



Testing Laboratory
3787

RADIO EXPOSURE TEST REPORT

FCC ID : 2ANC3PHYCF009
Equipment : Phyn Smart Water Assistant
Brand Name : Phyn
Model Name : PHYCF009
Applicant : Phyn LLC
1855 Del Amo Blvd, Torrance, CA United States 90501
Manufacturer : Phyn LLC
1855 Del Amo Blvd, Torrance, CA United States 90501
Standard : 47 CFR Part 2.1091

The product was received on Jan. 08, 2021, and testing was started from Jan. 11, 2021 and completed on Feb. 24, 2021. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory
No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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Photographs of EUT v01



History of this test report

TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A1_1 Ver1.1

Page Number : 3 of 8
Issued Date : Jun. 10, 2021
Report Version : 01



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Vicky Huang



1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM)

1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	ARISTOTLE	RFA-AP821A-70B-84	PIFA Antenna	I-PEX	2.6

Note: The above information was declared by manufacturer.

For 2.4GHz WLAN function

For IEEE 802.11b/g/n mode (1TX, 1RX):

Only Port 1 can be used as transmitting/receiving antenna.

1.3 Table for Multiple Listing

Table for LED board and Transition board Information

Type	LED board		Transition board	
	Brand	Model	Brand	Model
1	CHENSOURCE	PHYCBE02 Rev 4_Led board	CHENSOURCE	PHYCBE03 Rev 06
2	Zinwell	ZIO-P002 LED board	Zinwell	ZIO-P002 Transition board

Table for Combination of EUT

EUT	LED board	Transition board
1	Type 1	Type 1
2	Type 2	Type 2

Note1: The above information was declared by manufacturer.



1.4 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
Adapter 1	Phyn	F8J040PHY	Input:100-240VAC, 0.5A, 50-60Hz Output:DC 5V, 2.4A
Adapter 2	Phyn	WCA002dqPHY	Input:100-240VAC, 0.5A, 50-60Hz Output:DC 5V/2.4A
Sensor	Brand Name	Model Name	Remark
Phyn Smart Water Assistant Sensor Fittings	Phyn	PHYCBC03	Shielded, 1.2m

1.5 Testing Location

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	TEL: 886-3-656-9065 FAX: 886-3-656-9085
Test site Designation No. TW3787 with FCC.	
Conformity Assessment Body Identifier (CABID) TW3787 with ISED.	



2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	*(100)	<6
3.0-30	1842/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

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
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 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	2.60	22.75	25.35	0.50	25.85	0.38459	20	0.07651	1.00000

————THE END————