RF TEST REPORT

For

Micro ENE Inc.

Product Name: Light Therapy Lamp

Test Model(s).: M156138

Report Reference No.	:	**POCE231207024RL002**
FCC ID	:	**2BD4T-M156138**
Applicant's Name	:	Micro ENE Inc.
Address	:	12030 E LAKE CIRCLE GREENWOOD VILLAGE, CO 80111, USA
Testing Laboratory	:	Shenzhen POCE Testing Technology Co., Ltd.
Address	:	101-102, H5 Building & floor 1, Building H, Hongfa Science and Technology Park, Tangtou, Shiyan, Bao'An District, Shenzhen, China
Date of Receipt	:	December 13, 2023
Date of Test	:	December 13, 2023 to December 13, 2023
Data of Issue	:	December 14, 2023
Result	:	**Pass**

1 GENERAL INFORMATION

1.1 Client Information

Applicant's Name	:	Micro ENE Inc.
Address	:	12030 E LAKE CIRCLE GREENWOOD VILLAGE，CO 80111, USA
Manufacturer	:	GUANGDONG SHONE LIGHTING CO., LTD
Address	:	11 Heyun Rd., Jianggao Town, Baiyun District, Guangzhou, Guangdong, China

1.2 Description of Device (EUT)

Product Name:	Light Therapy Lamp
Sample number:	Q231207004-1
Model/Type reference:	M156138
Trade Mark:	N/A
Product Description:	Light Therapy Lamp
Power Supply:	INPUT: DC12V - 1A Wireless OUTPUT: 10W Max
Operation frequency:	147KHz
Number of Channels:	1
Modulation Type:	MSK
Antenna Type:	Inductive loop coil Antenna
Antenna Gain:	/
Hardware Version:	V02
Software Version:	V1.0

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency (KHz)
Channel 1	147.0KHz

1.3 Description of Test Modes

No	Title	Description
TM1	Full Load Wireless output	Keep the EUT in wireless charging mode
TM2	Half Load Wireless output	Keep the EUT in wireless charging mode
TM3	Full Load Wireless output	Keep the EUT in wireless charging mode

Title	Description
TM1/ TM2/ TM3	Keep the EUT works in continuously wireless charging mode.
	☐Special software is used. ☐Through engineering command into the engineering mode. engineering command: *#*#3646633#*#* ☒Other method: Wireless Charging Load

	Special software:

1.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Description	Manufacturer	Model No.	Remark	Certification
1	POWER ADAPTER	/	RSF-DY098-1202000US	Provide by client	SDOC
2	Wireless Charging Load Module	HANWEI	HW-T0201-LOAD-V1	Provide by Lab (Wireless Intput Power:5W/7.5 W/10W//15W)	SDOC
3	Wireless Charging Load Phone	HUAWEI	P40PRO	Provide by Lab	SDOC

1.5 Equipments Used During The Test

Test Equipment	Manufacturer	Model No.	SN.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
Exposure Level Tester	Narda	ELT-400	N-0231	2023-12-14	2024-12-13
Magnetic field probe 100cm^2	Narda	ELT probe 100cm^2	M0675	2023-12-14	2024-12-13

1.6 Statement Of The Measurement Uncertainty

Test Item	Measurement Uncertainty
ELT-400	0.8dB
Note: (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

2 RF Exposure Evaluation

Per KDB 680106 D01 Section 3. RF Exposure Requirements;
1) Consumer wireless power transfer devices approved under Part 18 in some cases have to demonstrate compliance with RF exposure requirements. The potential for exposure must be assessed according to the operating configurations of the wireless system and the exposure conditions of users and bystanders. RF exposure must be evaluated with the client device(s) being charged by the primary at maximum output power. The RF exposure requirements must be determined in conjunction with the device operating characteristics, according to the mobile and portable exposure requirements in Section 2.1091 and Section 2.1093 of the rules. SAR and MPE limits do not cover the frequency range for wireless power transfer applications which operate below 100 kHz and 300 kHz respectively; therefore, RF exposure compliance needs to be determined with respect to 1.1307 (c) and (d) of the FCC rules.

