

APPLICATION CERTIFICATION  
On Behalf of  
Shenzhen KingBoard Technology Co., Ltd.

Speaker  
Model No.: KTS-39, KTS-39A, BTS-10

FCC ID: SXXKTS-39

Prepared for : Shenzhen KingBoard Technology Co., Ltd.  
Address : Bldg. A, Dakanglong Industry Zone, Dabuxiang, Guanlan,  
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Report Number : ATE20132585  
Date of Test : December 3-4, 2013  
Date of Report : December 9, 2013

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## Test Report Certification

Applicant : Shenzhen KingBoard Technology Co., Ltd.  
Manufacturer : Shenzhen KingBoard Technology Co., Ltd.  
EUT Description : Speaker  
(A) MODEL NO.: KTS-39, KTS-39A, BTS-10  
(B) SERIAL NO.: N/A  
(C) POWER SUPPLY: DC 3.7V (Li-polymer battery) & DC 5V  
(Supplied from USB)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247  
ANSI C63.4- 2009

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : December 3-4, 2013

Prepared by : Bob Wang

(Engineer)

Approved & Authorized Signer : Genbo

(Manager)

# 1. GENERAL INFORMATION

## 1.1. Description of Device (EUT)

EUT	:	Speaker
Model Number	:	KTS-39, KTS-39A, BTS-10
		(Note: These samples are identical, different of the models name. Therefore only model KTS-39 is tested for EMC tests.)
Frequency Band	:	2402MHz-2480MHz
Number of Channels	:	79
Modulation type	:	GFSK
Antenna Gain	:	0dBi
Power Supply	:	DC 3.7V (Li-polymer battery) & DC 5V (Supplied from USB)
Applicant	:	Shenzhen KingBoard Technology Co., Ltd.
Address	:	Bldg. A, Dakanglong Industry Zone, Dabuxiang, Guanlan, Shenzhen, China
Manufacturer	:	Shenzhen KingBoard Technology Co., Ltd.
Address	:	Bldg. A, Dakanglong Industry Zone, Dabuxiang, Guanlan, Shenzhen, China
Date of sample received	:	December 2, 2013
Date of Test	:	December 3-4, 2013

## 1.2. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC  
The Registration Number is 752051

Listed by Industry Canada  
The Registration Number is 5077A-2

Accredited by China National Accreditation Committee  
for Laboratories  
The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.  
Science & Industry Park, Nanshan, Shenzhen, Guangdong  
P.R. China

## 1.3. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty  
(9kHz-30MHz) = 3.08dB, k=2

Radiated emission expanded uncertainty  
(30MHz-1000MHz) = 4.42dB, k=2

Radiated emission expanded uncertainty  
(Above 1GHz) = 4.06dB, k=2

## 2. MEASURING DEVICE AND TEST EQUIPMENT

**Table 1: List of Test and Measurement Equipment**

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 12, 2013	Jan. 11, 2014
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 12, 2013	Jan. 11, 2014
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 12, 2013	Jan. 11, 2014
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 12, 2013	Jan. 11, 2014
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Feb. 06, 2013	Feb. 05, 2014
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Feb. 06, 2013	Feb. 05, 2014
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Feb. 06, 2013	Feb. 05, 2014
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Feb. 06, 2013	Feb. 05, 2014
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 12, 2013	Jan. 11, 2014
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 12, 2013	Jan. 11, 2014

### 3. OPERATION OF EUT DURING TESTING

#### 3.1. Operating Mode

The mode is used: Transmitting mode

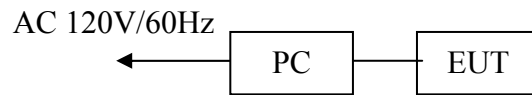
Low Channel: 2402MHz

Middle Channel: 2441MHz

High Channel: 2480MHz

Hopping

#### 3.2. Configuration and peripherals



(EUT: Speaker)

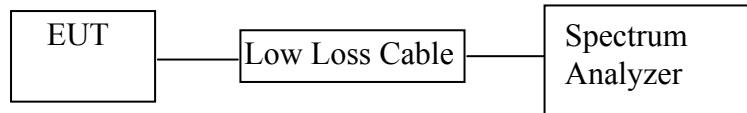


#### 4. TEST PROCEDURES AND RESULTS

<b>FCC Rules</b>	<b>Description of Test</b>	<b>Result</b>
Section 15.207	Conducted Emission Test	Compliant
Section 15.247(a)(1)	20dB Bandwidth Test	Compliant
Section 15.247(a)(1)	Carrier Frequency Separation Test	Compliant
Section 15.247(a)(1)(iii)	Number Of Hopping Frequency Test	Compliant
Section 15.247(a)(1)(iii)	Dwell Time Test	Compliant
Section 15.247(b)(1)	Maximum Peak Output Power Test	Compliant
Section 15.247(d) Section 15.209	Radiated Emission Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.203	Antenna Requirement	Compliant

## 5. 20DB BANDWIDTH TEST

### 5.1. Block Diagram of Test Setup



(EUT: Speaker)

### 5.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

### 5.3. EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 5.3.1. Speaker (EUT)

Model Number : KTS-39  
 Serial Number : N/A  
 Manufacturer : Shenzhen KingBoard Technology Co., Ltd.

### 5.4. Operating Condition of EUT

5.4.1. Setup the EUT and simulator as shown as Section 5.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

5.5. Test Procedure

5.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

5.5.2. Set RBW of spectrum analyzer to 30 kHz and VBW to 100 kHz.

5.5.3. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

5.6. Test Result

**PASS.**

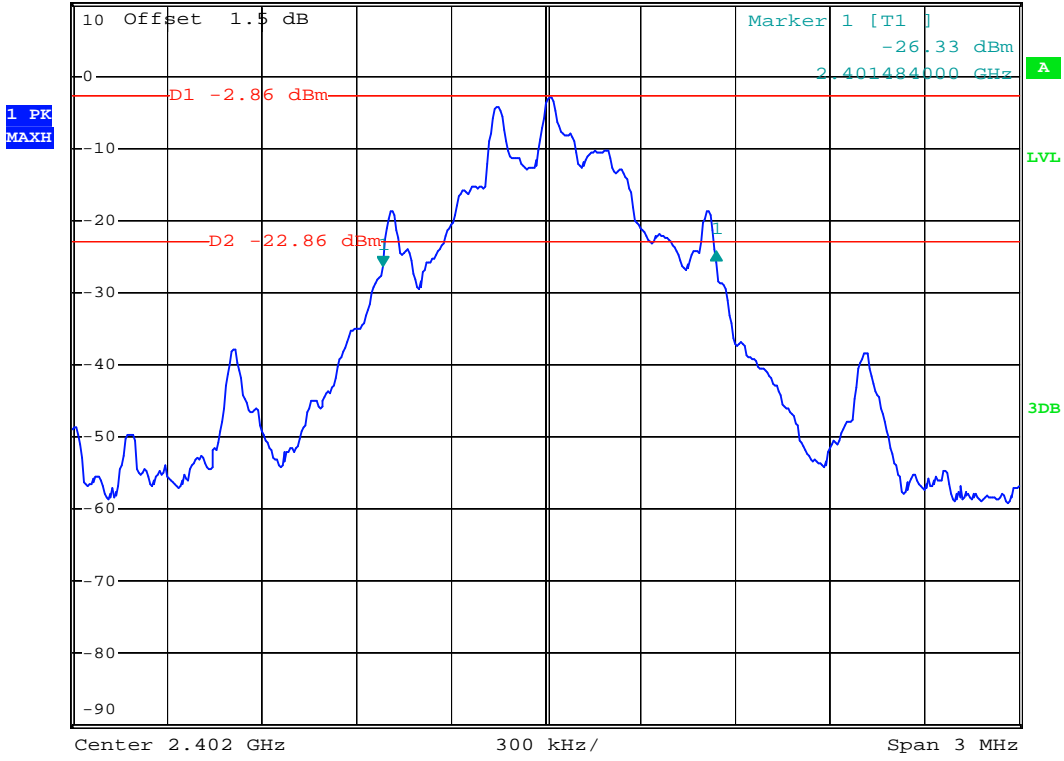
Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Rickey</u>

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	Limit (MHz)
Low	2402	1.056	---
Middle	2441	1.050	---
High	2480	1.056	---

The spectrum analyzer plots are attached as below.

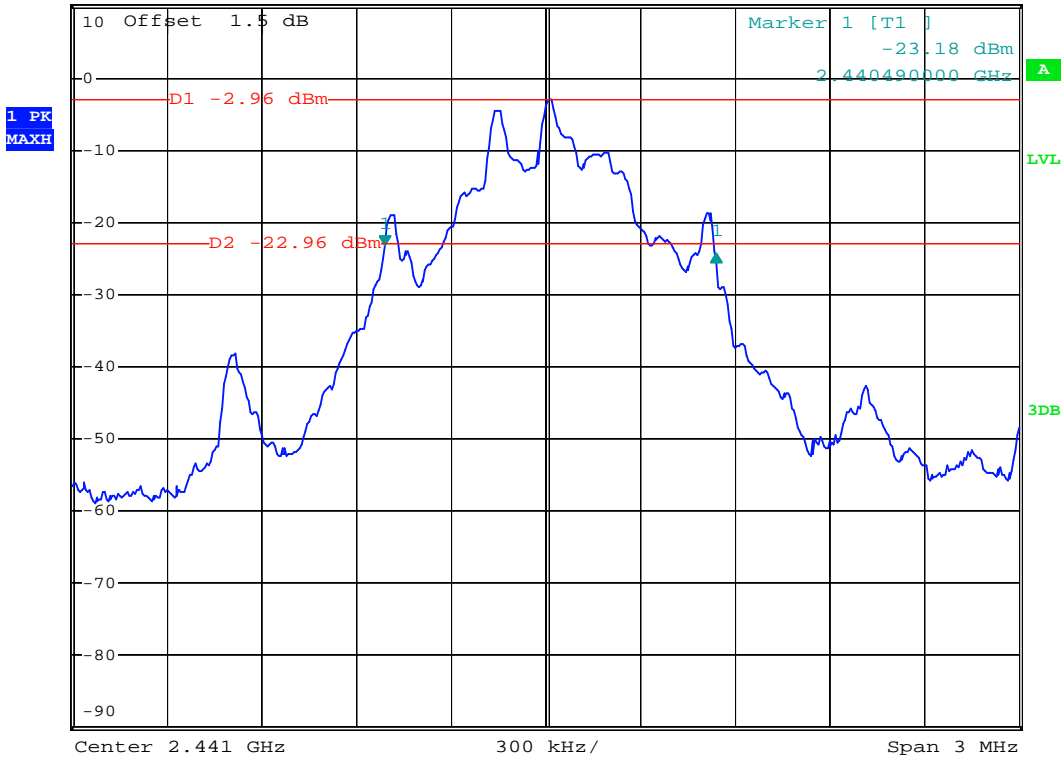


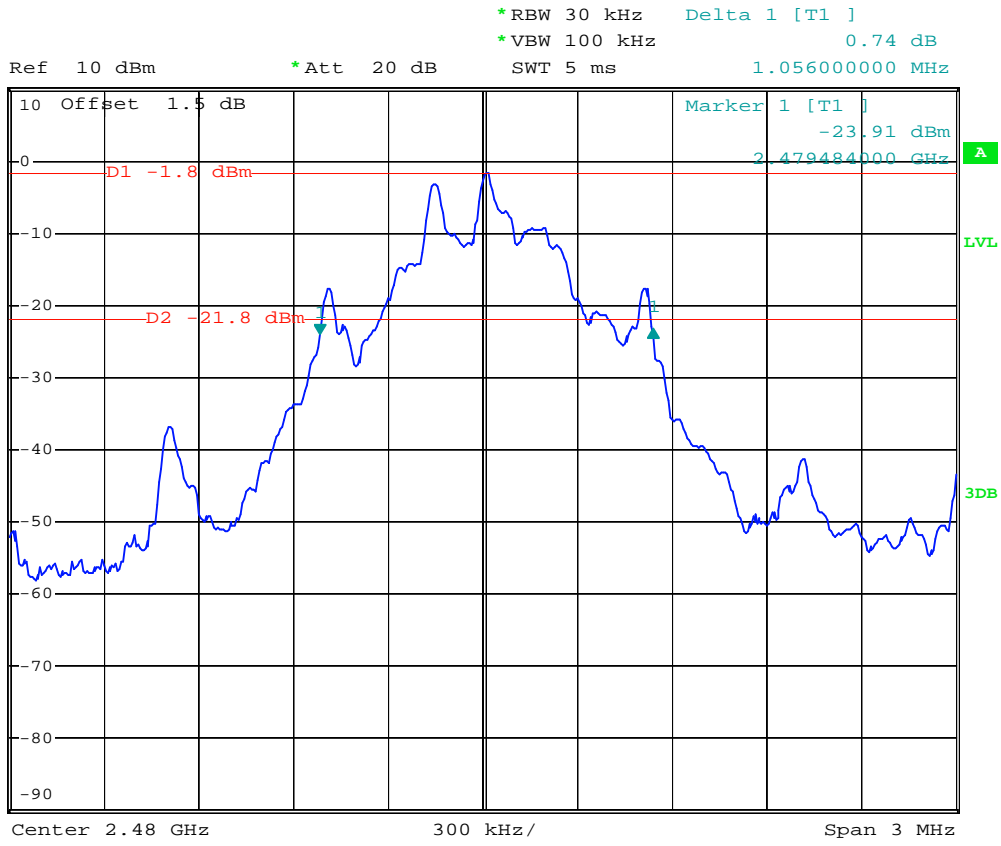
Ref 10 dBm      \*Att 20 dB      SWT 5 ms      1.056000000 MHz  
\*RBW 30 kHz      Delta 1 [T1 ]  
\*VBW 100 kHz      2.00 dB





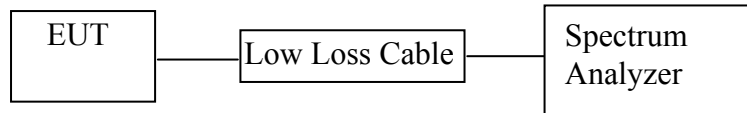
\*RBW 30 kHz Delta 1 [T1 ]  
\*VBW 100 kHz -1.09 dB  
Ref 10 dBm \*Att 20 dB SWT 5 ms 1.050000000 MHz





## 6. CARRIER FREQUENCY SEPARATION TEST

### 6.1. Block Diagram of Test Setup



(EUT: Speaker)

### 6.2. The Requirement For Section 15.247(a)(1)

Section 15.247(a)(1): Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudorandomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

### 6.3. EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 6.3.1. Speaker (EUT)

Model Number : KTS-39  
 Serial Number : N/A  
 Manufacturer : Shenzhen KingBoard Technology Co., Ltd.

### 6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

## 6.5. Test Procedure

6.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

6.5.2. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz. Adjust Span to 3 MHz.

6.5.3. Set the adjacent channel of the EUT maxhold another trace.

6.5.4. Measurement the channel separation

## 6.6. Test Result

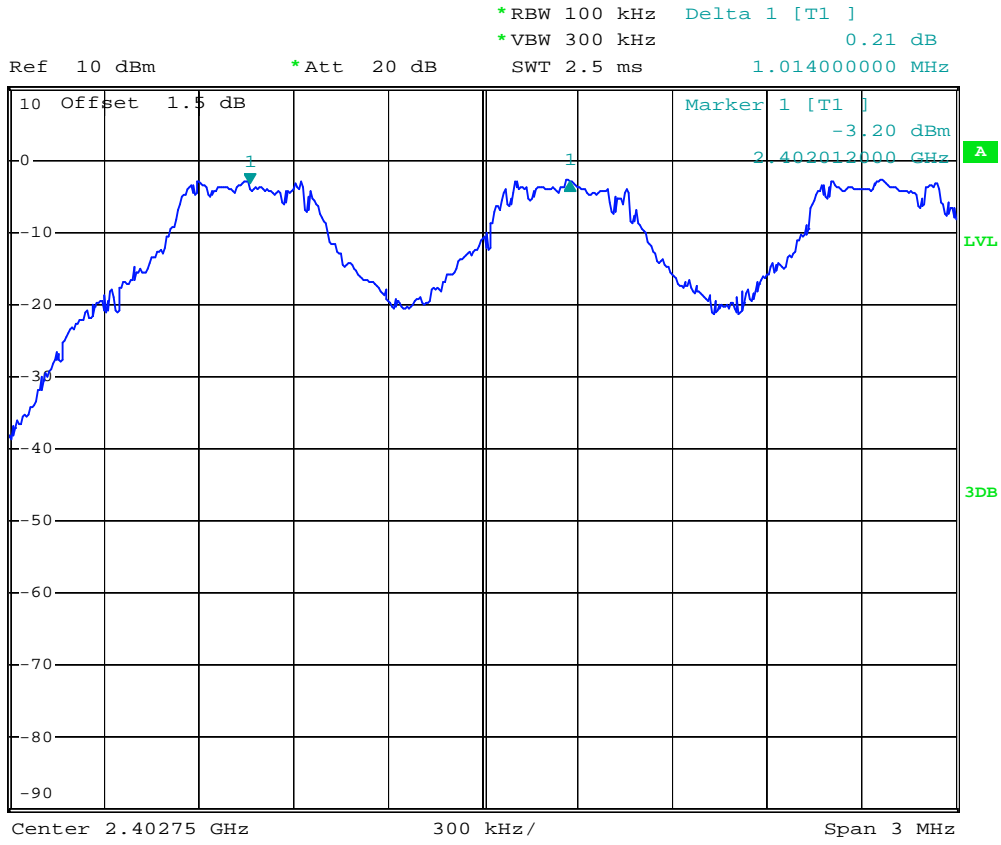
**PASS.**

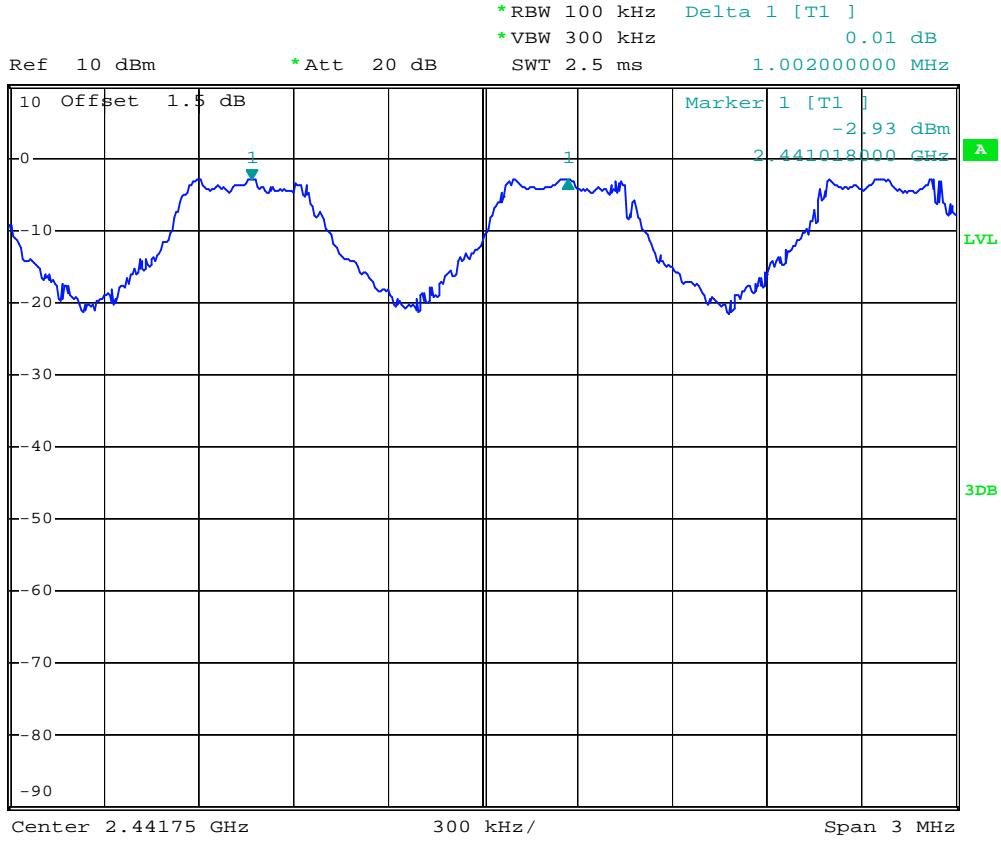
Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60Hz</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Rickey</u>

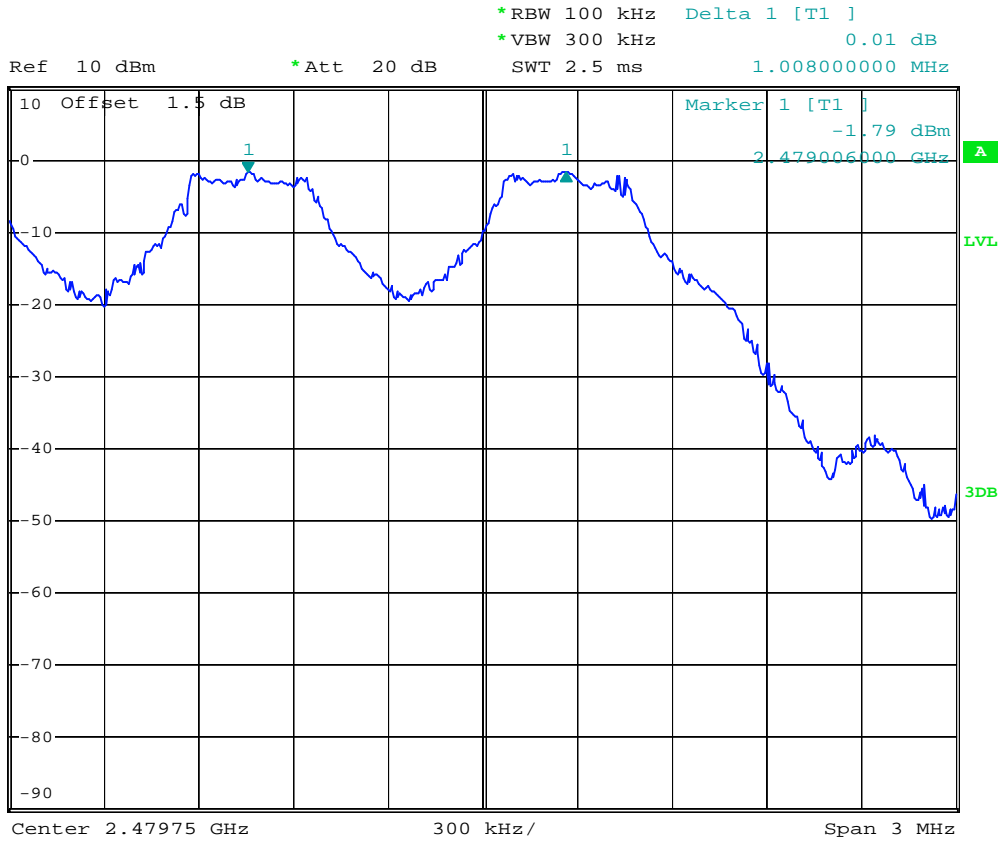
Channel	Channel Frequency (MHz)	Channel separation (MHz)	Limit (MHz)
Low	2402	1.014	0.704
Middle	2441	1.002	0.700
High	2480	1.008	0.704

The spectrum analyzer plots are attached as below.



