

RF EXPOSURE EVALUATION REPORT

Application No.: GZCR2108020775AT
Applicant: Dongguan Siyoto Electronics Co., Ltd.
Address of Applicant: No.10 North 7th street, Qiaodong road, Qiaotou town, Dongguan, Guangdong, China
Manufacturer: The same as applicant
Address of Manufacturer: The same as applicant
Factory: The same as applicant
Address of Factory: The same as applicant
Equipment Under Test (EUT):
EUT Name: WIRELESS HEADPHONES
Model No.: HA-A9T, HA-A3T
 * Please refer to section 2 of this report which indicates which item was actually evaluated and which were electrically identical.
Trade Mark: JVC
Standard(s) : 47 CFR Part 2.1093
Date of Receipt: 2021-08-17
Date of Evaluation: 2021-08-27 to 2021-11-30
Date of Issue: 2021-11-30

Evaluation Result:	Pass*
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* In the configuration evaluated, the EUT complied with the standards specified above.



Kobe Jian
 EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-11-30		Original

Authorized for issue by:				
		<i>Jim Li</i>		
		Jim Li/Project Engineer		
		<i>Ricky Liu</i>		
		Ricky Liu/Reviewer		



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2 Evaluation Summary

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

♣ Declaration of EUT Family Grouping:

Model No.: HA-A9T, HA-A3T

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on model name & battery capacity (HA-A9T with 420mAh & HA-A3T with 300mAh).

There are two types of lithium battery protection IC and touch IC used in the product. As below for details.

Part Name	Model	Manufacture	Remark
Lithium battery protection IC 1	SGM71100 - 430o04YUDT6G	SGMICRO	Original Test
Lithium battery protection IC 2	SGM41100A - 430o05YUDT6G	SGMICRO	Alternative new IC model.
Touch IC 1	VM8233D - RB6	VCOM	Original Test
Touch IC 2	BH7212	CHIPRISE	Alternative new IC model.

Therefore, only one model HA-A9T with Lithium battery protection IC 1 and Touch IC 1 was evaluated in this report.



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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 5V supply by USB Port for battery charging. DC 3.7V supply by built-in rechargeable battery.
Cable(s):	N/A
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.1
Modulation Type:	GFSK, pi/4DQPSK, 8DPSK
Number of Channels:	79
Channel Spacing:	1MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Antenna Type:	FPC Antenna
Antenna Gain:	-1.56dBi declared by applicant
Firmware Version:	V016
Hardware Version:	JVC-HA-A9T-V2.1 for earbud HA-A9T_Charing_BOX VER2.1 for charging box.
Testing Software:	FCC_assist_1.0.2.2.exe
Sample NO.:	E361828
Power Setting:	default.
Function:	BT Classic for wireless headphones.

4.2 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
 198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
 Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



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4.3 Facility

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

● **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

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.

● **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

● **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

● **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

● **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 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.: R-12460, C-12584, G-20107 and T-11179 respectively.

● **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.4 Deviation from Standards

None

4.5 Abnormalities from Standard Conditions

None



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5 Technical Requirements Specification

5.1 General Description of Applied Standards

5.2 RF Exposure Evaluation

5.2.1 Limit & Test Method

According to §2.1093, the limit for Radiofrequency radiation exposure evaluation: portable devices.

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

d = the minimum separation distance (cm) in any direction from any part of the device antenna(s) or radiating structure(s) to the body of the device user.

5.2.2 Conclusion

Normal use condition for Distance between antenna and body:	< 5 mm
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Test Mode	Frequency (MHz)	Conducted Power(dBm)	P(mW)	Limits for P _{th} (mW)
BT Classic (Left earbud)	2402	1.60 dBm	1.445 mW	2.79 mW **
	2440	2.13 dBm	1.633 mW	2.75 mW **
	2480	3.52 dBm	2.249 mW	2.72 mW **
BT Classic (Right earbud)	2402	2.52 dBm	1.786 mW	2.79 mW **
	2440	3.28 dBm	2.128 mW	2.75 mW **
	2480	4.26 dBm	2.667 mW	2.72 mW **



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**** Refer to formula.**

For example:

Where:

$$f = 2.480 \text{ GHz}$$

$$d = 0.5 \text{ cm}$$

$$\text{ERP}_{20\text{cm}} = 3060$$

$$x = -\log_{10}(60/\text{ERP}_{20\text{cm}} \cdot \sqrt{f})$$

$$= -\log_{10}(60/3060 \cdot \sqrt{2.48})$$

$$= -\log_{10}(0.01245)$$

$$= 1.9047$$

$$\text{So, } P_{\text{th}} = \text{ERP}_{20\text{cm}} \cdot (d/20 \text{ cm})^x$$

$$= 3060 \cdot (0.5/20)^{1.9047}$$

$$= 3060 \cdot (0.025)^{1.9047}$$

$$= 3060 \cdot 0.00089$$

$$= 2.72$$

Note: Refer to report No. GZCR210802077502 for EUT test Max Conducted Peak Output Power value.



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6 EUT Constructional Details (EUT Photos)

Refer to external and internal photos for GZCR2108020775AT.

- End of the Report -



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