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RF Exposure Evaluation Report

Report No.:	CQASZ20220200200E-02
Applicant:	Shenzhen Inkbird Technology Co., Ltd.
Address of Applicant:	Room 1803, Guowei Building, NO.68 Guowei Road, Xianhu Community, Liantang, Luohu District, Shenzhen, China.
Equipment Under Test (EUT):	
EUT Name:	Temperature & Humidity Smart Sensor
Test Model No.:	ITH-12S, ITH-13S, ITH-15S, ITH-16S
Model No.:	ITH-12S
Brand Name:	INKBIRD
FCC ID:	2AYZD-ITH12S
Standards:	47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2022-02-16
Date of Test:	2022-02-16 to 2022-02-21
Date of Issue:	2022-02-25
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
CQASZ20220200200E-02	Rev.01	Initial report	2022-02-25

2 Contents

3 General Information

3.1 Client Information

Applicant:	Shenzhen Inkbird Technology Co., Ltd.
Address of Applicant:	Room 1803, Guowei Building, NO.68 Guowei Road, Xianhu Community, Liantang, Luohu District, Shenzhen, China.
Manufacturer:	Shenzhen Inkbird Technology Co., Ltd.
Address of Manufacturer:	Room 1803, Guowei Building, NO.68 Guowei Road, Xianhu Community, Liantang, Luohu District, Shenzhen, China.
Factory:	Shenzhen Inkbird Technology Co., Ltd.
Address of Factory:	Room 1803, Guowei Building, NO.68 Guowei Road, Xianhu Community, Liantang, Luohu District, Shenzhen, China.

3.2 General Description of EUT

Product Name:	Temperature & Humidity Smart Sensor
Model No.:	ITH-12S, ITH-13S, ITH-15S, ITH-16S
Test Model No	ITH-12S
Trade Mark:	INKBIRD
EUT Supports Radios application:	Bluetooth mode 2402-2480MHz
Software Version:	REV 2.0
Hardware Version:	REV 1.0
Sample Type:	☐ Mobile ☒ Portable ☐ Fix Location
EUT Power Supply:	Button Battery: 3V

3.3 General Description of BT&BLE

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Technique:	Non Frequency Hopping Spread Spectrum(NFHSS)
Modulation Type:	GFSK
Number of Channel:	40
Transfer Rate:	1Mbps/2Mbps
Test Software of EUT:	Phypluskit
Antenna Type:	PCB antenna
Antenna Gain:	1dBi

Note:
Model No.:ITH-12S, ITH-13S, ITH-15S, ITH-16S
The model ITH-12S was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, only difference of the appearance color and model name.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 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.

4.1.2 Limits

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

4.1.3 EUT RF Exposure

Measurement Data

Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	1.3	1.0±1	2.0	1.585	0.491	3.0
Middle (2440MHz)	1.65	1.5±1	2.5	1.778	0.556	
Highest (2480MHz)	1.26	1.0±1	2.0	1.585	0.499	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20220200200E-01.

*** END OF REPORT ***