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Report Template Version: V05
Report Template Revision Date: 2021-11-03

RF Exposure Evaluation Report

Report No.: CQASZ20240801827E-03

Applicant: Aeroo Innovations Pty Ltd

Address of Applicant: 10/6a Prosperity Pde, Warriewood, NSW, 2102, Australia

Equipment Under Test (EUT):

EUT Name: Aeroo Pro

Model No.: Aeroo Pro

Test Model No.: Aeroo Pro

Brand Name: Aeroo

FCC ID: 2BKDI-AEROOPRO

Standards: 47 CFR Part 1.1307

47 CFR Part 1.1310

447498 D04 Interim General RF Exposure Guidance v01

Date of Receipt: 2024-08-26

Date of Test: 2024-08-26 to 2024-10-10

Date of Issue: 2024-10-10

Test Result: PASS*

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

Tested By:

lewis zhou

(Lewis Zhou)

Reviewed By:

Timo Lei

(Timo Lei)

Approved By:

Alex

(Alex Wang)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20240801827E-03	Rev.01	Initial report	2024-10-10

2 Contents

	Page
1 VERSION	2
2 CONTENTS	3
.....	3
3 GENERAL INFORMATION	4
3.1 CLIENT INFORMATION	4
3.2 GENERAL DESCRIPTION OF EUT	4
3.3 GENERAL DESCRIPTION OF BLE	4
3.4 GENERAL DESCRIPTION OF 2.4G CUSTOM	5
4 MPE EVALUATION	6
4.1 RF EXPOSURE COMPLIANCE REQUIREMENT	6
4.1.1 <i>Limits</i>	6
4.1.2 <i>Test Procedure</i>	6
4.1.3 <i>EUT RF Exposure</i>	7

3 General Information

3.1 Client Information

Applicant:	Aeroo Innovations Pty Ltd
Address of Applicant:	10/6a Prosperity Pde, Warriewood, NSW, 2102, Australia
Manufacturer:	SHENZHEN HUBSAN TECHNOLOGY CO.,LTD
Address of Manufacturer:	2101-02C, Xinghe WORLD Building, No.1 Yabao Road, Nankeng Community, Bantian Street, Longgang District, Shenzhen , China
Factory:	Dongguan Tengsheng Industrial Co., LTD
Address of Factory:	16th Floor, No. 2 Tiansha Road, Tangxia Town, Dongguan, China. Post code: 523718

3.2 General Description of EUT

Product Name:	Aeroo Pro
Model No.:	Aeroo Pro
Test Model No.:	Aeroo Pro
Trade Mark:	Aeroo
Software Version:	V1.0
Hardware Version:	V1.03
EUT Power Supply:	Li-ion battery DC 21.9V 4000mAh, Charge by DC 25.2V for adapter

3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	Bluetooth Spec 5.0
Modulation Type:	GFSK
Number of Channel:	40
Transfer Rate:	1Mbps
Sample Type:	<input checked="" type="checkbox"/> Mobile <input type="checkbox"/> Portable
Antenna Type:	FPC antenna
Antenna Gain:	3.72dBi

3.4 General Description of 2.4G custom

Operation Frequency:	2406MHz~2470MHz
Type of Modulation:	OFDM
Number of Channel:	9 Channels
Sample Type:	<input checked="" type="checkbox"/> Mobile <input type="checkbox"/> Portable
Antenna Type:	Copper tube antenna
Antenna Gain:	Ant1:3.11dBi Ant2:3.11dBi Ant1+Ant2:6.12dBi

Note:

The above parameters will directly affect the test results. The information is provided by the applicant.

4 MPE Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

The table applies to any RF source (i.e., single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least $\lambda /2 \pi$. The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator. For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

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

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i.e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda /4$ or if the antenna gain is less than that of a half-wave Dipole).

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.1.3 EUT RF Exposure**1) For BLE****Measurement Data**

Test channel	EIRP (dBm)	ERP (dBm)	Tune up tolerance (dBm)	GFSK mode	
				(dBm)	(mW)
Lowest(2402MHz)	24.27	22.12	22.0±1	23.0	199.53
Middle(2440MHz)	23.84	21.69	21.5±1	22.5	177.83
Highest(2480MHz)	23.93	21.78	21.5±1	22.5	177.83

The ERP of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20240801827E-02 for EUT test Max Conducted Peak Output Power value.
2) EUT's module is more than 20cm away from the human body.

2) For 2.4G custom
Measurement Data

OFDM mode(ANT2)					
Test channel	EIRP (dBm)	ERP (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
				(dBm)	(mW)
Lowest(2406MHz)	28.85	26.70	26.5±1	27.5	562.34
Middle(2438MHz)	27.59	25.44	25.5±1	26.5	446.68
Highest(2470MHz)	28.30	26.15	26.0±1	27.0	501.19
OFDM mode(ANT1+ANT2)					
Test channel	EIRP (dBm)	ERP (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
				(dBm)	(mW)
Lowest(2406MHz)	34.86	32.71	32.5±1	33.5	2238.72
Middle(2438MHz)	33.59	31.44	31.5±1	32.5	1778.28
Highest(2470MHz)	34.28	32.13	32.0±1	33.0	1995.26

EIRP=Conducted peak Output Power+Gain

ERP=EIRP-2.15dB

The ERP of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20240801827E-01 for EUT test Max Conducted peak Output Power value.

2) EUT's module is more than 20cm away from the human body.

*** END OF REPORT ***