RF EXPOSURE REPORT

Report No.:	20240617G10725X-W6
Product Name:	HOVERAir X1Smart
Model No.:	ZZ-H-1-002
FCC ID:	2AIDW-ZZ-H-1-003
Applicant:	Shenzhen Zero Zero Infinity Technology Co., Ltd.
Address:	4th Floor,Qianhai E-metro Tower,Shenzhen-Hong Kong Cooperation Zone, Shenzhen,China
Dates of Testing:	06/18/2024 - 07/15/2024
Issued by:	CCIC Southern Testing Co., Ltd.
Lab Location:	Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China. **Tel**：86 755 26627338 **E-Mail**：manager@ccic-set.com

Test Report

Product .....:	HOVERAir X1Smart
Trade Name .....:	ZERO ZERO ROBOTICS
Applicant.....:	Shenzhen Zero Zero Infinity Technology Co., Ltd.
Applicant Address.....:	4th Floor,Qianhai E-metro Tower,Shenzhen-Hong Kong Cooperation Zone, Shenzhen,China
Manufacturer .....:	Shenzhen Zero Zero Infinity Technology Co., Ltd.
Manufacturer Address .....:	4th Floor,Qianhai E-metro Tower,Shenzhen-Hong Kong Cooperation Zone, Shenzhen,China
Test Standards .....:	47 CFR Part 2.1091
Test Result.....:	Pass

Tested by .....: Kim Li 2024.07.19

Kim Li, Test Engineer

Reviewed by .....: Sun Jiaohui 2024.07.19

Sun Jiaohui, Senior Engineer

Approved by .....: Chris You 2024.07.19

Chris You, Manager

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Change History		
Issue	Date	Reason for change
1.0	2024.07.19	First edition

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	HOVERAir X1Smart
Model No.	ZZ-H-1-002
Hardware Version	H130_HMB_V21
Software Version	ZZ_IMG_H121_V7.6.1/7.0.62
Frequency Range	Bluetooth/ Bluetooth LE WLAN 2.4GHz 802.11b/g/n (HT20/HT40) WLAN 5.0GHz 802.11a/n (HT20/HT40)/ac (VHT20/VHT40/VHT80)
Modulation Type	DSSS (802.11b), OFDM (802.11g/n/ac)
Antenna Type	Internal Antenna
Antenna Gain	BT: 1.5dBi BLE: 1.5dBi 2.4G WIFI: 1.5dBi 5.0G WIFI: 4.28dBi

Note 1: The information of antenna gain and cable loss is provided by the manufacturer and our lab is not responsible for the accuracy of the antenna gain and cable loss information.

1.2. EUT Description

EUT has been tested according to the following standards.

No.	Identity	Document Title
1	47 CFR Part 1	Practice and Procedure
2	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
3	KDB 447498 D01 General RF Exposure Guidance v06	RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices
4	OET Bulletin 65 Edition 97-01	Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields

1.3. Laboratory Facilities

FCC-Registration No.: 406086

CCIC Southern Testing Co., Ltd EMC Laboratory has been registered 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: CN1283, valid time is until Jun. 30th, 2025.

ISED Registration: 11185A

CCIC Southern Testing Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A on Aug. 04, 2016, valid time is until Jun. 30th, 2025.

CAB number: CN0064

A2LA Code: 5721.01

CCIC-SET is a third party testing organization accredited by A2LA according to ISO/IEC 17025. The accreditation certificate number is 5721.01.

1.4. Laboratory Location

Company Name:	CCIC Southern Testing Co., Ltd.
Address:	Electronic Testing Building, No. 43 Shahe Road, Xili Street, Nanshan District, Shenzhen, Guangdong, China

2. Technical Requirements Specification in CFR Title 47 Part 2.1091

2.1. Evaluation method

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 1.1307(b).

Table 1 to §1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	Averaging Time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	< 6
3.0-30	1824/f	4.89/f	*(900/f^2)	< 6
30-300	61.4	0.163	1.0	< 6
300-1500	/	/	f/300	< 6
1500-100,000	/	/	5	< 6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	< 30
1.34-30	824/f	2.19/f	*(180/f^2)	< 30
30-300	27.5	0.073	0.2	< 30
300-1500	/	/	f/1500	< 30
1500-100,000	/	/	1.0	< 30
Note: f = frequency in MHz. * = Plane-wave equivalent power density.				

2.2. Predication of MPE limit at a given distance

Refer to formulas on page 19 of OET Bulletin 65, Edition 97-01.

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = power density (in appropriate units, e.g. mW/cm^2)

P = power input to the antenna (in appropriate units, e.g., mW)

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna (appropriate units, e.g., cm)

2.3. Evaluation Results

Worst-Case mode Conducted Output Power Results for WLAN/BT

Operation Mode	Frequency (MHz)	Maximum Output power (dBm)	Max Tune up power (dBm)	Max Tune up power (mW)
WIFI 802.11b	2437	16.73	16±1	50.12
WIFI 802.11a	5240	14.30	14±1	31.62
BT	2480	10.49	10±1	12.59
BLE	2480	6.69	6±1	5.01

Calculation results: Worst-Case mode

Operation Mode	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm2)	Power Density (mW/cm2)	Ratio
WIFI 802.11b	1.50	1.41	20	0.014	1.00	0.014
WIFI 802.11a	4.28	2.68	20	0.017	1.00	0.017
BT	1.50	1.41	20	0.004	1.00	0.004
BLE	1.50	1.41	20	0.001	1.00	0.001

Simultaneous Transmission Calculation (Worst-case mode)

No.	Transmitter Combinations	Scenario Supported or not
1	BT + 2.4G WLAN	Yes
2	BT + 5G WLAN	Yes

Max Simultaneous Transmission Calculation (Worst-case mode)

No.	Worst Mode	MPE Ratio	Limit	Results
1	BT + 5G WIFI	0.021	≤ 1.0	Pass

2.4. Conclusion

According to the KDB 447498 D01 General RF Exposure Guidance v06 section 7.2 determine the device is exclusion from SAR test.

** END OF REPORT **