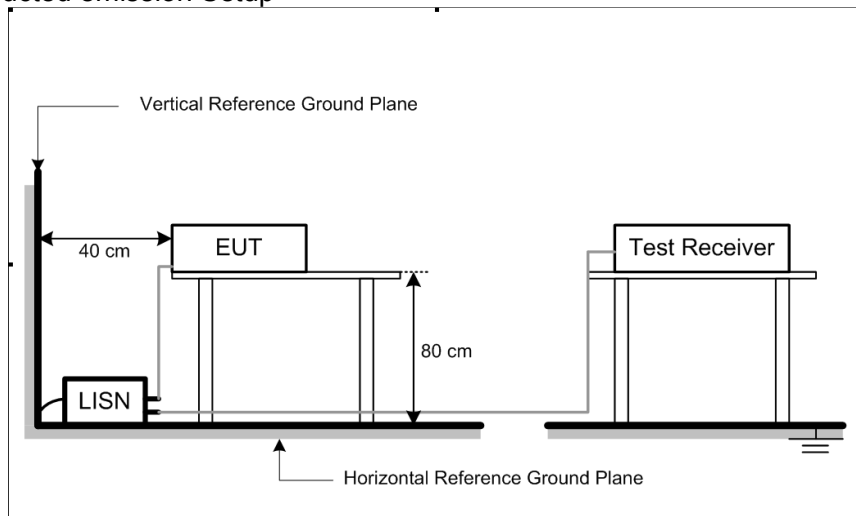
2.5.1.1 For Conducted



2.5.1.2 For Radiated



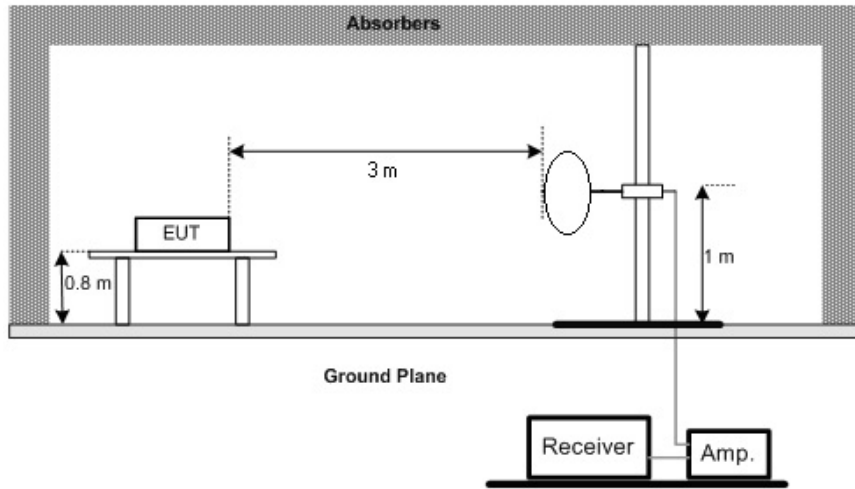
2.5.2 Conducted emission Setup



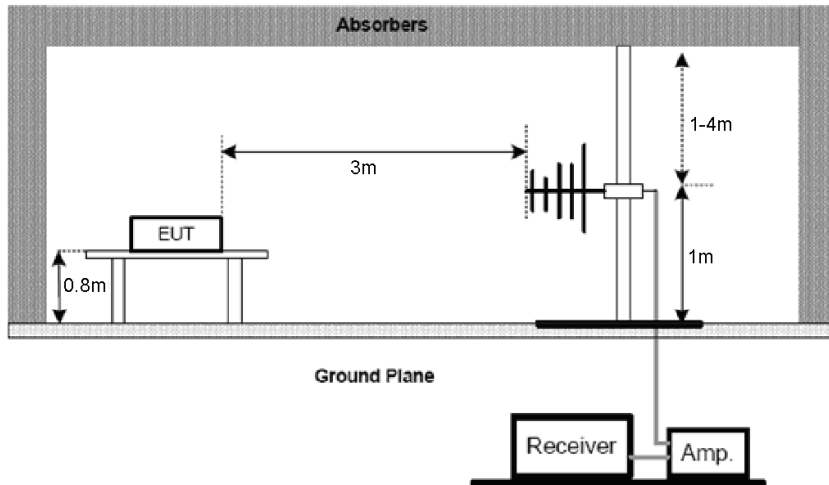


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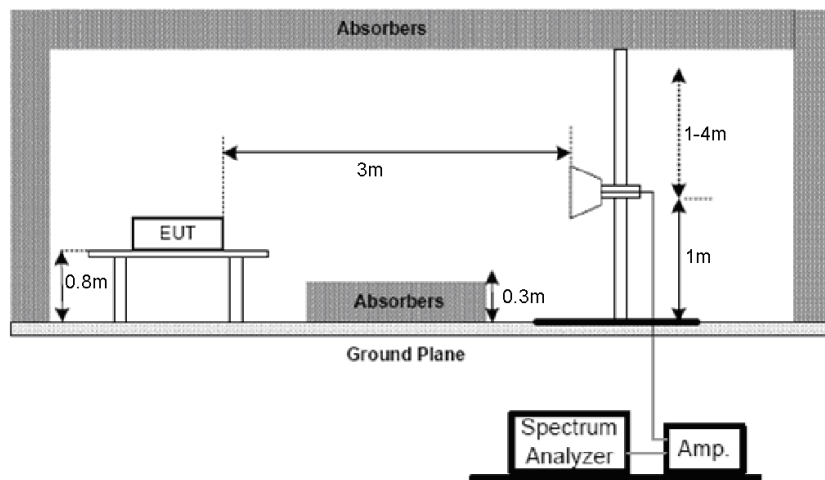
### 2.5.3 Radiated Emission Setup Frequency Below 30MHz



### Frequency From 30MHz-1GHz



### Frequency Above 1GHz



### 3 - DISTURBANCE VOLTAGE AT THE MAINS TERMINALS

#### 3.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is  $\pm 2.4$  dB.

#### 3.2 Limit of Disturbance Voltage at The Mains Terminals (FCC PART 15.207)

Frequency Range (MHz)	Limits ( dBuV)	
	Quasi-Peak	Average
0.150~0.500	66~56	56~46
0.500~5.000	56	46
5.000~30.00	60	50

Note: (1)The tighter limit shall apply at the edge between two frequency bands.  
 (2) Decreases with the logarithm of the frequency.

#### 3.3 EUT Setup

The setup of EUT is according with ANSI C63.4-2009 measurement procedure. The specification used was the FCC Rules and Regulations Part 15.207 limits.

The EUT was placed center and the back edge of the test table.

The spacing between the peripherals was 10 cm.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

#### 3.4 Instrument Setup

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range.....150 KHz to 30 MHz  
 Detector.....Peak & Quasi-Peak & Average  
 Sweep Speed.....Auto  
 IF Band Width.....9 KHz

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### 3.5 Test Procedure

During the conducted emission test, the EUT power cord was connected to the auxiliary outlet of the first Artificial Mains.

Maximizing procedure was performed on the highest emissions to ensure EUT compliance using all installation combination.

All data was recorded in the peak detection mode. Quasi-peak and Average readings were only performed when an emission was found to be marginal (within  $-10 \text{ dB}\mu\text{V}$  of specification limits). Quasi-peak readings are distinguished with a "**QP**". Average readings are distinguished with a "**AV**".

