RF EXPOSURE EVALUATION REPORT

Application No.:	GZCR2204000409AT
Applicant:	HEXAERO PTE. LTD.
Address of Applicant:	160 ROBINSON ROAD #14-04 SPORE BUSINESS FEDERATION CTR SINGAPORE (068914)
Manufacturer:	HEXAERO PTE. LTD.
Address of Manufacturer:	160 ROBINSON ROAD #14-04 SPORE BUSINESS FEDERATION CTR SINGAPORE (068914)
Factory:	INVENTEC APPLIANCES(JIANGNING) CORPORATION
Address of Factory:	133, Jiang-Jun Road, Jiangning District, Nanjing, 211153, P.R. China
Equipment Under Test (EUT):	
EUT Name:	HERELINK Controller Unit
Model No.:	HX4-06211
Standard(s) :	47 CFR Part 1.1307
	KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2022-04-14
Date of Evaluation:	2022-06-21
Date of Issue:	2022-06-27
Evaluation Result:	**Pass***

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

Kobe Jian
EMC Laboratory Manager

Revision Record			
Version	**Report No.**	**Date**	**Remark**
01	GZCR220400040904	2022-06-27	Original

Authorized for issue by:				
		 **Curry Wu/Project Engineer**		
		 **Ricky Liu/Reviewer**		

2 Evaluation Summary

Radio Spectrum Technical Requirement				
Item	**Standard**	**Method**	**Requirement**	**Result**
RF Exposure	KDB447498D01 General RF Exposure Guidance v06	KDB447498D01 General RF Exposure Guidance v06	47 CFR Part 1.1307	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.

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3.6V supply by rechargeable battery DC 5V charging by USB port
Cable(s):	about 1.5m USB cable

For 2.4G part

Operation Frequency:	2412MHz to 2462MHz for 20MHz 2409MHz to 2459MHz for 10MHz
Modulation Type:	QPSK
Bandwidth	10MHz & 20MHz
Antenna Type:	Dedicated antenna
Antenna Gain:	Ant 1:3dBi Ant 2:4dBi
Remark	Ant 1 is transmitting + receiving function Ant 2 is receiving function only

For 5G WiFi part:

Operation Frequency (20MHz):	U-NII-1: 5180-5240MHz; U-NII-2A: 5260-5320MHz; U-NII-2C: 5500-5700MHz; U-NII-3: 5745-5825MHz
Operation Frequency (40MHz):	U-NII-1: 5190-5230MHz; U-NII-2A: 5270-5310MHz; U-NII-2C: 5510-5670MHz; U-NII-3: 5755-5795MHz
Operation Frequency (80MHz):	U-NII-1: 5210MHz; U-NII-2A: 5290MHz; U-NII-2C: 5530-5610MHz; U-NII-3: 5775MHz
Modulation Type:	802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK); 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM); 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Channel Spacing:	802.11a/n(HT20)/ac(HT20): 20MHz; 802.11n(HT40)/ac(HT40): 40MHz; 802.11ac(HT80): 80MHz
DFS Function:	Slave without Radar detection
TPC Function:	Without TPC function
Antenna Type:	Integral Antenna
Antenna Gain:	2dBi

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.

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

5 Technical Requirements Specification

5.1 RF Exposure Evaluation

5.1.1 Limit & Test Method

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

5.1.2 Conclusion

Normal use condition for Distance between antenna and body: <5cm declared by applicant

For 2.4 GHz

The Max Conducted Peak Output Power is 1.49 dBm on the lowest channel 2.437 GHz
1.49 dBm logarithmic terms convert to numeric result is nearly 1.41 mW
According to the formula. calculate the test exclusion thresholds:
[(max. power of channel, including tune-up tolerance, mW)/
(min. test separation distance, mm)] · [√f(GHz)]
General RF Exposure = (1.41 mW / 5 mm) x √2.437 GHz = 0.440 (1)
SAR requirement:
S = 3.0 (2)
(1) < (2)
So the SAR report is not required.

For 5 GHz Wi-Fi

The Max Conducted Peak Output Power is 6.61 dBm on the channel 5.19 GHz
6.61 dBm logarithmic terms convert to numeric result is nearly 4.58 mW
According to the formula. calculate the test exclusion thresholds:
[(max. power of channel, including tune-up tolerance, mW)/
(min. test separation distance, mm)] · [√f(GHz)]
General RF Exposure = (4.58 mW / 5 mm) x √5.19 GHz = 2.087 (1)
SAR requirement:
S = 3.0 (2)
(1) < (2)
So the SAR report is not required.

The 2.4G part and Wi-Fi can be transmitted together, the result is
0.44/3 + 2.087/3 =0.8423 < 1.0
So SAR report is not required.

Note: Refer to report No. GZCR220400040903, GZCR220400040904 for EUT test Max Conducted Peak Output Power value.

6 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for GZCR2204000409AT

- End of the Report -

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