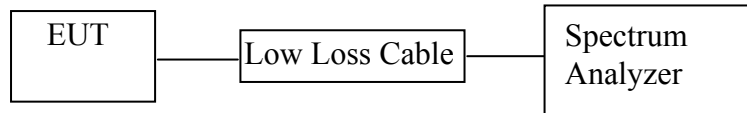






## 7. NUMBER OF HOPPING FREQUENCY TEST

### 7.1. Block Diagram of Test Setup



(EUT: Speaker)

### 7.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

### 7.3. EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 7.3.1. Speaker (EUT)

Model Number : KTS-39  
 Serial Number : N/A  
 Manufacturer : Shenzhen KingBoard Technology Co., Ltd.

### 7.4. Operating Condition of EUT

7.4.1. Setup the EUT and simulator as shown as Section 7.1.

7.4.2. Turn on the power of all equipment.

7.4.3. Let the EUT work in TX (Hopping on) modes measure it.

7.5. Test Procedure

7.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

7.5.2. Set the spectrum analyzer as Span=83.5MHz, RBW=100 kHz, VBW=300 kHz.

7.5.3. Max hold, view and count how many channel in the band.

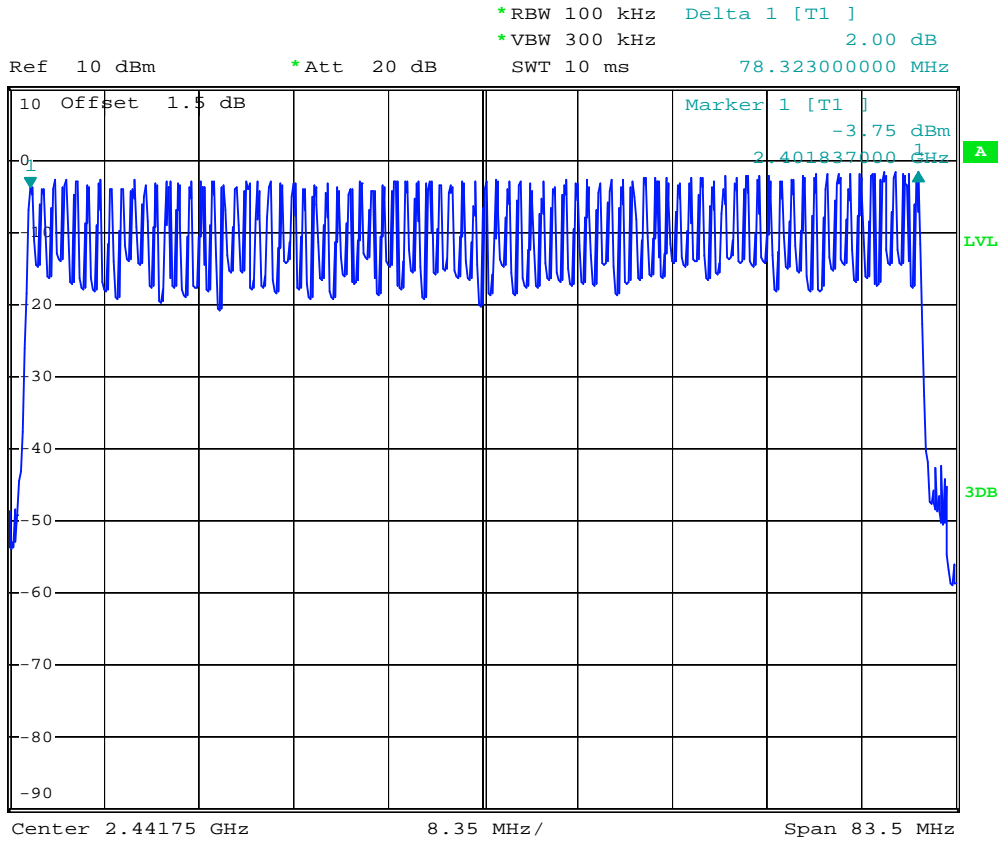
7.6. Test Result

**PASS.**

Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>Hopping</u>	Test Engineer:	<u>Rickey</u>

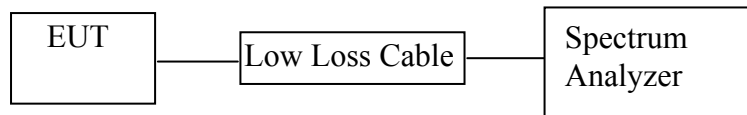
Total number of hopping channel	Measurement result (CH)	Limit (CH)
	79	>15

The spectrum analyzer plots are attached as below.



## 8. DWELL TIME TEST

### 8.1. Block Diagram of Test Setup



(EUT: Speaker)

### 8.2. The Requirement For Section 15.247(a)(1)(iii)

Section 15.247(a)(1)(iii): Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

### 8.3. EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 8.3.1. Speaker (EUT)

Model Number : KTS-39  
 Serial Number : N/A  
 Manufacturer : Shenzhen KingBoard Technology Co., Ltd.

### 8.4. Operating Condition of EUT

8.4.1. Setup the EUT and simulator as shown as Section 8.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in TX (Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

### 8.5. Test Procedure

- 8.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 8.5.2. Set center frequency of spectrum analyzer = operating frequency.
- 8.5.3. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz, Span=0Hz, Adjust Sweep=1s. Get the burst (in 1 sec.).
- 8.5.4. Set the spectrum analyzer as RBW=1MHz, VBW=3MHz, Span=0Hz, Adjust Sweep=2ms. Get the pulse time.
- 8.5.5. Repeat above procedures until all frequency measured were complete.

### 8.6. Test Result

**PASS.**

Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Rickey</u>

DH1:

A period transmit time = $0.4 \times 79 = 31.6$				
Dwell time = pulse time $\times (1600/(2*79)) \times 31.6$				
Channel	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
Low	2402	0.534	170.88	400
Middle	2441	0.540	172.80	400
High	2480	0.534	170.88	400



DH3:

A period transmit time =  $0.4 \times 79 = 31.6$ Dwell time = pulse time  $\times (1600/(4*79)) \times 31.6$ 

Channel	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
Low	2402	1.797875	287.66	400
Middle	2441	1.815875	290.54	400
High	2480	1.815875	290.54	400

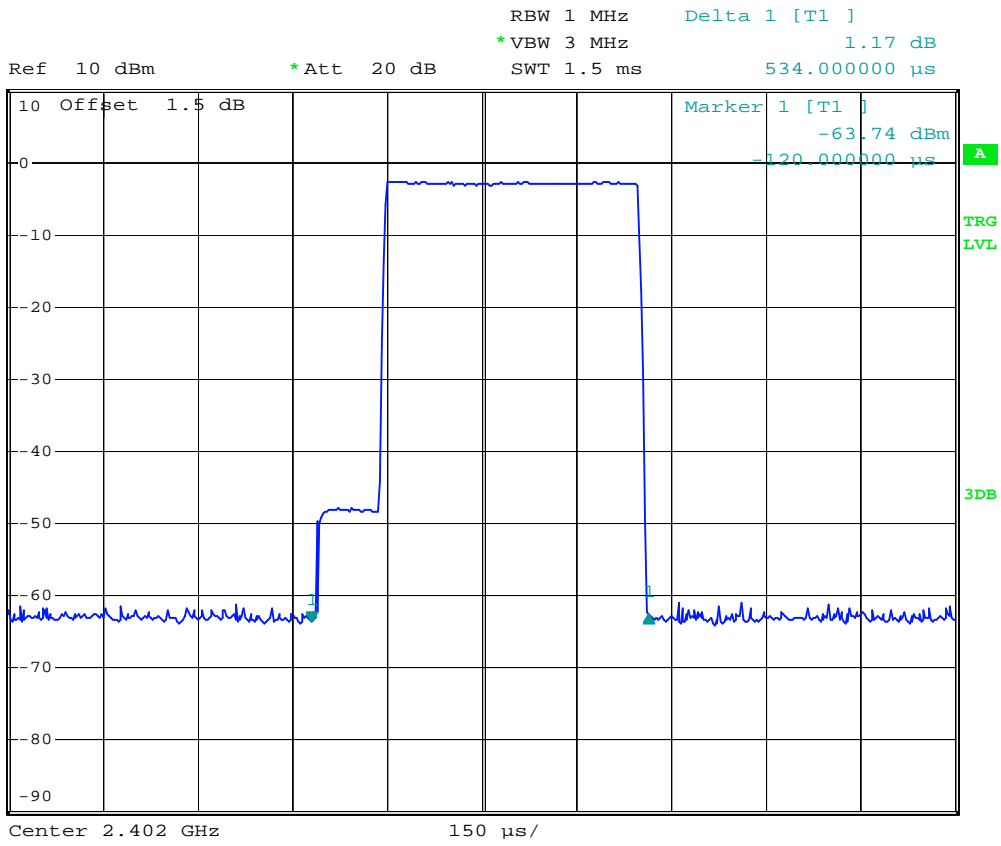
DH5:

A period transmit time =  $0.4 \times 79 = 31.6$ Dwell time = pulse time  $\times (1600/(6*79)) \times 31.6$ 

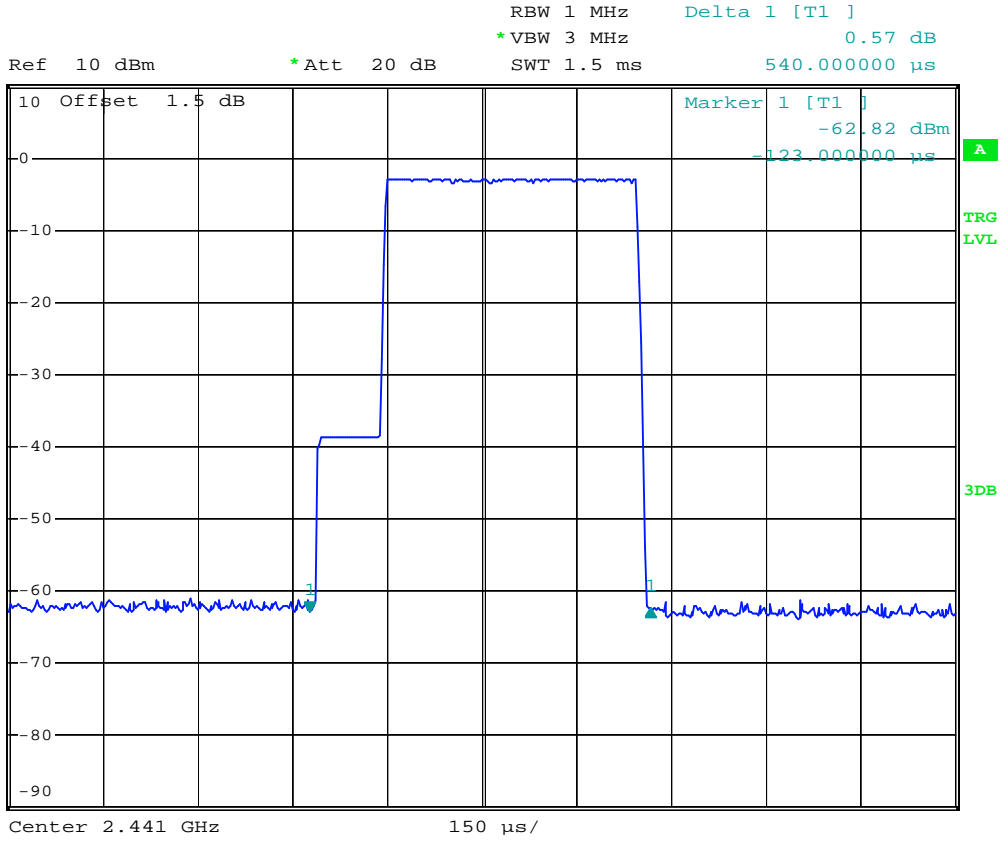
Channel	Channel Frequency (MHz)	Pulse Time (ms)	Dwell Time (ms)	Limit (ms)
Low	2402	3.073	327.7867	400
Middle	2441	3.097	330.3467	400
High	2480	3.081	328.6400	400

The spectrum analyzer plots are attached as below.

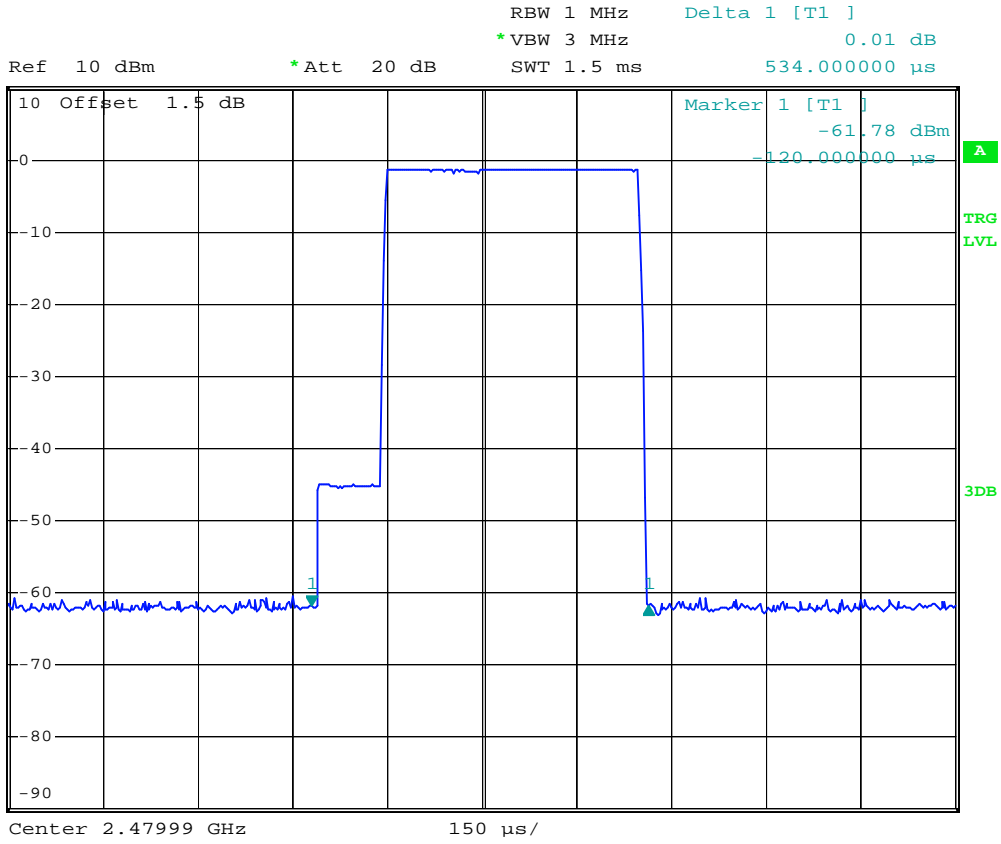
DH1:



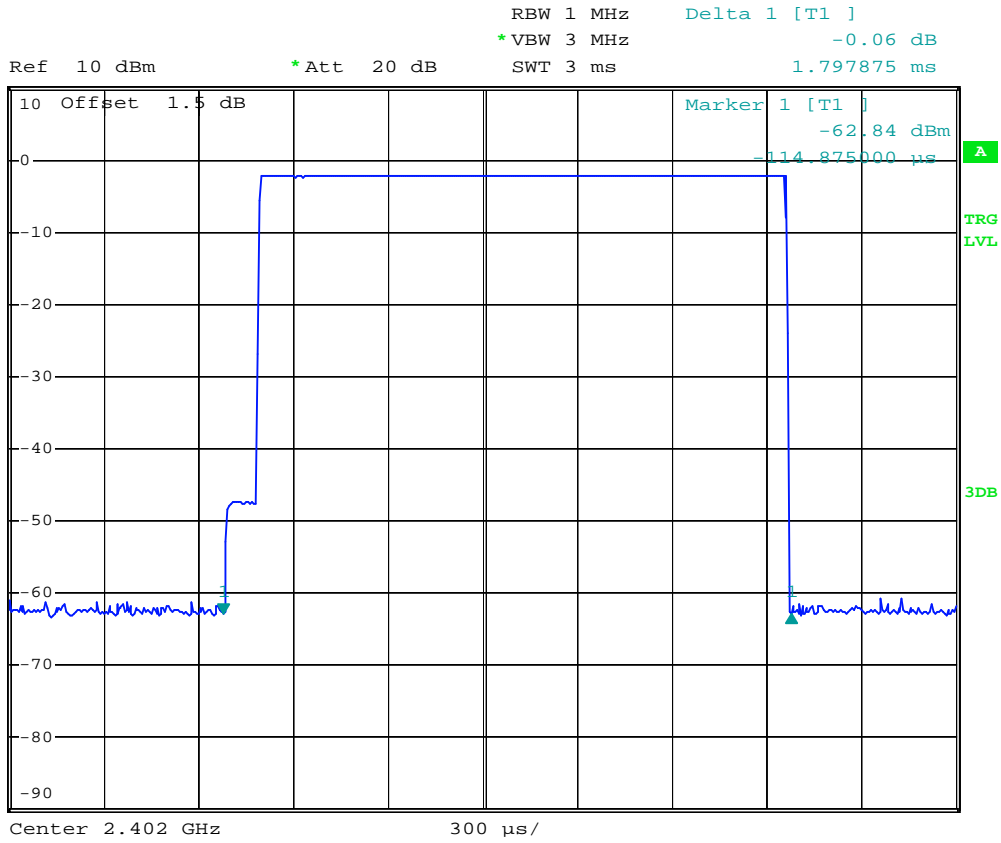
DH1:



DH1:



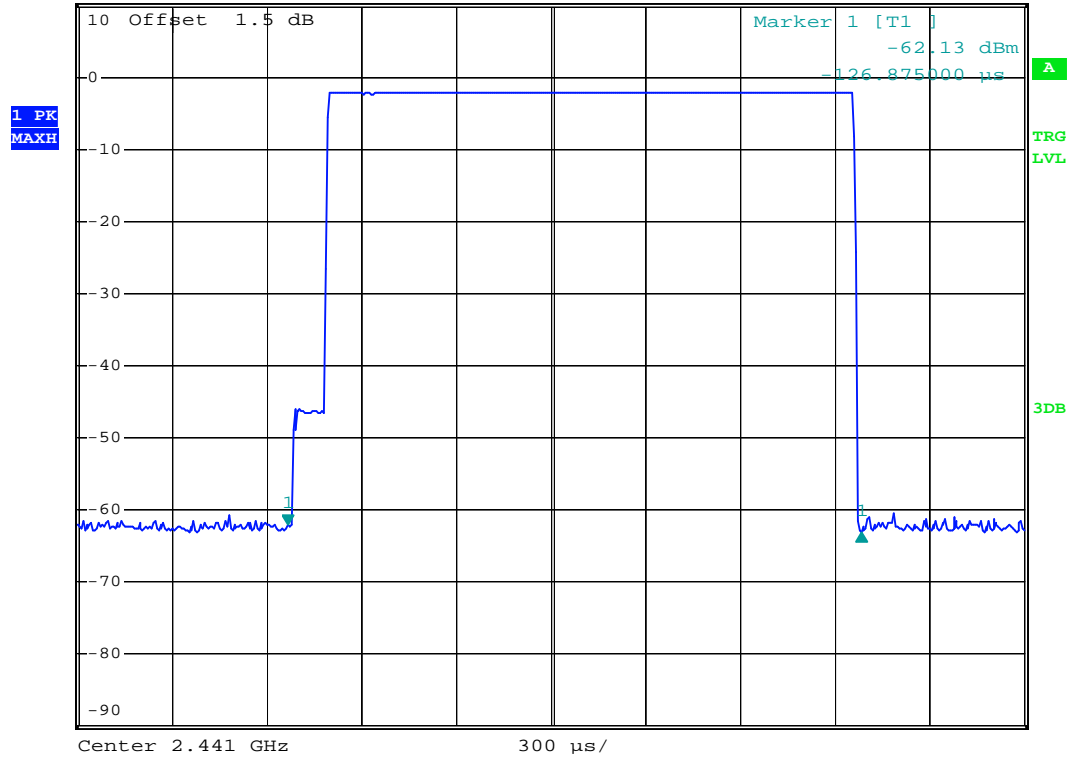
DH3:



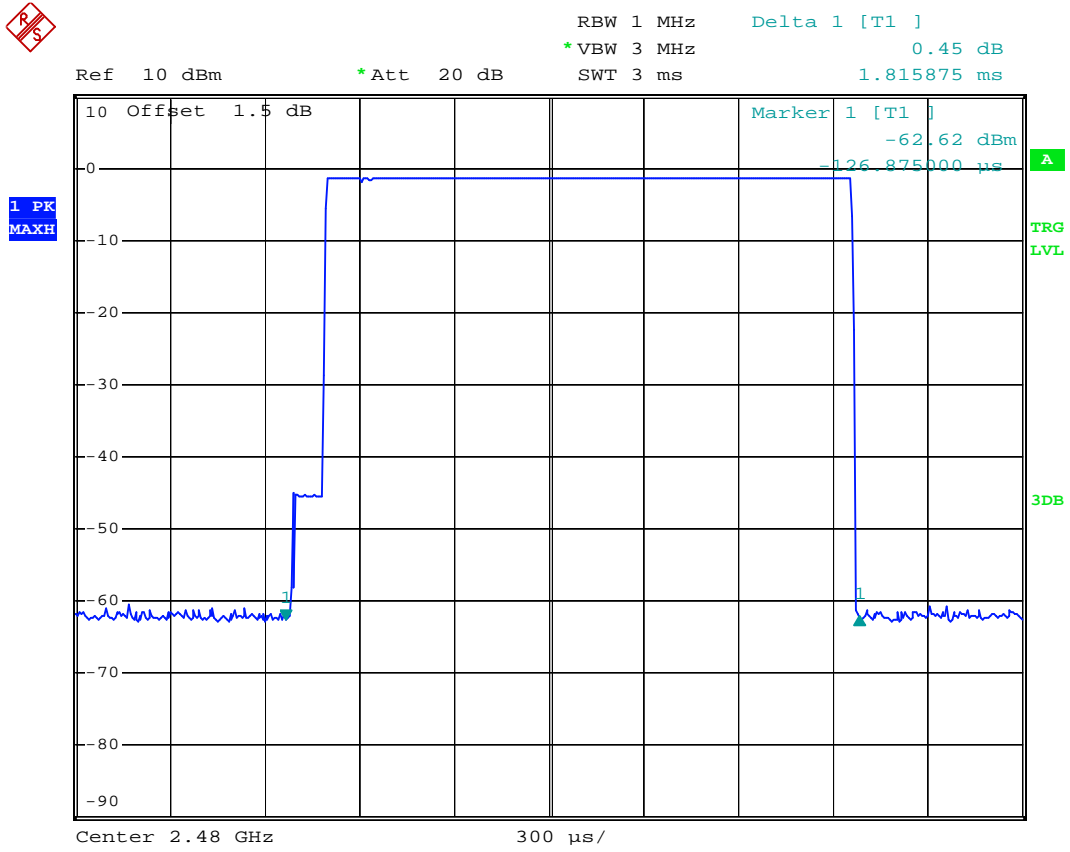
DH3:



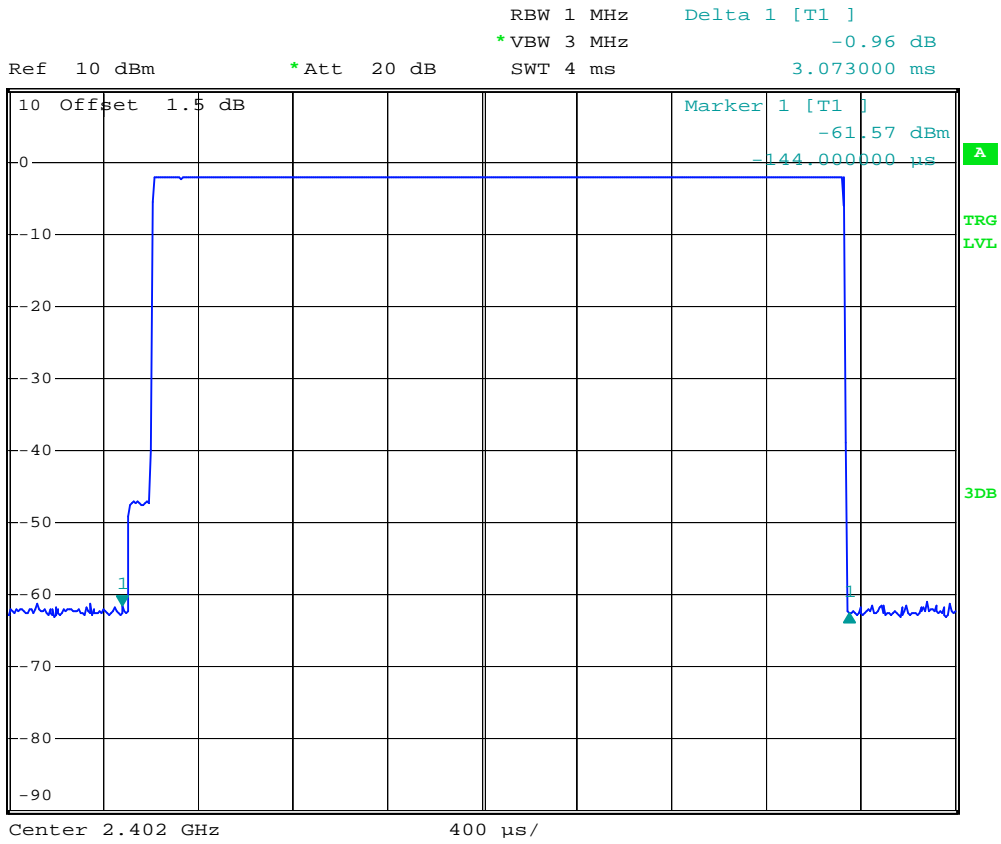
RBW 1 MHz    Delta 1 [T1 ]  
\*VBW 3 MHz    -0.90 dB  
Ref 10 dBm    \*Att 20 dB    SWT 3 ms    1.815875 ms



DH3:



DH5:

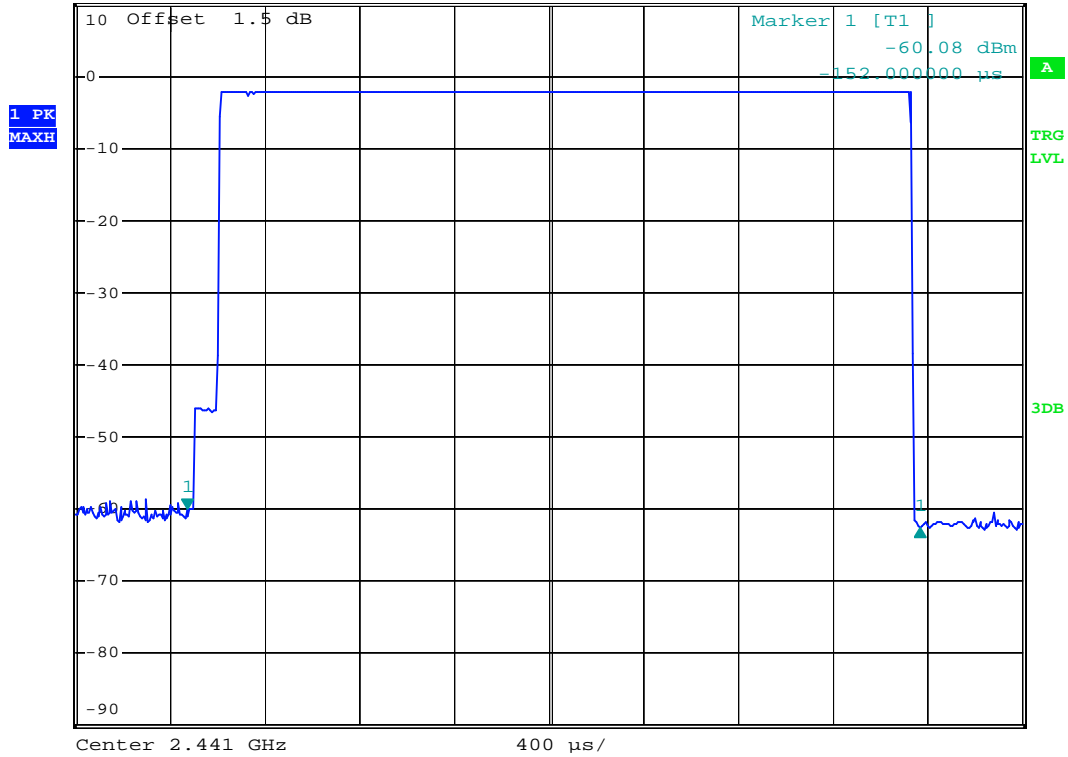




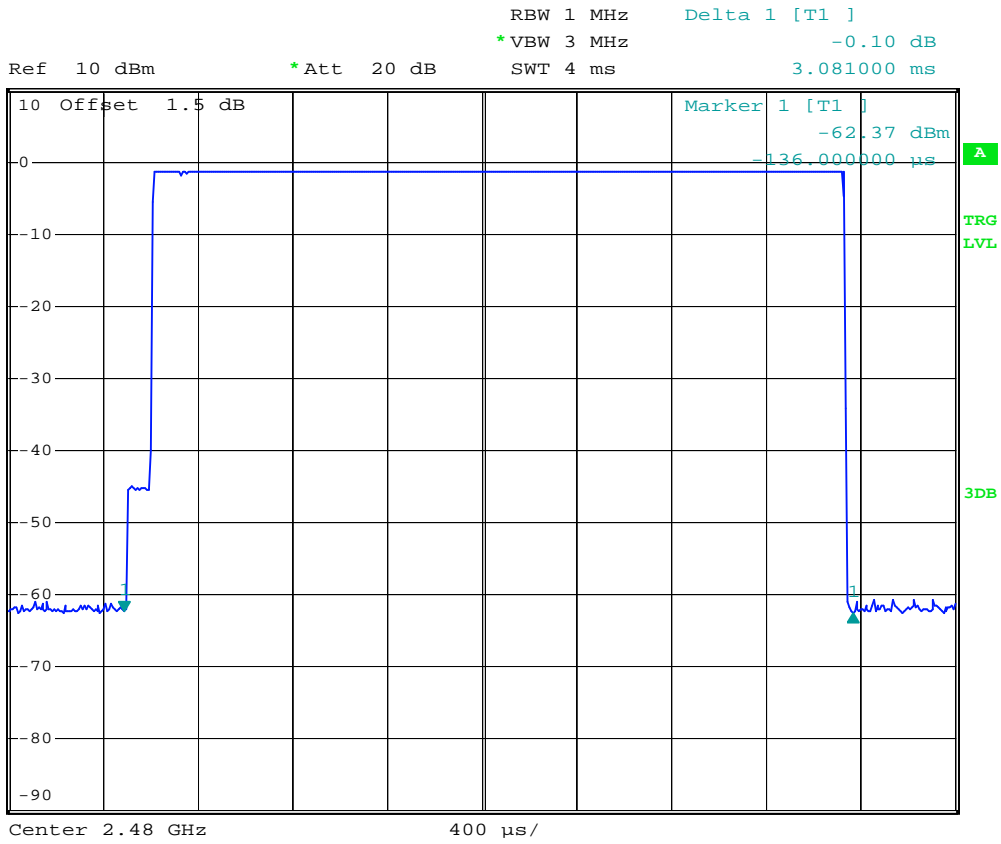
DH5:



RBW 1 MHz    Delta 1 [T1 ]  
\*VBW 3 MHz    -2.44 dB  
Ref 10 dBm    \*Att 20 dB    SWT 4 ms    3.097000 ms

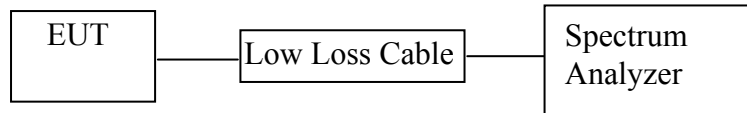


DH5:



## 9. MAXIMUM PEAK OUTPUT POWER TEST

### 9.1. Block Diagram of Test Setup



(EUT: Speaker)

### 9.2. The Requirement For Section 15.247(b)(1)

Section 15.247(b)(1): For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

### 9.3. EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 9.3.1. Speaker (EUT)

Model Number	:	KTS-39
Serial Number	:	N/A
Manufacturer	:	Shenzhen KingBoard Technology Co., Ltd.

### 9.4. Operating Condition of EUT

9.4.1. Setup the EUT and simulator as shown as Section 9.1.

9.4.2. Turn on the power of all equipment.

9.4.3. Let the EUT work in TX (Hopping off) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2441MHz, and 2480MHz TX frequency to transmit.

## 9.5. Test Procedure

9.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

9.5.2. Set RBW of spectrum analyzer to 3MHz and VBW to 3MHz.

9.5.3. Measurement the maximum peak output power.

## 9.6. Test Result

**PASS.**

Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>TX</u>	Test Engineer:	<u>Rickey</u>

Channel	Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)	Limits dBm / mW
Low	2402	-0.63	0.86	21 dBm / 125 mW
Middle	2441	-0.67	0.85	21 dBm / 125 mW
High	2480	0.08	1.01	21 dBm / 125 mW

The spectrum analyzer plots are attached as below.

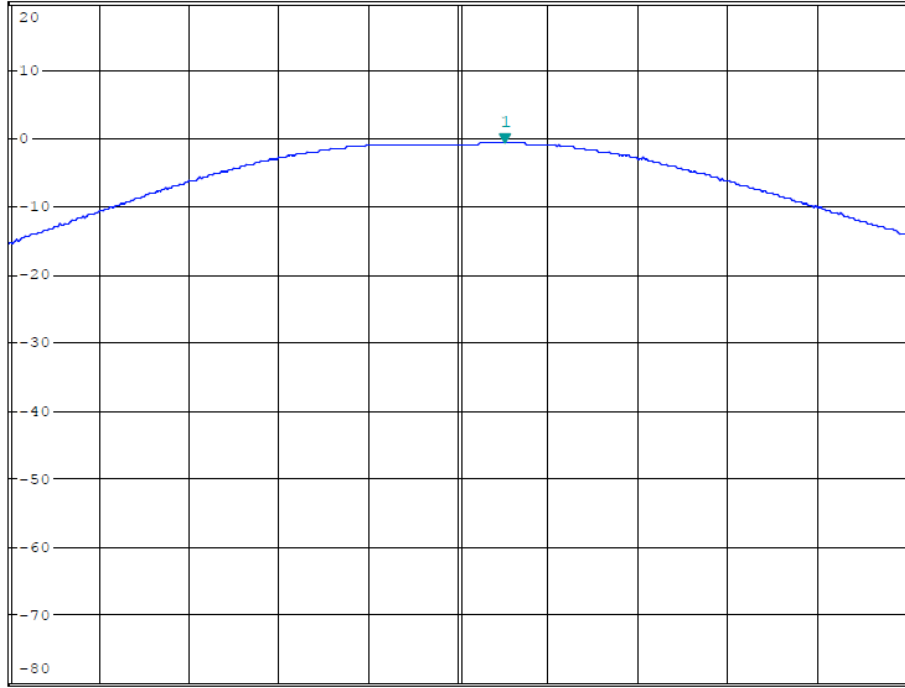


\*RBW 3 MHz    Marker 1 [T1 ]  
\*VBW 3 MHz    -0.63 dBm  
\*SWT 2.5 ms    2.402156100 GHz

Ref 20 dBm

Att 50 dB

1 PK  
MAXH



A

3DB

Center 2.402 GHz

300 kHz/

Span 3 MHz

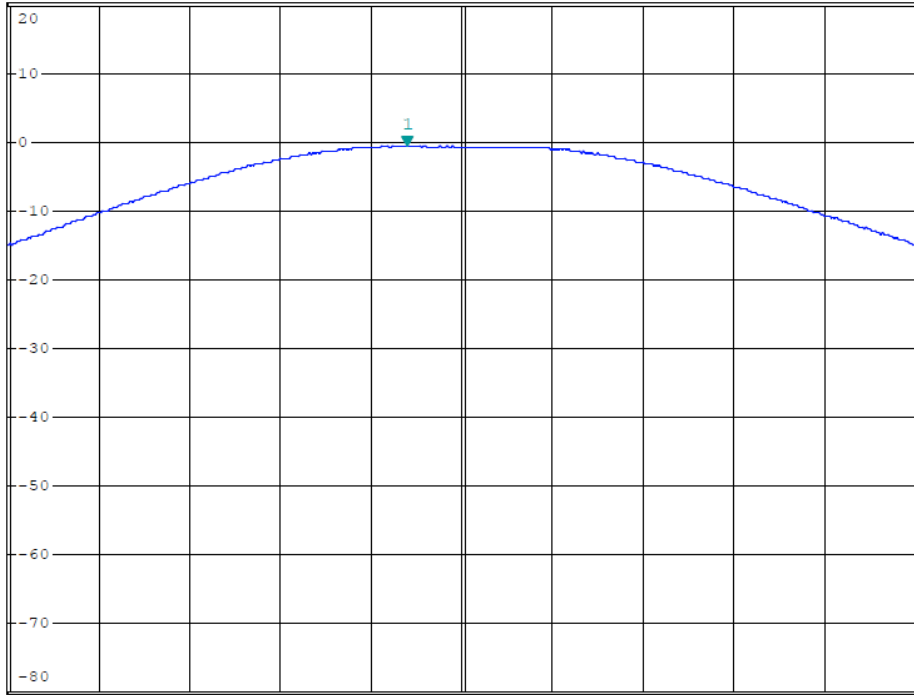


\*RBW 3 MHz    Marker 1 [T1 ]  
\*VBW 3 MHz    -0.67 dBm  
\*SWT 2.5 ms    2.440821000 GHz

Ref 20 dBm

Att 50 dB

1 PK  
MAXH



A

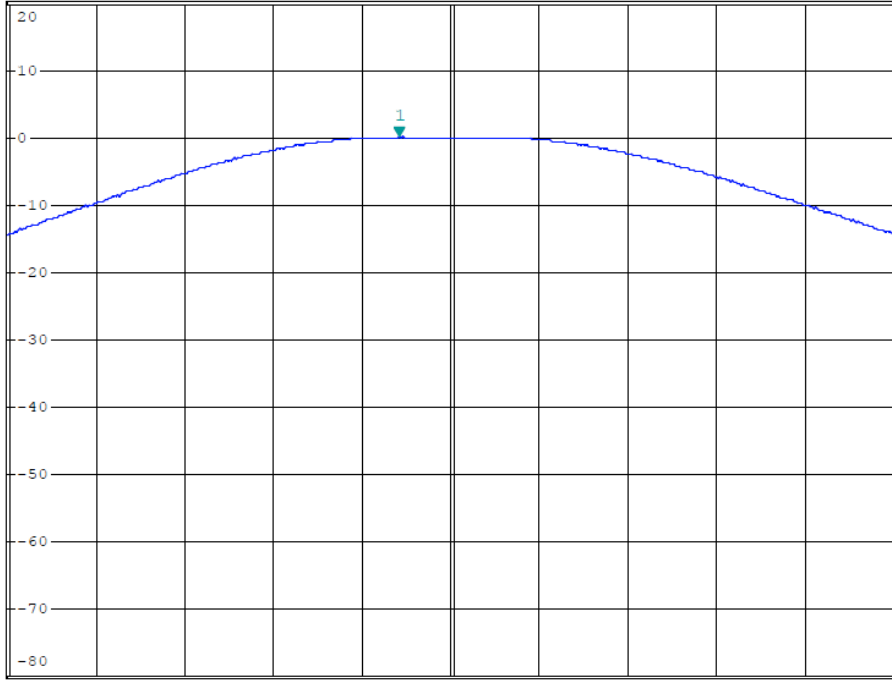
3DB



\*RBW 3 MHz    Marker 1 [T1 ]  
\*VBW 3 MHz    0.08 dBm  
\*SWT 2.5 ms    2.479826100 GHz

Ref 20 dBm    Att 50 dB

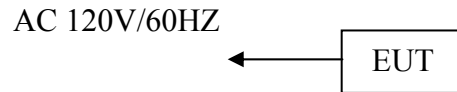
1 PK  
MAXH



## 10. RADIATED EMISSION TEST

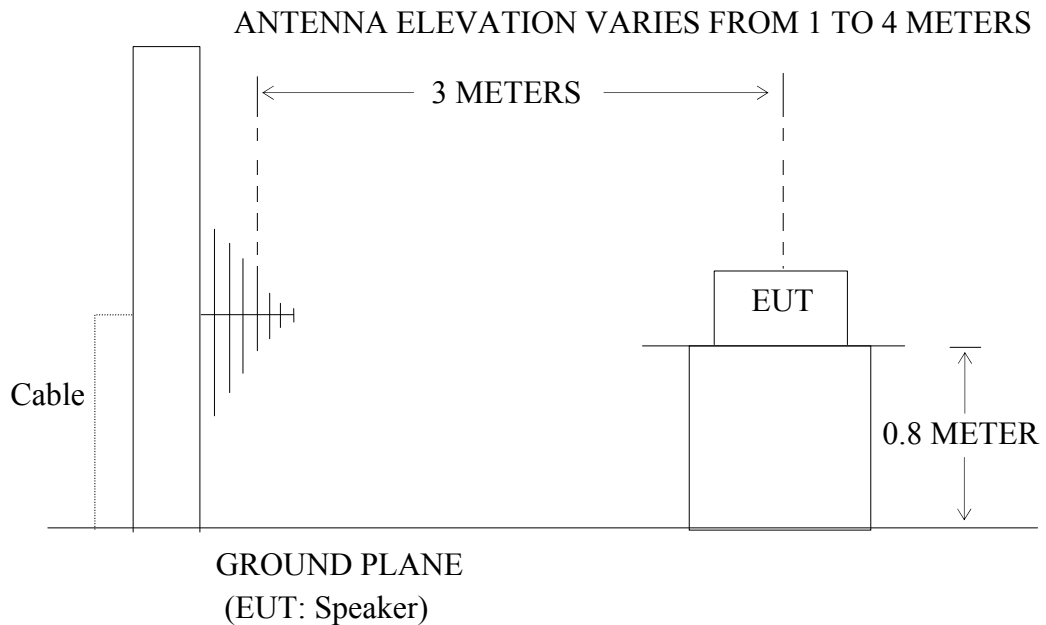
### 10.1. Block Diagram of Test Setup

#### 10.1.1. Block diagram of connection between the EUT and simulators



(EUT: Speaker)

#### 10.1.2. Anechoic Chamber Test Setup Diagram



### 10.2. The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).



### 10.3. Restricted bands of operation

#### 10.3.1. FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz MHz		GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	( <sup>2</sup> )
13.36-13.41			

<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510

<sup>2</sup>Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

### 10.4. Configuration of EUT on Measurement

The following equipment are installed on Radi ated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 10.4.1. Speaker (EUT)

Model Number : KTS-39  
 Serial Number : N/A  
 Manufacturer : Shenzhen KingBoard Technology Co., Ltd.