### 3.6 Test Situation

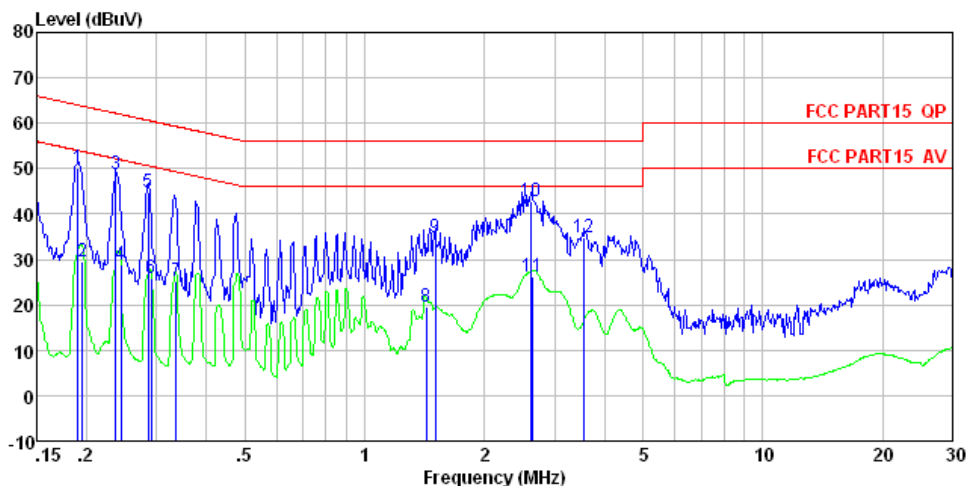
Temperature ( °C )	26.3
Humidity ( %RH )	56.1
Barometric Pressure ( mbar )	1001.4
EUT	Bluetooth Speaker
M/N	YB-801
Operating Mode	Operating + Charging mode

**Remark:** (1) When PK reading is less than relevant limit 20dB, the QP reading and AV reading will not be recorded.  
 (2) Where QP reading is less than relevant AV limit, the AV reading will not be measured  
 (3) When AV reading is less than relevant limit 20dB, the AV reading will not be recorded.

### 3.7 Test Result

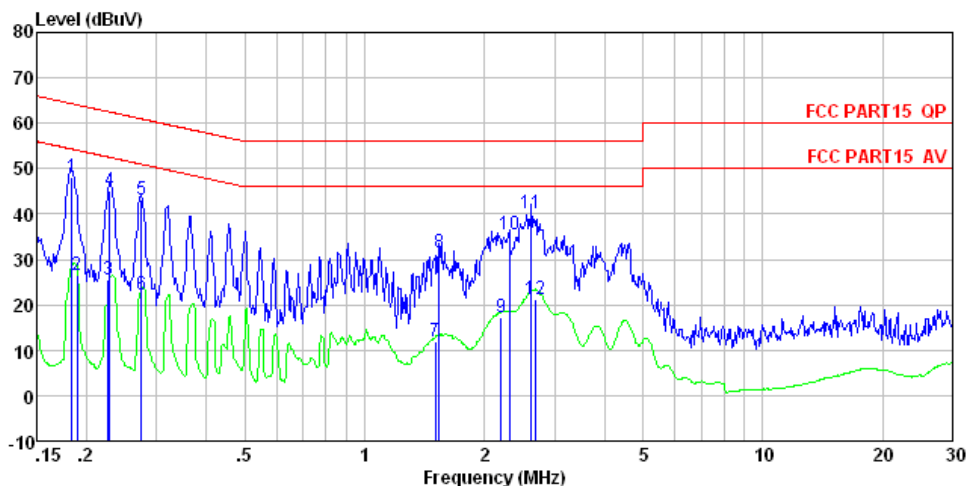
**Pass**

Details see the following pages.



Condition : FCC PART15 QP LISN-2013 LINE  
 EUT : Bluetooth Speaker  
 Model : YB-801  
 Test Mode : Operating + Charging mode  
 Power Rating : AC 120V/60Hz  
 Test Engineer: David

