Guangdong Hailea Group Co., Ltd.

MPE ASSESSMENT REPORT

Report Type:
FCC MPE assessment report

Model:
74012
74013

REPORT NUMBER:
220302634SHA-004

ISSUE DATE:
Aug 17, 2022

DOCUMENT CONTROL NUMBER:
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TEST REPORT

Report no.: 220302634SHA-004

Applicant:	Guangdong Hailea Group Co., Ltd. Hailea Industrial Zone, Hailea Road, Raoping County, Chaozhou, Guangdong Province 515700, China.
Manufacturer:	Guangdong Hailea Group Co., Ltd. Hailea Industrial Zone, Hailea Road, Raoping County, Chaozhou, Guangdong Province 515700, China.
PRODUCT NAME:	Smart Pond Thermometer
TYPE/MODEL:	74012 74013
FCC ID:	2AVM6-74013

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
KDB447498 D01 General RF Exposure Guidance v07 FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

PREPARED BY:	**REVIEWED BY:**
Scout Gong	Wakeyou Wang
Project Engineer	Reviewer

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Revision History

Report No.	Version	Description	Issued Date
220302634SHA-004	Rev. 01	Initial issue of report	Aug 17, 2022

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1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Smart Pond Thermometer
Type/Model:	74012 74013
Description of EUT:	The EUTs covered by this report are smart pond thermometers with Wi-Fi function. There are two models, they use the same electrical system, the only different is that the model 74013 equipped with low-voltage transformer. After assessment, model 74013 was tested as representative. The worst RF data were listed in this report.
Rating:	AC Adaptor: Input 120VAC, 60Hz, Output 12VDC, 300mA, 3.6W RF module: 3.3V DC
EUT type:	☒ Tabletop ☐ Floor standing
Brand name:	/
Software Version:	/
Hardware Version:	/
Sample received date:	July 22, 2022
Date of test:	July 23, 2022~August 10, 2022

1.2 Technical Specification

Frequency Band:	2400MHz ~ 2483.5MHz
Support Standards:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n(HT20)
Type of Modulation:	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) IEEE 802.11n(HT20): OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Channel Number:	11 Channels for 802.11b, 802.11g and 802.11n(HT20)
Data Rate:	IEEE 802.11b: Up to 11Mbps IEEE 802.11g: Up to 54Mbps IEEE 802.11n(HT20): Up to MCS7
Channel Separation:	5 MHz
Antenna Information:	PCB Antenna, 2.0dBi Gain

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1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road (North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN1175
	IC Registration Lab CAB identifier.: CN0014
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

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2 MPE Assessment

Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (uT)	Equivalent plane wave power density S_{eq} (W/m^2)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	-
8-25 Hz	10 000	4 000/f	5 000/f	-
0,025-0,8 kHz	250/f	4/f	5/f	-
0,8-3 kHz	250/f	5	6,25	-
3-150 kHz	87	5	6,25	-
0,15-1 MHz	87	0,73/f	0,92/f	-
1-10 MHz	$87/f^{1/2}$	0,73/f	0,92/f	-
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375\ f^{1/2}$	$0,0037\ f^{1/2}$	$0,0046\ f^{1/2}$	f/200
2-300 GHz	61	0,16	0,20	10

Mobile device exposure for simultaneous transmission operations: **the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is ≤ 1.0**

2.2 Assessment Results

Power density (S) is calculated according to the formula:
$S = PG / (4\pi R^2)$
Where S = power density in mW/cm^2
G = Antenna Gain, dBi to numeric
P = Radiated transmit power in Mw
R = distance (cm)

As we can see from the test report 220302634SHA-003:

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

Mode	Frequency band	Max Power	Antenna Gain	R	S	Limits
	(MHz)	dBm	dBi	(cm)	(mW/cm^2)	(mW/cm^2)
WIFI	2412-2462	13.00	2.0	20	0.0062	1

Note: 1 mW/cm^2 from 1.310 Table 1

The sum of the MPE ratios for all simultaneously transmitting is $0.0039 mW/cm^2 < 1.0$

For the device can support simultaneous transmission, according to 447498 D01 General RF Exposure Guidance v07

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Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.

********** END **********