

RF EXPOSURE REPORT



Report No.: 16071154-FCC-H

Supersede Report No.: N/A

Applicant	SHENZHEN KINGSUN ENTERPRISES Co.,Ltd		
Product Name	Bluetooth Shower Speaker		
Model No.	DC-0701		
Serial No.	AS-WSP20-01 AS-WSP20-03 AS-WSP20-04 AS-WSP20-06 AS-WSP20-08 AS-WSP20-ANC AS-WSP20-CAB AS-WSP20-FLW AS-WSP20-GR01 AS-WSP20-GR08 AS-WSP20-LNKS AS-WSP20-SNK AS-WSP20-SQU AS-WSP20-ZB04 AS-WSP20-ZB06		
Test Standard	FCC 2.1091:2015		
Test Date	September 14 to 25, 2016		
Issue Date	September 26, 2016		
Test Result	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail		
Equipment complied with the specification <input checked="" type="checkbox"/>			
Equipment did not comply with the specification <input type="checkbox"/>			
Loren Luo	David Huang		
Loren Luo Test Engineer	David Huang Checked By		
This test report may be reproduced in full only			
Test result presented in this test report is applicable to the tested sample only			

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

Zone A, Floor 1, Building 2 Wan Ye Long Technology Park

South Side of Zhoushi Road, Bao'an District, Shenzhen, Guangdong China 518108

Phone: +86 0755 2601 4629801 Email: China@siemic.com.cn

Laboratories Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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1. Report Revision History

Report No.	Report Version	Description	Issue Date
16071154-FCC-H	NONE	Original	September 26, 2016

2. Customer information

Applicant Name	SHENZHEN KINGSUN ENTERPRISES Co.,Ltd
Applicant Add	25/F, CEC Information Building, Xinwen Rd., Shenzhen, Guangdong, China
Manufacturer	SHENZHEN KINGSUN ENTERPRISES Co.,Ltd
Manufacturer Add	25/F, CEC Information Building, Xinwen Rd., Shenzhen, Guangdong, China

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao'an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	718246
IC Test Site No.	4842E-1
Test Software	Radiated Emission Program-To Shenzhen v2.0

4. Equipment under Test (EUT) Information

Description of EUT: Bluetooth Shower Speaker

Main Model: DC-0701
 AS-WSP20-01 AS-WSP20-03 AS-WSP20-04 AS-WSP20-06
 AS-WSP20-08 AS-WSP20-ANC AS-WSP20-CAB AS-WSP20-FLW

Serial Model:
 AS-WSP20-GR01 AS-WSP20-GR08 AS-WSP20-LNKS
 AS-WSP20-SNK AS-WSP20-SQU AS-WSP20-ZB04
 AS-WSP20-ZB06

Date EUT received: September 13, 2016

Test Date(s): September 14 to 25, 2016

Antenna Gain: 0dBi

Antenna Type: PCB antenna

Type of Modulation: GFSK, π /4DQPSK, 8DPSK

RF Operating Frequency (ies): 2402-2480 MHz(TX/RX)

Number of Channels: 79CH

Port: USB Port

Input Power:
 Battery: Spec:3.7V, 400mAh
 USB: DC 5V

Trade Name : N/A

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FCC ID:

2AAPKDC0701

5. FCC §2.1091 - Maximum Permissible exposure (MPE)

5.1 RF Exposure

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	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

* = Plane-wave equivalent power density

5.2 Test Result

Bluetooth Mode:

Type	Test mode	CH	Freq (MHz)	Conducted Power (dBm)	Tune Up Power (dBm)
Output power	GFSK	Low	2402	-3.870	-3.5±1
		Mid	2441	-3.190	-3.5±1
		High	2480	-3.283	-3.5±1
	$\pi/4$ DQPSK	Low	2402	-3.419	-3.5±1
		Mid	2441	-3.597	-3.5±1
		High	2480	-3.862	-3.5±1
	8-DPSK	Low	2402	-3.408	-3.5±1
		Mid	2441	-3.920	-3.5±1
		High	2480	-3.738	-3.5±1

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For the antenna manufacturer provide only used limited to ERP/EIRP or radiated spurious emission test. The MPE evaluation as below:

Maximum output power at antenna input terminal: -2.5(dBm)

Maximum output power at antenna input terminal: 0.562(mW)

Prediction distance: >20(cm)

Predication frequency: 2441 (MHz) High frequency

Antenna Gain (typical): 0 (dBi)

The worst case is power density at predication frequency at 20 cm: 0.0001(mW/cm²)

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MPE limit for general population exposure at prediction frequency: 1.0 (mW/cm²)

0.0001 (mW/cm²) < 1.0 (mW/cm²)

Result: Pass