	Read Freq	Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.190	49.72	0.14	0.13	49.99	64.02	-14.03	QP
2	0.195	29.31	0.14	0.13	29.58	53.80	-24.22	Average
3	0.237	48.38	0.12	0.12	48.62	62.22	-13.60	QP
4	0.244	28.78	0.12	0.11	29.01	51.95	-22.94	Average
5	0.286	44.45	0.11	0.10	44.66	60.63	-15.97	QP
6	0.291	25.81	0.11	0.10	26.02	50.50	-24.48	Average
7	0.336	24.86	0.11	0.10	25.07	49.31	-24.24	Average
8	1.426	19.44	0.12	0.13	19.69	46.00	-26.31	Average
9	1.503	34.73	0.12	0.14	34.99	56.00	-21.01	QP
10	2.622	42.55	0.14	0.15	42.84	56.00	-13.16	QP
11	2.650	26.07	0.14	0.15	26.36	46.00	-19.64	Average
12	3.565	34.49	0.19	0.15	34.83	56.00	-21.17	QP



Condition : FCC PART15 QP LISN-2013 NEUTRAL  
 EUT : Bluetooth Speaker  
 Model : YB-801  
 Test Mode : Operating + Charging mode  
 Power Rating : AC 120V/60Hz  
 Test Engineer: David

	Read Freq	Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.183	47.97	0.07	0.13	48.17	64.33	-16.16	QP
2	0.189	26.40	0.07	0.13	26.60	54.06	-27.46	Average
3	0.227	25.35	0.06	0.12	25.53	52.57	-27.04	Average
4	0.229	45.00	0.06	0.12	45.18	62.48	-17.30	QP
5	0.274	42.90	0.06	0.10	43.06	60.98	-17.92	QP
6	0.274	21.90	0.06	0.10	22.06	50.98	-28.92	Average
7	1.503	11.70	0.09	0.14	11.93	46.00	-34.07	Average
8	1.535	31.29	0.09	0.14	31.52	56.00	-24.48	QP
9	2.201	17.10	0.09	0.15	17.34	46.00	-28.66	Average
10	2.309	35.36	0.10	0.15	35.61	56.00	-20.39	QP
11	2.622	39.89	0.10	0.15	40.14	56.00	-15.86	QP
12	2.692	20.86	0.10	0.15	21.11	46.00	-24.89	Average

## 4 - Radiation Interference

### 4.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is  $\pm 4.0$  dB.

### 4.2 Limit of Radiated Disturbances (FCC Part 15.209)

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dB $\mu$ V/m)
30 ~ 88	3	40
88 ~216	3	43.5
216 ~ 960	3	46
960~1000	3	54

Note: (1) The tighter limit shall apply at the edge between two frequency bands.  
 (2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

### 4.3 EUT Setup

The radiated emission tests were performed in the in the 3-meter anechoic chamber, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15 limits.

The EUT was placed on the center of the test table.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

### 4.4 Test Receiver Setup

According to FCC Part 15 rule, the frequency was investigated from 30 to 1000 MHz. During the radiated emission test, the test receiver was set with the following configurations:

Test Receiver Setting:

Detector.....Peak & Quasi-Peak  
 IF Band Width.....120KHz  
 Frequency Range.....30MHz to 1000MHz  
 Turntable Rotated.....0 to 360 degrees

Antenna Position:

Height.....1m to 4m  
 Polarity.....Horizontal and Vertical

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#### 4.5 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings performed only when an emission was found to be marginal (within -10 dB $\mu$ V of specification limits), and are distinguished with a "QP" in the data table.

#### 4.6 Radiated Emissions Test Result

Temperature ( °C )	26.3
Humidity ( %RH )	56.1
Barometric Pressure ( mbar )	1001.4
EUT	Bluetooth Speaker
M/N	YB-801
Operating Mode	Operating mode

Test data see following pages.