### 10.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4- 2009 on radiated emission measurement.

The bandwidth of test receiver (R&S ESI26) is set at 120 KHz in 30-1000MHz. and set at 1MHz in above 1000MHz.

The frequency range from 30MHz to 25000MHz is checked.

The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

### 10.6. The Field Strength of Radiation Emission Measurement Results

**PASS.**

Date of Test:	December 3, 2013	Temperature:	25°C
EUT:	Speaker	Humidity:	50%
Model No.:	KTS-39	Power Supply:	AC 120V/60HZ
Test Mode:	TX (2402MHz)	Test Engineer:	Rickey

**For 30MHz-1000MHz**

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading (dBµV/m)		Factor Corr. (dB)	Result (dBµV/m)		Limit (dBµV/m)	Margin (dB)		Polarization
	QP			QP	QP		QP	QP	
71.8320	48.68		-21.45	27.23		40.00	-12.77		Horizontal
95.7622	49.14		-21.96	27.18		43.50	-16.32		Horizontal
665.8035	47.12		-10.35	36.77		46.00	-9.23		Horizontal
370.7023	45.87		-15.85	30.02		46.00	-15.98		Vertical
665.8035	44.44		-10.35	34.09		46.00	-11.91		Vertical
916.0687	37.75		-5.87	31.88		46.00	-14.12		Vertical

**For 1GHz-25GHz**

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dBµV/m)		Factor Corr. (dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dBµV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	Horizontal

**Note: 1.** The emission emitted by the EUT is too low to be measured except the emission listed above.

**2. \*: Denotes restricted band of operation.**

**3. The fundamental radiated emissions were reduced by 2.4G Band Reject Filter in the attached plots.**

Date of Test:	December 3, 2013	Temperature:	25°C
EUT:	Speaker	Humidity:	50%
Model No.:	KTS-39	Power Supply:	AC 120V/60HZ
Test Mode:	TX (2441MHz)	Test Engineer:	Rickey

**For 30MHz-1000MHz**

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading (dBµV/m)		Factor Corr. (dB)	Result (dBµV/m)		Limit (dBµV/m)	Margin (dB)	Polarization
	QP			QP	QP			
95.7622	46.82		-21.96	24.86		43.50	-18.64	Horizontal
312.1792	46.08		-17.61	28.47		46.00	-17.53	Horizontal
665.8034	43.83		-10.35	33.48		46.00	-12.52	Horizontal
79.8003	43.63		-21.39	22.24		40.00	-17.76	Vertical
382.5879	45.36		-15.76	29.60		46.00	-16.40	Vertical
665.8035	44.92		-10.35	34.57		46.00	-11.43	Vertical

**For 1GHz-25GHz**

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dBµV/m)		Factor Corr. (dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dBµV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	Horizontal

**Note: 1. The emission emitted by the EUT is too low to be measured except the emission listed above.**

**2. \*: Denotes restricted band of operation.**

**3. The fundamental radiated emissions were reduced by 2.4G Band Reject Filter in the attached plots.**

Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>TX (2480MHz)</u>	Test Engineer:	<u>Rickey</u>

**For 30MHz-1000MHz**

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading (dBμV/m)		Factor Corr. (dB)	Result (dBμV/m)		Limit (dBμV/m)	Margin (dB)		Polarization
	QP			QP	QP		QP	QP	
71.8319	47.28		-21.45	25.83		40.00	-14.17		Horizontal
299.3158	47.31		-17.88	29.43		46.00	-16.57		Horizontal
665.8034	44.73		-10.35	34.38		46.00	-11.62		Horizontal
71.8320	42.71		-21.45	21.26		40.00	-18.74		Vertical
383.9318	43.98		-15.76	28.22		46.00	-17.78		Vertical
665.8035	43.20		-10.35	32.85		46.00	-13.15		Vertical

**For 1GHz-25GHz**

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dBμV/m)		Factor Corr. (dB)	Result(dBμV/m)		Limit(dBμV/m)		Margin(dBμV/m)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	Horizontal

**Note: 1. The emission emitted by the EUT is too low to be measured except the emission listed above.**

**2. \*: Denotes restricted band of operation.**

**3. The fundamental radiated emissions were reduced by 2.4G Band Reject Filter in the attached plots.**



**ACCURATE TECHNOLOGY CO., LTD.**

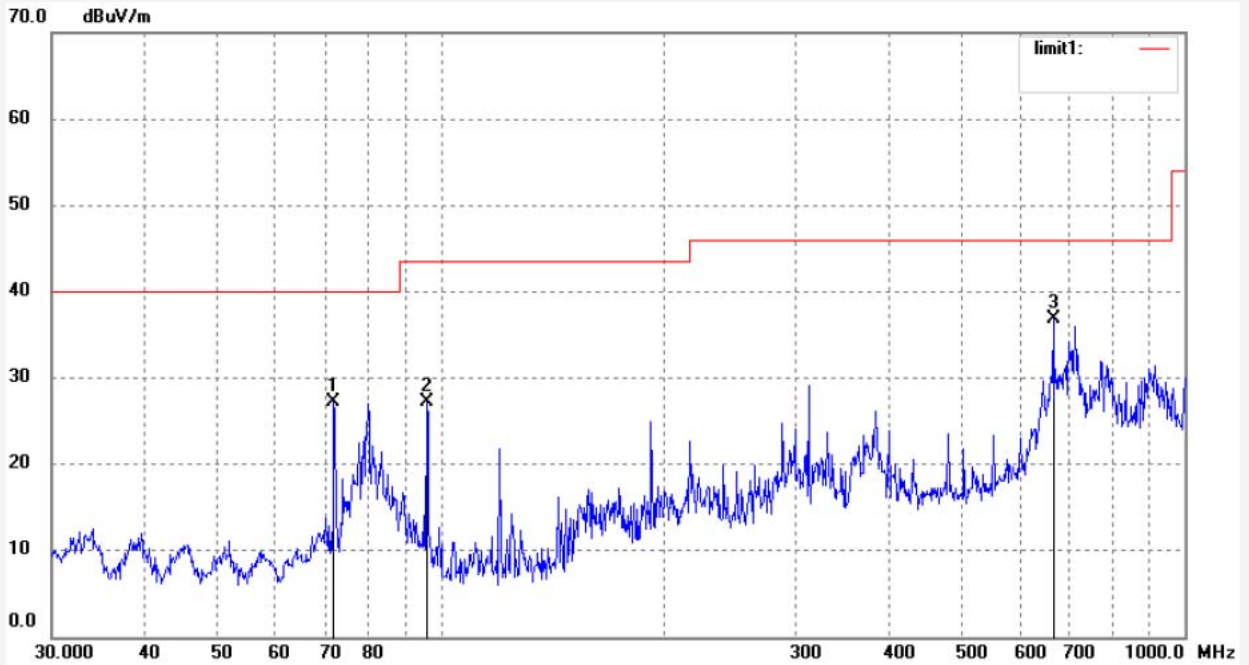
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: star #3940  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2402MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Horizontal  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 10/08/22  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE201032585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	71.8320	48.68	-21.45	27.23	40.00	-12.77	peak			
2	95.7622	49.14	-21.96	27.18	43.50	-16.32	peak			
3	665.8035	47.12	-10.35	36.77	46.00	-9.23	peak			



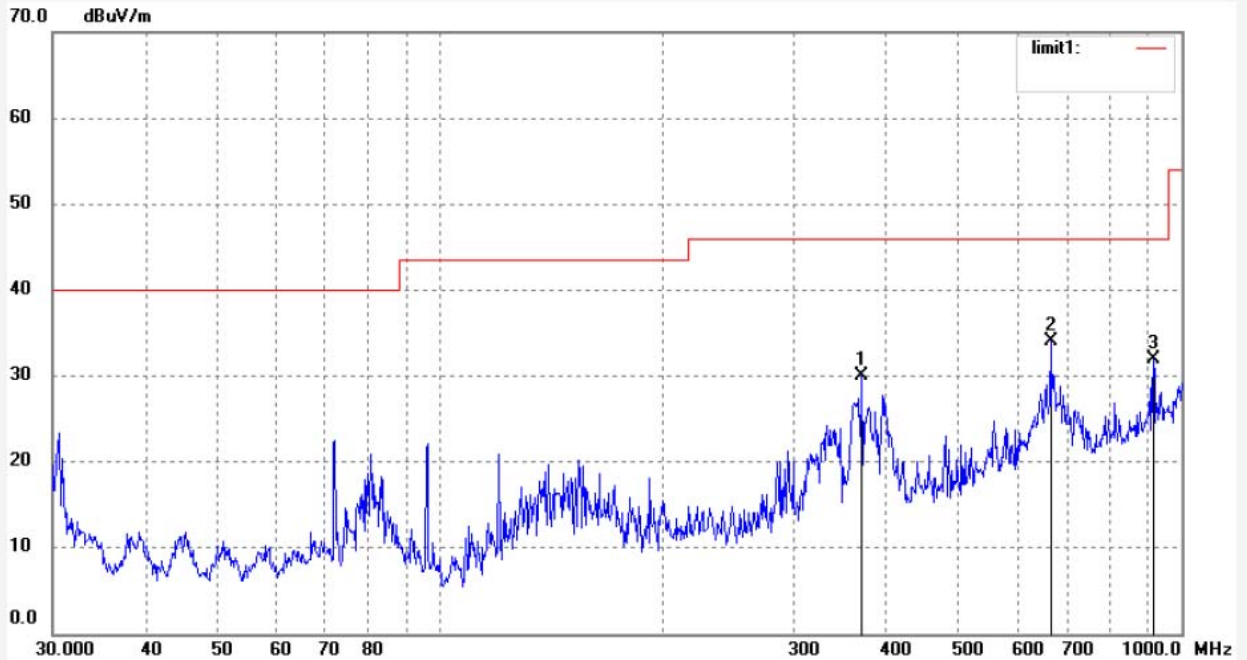
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F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: star #3941	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 5V
Test item: Radiation Test	Date: 13/12/03/
Temp.( C)/Hum.(%) 25 C / 55 %	Time: 10/08/54
EUT: Speaker	Engineer Signature:
Mode: TX 2402MHz	Distance: 3m
Model: KTS-39	
Manufacturer: KingBoard	

Note: Report No.:ATE201032585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	370.7023	45.87	-15.85	30.02	46.00	-15.98	peak			
2	665.8035	44.44	-10.35	34.09	46.00	-11.91	peak			
3	916.0687	37.75	-5.87	31.88	46.00	-14.12	peak			



**ACCURATE TECHNOLOGY CO., LTD.**

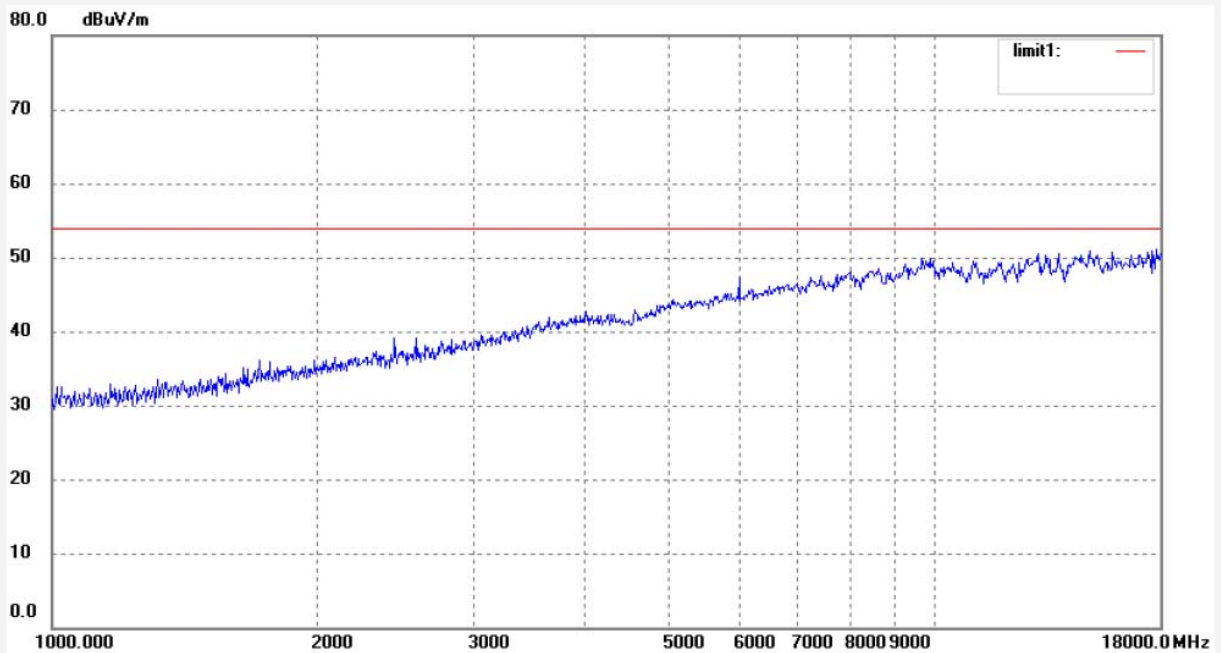
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3636  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2402MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Horizontal  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 11/06/50  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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**ACCURATE TECHNOLOGY CO., LTD.**

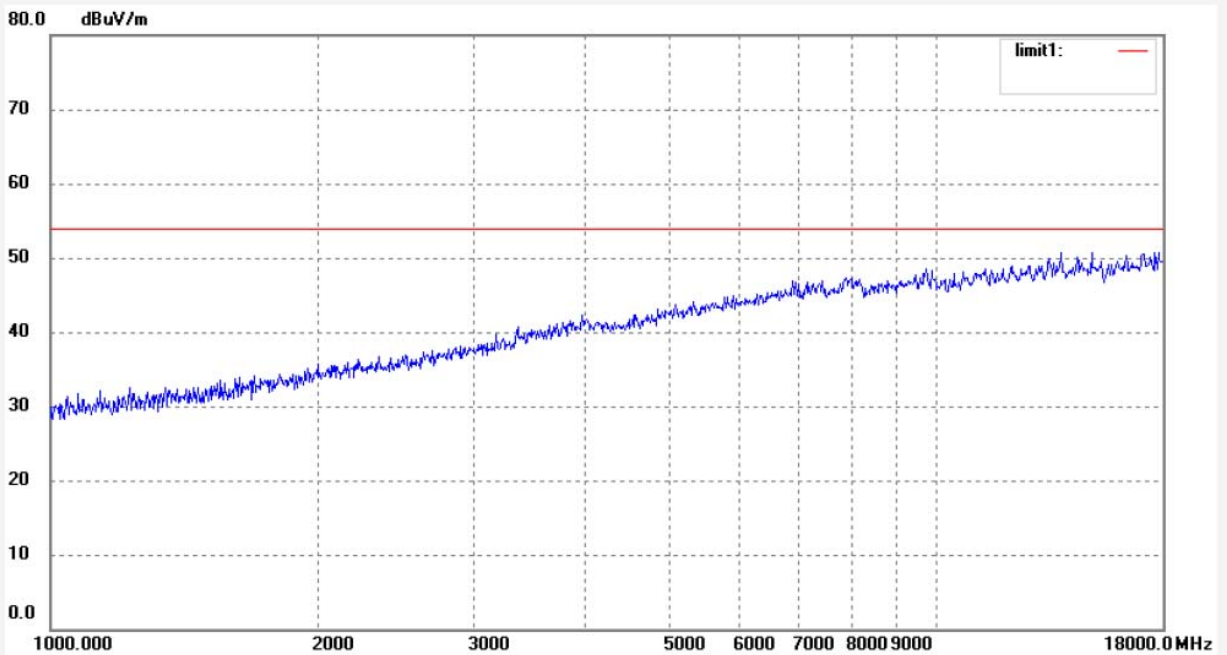
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3637  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2402MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Vertical  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 11/10/49  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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**ACCURATE TECHNOLOGY CO., LTD.**

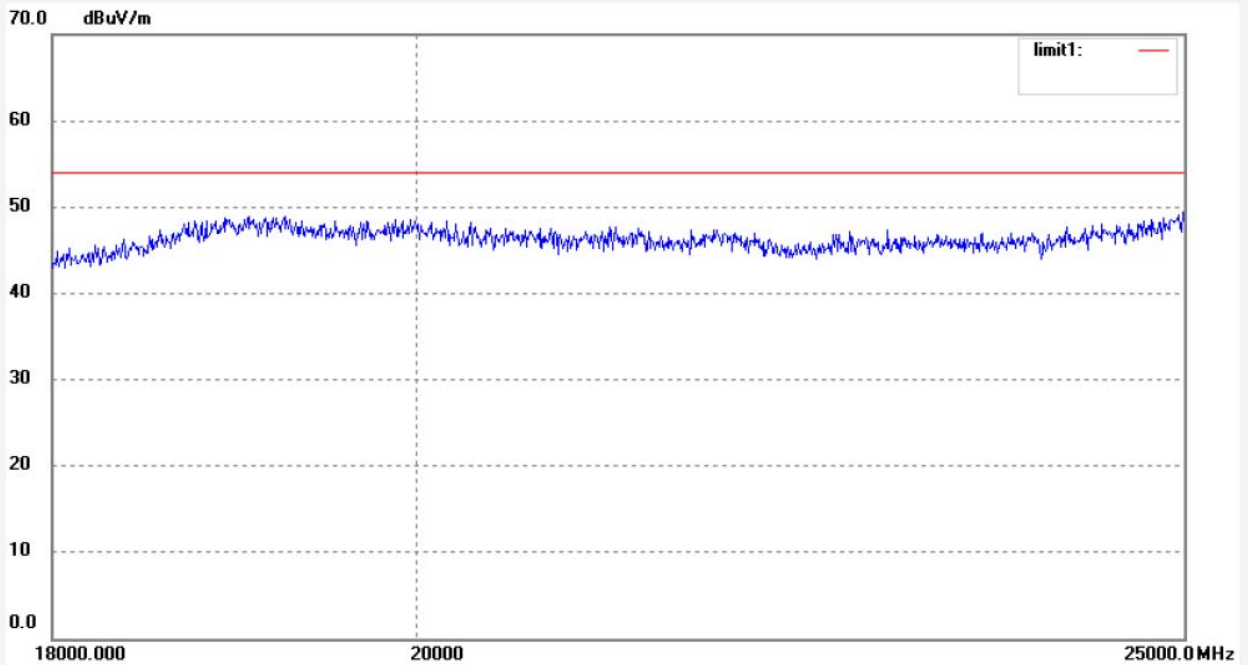
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: Alen #651  
Standard: FCC 15C  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 50 %  
EUT: Speaker  
Mode: TX 2402MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Vertical  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 11:41:05  
Engineer Signature: Alen  
Distance: 3m

Note: Report No:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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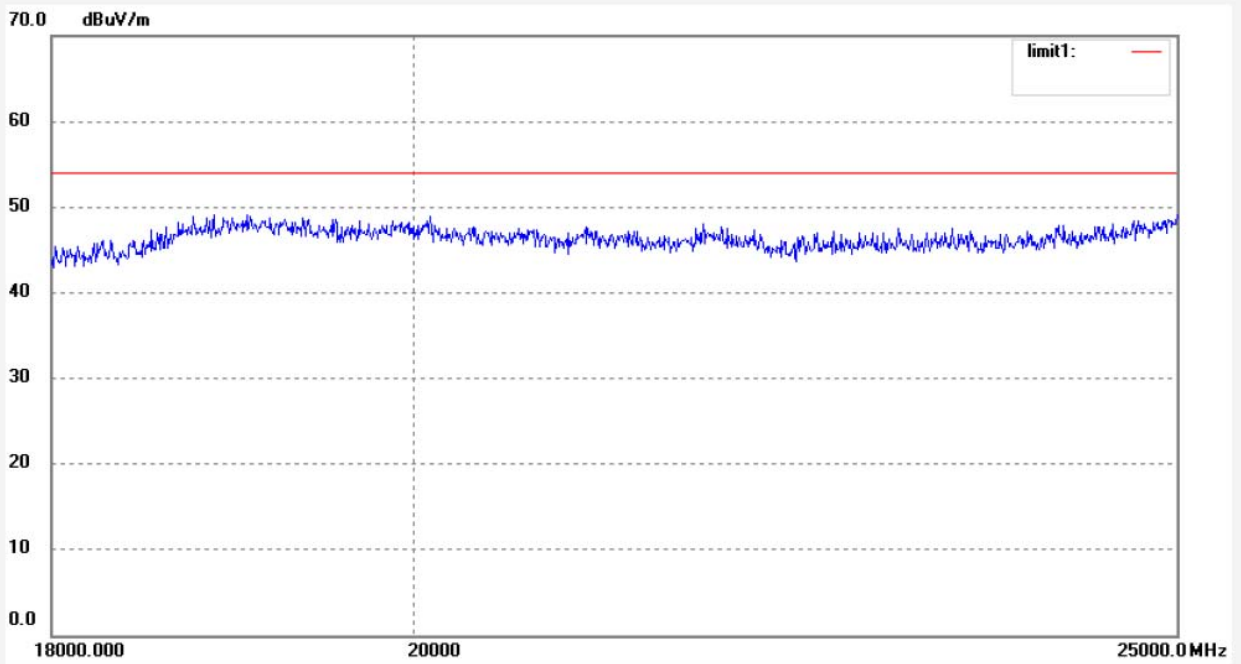
**ACCURATE TECHNOLOGY CO., LTD.**

