

**RF EXPOSURE EVALUATION REPORT**

<b>Application No.:</b>	GZCR2309000908LM
<b>Applicant:</b>	Foshan City Shunde District Ouliang Model Company Limited
<b>Address of Applicant:</b>	4 Floor # 33 Rong Gang Road, Rong Gui, Shunde, Foshan, Guandong, PRC
<b>Manufacturer:</b>	Foshan City Shunde District Ouliang Model Company Limited
<b>Address of Manufacturer:</b>	4 Floor # 33 Rong Gang Road, Rong Gui, Shunde, Foshan, Guandong, PRC
<b>Factory:</b>	Foshan City Shunde District Ouliang Model Company Limited
<b>Address of Factory:</b>	4 Floor # 33 Rong Gang Road, Rong Gui, Shunde, Foshan, Guandong, PRC
<b>Equipment Under Test (EUT):</b>	
<b>EUT Name:</b>	Keysnake
<b>Model No.:</b>	Keysnake 4 Octave
<b>Trade Mark:</b>	Keysnake
<b>Standard(s) :</b>	47 CFR Part 1.1310 KDB447498 D01 General RF Exposure Guidance v06
<b>Date of Receipt:</b>	2023-09-01
<b>Date of Evaluation:</b>	2023-09-20 to 2023-09-20
<b>Date of Issue:</b>	2023-10-18
<b>Evaluation Result:</b>	<b>Pass*</b>

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



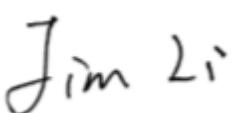
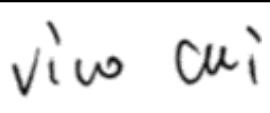
Ricky Liu  
Manager

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Revision Record			
Version	Report No.	Date	Remark
01	GZCR230900090803	2023-10-18	Original

Authorized for issue by:			
	 Jim Li/Project Engineer		
	 Vico Cui/Reviewer		

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## 2 Evaluation Summary

<b>Radio Spectrum Technical Requirement</b>				
<b>Item</b>	<b>Standard</b>	<b>Method</b>	<b>Requirement</b>	<b>Result</b>
RF Exposure	KDB447498 D01 General RF Exposure Guidance v06	KDB447498 D01 General RF Exposure Guidance v06	47 CFR Part 1.1310	Pass

**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.

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### 3 Contents

	Page
<b>1 Cover Page</b> .....	<b>1</b>
<b>2 Evaluation Summary</b> .....	<b>3</b>
<b>3 Contents</b> .....	<b>4</b>
<b>4 General Information</b> .....	<b>5</b>
4.1 Details of E.U.T. .....	5
4.2 Evaluating Location .....	5
4.3 Facility .....	6
4.4 Deviation from Standards .....	6
4.5 Abnormalities from Standard Conditions .....	6
<b>5 Technical Requirements Specification</b> .....	<b>7</b>
5.1 General Description of Applied Standards .....	7
5.2 RF Exposure Evaluation.....	7
5.2.1 Limit & Test Method .....	7
5.2.2 Conclusion .....	8
<b>6 EUT Constructional Details (EUT Photos)</b> .....	<b>9</b>



## 4 General Information

### 4.1 Details of E.U.T.

Power supply:	DC 5 V
Cable(s):	Type-C Port x2(One for power supply, the other for connected to laptop)
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.0 LE
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Antenna Type:	Integral Antenna
Antenna Gain:	2.12dBi Max
Antenna Number:	1

### 4.2 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,  
198 Kezhu Road, Scientech 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:

- **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.

- **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

KDB447498 D01 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.

### 5.2 RF Exposure Evaluation

#### 5.2.1 Limit & Test Method

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:  $P_d = (P_{out} * G) / (4 * P_i * R^2)$

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

$P_i$  = 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.

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**5.2.2 Conclusion**

Normal use condition for Distance 20cm declared by applicant  
between antenna and body:

Antenna Gain: 2.12 dBi

For Bluetooth BLE

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm <sup>2</sup> )	Limit of Power Density (S)	Test Result
					(mW/cm <sup>2</sup> )	
2402	1.63	-12.43	0.06	0.00002	1	Complies
2442	1.63	-12.62	0.05	0.00002	1	Complies
2480	1.63	-12.33	0.06	0.00002	1	Complies

So SAR report is not required.

Note:

Refer to report No. GZCR230900090802 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 GZCR2309000908LM

- End of the Report -

