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RF Exposure Evaluation Report

Report No.:	CQASZ20220300484E-02
Applicant:	Shenzhen DO Intelligent Technology Co., Ltd.
Address of Applicant:	11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China
Equipment Under Test (EUT):	
EUT Name:	Smoker Controller
Model No.:	ISC-007BW, ISC-008BW, ISC-027BW
Test Model No.:	ISC-007BW
Brand Name:	INKBIRD
FCC ID:	2AYZD-ISC007BW
Standards:	47 CFR Part 1.1307 47 CFR Part 1.1310 447498 D04 Interim General RF Exposure Guidance v01
Date of Receipt:	2022-03-31
Date of Test:	2022-03-31 to 2022-04-02
Date of Issue:	2022-04-07
Test Result:	**PASS***

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

Tested By: lewis zhou

(Lewis Zhou)

Reviewed By: Rock Huang

(Rock Huang)

Approved By:

(Jack Ai)

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20220300484E-02	Rev.01	Initial report	2022-04-07

2 Contents

3 General Information

3.1 Client Information

Applicant:	Shenzhen DO Intelligent Technology Co., Ltd.
Address of Applicant:	11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China
Manufacturer:	Shenzhen DO Intelligent Technology Co., Ltd.
Address of Manufacturer:	11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China
Factory:	Shenzhen DO Intelligent Technology Co., Ltd.
Address of Factory:	11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China

3.2 General Description of EUT

Product Name:	Smoker Controller
Model No.:	ISC-007BW, ISC-008BW, ISC-027BW
Test Model No.:	ISC-007BW
Trade Mark:	INKBIRD
Software Version:	REV2.1
Hardware Version:	REV3.0
EUT Power Supply:	Power by DC 12V for Adapter Model:DWIN-120200A Output:12V 2A 24W

3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	Bluetooth Spec 5.0
Modulation Technique:	Non Frequency Hopping Spread Spectrum(NFHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channel:	40
Transfer Rate:	1Mbps
Sample Type:	☒ Mobile ☐ Portable ☐ Fix Location
Antenna Type:	PCB antenna
Antenna Gain:	1 dBi

3.4 General Description of wifi (From FCC ID: 2ANDL-WBR3)

Operation Frequency:	2412MHz~2462MHz
Modulation Type:	Direct Sequence Spread Spectrum (DSSS) for 802.11b Orthogonal Frequency Division Multiplexing (OFDM) for 802.11g/n
Number of Channel:	11
Transfer Rate:	5Mbps
Sample Type:	☒ Mobile ☐ Portable ☐ Fix Location
Antenna Type:	PCB antenna
Antenna Gain:	2.5 dBi

Note：

The above parameters will directly affect the test results. The information is provided by the applicant.
FCC certified module (only the WiFi part is used) and the BLE module can transmit simultaneously.

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 ERP20cm inFormula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

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

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 Classic

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-1.46	-1.5±1	-0.5	0.891
Middle(2440MHz)	-1.33	-1.5±1	-0.5	0.891
Highest(2480MHz)	-0.99	-1.0±1	0	1.000

Note: 1) Refer to report No. CQASZ20220300484E-01 for EUT test Max Conducted Peak Output Power value.
2) EUT's Bluetooth module is more than 20cm away from the human body.

2) For WIFI Classic

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

802.11g mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	24.05	24±1	25	316.23
Middle(2437MHz)	24.33	24±1	25	316.23
Highest(2462MHz)	24.02	24±1	25	316.23

Final result:1/3060+316.23/3060=0.104<1, this product does not require SAR testing

*** END OF REPORT ***