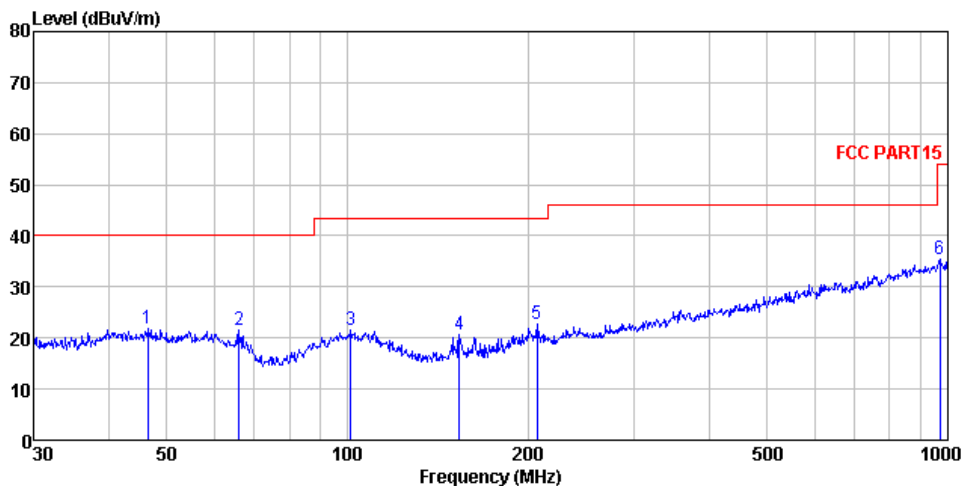
**Remark:** (1) When PK reading is less than relevant limit 20dB, the QP reading and AV reading will not be recorded.

(2) Where QP reading is less than relevant AV limit, the AV reading will not be measured

#### 4.7 Test Result

**Pass.**

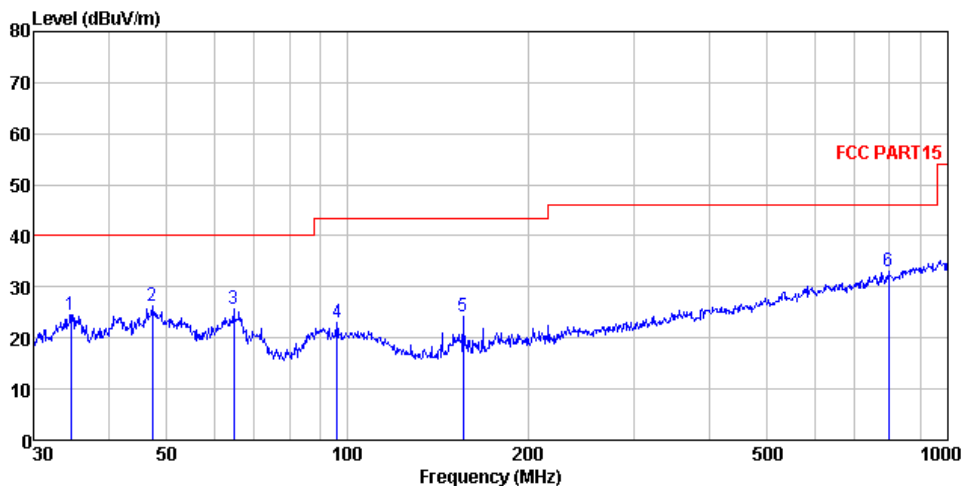
Details see the following pages.



Site : 3m chamber  
 Condition : FCC PART15 3m VULB9163-2013M HORIZONTAL  
 EUT : Bluetooth Speaker  
 Model : YB-801  
 Test Mode : Operating mode  
 Power Rating : DC 3.7V  
 Test Engineer: David

	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over	
	MHz	Level	Factor	Loss	Factor	dB	Line	Limit	Remark
		dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	46.503	37.78	15.46	0.74	31.99	21.99	40.00	-18.01	QP
2	66.034	40.10	12.30	0.91	31.90	21.41	40.00	-18.59	QP
3	101.289	37.09	15.02	1.20	31.77	21.54	43.50	-21.96	QP
4	153.739	40.69	10.42	1.59	32.00	20.70	43.50	-22.80	QP
5	207.123	40.23	12.80	1.88	32.14	22.77	43.50	-20.73	QP
6	968.934	38.09	23.55	5.11	31.22	35.53	54.00	-18.47	QP