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: Alen #652	Polarization: Horizontal
Standard: FCC 15C	Power Source: DC 5V
Test item: Radiation Test	Date: 13/12/03/
Temp.( C)/Hum.(%) 25 C / 50 %	Time: 11:42:56
EUT: Speaker	Engineer Signature: Alen
Mode: TX 2402MHz	Distance: 3m
Model: KTS-39	
Manufacturer: KingBoard	

Note: Report No:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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**ACCURATE TECHNOLOGY CO., LTD.**

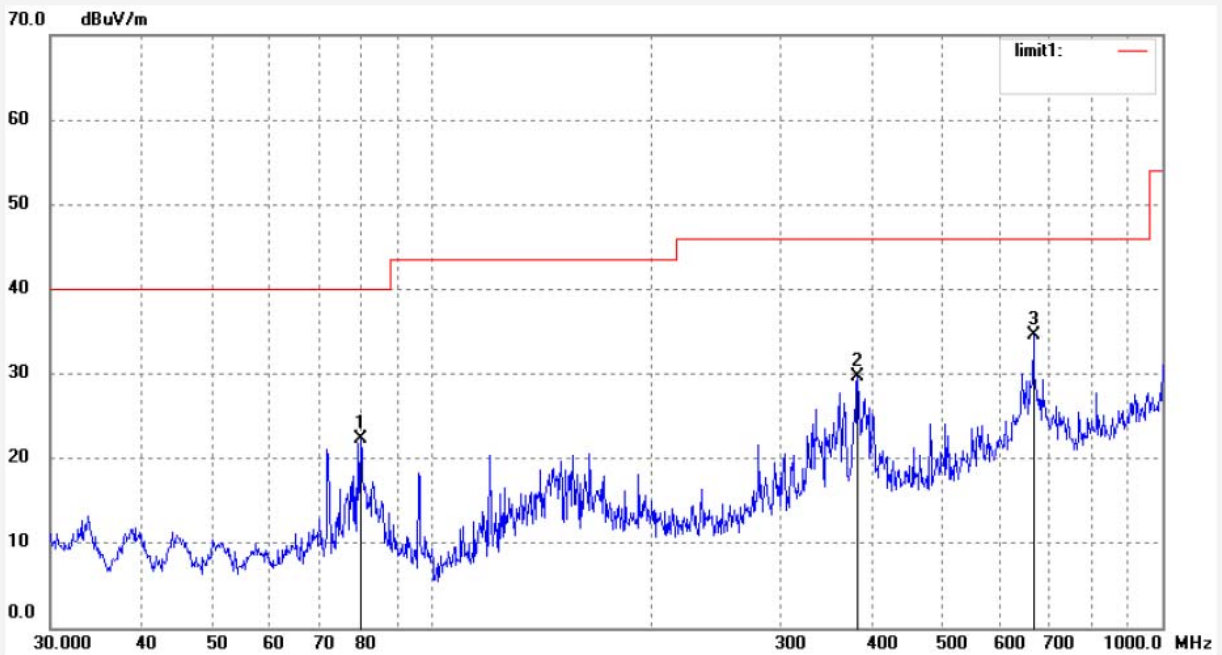
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: star #3942  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2441MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Vertical  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 10/09/36  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE201032585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	79.8003	43.63	-21.39	22.24	40.00	-17.76	peak			
2	382.5879	45.36	-15.76	29.60	46.00	-16.40	peak			
3	665.8035	44.92	-10.35	34.57	46.00	-11.43	peak			





**ACCURATE TECHNOLOGY CO., LTD.**

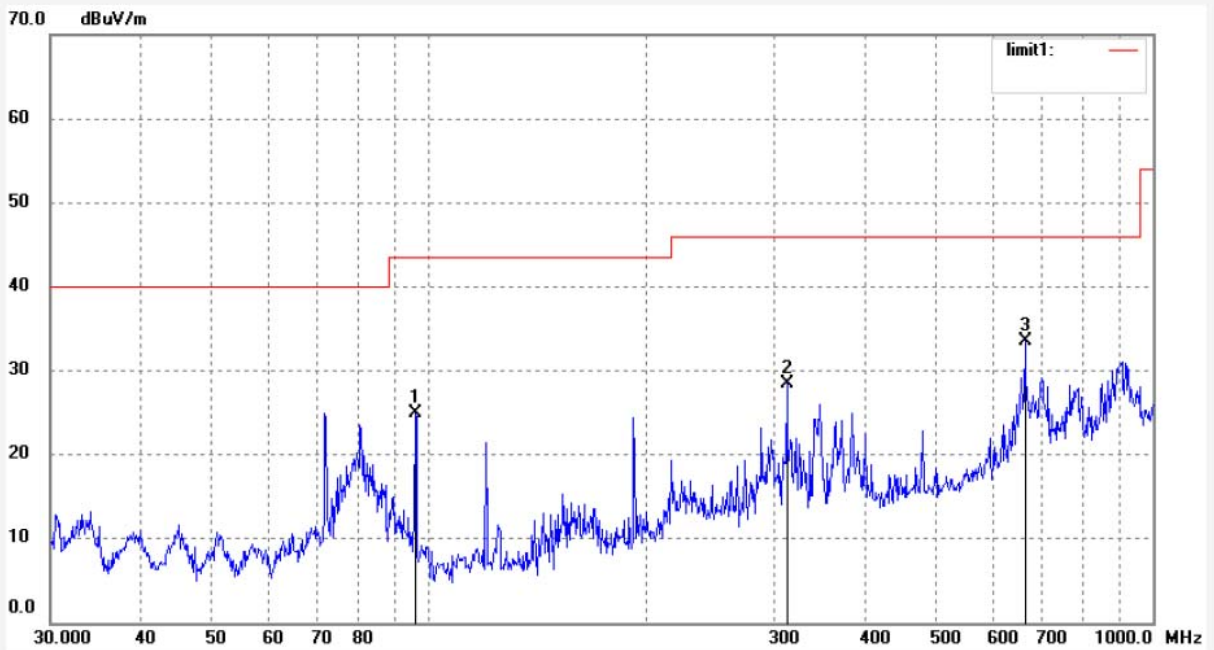
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: star #3943  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2441MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Horizontal  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 10/10/01  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE201032585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	95.7622	46.82	-21.96	24.86	43.50	-18.64	peak			
2	312.1792	46.08	-17.61	28.47	46.00	-17.53	peak			
3	665.8034	43.83	-10.35	33.48	46.00	-12.52	peak			



**ACCURATE TECHNOLOGY CO., LTD.**

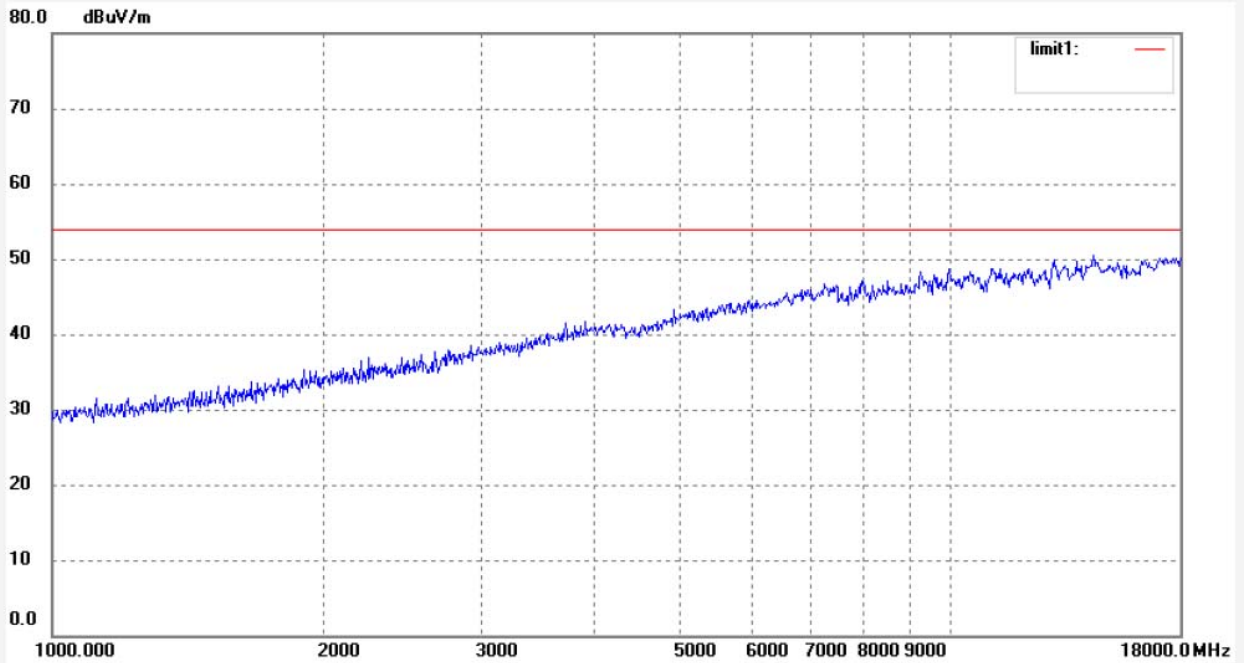
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3638  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2441MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Vertical  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 11/14/23  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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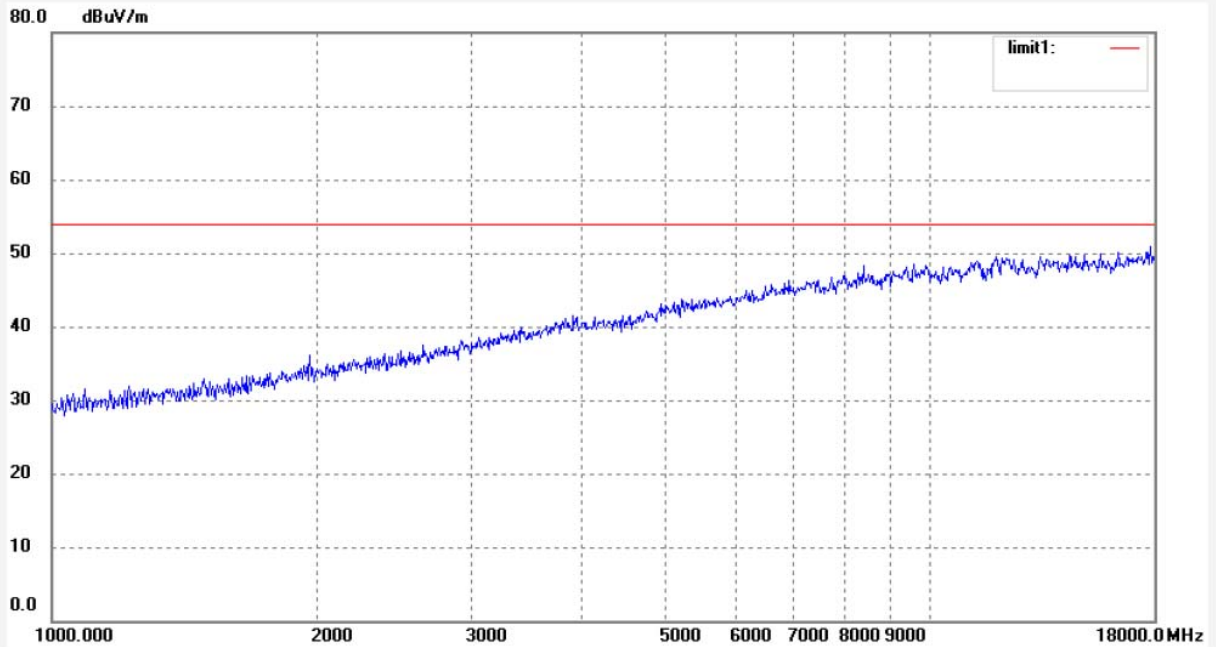
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3639  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2441MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Horizontal  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 11/18/50  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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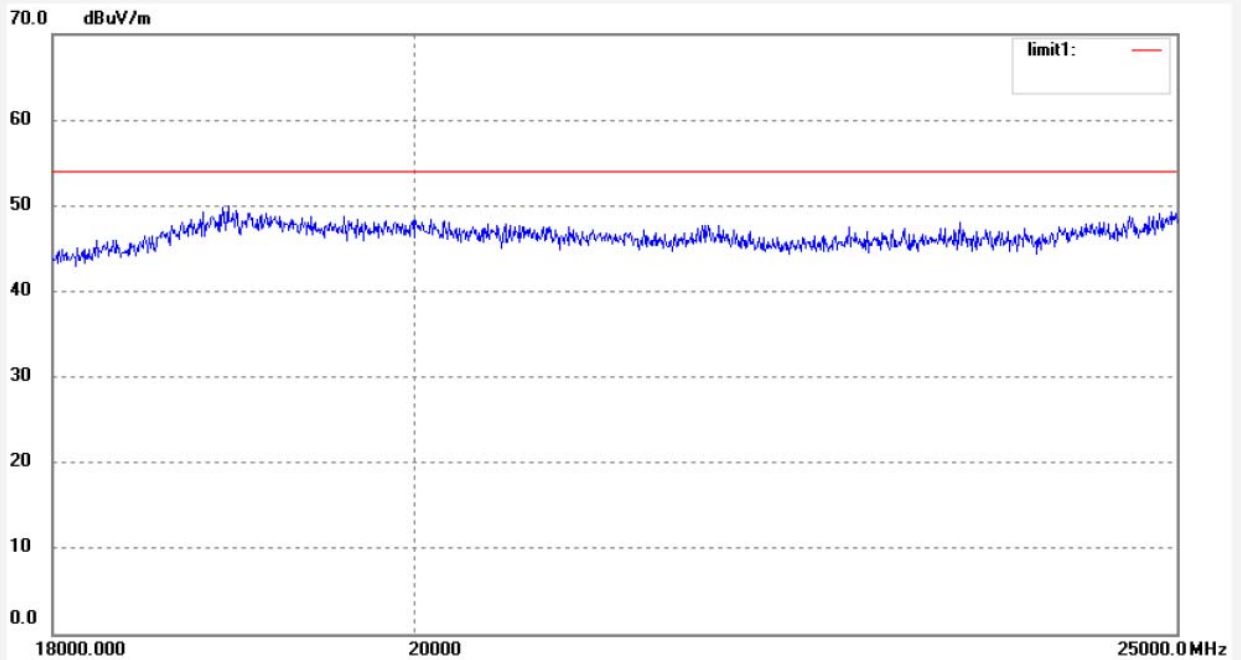
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: Alen #653  
Standard: FCC 15C  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 50 %  
EUT: Speaker  
Mode: TX 2441MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Horizontal  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 11:44:38  
Engineer Signature: Alen  
Distance: 3m

Note: Report No:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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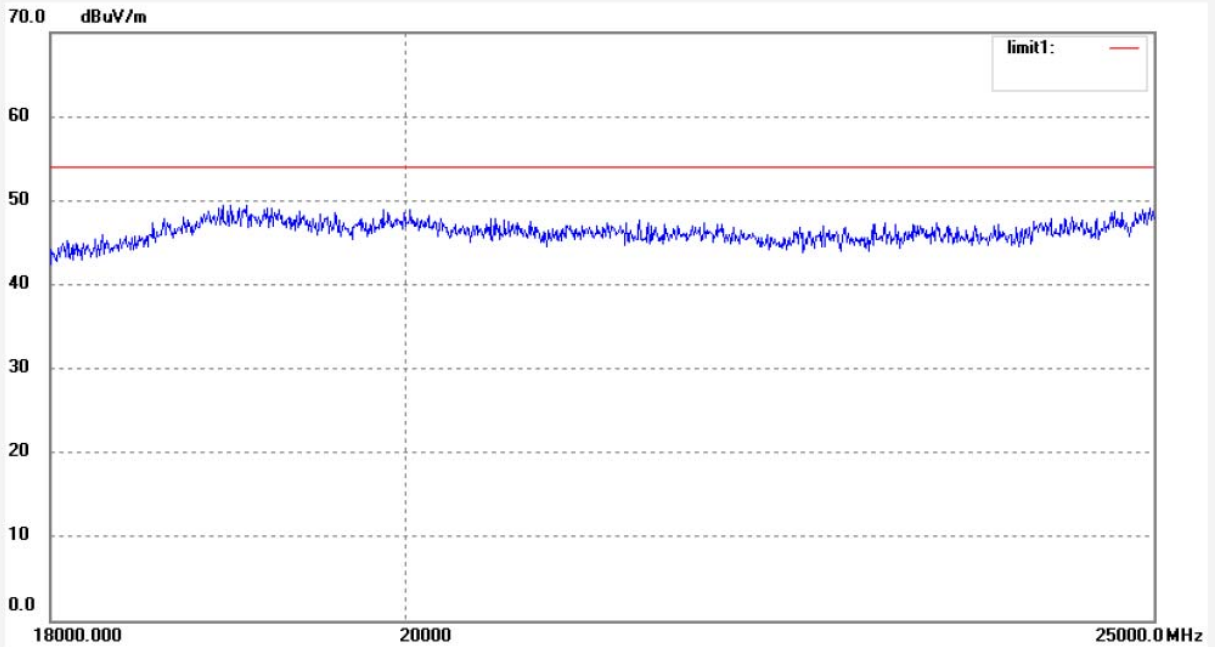
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: Alen #654  
Standard: FCC 15C  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 50 %  
EUT: Speaker  
Mode: TX 2441MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Vertical  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 11:45:42  
Engineer Signature: Alen  
Distance: 3m

Note: Report No:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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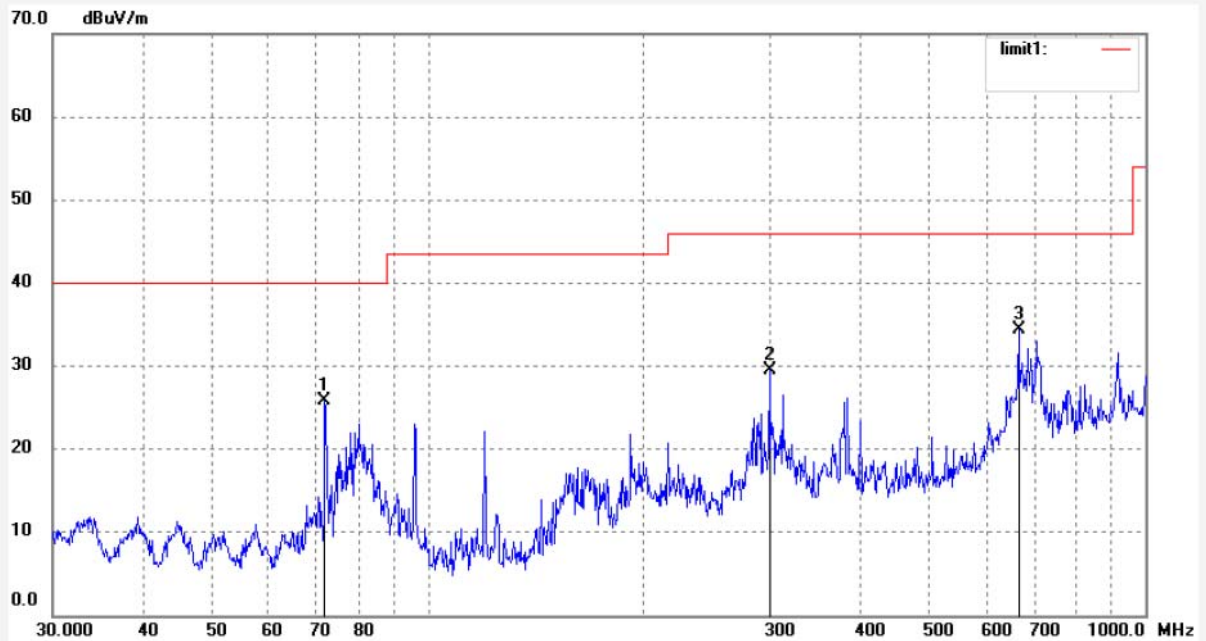
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: star #3944  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2480MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Horizontal  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 10/10/22  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE201032585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	71.8319	47.28	-21.45	25.83	40.00	-14.17	peak			
2	299.3158	47.31	-17.88	29.43	46.00	-16.57	peak			
3	665.8034	44.73	-10.35	34.38	46.00	-11.62	peak			



