



No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District Shenzhen, China 518057  
Telephone: +86 (0) 755 2601 2053  
Fax: +86 (0) 755 2671 0594  
Email: ee.shenzhen@sgs.com

Report No.: SZEM150800505503  
Page: 1 of 8

# SAR Evaluation Report

**Application No.:** SZEM1508005055CR  
**Applicant:** Gibson Innovations Limited  
**Manufacturer:** Gibson Innovations Limited  
**Factory:** Arts Electronics Co.,Ltd.  
**Product Name:** Wireless portable speaker  
**Trade Mark:** PHILIPS  
**Model No.(EUT):** BT6000B/37  
**Add Model No.:** BT6000X/zz, BT6050X/zz, BT6060X/zz, where X=A – Z or NIL, zz=00 – 99(different plug portion and exported countries.)  
**FCC ID:** 2AANUBT6000X  
**Standards:** 47 CFR Part 1.1307 (2014)  
47 CFR Part 2.1093 (2014)  
KDB447498D01 General RF Exposure Guidance v05r02  
**Date of Receipt:** 2015-08-18  
**Date of Test:** 2015-08-18 to 2015-08-25  
**Date of Issue:** 2015-09-01

<b>Test Result :</b>	<b>PASS*</b>
----------------------	--------------

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

Authorized Signature:



Jack Zhang

SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



## 2 Version

<b>Revision Record</b>				
<b>Version</b>	<b>Chapter</b>	<b>Date</b>	<b>Modifier</b>	<b>Remark</b>
00		2015-09-01		Original

<b>Authorized for issue by:</b>				
<b>Tested By</b>				2015-08-25
		<hr/>		<hr/>
		<b>(Owen Zhou) /Project Engineer</b>		<b>Date</b>
<b>Prepared By</b>				2015-09-01
		<hr/>		<hr/>
		<b>(Doris Chen) /Clerk</b>		<b>Date</b>
<b>Checked By</b>				2015-09-01
		<hr/>		<hr/>
		<b>(Eric Fu) /Reviewer</b>		<b>Date</b>



### **3 Contents**

	<b>Page</b>
<b>1 COVER PAGE .....</b>	<b>1</b>
<b>2 VERSION.....</b>	<b>2</b>
<b>3 CONTENTS .....</b>	<b>3</b>
<b>4 GENERAL INFORMATION.....</b>	<b>4</b>
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF EUT .....	4
4.3 TEST LOCATION .....	5
4.4 TEST FACILITY.....	6
4.5 DEVIATION FROM STANDARDS.....	6
4.6 ABNORMALITIES FROM STANDARD CONDITIONS.....	6
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER .....	6
<b>5 SAR EVALUATION.....</b>	<b>7</b>
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT .....	7
5.1.1 <i>Standard Requirement</i> .....	7
5.1.2 <i>Limits</i> .....	7
5.1.3 <i>EUT RF Exposure</i> .....	8

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



## 4 General Information

### 4.1 Client Information

Applicant:	Gibson Innovations Limited
Address of Applicant:	5/F., Philips Electronics Building,5 Science Park East Avenue ,Hong Kong Science Park, Shatin, New Territories, Hong Kong
Manufacturer:	Gibson Innovations Limited
Address of Manufacturer:	5/F., Philips Electronics Building,5 Science Park East Avenue ,Hong Kong Science Park, Shatin, New Territories, Hong Kong
Factory:	Arts Electronics Co.,Ltd.
Address of Factory:	NO.1, SHANGXING LU, SHANGJIAO COMMUNITY, CHANGAN TOWN, DONGGUAN CITY, GUANGDONG PROVINCE,CHINA

### 4.2 General Description of EUT

Product Name:	Wireless portable speaker
Model No.:	BT6000B/37
Trade Mark:	PHILIPS
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.0 dual mode
Sample Type:	Portable production
Antenna Type	Integral
Antenna Gain	2.12dBi
Rechargeable battery:	DC 3.7V 4400mAh (charge by USB)
Adapter:	Model: GME10C-050200FUu Input: AC 100-240V 50-60Hz 0.28A Output: DC 5.0V 2.0A
<b>For Classic Mode</b>	
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
<b>For BLE Mode</b>	
Modulation Type:	GFSK
Number of Channels:	40

Remark:

Model No.: BT6000B/37, BT6000X/zz, BT6050X/zz, BT6060X/zz, where X=A – Z or NIL, zz=00 – 99(different plug portion and exported countries.)

Only the Model BT6000B/37 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for all above models. Only the Item number and colour of cabinet are different.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at [www.sgs.com/terms\\_and\\_conditions.htm](http://www.sgs.com/terms_and_conditions.htm) and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at [www.sgs.com/terms\\_e-document.htm](http://www.sgs.com/terms_e-document.htm). Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



### **4.3 Test Location**

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China  
518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.



#### **4.4 Test Facility**

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

- **Industry Canada (IC)**

The 3m Semi-anechoic chambers of SGS-CSTC Standards Technical Services Co., Ltd. have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-2.

#### **4.5 Deviation from Standards**

None.

#### **4.6 Abnormalities from Standard Conditions**

None.

#### **4.7 Other Information Requested by the Customer**

None.



## 5 SAR Evaluation

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v05r02

##### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

#### 5.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$\left[ \frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0$$
 for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR, where

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion



### 5.1.3 EUT RF Exposure

#### For classic mode

The Max Conducted Peak Output Power is 2.07dBm in highest channel(2.480GHz);

The best case gain of the antenna is 2.12dBi.

EIRP= 2.07dBm + 2.12dBi =4.19dBm

4.19dBm logarithmic terms convert to numeric result is nearly 2.624mW

According to the formula. calculate the EIRP test result:

$$\left[ \frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot \sqrt{f(\text{GHz})}$$

General RF Exposure =  $(2.624\text{mW} / 5 \text{ mm}) \times \sqrt{2.480\text{GHz}} = 0.8265$ ①

SAR requirement:

S= 3.0 ② ;

① < ②.

So the SAR report is not required.

#### For BLE mode

The Max Conducted Peak Output Power is 0.9dBm in highest channel(2.480GHz);

The best case gain of the antenna is 2.12dBi.

EIRP= 0.9dBm + 2.12dBi =3.02dBm

3.02dBm logarithmic terms convert to numeric result is nearly 2.004mW

According to the formula. calculate the EIRP test result:

$$\left[ \frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot \sqrt{f(\text{GHz})}$$

General RF Exposure =  $(2.004\text{mW} / 5 \text{ mm}) \times \sqrt{2.480\text{GHz}} = 0.6312$ ①

SAR requirement:

S= 3.0 ② ;

① < ②.

So the SAR report is not required.