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CNAS L5785

RF Exposure Evaluation Report

Report No.: CQASZ20250501169E-02

Applicant: Shenzhen Inkbird Technology Co., Ltd

Address of Applicant: Room 1803, Guowei Building, NO.68 Guowei Rd, Xianhu Community, Liantang, Luohu District, Shenzhen, China

Equipment Under Test (EUT):

EUT Name: WIRELESS POOL MONITOR WITH AMBIENT LIGHT

Model No.: IBS-P05R-O

Test Model No.: IBS-P05R-O

Brand Name: N/A

FCC ID: 2AYZD-IBSP05O

Standards: 47 CFR Part 1.1307

47 CFR Part 1.1310

447498 D04 Interim General RF Exposure Guidance v01

Date of Receipt: 2025-05-19

Date of Test: 2025-05-19 to 2025-07-08

Date of Issue: 2025-07-08

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: Jack Ai
(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20250501169E-02	Rev.01	Initial report	2025-07-08

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3 General Information

3.1 Client Information

Applicant:	Shenzhen Inkbird Technology Co., Ltd
Address of Applicant:	Room 1803, Guowei Building, NO.68 Guowei Rd, Xianhu Community, Liantang, Luohu District, Shenzhen, China
Manufacturer:	Shenzhen Inkbird Technology Co., Ltd
Address of Manufacturer:	Room 1803, Guowei Building, NO.68 Guowei Rd, Xianhu Community, Liantang, Luohu District, Shenzhen, China
Factory:	Shenzhen Inkbird Technology Co., Ltd
Address of Factory:	5th and 6th Floor, Building 138, No. 71, Yiqing Road, Xianhu Community, Liantang Street, Luohu District, Shenzhen, Guangdong, China

3.2 General Description of EUT

Product Name:	WIRELESS POOL MONITOR WITH AMBIENT LIGHT
Model No.:	IBS-P05R-O
Test Model No.:	IBS-P05R-O
Trade Mark:	N/A
Software Version:	REV2.3
Hardware Version:	REV2.0
EUT Power Supply:	Li-ion battery DC 3.7V 1000mAh, Charge by DC 5V for adapter

3.3 General Description of 432.97MHz

Operation Frequency:	432.97MHz
Type of Modulation:	FSK
Sample Type:	<input checked="" type="checkbox"/> Mobile <input type="checkbox"/> Portable
Antenna Type:	Spring antenna
Antenna Gain:	2.7dBi

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.

2.1.2 1-mW Test Exemption

Per § 1.1307(b)(3)(i)(A), a single RF source is *exempt RF device* (from the requirement to show data demonstrating compliance to RF exposure limits, as previously mentioned) if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption applies to all operating configurations and exposure conditions, for the frequency range 100 kHz to 100 GHz, regardless of fixed, mobile, or portable device exposure conditions. This is a standalone exemption, and it cannot be applied in conjunction with any other test exemption.

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 433.92MHz

$$\text{EIRP} = E_{\text{Meas}} + 20 \log(d_{\text{Meas}}) - 104.7$$

where

E_{IRP} is the equivalent isotropically radiated power, in dBm
 E_{Meas} is the field strength of the emission at the measurement distance, in dB μ V/m
 d_{Meas} is the measurement distance, in m

Periodic transmissions:

Frequency	EIRP (dBm)	ERP (dBm)	Maximum tune-up Power (mW)	Exclusion threshold (mW)
432.97MHz	-24.19	-26.34	0.002	1

$$\text{EIRP} = 70.97 + 20 \log(3) - 104.7 = -24.19 \text{ dBm}$$

Remark: The Max Eirp Power data refer to report Report No.: CQASZ20250501169E-01.

Manually operated transmitter:

Frequency	EIRP (dBm)	ERP (dBm)	Maximum tune-up Power (mW)	Exclusion threshold (mW)
432.97MHz	-25.19	-27.34	0.002	1

$$\text{EIRP} = 69.97 + 20 \log(3) - 104.7 = -25.19 \text{ dBm}$$

Remark: The Max Eirp Power data refer to report Report No.: CQASZ20250501169E-03.

*** END OF REPORT ***