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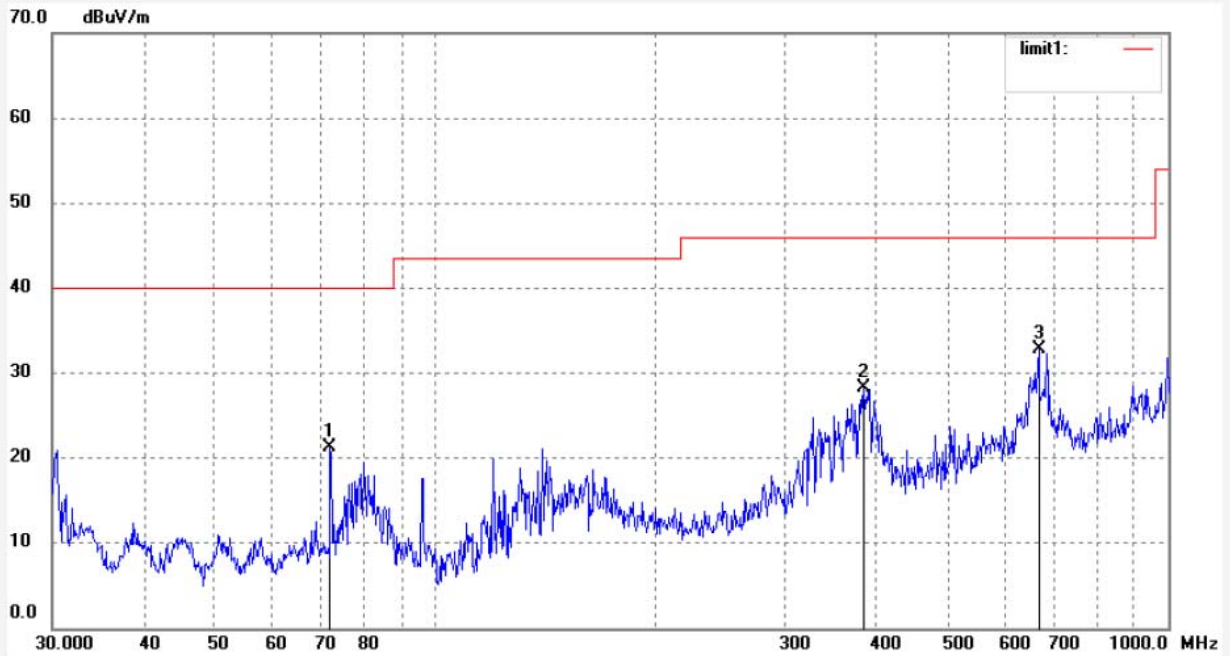
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: star #3945  
Standard: FCC Class B 3M Radiated  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2480MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Vertical  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 10/10/54  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE201032585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	71.8320	42.71	-21.45	21.26	40.00	-18.74	peak			
2	383.9318	43.98	-15.76	28.22	46.00	-17.78	peak			
3	665.8035	43.20	-10.35	32.85	46.00	-13.15	peak			



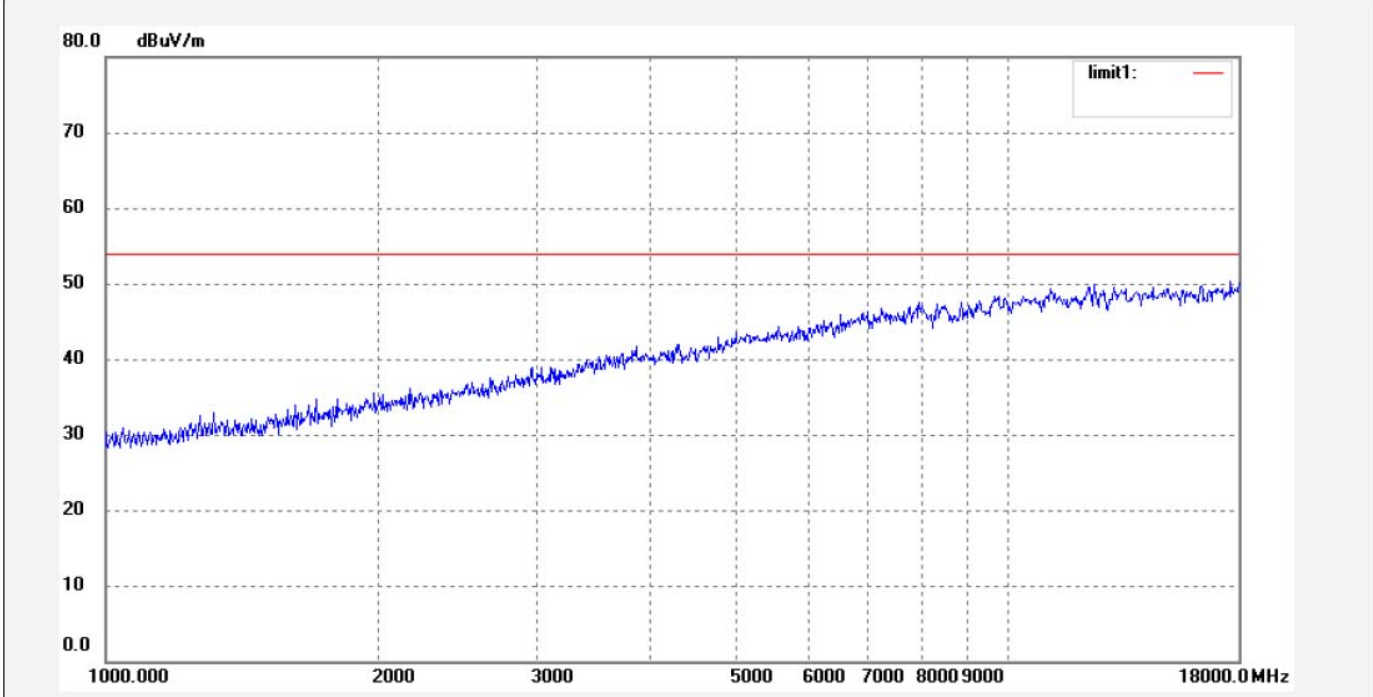
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F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3640	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 5V
Test item: Radiation Test	Date: 13/12/03/
Temp.( C)/Hum.(%) 25 C / 55 %	Time: 11/22/18
EUT: Speaker	Engineer Signature:
Mode: TX 2480MHz	Distance: 3m
Model: KTS-39	
Manufacturer: KingBoard	

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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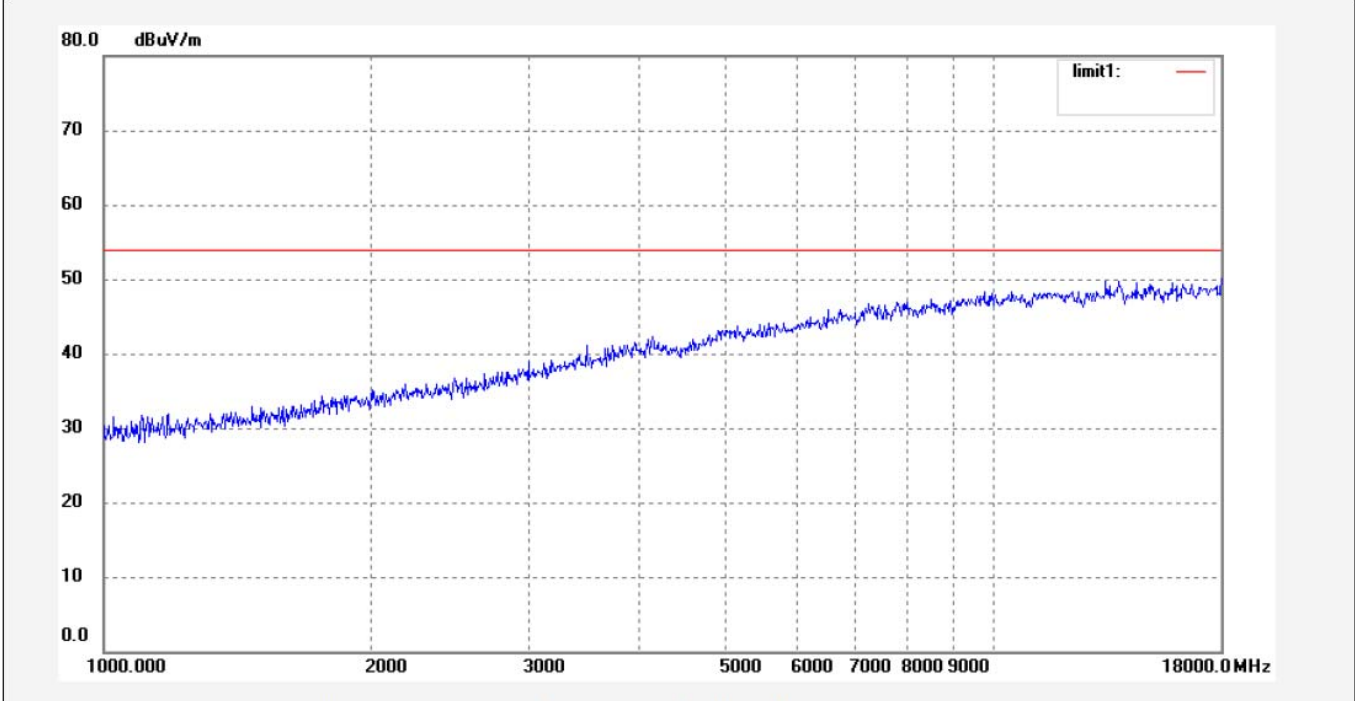
**ACCURATE TECHNOLOGY CO., LTD.**

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3641	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 5V
Test item: Radiation Test	Date: 13/12/03/
Temp.( C)/Hum.(%) 25 C / 55 %	Time: 11/26/45
EUT: Speaker	Engineer Signature:
Mode: TX 2480MHz	Distance: 3m
Model: KTS-39	
Manufacturer: KingBoard	

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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**ACCURATE TECHNOLOGY CO., LTD.**

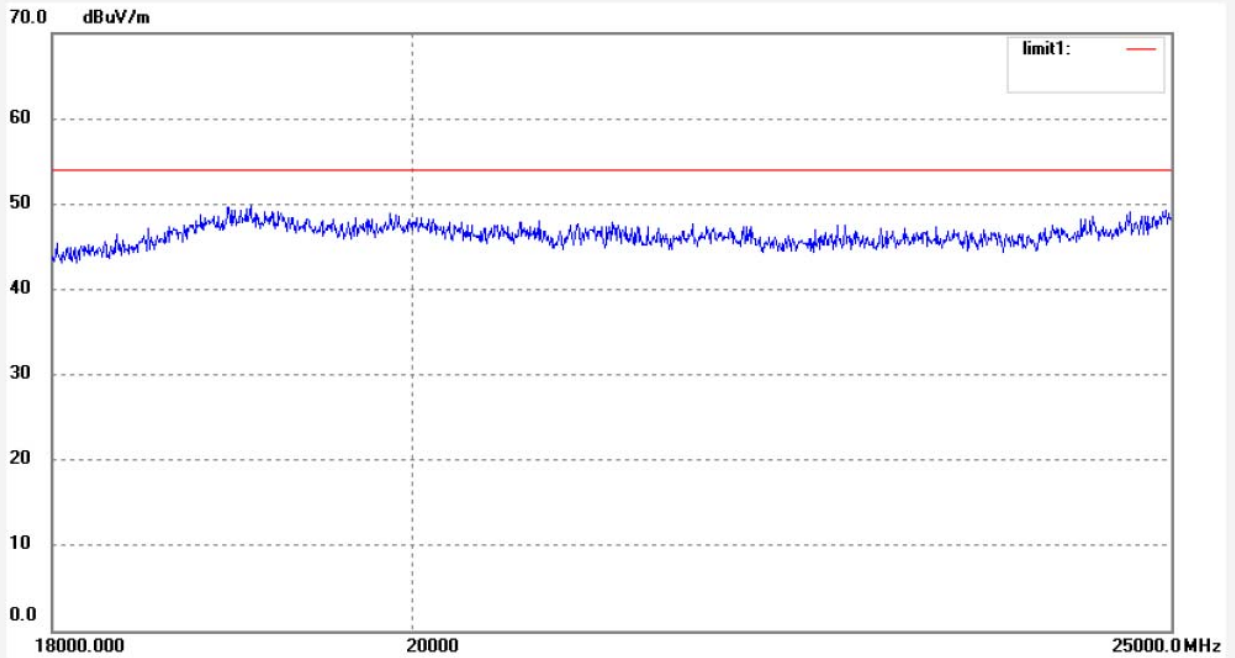
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: Alen #655  
Standard: FCC 15C  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 50 %  
EUT: Speaker  
Mode: TX 2480MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Vertical  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 11:48:59  
Engineer Signature: Alen  
Distance: 3m

Note: Report No:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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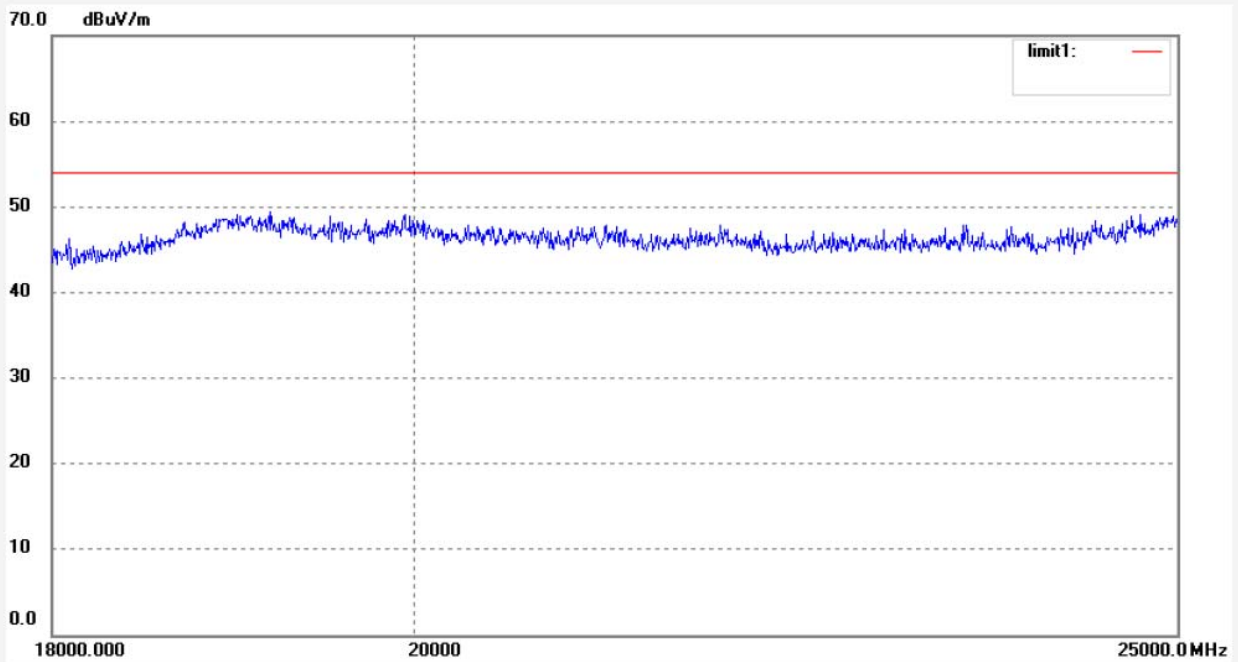
**ACCURATE TECHNOLOGY CO., LTD.**

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: Alen #656	Polarization: Horizontal
Standard: FCC 15C	Power Source: DC 5V
Test item: Radiation Test	Date: 13/12/03/
Temp.( C)/Hum.(%) 25 C / 50 %	Time: 11:52:35
EUT: Speaker	Engineer Signature: Alen
Mode: TX 2480MHz	Distance: 3m
Model: KTS-39	
Manufacturer: KingBoard	

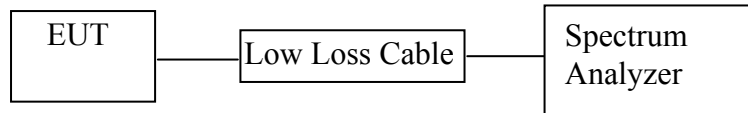
Note: Report No:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
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## 11. BAND EDGE COMPLIANCE TEST

### 11.1. Block Diagram of Test Setup



(EUT: Speaker)

### 11.2. The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

### 11.3. EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 11.3.1. Speaker (EUT)

Model Number : KTS-39  
 Serial Number : N/A  
 Manufacturer : Shenzhen KingBoard Technology Co., Ltd.



## 11.4. Operating Condition of EUT

11.4.1. Setup the EUT and simulator as shown as Section 10.1.

11.4.2. Turn on the power of all equipment.

11.4.3. Let the EUT work in TX (Hopping off, Hopping on) modes measure it. The transmit frequency are 2402-2480MHz. We select 2402MHz, 2480MHz TX frequency to transmit.

## 11.5. Test Procedure

Conducted Band Edge:

11.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

11.5.2. Set RBW of spectrum analyzer to 300kHz and VBW to 1MHz.

Radiate Band Edge:

11.5.3. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.

11.5.4. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

11.5.5. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

11.5.6. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

RBW=1MHz, VBW=1MHz

11.5.7. The band edges was measured and recorded.

## 11.6. Test Result

**Pass**

Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>TX (Hopping off)</u>	Test Engineer:	<u>Rickey</u>

## Conducted test

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2402	37.74	> 20dBc
2480	38.25	> 20dBc

Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>TX (Hopping on)</u>	Test Engineer:	<u>Rickey</u>

## Conducted test

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2402	36.69	> 20dBc
2480	37.69	> 20dBc

"Spectrum analyzer" is R/S

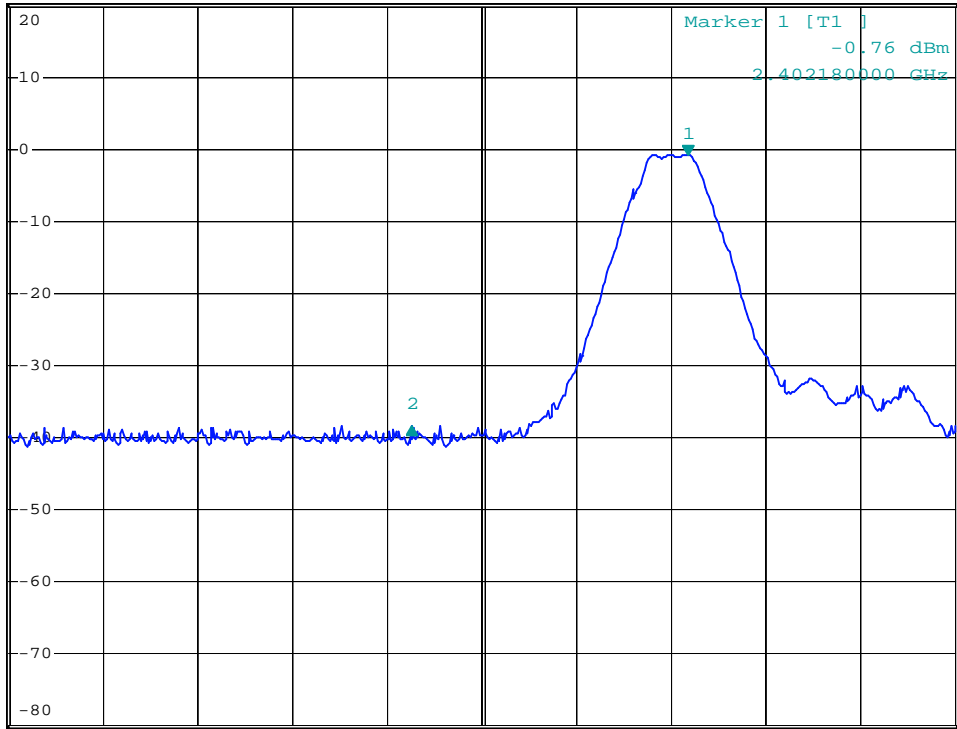


\*RBW 300 kHz Delta 2 [T1 ]  
\*VBW 1 MHz -37.74 dB  
\*SWT 2.5 ms -2.920000000 MHz