Site : 3m chamber  
 Condition : FCC PART15 3m VULB9163-2013M VERTICAL  
 EUT : Bluetooth Speaker  
 Model : YB-801  
 Test Mode : Operating mode  
 Power Rating : DC 3.7V  
 Test Engineer: David

	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over	
	MHz	Level	Factor	Loss	Factor	dBuV/m	Line	Limit	Remark
		dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	34.639	41.76	14.30	0.61	32.06	24.61	40.00	-15.39	QP
2	47.326	42.21	15.41	0.74	31.98	26.38	40.00	-13.62	QP
3	64.659	43.83	12.84	0.90	31.91	25.66	40.00	-14.34	QP
4	96.099	38.73	14.90	1.16	31.75	23.04	43.50	-20.46	QP
5	155.910	44.09	10.51	1.60	32.00	24.20	43.50	-19.30	QP
6	796.183	37.97	22.01	4.45	31.31	33.12	46.00	-12.88	QP

## 5 - Field Strength Of Radiated Emissions - FCC §15.225(a)(b)(c)

### 5.1 Requirements (FCC §15.225):

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

### 5.2 Test Setup

The field strength of radiated emissions tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part Subpart C limits.

### 5.3 Test Results

**Pass.**

Please refer the following data.

Polarization: Horizontal

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark	Frequency Range (MHz)
13.3778	32.10	0.20	0.00	36.45	80.50	-44.05	QP	13.110-13.410
13.5510	32.10	0.20	0.00	53.97	90.50	-36.53	QP	13.410-13.553
13.5601	32.10	0.20	0.00	70.25	124.00	-53.75	QP	13.553-13.567
13.5674	32.10	0.20	0.00	54.82	90.50	-35.68	QP	13.567-13.710
13.7615	32.10	0.20	0.00	37.63	80.50	-42.87	QP	13.710-14.010

Polarization: Vertical

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark	Frequency Range (MHz)
13.3810	32.10	0.20	0.00	36.53	80.50	-43.97	QP	13.110-13.410
13.5508	32.10	0.20	0.00	53.90	90.50	-36.60	QP	13.410-13.553
13.5600	32.10	0.20	0.00	70.16	124.00	-53.84	QP	13.553-13.567
13.5683	32.10	0.20	0.00	54.65	90.50	-35.85	QP	13.567-13.710
13.7595	32.10	0.20	0.00	37.77	80.50	-42.73	QP	13.710-14.010

## 6 - Out Of Band Emission - FCC §15.225(d) & §15.209

### 6.1 Requirements (FCC §15.225):

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

Fundamental Frequency (MHz)	Field Strength of Harmonics and Spurious Emissions
0.009 – 0.490	2400/F (kHz) uV/m @ 300 meters
0.490 – 1.705	24000/F (kHz) uV/m @ 30 meters
1.705 – 30.0	29.54 dBuV/m @ 30 meters or 69.54 dBuV/m @ 3 meters
30 – 88	40.00 dBuV/m @ 3 meters
88 – 216	43.50 dBuV/m @ 3 meters
216 – 960	46.00 dBuV/m @ 3 meters
Above 960	54.00 dBuV/m @ 3 meters

### 6.2 Test Setup

The field strength of radiated emissions tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part Subpart C limits.

### 6.3 Test Results

**Pass.**

Please refer the following data.

Polarization: **Horizontal**

Frequency (MHz)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Test Distance (m)	Remark
0.010	43.15	127.60	-84.45	3	Peak
0.150	69.88	104.08	-34.20	3	Peak
16.350	47.67	69.54	-21.87	3	Peak
16.680	45.33	69.54	-24.21	3	Peak
20.830	42.18	69.54	-27.36	3	Peak

