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Report No.: SZEM160800644303  
Page: 1 of 8

## RF Exposure Evaluation Report

**Application No.:** SZEM1608006443CR  
**Applicant:** VOXX Accessories Corp.  
**Manufacturer:** Guangzhou Changjia Electronic Co., Ltd.  
**Factory:** Guangzhou Changjia Electronic Co., Ltd.  
**Product Name:** Bluetooth Wireless Speaker  
**Model No.(EUT):** AWSHTNLB  
**Trade Mark:** AR  
**FCC ID:** VIXAWSHTNLB  
**Standards:** 47 CFR Part 1.1307 (2015)  
47 CFR Part 1.1310 (2015)  
**Date of Receipt:** 2016-08-03  
**Date of Test:** 2016-08-09 to 2016-10-12  
**Date of Issue:** 2016-10-13

<b>Test Result :</b>	<b>PASS*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang  
EMC Laboratory Manager

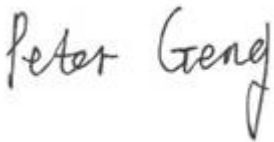

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant 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.

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## 2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2016-10-13		Original

Authorized for issue by:				
Tested By				2016-10-12
		(Peter Geng) /Project Engineer		Date
Checked By				2016-10-13
		(Eric Fu) /Reviewer		Date



### 3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION .....	2
3 CONTENTS .....	3
4 GENERAL INFORMATION.....	4
4.1 CLIENT INFORMATION.....	4
4.2 GENERAL DESCRIPTION OF EUT .....	4
4.3 TEST LOCATION .....	5
4.4 TEST FACILITY .....	5
4.5 DEVIATION FROM STANDARDS.....	6
4.6 ABNORMALITIES FROM STANDARD CONDITIONS .....	6
4.7 OTHER INFORMATION REQUESTED BY THE CUSTOMER .....	6
5 RF EXPOSURE EVALUATION .....	7
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT .....	7
5.1.1 Limits .....	7
5.1.2 Test Procedure.....	7
4.1.3 EUT RF EXPOSURE EVALUATION.....	8



## 4 General Information

### 4.1 Client Information

Applicant:	VOXX Accessories Corp.
Address of Applicant:	3502 Woodview Trace, Suite 220, Indianapolis, IN 46268
Manufacturer:	Guangzhou Changjia Electronic Co., Ltd.
Address of Manufacturer:	Bo-ying Industrial Garden, Taishi Industrial Zone, Yuwotou, Dongchong Town, Nansha district, Guangzhou, China
Factory:	Guangzhou Changjia Electronic Co., Ltd.
Address of Factory:	Bo-ying Industrial Garden, Taishi Industrial Zone, Yuwotou, Dongchong Town, Nansha district, Guangzhou, China

### 4.2 General Description of EUT

Product Name:	Bluetooth Wireless Speaker
Model No.:	AWSHTNLB
Trade Mark:	AR
Bluetooth Version:	V2.1+EDR
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
Sample Type:	Fixed production
Antenna Type:	Integral
Antenna Gain:	0dBi
Power Supply	Input: AC 100-240V 50/60Hz 45W Test voltage: AC 120V 60Hz

Remark:

Model No.: AWSHTNLB

AWSHTNLB may come in color variations, but are electrically and mechanically the same. The only difference is the color.



### 4.3 Test Location

All tests were performed at:

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

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.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room 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)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.



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

None.

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

None.

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

None.



## 5 RF Exposure Evaluation

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34 .....	614	1.63	*(100)	30
1.34–30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300 .....	27.5	0.073	0.2	30
300–1500 .....	.....	.....	f/1500	30
1500–100,000 .....	.....	.....	1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

#### 5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.



#### **4.1.3 EUT RF Exposure Evaluation**

Antenna Gain: 0dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
Lowest	2402	2.26	1.68	0.0003	1.0	PASS

Note: Refer to report No. SZEM160800644302 for EUT test Max Conducted Peak Output Power value.