Ref 20 dBm

Att 50 dB

1 PK  
MAXH



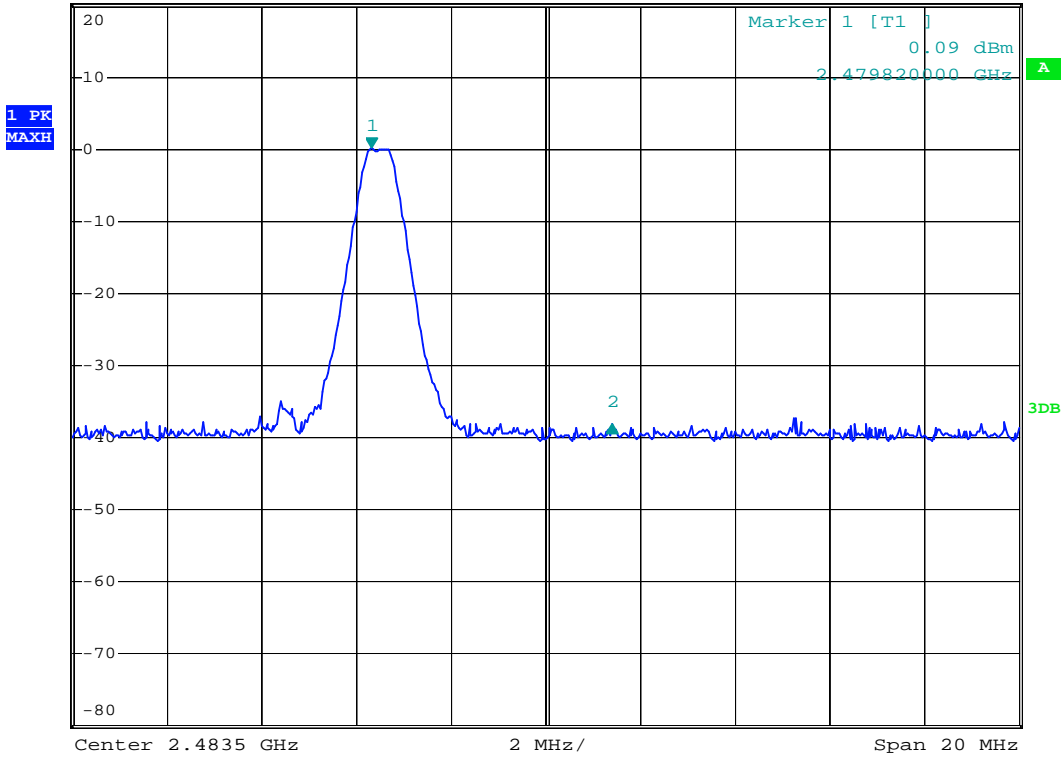
Center 2.4 GHz

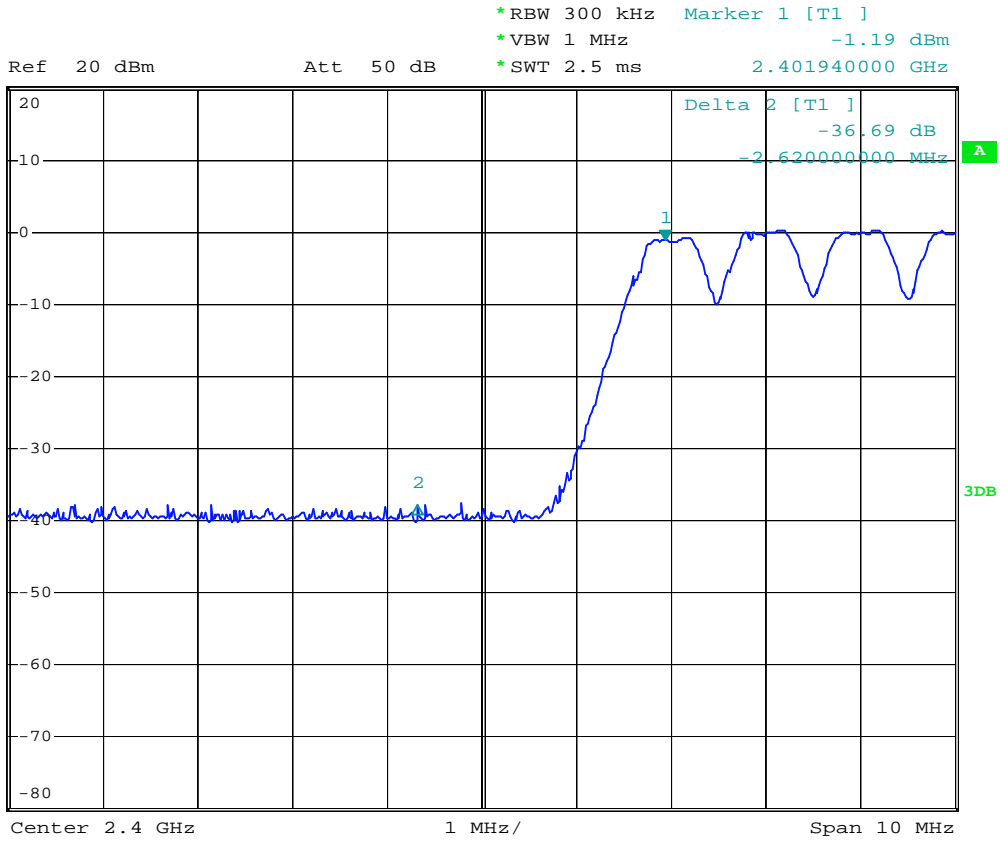
1 MHz/

Span 10 MHz



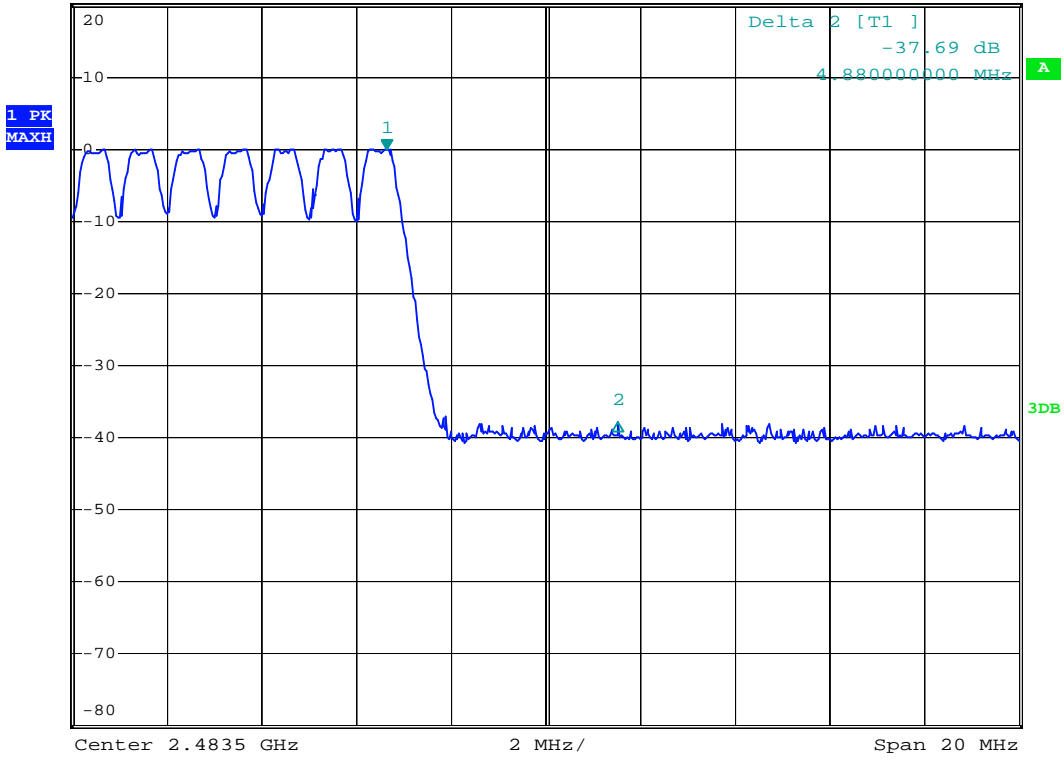
Ref 20 dBm Att 50 dB \*RBW 300 kHz Delta 2 [T1 ]  
\*VBW 1 MHz -38.25 dB  
\*SWT 2.5 ms 5.060000000 MHz







Ref 20 dBm Att 50 dB \*RBW 300 kHz Marker 1 [T1 ]  
\*VBW 1 MHz -0.06 dBm  
\*SWT 2.5 ms 2.480140000 GHz



**Radiated Band Edge Result**

Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>TX 2402MHz(Hopping off)</u>	Test Engineer:	<u>Rickey</u>

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2310.000	27.58	34.53	-6.99	20.59	27.54	54.00	74.00	-33.41	-46.46	Vertical
2352.640	28.93	36.54	-6.88	22.05	29.66	54.00	74.00	-31.95	-44.34	Vertical
2390.000	24.55	32.43	-6.78	17.77	25.65	54.00	74.00	-36.23	-48.35	Vertical
2310.000	26.25	34.27	-6.99	19.26	27.28	54.00	74.00	-34.74	-46.72	Horizontal
2354.740	26.41	35.04	-6.88	19.53	28.16	54.00	74.00	-34.47	-45.84	Horizontal
2390.000	27.20	33.03	-6.78	20.42	26.25	54.00	74.00	-33.58	-47.75	Horizontal

## Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

3. Display the measurement of peak values.

Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>TX 2480MHz (Hopping off)</u>	Test Engineer:	<u>Rickey</u>

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2483.500	25.17	34.48	-6.54	18.63	27.94	54.00	74.00	-35.37	-46.06	Vertical
2495.200	29.50	37.21	-6.50	23.00	30.71	54.00	74.00	-31.00	-43.29	Vertical
2500.000	26.93	34.56	-6.50	20.43	28.06	54.00	74.00	-33.57	-45.94	Vertical
2483.500	25.40	33.60	-6.54	18.86	27.06	54.00	74.00	-35.14	-46.94	Horizontal
2493.920	29.50	37.76	-6.51	22.99	31.25	54.00	74.00	-31.01	-42.75	Horizontal
2500.000	27.80	35.31	-6.50	21.30	28.81	54.00	74.00	-32.70	-45.19	Horizontal

## Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:  
Result = Reading + Corrected Factor
3. Display the measurement of peak values.



Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>TX (Hopping on)</u>	Test Engineer:	<u>Rickey</u>

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2310.000	31.58	44.18	-6.99	24.59	37.19	54.00	74.00	-29.41	-36.81	Horizontal
2390.000	34.25	45.89	-6.78	27.47	39.11	54.00	74.00	-26.53	-34.89	Horizontal
2483.500	32.69	44.36	-6.54	26.15	37.82	54.00	74.00	-27.85	-36.18	Horizontal
2500.000	37.66	48.29	-6.50	31.16	41.79	54.00	74.00	-22.84	-32.21	Horizontal

## Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:  
Result = Reading + Corrected Factor
3. Display the measurement of peak values.

Date of Test:	<u>December 3, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>TX (Hopping on)</u>	Test Engineer:	<u>Rickey</u>

Frequency (MHz)	Reading(dBμV/m)		Factor(dB) Corr.	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2310.000	37.25	46.43	-6.99	30.26	39.44	54.00	74.00	-23.74	-34.56	Vertical
2390.000	35.86	46.86	-6.78	29.08	40.08	54.00	74.00	-24.92	-33.92	Vertical
2483.500	36.87	45.50	-6.54	30.33	38.96	54.00	74.00	-23.67	-35.04	Vertical
2500.000	35.88	47.78	-6.50	29.38	41.28	54.00	74.00	-24.62	-32.72	Vertical

## Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:  
Result = Reading + Corrected Factor
3. Display the measurement of peak values.

Non-hopping mode



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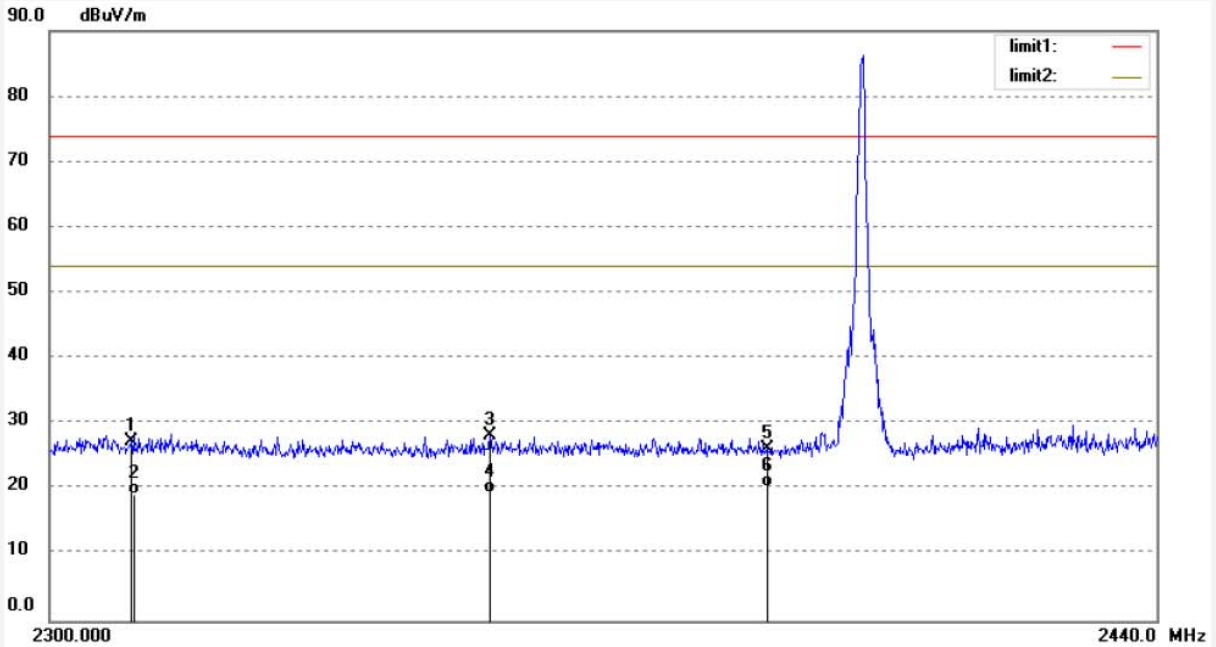
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3015  
Standard: FCC PK  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2402MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Horizontal  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 14/25/37  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2310.000	34.27	-6.99	27.28	74.00	-46.72	peak			
2	2310.000	26.25	-6.99	19.26	54.00	-34.74	AVG			
3	2354.740	35.04	-6.88	28.16	74.00	-45.84	peak			
4	2354.740	26.41	-6.88	19.53	54.00	-34.47	AVG			
5	2390.000	33.03	-6.78	26.25	74.00	-47.75	peak			
6	2390.000	27.20	-6.78	20.42	54.00	-33.58	AVG			



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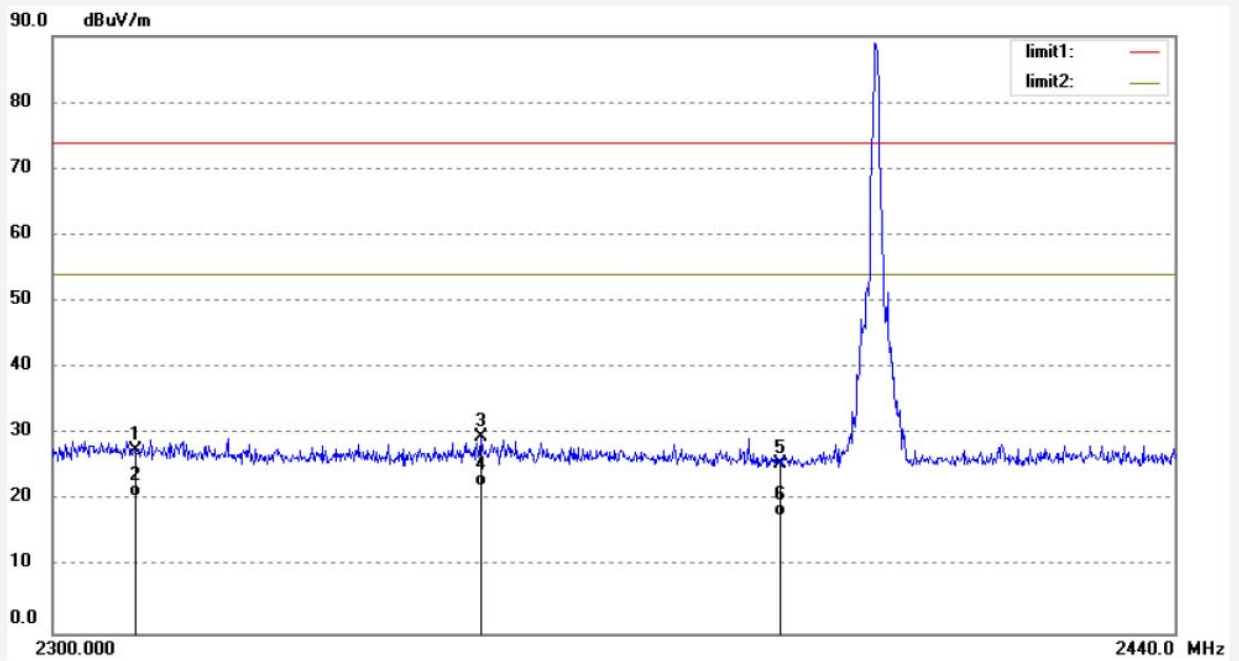
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3016  
Standard: FCC PK  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2402MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Vertical  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 14/29/06  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2310.000	34.53	-6.99	27.54	74.00	-46.46	peak			
2	2310.000	27.58	-6.99	20.59	54.00	-33.41	AVG			
3	2352.640	36.54	-6.88	29.66	74.00	-44.34	peak			
4	2352.640	28.93	-6.88	22.05	54.00	-31.95	AVG			
5	2390.000	32.43	-6.78	25.65	74.00	-48.35	peak			
6	2390.000	24.55	-6.78	17.77	54.00	-36.23	AVG			



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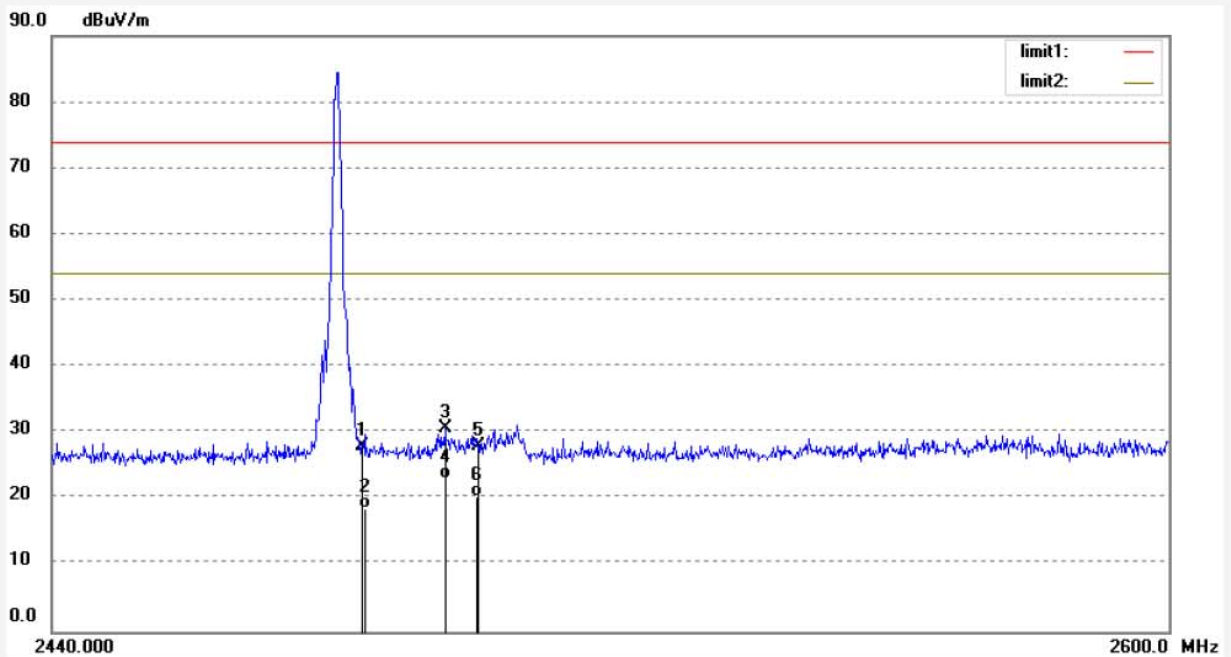
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3017  
Standard: FCC PK  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: TX 2480MHz  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Vertical  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 14/32/02  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	34.48	-6.54	27.94	74.00	-46.06	peak			
2	2483.500	25.17	-6.54	18.63	54.00	-35.37	AVG			
3	2495.200	37.21	-6.50	30.71	74.00	-43.29	peak			
4	2495.200	29.50	-6.50	23.00	54.00	-31.00	AVG			
5	2500.000	34.56	-6.50	28.06	74.00	-45.94	peak			
6	2500.000	26.93	-6.50	20.43	54.00	-33.57	AVG			





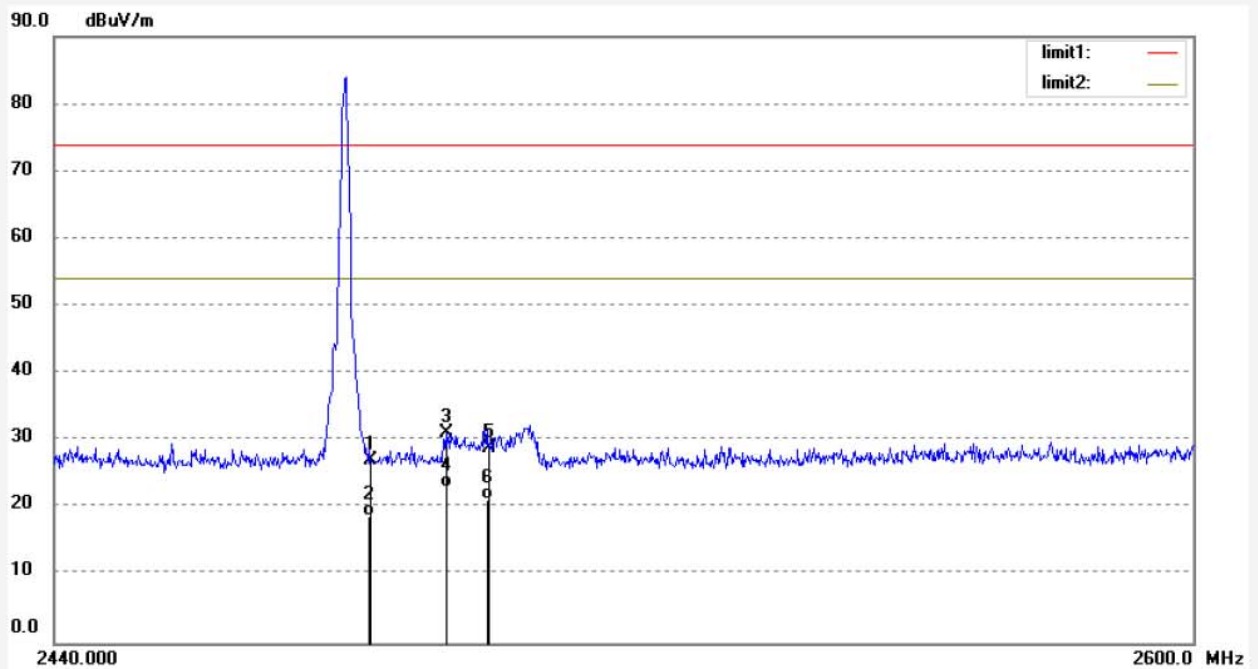
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3018	Polarization: Horizontal
Standard: FCC PK	Power Source: DC 5V
Test item: Radiation Test	Date: 13/12/03/
Temp.( C)/Hum.(%) 25 C / 55 %	Time: 14/36/21
EUT: Speaker	Engineer Signature:
Mode: TX 2480MHz	Distance: 3m
Model: KTS-39	
Manufacturer: KingBoard	