Polarization: **Vertical**

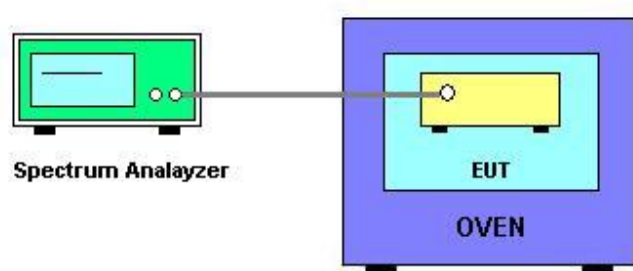
Frequency (MHz)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Test Distance (m)	Remark
0.014	42.33	124.68	-82.35	3	Peak
0.150	68.36	104.08	-35.72	3	Peak
2.492	45.52	69.54	-24.02	3	Peak
16.640	43.65	69.54	-25.89	3	Peak
20.880	43.29	69.54	-26.25	3	Peak

## 7 - Frequency Stability - FCC §15.225(e)

### 7.1 Requirements (FCC §15.225):

(e) The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

### 7.2 Test Setup



Test equipments see section 1.5 of this report.

### 7.3 Test Results

**Pass.**

Please refer the following page.

Normal voltage is DC 3.7V.

Assigned Frequency (MHz)		13.560MHz		
Voltage (V)	Temperature (°C)	Measured Frequency (MHz)	ppm	Limit (ppm)
3.7	-20	13.560101	7.45	100
3.7	-10	13.560110	8.11	100
3.7	0	13.560116	8.55	100
3.7	+10	13.560139	10.25	100
3.7	+20	13.560158	11.65	100
3.7	+30	13.560160	11.80	100
3.7	+40	13.560164	12.09	100
3.7	+50	13.560175	12.91	100
3.145	+20°C	13.560146	10.77	100
4.255	+20°C	13.560232	17.11	100

## 8 - 20dB Bandwidth - FCC §15.215 (c)

### 8.1 Requirements (FCC §15.215):

(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

### 8.2 Test Procedure

**8.2.1.** Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

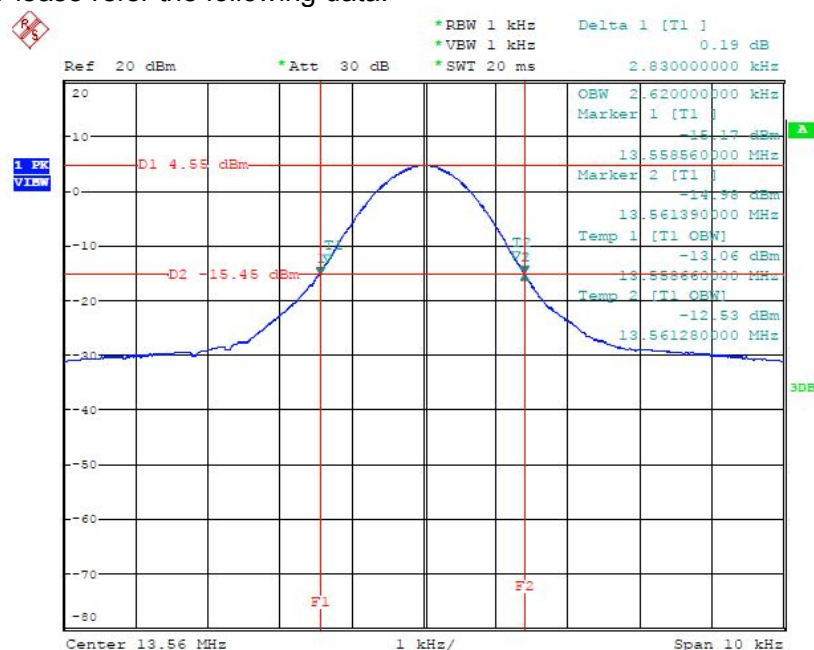
**8.2.2.** Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.

**8.2.3.** Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.

### 8.3 Test Results

Pass.

Please refer the following data.



## **9 - ANTENNA REQUIREMENT**

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### **9.1 STANDARD APPLICABLE:**

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### **9.2 STANDARD APPLICABLE**

The antenna is a loop antenna and connector is designed with permanent attachment no consideration of replacement. The antenna used in this product is complied with Standard. The maximum Gain of the antenna lower than 6.0dBi and has the definite antenna Specification.