SAR Evaluation Report

Application No.:	SZEM1906015211CR
Applicant:	Kingstate Electronics(DongGuan)Co., Ltd.
Address of Applicant:	Shi Chong Industrial Park, Shi Chong Avenue, Xiang Xi Village, Shi Pai Town, Dongguan, China
Manufacturer:	Kingstate Electronics(DongGuan)Co., Ltd.
Address of Manufacturer:	Shi Chong Industrial Park, Shi Chong Avenue, Xiang Xi Village, Shi Pai Town, Dongguan, China
Equipment Under Test (EUT):	
EUT Name:	WIRELESS HEADPHONES
Model No.:	HA-A10T
Trade mark:	JVC
FCC ID:	2AKMBHA-A10T
Standards:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2019-06-15
Date of Test:	2019-06-17 to 2019-07-04
Date of Issue:	2019-07-09
Test Result :	**PASS***

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

Keny Xu
EMC Laboratory Manager

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2019-07-09		Original

Authorized for issue by:				
				
		Harry Wu /Project Engineer		
				
		Eric Fu /Reviewer		

3 Contents

4 General Information

4.1 General Description of EUT

Power supply:	Earphone: DC 3.7V Rechargeable Batteries; Charging Case: DC3.7V rechargeable battery can be charged by Micro USB port
For BT:	
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.0
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channels:	79
Channel Spacing:	1MHz
Antenna Type:	Monopole
Antenna Gain:	0.09dBi
For BLE:	
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.0
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Antenna Type:	Monopole
Antenna Gain:	0.09dBi

4.2 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.

4.3 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 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.4 Deviation from Standards

None.

4.5 Abnormalities from Standard Conditions

None.

4.6 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 v06

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 ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation[17]
The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 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 BT:

For Left Ear:

The Max. power (including tune-up tolerance) is 3.96 dBm on the lowest channel 2.441 GHz (*)
3.96 dBm logarithmic terms convert to numeric result is nearly 2.49 mW
According to the formula. calculate the test exclusion thresholds:

$$General\ RF\ Exposure = \frac{(Max.\ Power\ of\ channel, including\ tune-up\ tolerance, mW) * \sqrt{f\ (GHz)}}{(min.\ test\ separation\ distance, mm)}$$

$$General\ RF\ Exposure = (2.49\ mW / 5\ mm) \times \sqrt{2.441\ GHz} = 0.78 \quad (1)$$

SAR requirement:

$$S = 3.0 \quad (2)$$

(1) < (2)
So the SAR report is not required.

(*) Max. power refer to Report No.:SZEM190601521102

For Right Ear:

The Max. power (including tune-up tolerance) is 5.32 dBm on the lowest channel 2.441 GHz (*)
5.32 dBm logarithmic terms convert to numeric result is nearly 3.40 mW
According to the formula. calculate the test exclusion thresholds:

$$General\ RF\ Exposure = \frac{(Max.\ Power\ of\ channel, including\ tune-up\ tolerance, mW) * \sqrt{f\ (GHz)}}{(min.\ test\ separation\ distance, mm)}$$

$General\ RF\ Exposure = (3.40\ mW / 5\ mm)\ x\ \sqrt{2.441\ GHz} = 1.06$ (1)

SAR requirement:

$S = 3.0$ (2)

(1) < (2)

So the SAR report is not required.

(*) Max. power refer to Report No.:SZEM190601521102

For BLE:

For Left Ear:

The Max. power (including tune-up tolerance) is 3.06 dBm on the lowest channel 2.44 GHz (*)
3.06 dBm logarithmic terms convert to numeric result is nearly 2.02 mW
According to the formula. calculate the test exclusion thresholds:

$$General\ RF\ Exposure = \frac{(Max.\ Power\ of\ channel, including\ tune-up\ tolerance, mW) * \sqrt{f\ (GHz)}}{(min.\ test\ separation\ distance, mm)}$$

$General\ RF\ Exposure = (2.02\ mW / 5\ mm)\ x\ \sqrt{2.44\ GHz} = 0.63$ (1)

SAR requirement:

$S = 3.0$ (2)

(1) < (2)

So the SAR report is not required.

(*) Max. power refer to Report No.:SZEM190601521103

For Right Ear:

The Max. power (including tune-up tolerance) is 4.75 dBm on the lowest channel 2.48 GHz (*)
4.75 dBm logarithmic terms convert to numeric result is nearly 2.99 mW
According to the formula. calculate the test exclusion thresholds:

$$General\ RF\ Exposure = \frac{(Max.\ Power\ of\ channel, including\ tune-up\ tolerance, mW) * \sqrt{f\ (GHz)}}{(min.\ test\ separation\ distance, mm)}$$

$General\ RF\ Exposure = (2.99\ mW / 5\ mm)\ x\ \sqrt{2.48\ GHz} = 0.94$ (1)

SAR requirement:

$S = 3.0$ (2)

(1) < (2)

So the SAR report is not required.

(*) Max. power refer to Report No.:SZEM190601521103

- End of the Report -

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