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	33.60	-6.54	27.06	74.00	-46.94	peak			
2	2483.500	25.40	-6.54	18.86	54.00	-35.14	AVG			
3	2493.920	37.76	-6.51	31.25	74.00	-42.75	peak			
4	2493.920	29.50	-6.51	22.99	54.00	-31.01	AVG			
5	2500.000	35.31	-6.50	28.81	74.00	-45.19	peak			
6	2500.000	27.80	-6.50	21.30	54.00	-32.70	AVG			

Hopping mode



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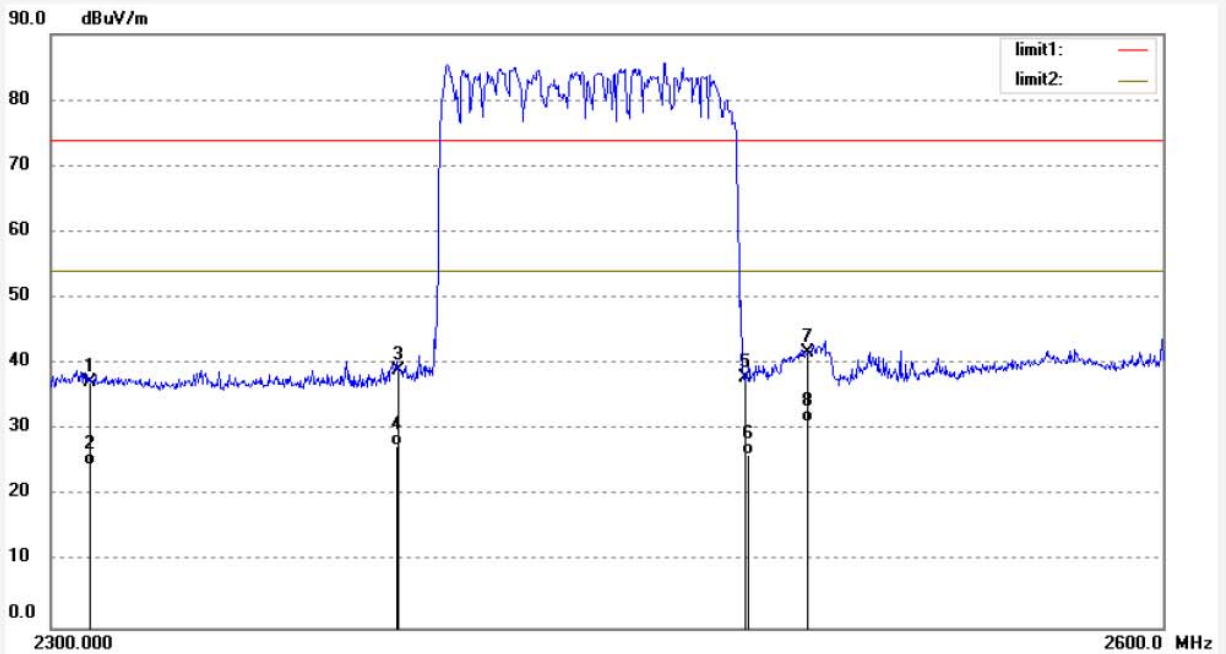
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3027  
Standard: FCC PK  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: HOPPING  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Horizontal  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 11/22/51  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2310.000	44.18	-6.99	37.19	74.00	-36.81	peak			
2	2310.000	31.58	-6.99	24.59	54.00	-29.41	AVG			
3	2390.000	45.89	-6.78	39.11	74.00	-34.89	peak			
4	2390.000	34.25	-6.78	27.47	54.00	-26.53	AVG			
5	2483.500	44.36	-6.54	37.82	74.00	-36.18	peak			
6	2483.500	32.69	-6.54	26.15	54.00	-27.85	AVG			
7	2500.000	48.29	-6.50	41.79	74.00	-32.21	peak			
8	2500.000	37.66	-6.50	31.16	54.00	-22.84	AVG			



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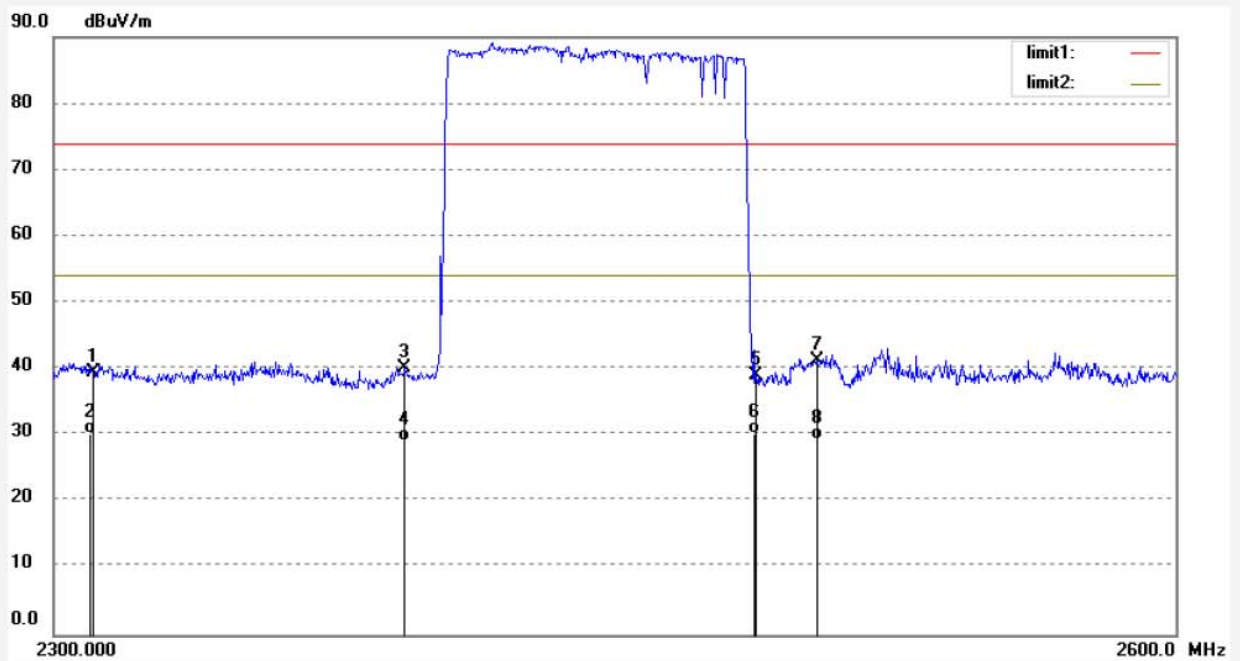
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: STAR #3028  
Standard: FCC PK  
Test item: Radiation Test  
Temp.( C)/Hum.(%) 25 C / 55 %  
EUT: Speaker  
Mode: HOPPING  
Model: KTS-39  
Manufacturer: KingBoard

Polarization: Vertical  
Power Source: DC 5V  
Date: 13/12/03/  
Time: 11/25/42  
Engineer Signature:  
Distance: 3m

Note: Report No.:ATE20132585



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2310.000	46.43	-6.99	39.44	74.00	-34.56	peak			
2	2310.000	37.25	-6.99	30.26	54.00	-23.74	AVG			
3	2390.000	46.86	-6.78	40.08	74.00	-33.92	peak			
4	2390.000	35.86	-6.78	29.08	54.00	-24.92	AVG			
5	2483.500	45.50	-6.54	38.96	74.00	-35.04	peak			
6	2483.500	36.87	-6.54	30.33	54.00	-23.67	AVG			
7	2500.000	47.78	-6.50	41.28	74.00	-32.72	peak			
8	2500.000	35.88	-6.50	29.38	54.00	-24.62	AVG			

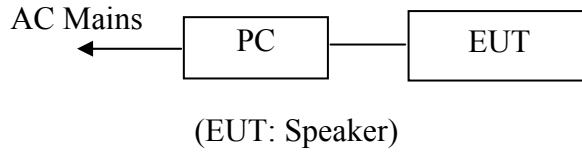


## 12.AC POWER LINE CONDUCTED EMISSION FOR FCC PART

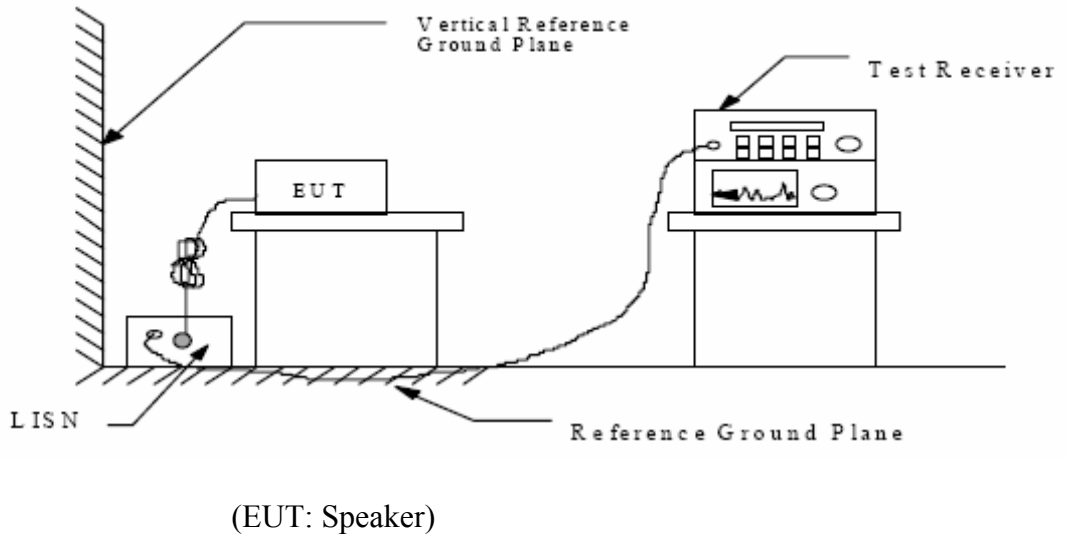
### 15 SECTION 15.207(A)

#### 12.1.Block Diagram of Test Setup

12.1.1.Block diagram of connection between the EUT and simulators



12.1.2.Shielding Room Test Setup Diagram



#### 12.2.The Emission Limit

12.2.1.Conducted Emission Measurement Limits According to Section 15.207(a)

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

\* Decreases with the logarithm of the frequency.

### 12.3. Configuration of EUT on Measurement

The following equipment are installed on the Conducted Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 12.3.1. Speaker (EUT)

Model Number : KTS-39  
Serial Number : N/A  
Manufacturer : Shenzhen KingBoard Technology Co., Ltd.

### 12.4. Operating Condition of EUT

12.4.1. Setup the EUT and simulator as shown as Section 11.1.

12.4.2. Turn on the power of all equipment.

12.4.3. Let the EUT work in TX (Charging) mode measure it.

### 12.5. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4- 2009 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9 kHz.

The frequency range from 150 kHz to 30MHz is checked.

## 12.6. Power Line Conducted Emission Measurement Results

**PASS.**

The frequency range from 150 kHz to 30MHz is checked.

Date of Test:	<u>December 4, 2013</u>	Temperature:	<u>25°C</u>
EUT:	<u>Speaker</u>	Humidity:	<u>50%</u>
Model No.:	<u>KTS-39</u>	Power Supply:	<u>AC 120V/60HZ</u>
Test Mode:	<u>Charging</u>	Test Engineer:	<u>Rickey</u>

Frequency (MHz)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector	Line
0.150000	47.90	66	-18.1	QP	Neutral
4.913107	37.80	56	-18.2	QP	
0.153024	38.50	56	-17.3	AV	
4.913107	32.90	46	-13.1	AV	
0.153636	47.50	66	-18.3	QP	Live
4.913107	37.10	56	-18.9	QP	
0.456875	31.80	47	-14.9	AV	
4.913107	32.30	46	-13.7	AV	
5.786800	32.70	50	-17.3	AV	

Emissions attenuated more than 20 dB below the permissible value are not reported.  
The spectral diagrams are attached as below.

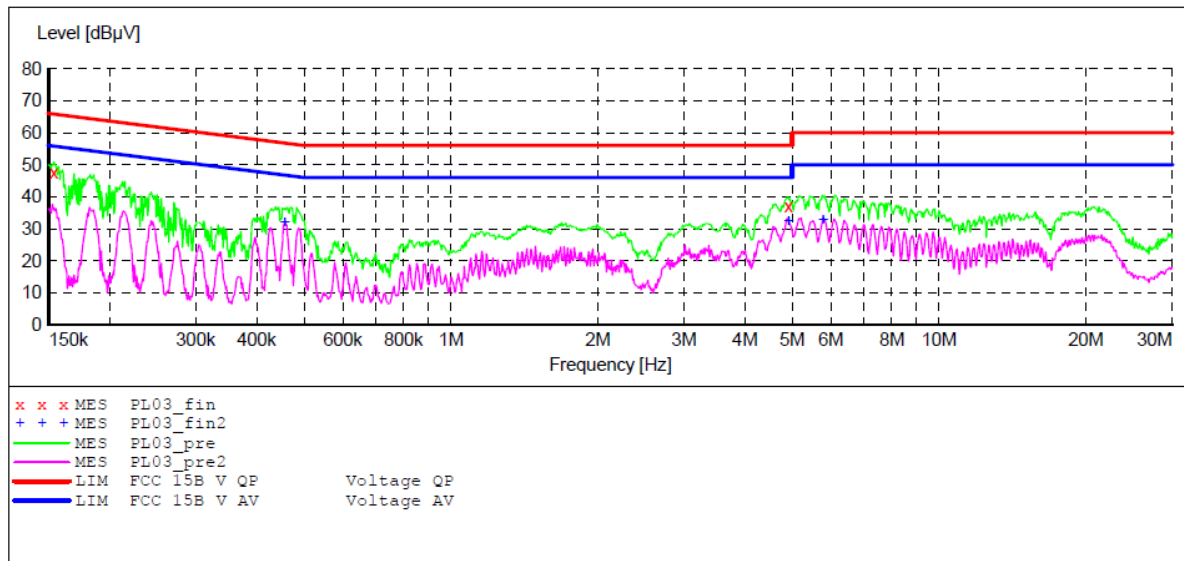
**ACCURATE TECHNOLOGY CO., LTD**

**CONDUCTED EMISSION STANDARD FCC PART 15 B**

EUT: Speaker M/N:KTS-39  
 Manufacturer: KingBoard  
 Operating Condition: Charging  
 Test Site: 1#Shielding Room  
 Operator: Star  
 Test Specification: L 120V/60Hz  
 Comment: Report No.:ATE20132585  
 Start of Test: 12/04/2013 / 4:42:54PM

**SCAN TABLE: "V 150K-30MHz fin"**

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 0.8 % QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



**MEASUREMENT RESULT: "PL03\_fin"**

12/04/2013 4:46PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.153636	47.50	11.0	66	18.3	QP	L1	GND
4.913107	37.10	11.4	56	18.9	QP	L1	GND

**MEASUREMENT RESULT: "PL03\_fin2"**

12/04/2013 4:46PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.456875	31.80	11.9	47	14.9	AV	L1	GND
4.913107	32.30	11.4	46	13.7	AV	L1	GND
5.786800	32.70	11.4	50	17.3	AV	L1	GND

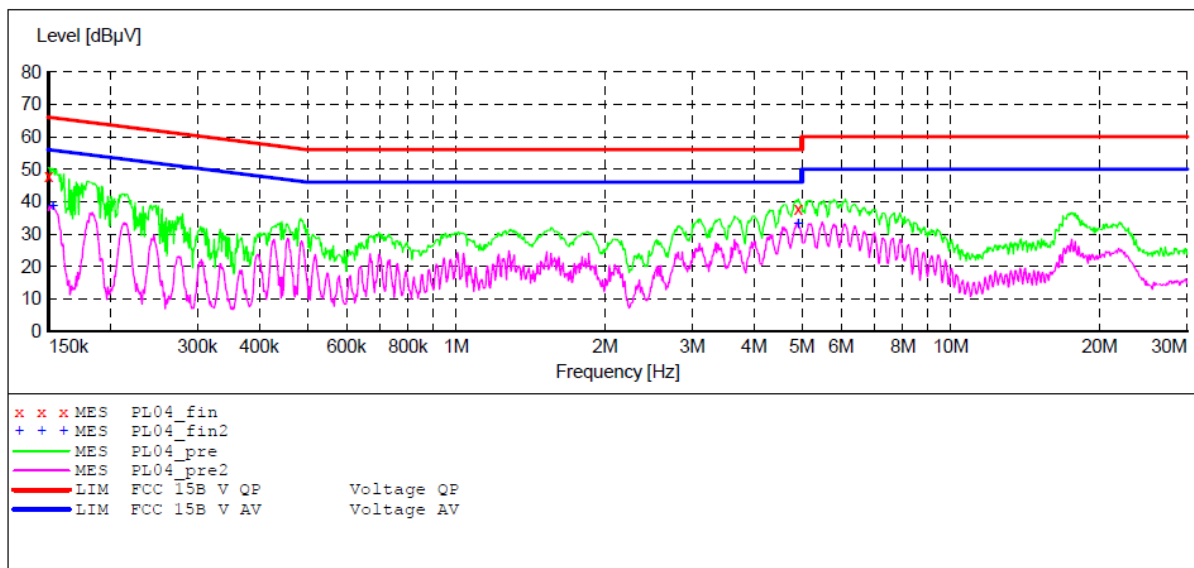
**ACCURATE TECHNOLOGY CO.,LTD**

**CONDUCTED EMISSION STANDARD FCC PART 15 B**

EUT: Speaker M/N:KTS-39  
 Manufacturer: KingBoard  
 Operating Condition: Charging  
 Test Site: 1#Shielding Room  
 Operator: Star  
 Test Specification: N 120V/60Hz  
 Comment: Report No.:ATE20132585  
 Start of Test: 12/04/2013 / 4:46:46PM

**SCAN TABLE: "V 150K-30MHZ fin"**

Short Description: \_SUB\_STD\_VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 150.0 kHz 30.0 MHz 0.8 % QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



**MEASUREMENT RESULT: "PL04\_fin"**

12/04/2013 4:48PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	47.90	11.0	66	18.1	QP	N	GND
4.913107	37.80	11.4	56	18.2	QP	N	GND

**MEASUREMENT RESULT: "PL04\_fin2"**

12/04/2013 4:48PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.153024	38.50	11.0	56	17.3	AV	N	GND
4.913107	32.90	11.4	46	13.1	AV	N	GND

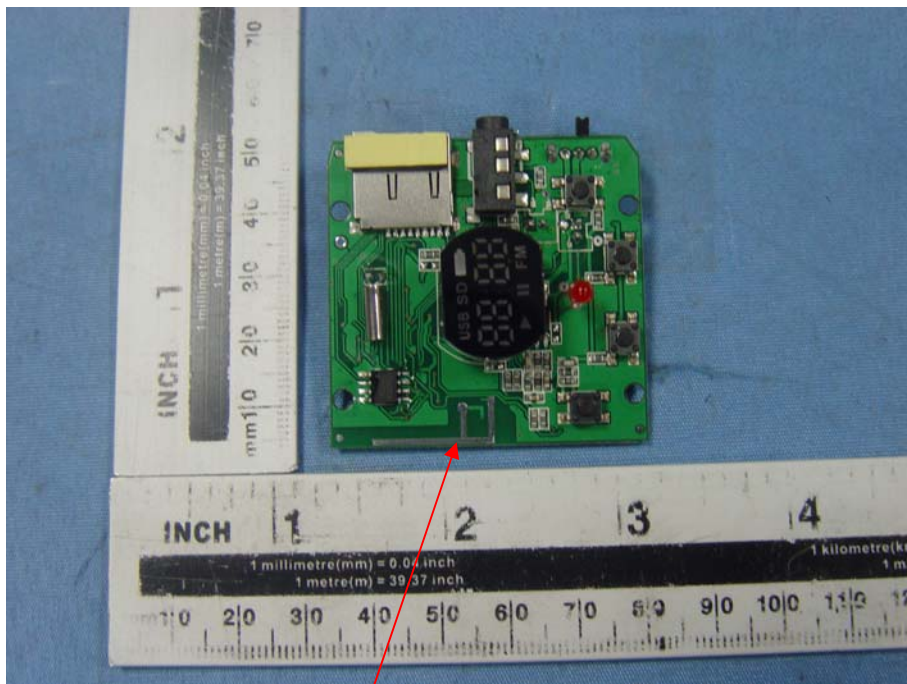
## 13. ANTENNA REQUIREMENT

### 13.1. The Requirement

According to 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.

### 13.2. Antenna Construction

The antenna is PCB Layout antenna, no consideration of replacement. Therefore, the equipment complies with the antenna requirement of Section 15.203.



**Antenna**