2) Based on the design and implementation of the power transfer application, it must be clearly identified if mobile or portable RF exposure conditions apply. Devices that are installed to provide separation of at least 20 cm from users and bystanders may qualify for mobile exposure conditions. For some conditions where users and bystanders may be exposed at closer than 20 cm, section 2.1091(d)(4) of the rules may apply.

3) For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device. Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

4) Portable exposure conditions from 100 kHz to 6 GHz are determined with respect to SAR requirements. Existing SAR systems and test procedures are generally intended for measurements above 100 MHz. While numerical modeling can be an alternative, the constraints of substantial computational resources at low frequencies could introduce further limitations. Under these circumstances, including operations below 100 kHz, the Commission may consider a combination of analytical analysis, field strength, radiated and conducted power measurements, in conjunction with some limited numerical modeling to assess compliance.

5) Depending on the operating frequency, existing SAR and MPE measurement procedures may be adapted to evaluate wireless power transfer devices for compliance with respect to mobile or portable exposure conditions. If the grantee or its test lab have any questions regarding RF exposure evaluation they should contact the FCC Laboratory with sufficient system operating configuration details to determine if RF exposure evaluation is necessary and, if required, how to apply specific test procedures. Below 100 MHz, when SAR testing is required and the device is operating at close

proximity to persons, information on device design, implementation, operating configurations, exposure conditions of users and bystanders are needed to determine the evaluation and testing requirements. In addition, the influence of nearby objects may also need consideration according to the wireless power transfer system implementation; for example, the effects of placing the device, its coils or radiating elements on or near metallic surfaces

2.1 LIMITS

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
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
300-1,500	/	/	f/300	6
1,500-100,000	/	/	5	6

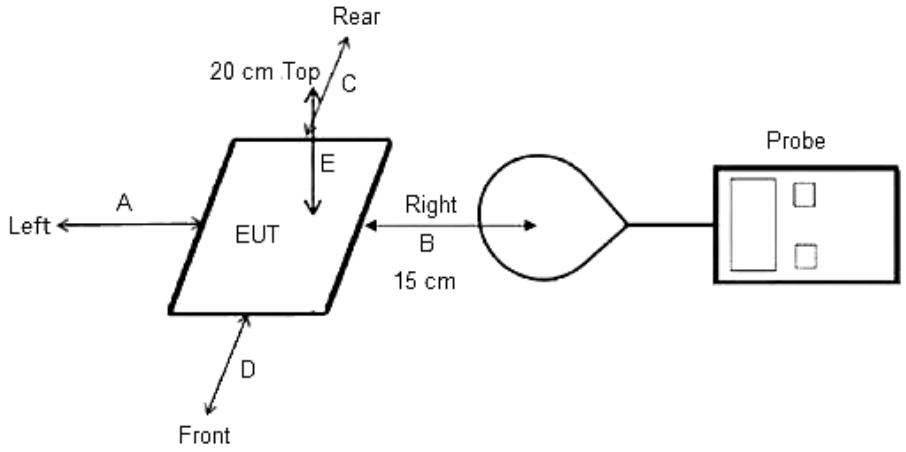
Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
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
300-1,500	/	/	f/1500	30
1,500-100,000	/	/	1.0	30

According to FCC KDB 680106 D01 Section 3. RF Exposure Requirements clause 3 the Emission-Limits in the frequency range from 100 KHz to 300 KHz should be assessed versus the limits at 300 KHz in Table 1 of CFR 47 – Section1.310 as following (measured distance shall be 15cm from the center of the probe to the edge of the device):

Frequency	E-Field(V/m)	A/m	uT
0.3 MHz – 3.0 MHz	614	1.613	2.0
3.0 MHz – 30 MHz	824/f	2.19/f	--

2.2 Test Setup Diagram



2.3 Test Procedure

1) The RF exposure test was performed in anechoic chamber.
2) The measurement probe was placed at test distance (15 cm from all sides and 20 cm from the top) which is between the edge of the charger and the geometric center of probe.
3) The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
4) The EUT was measured according to the dictates of KDB 680106 v03r01.

Remark：1. The EUT's test position A, B, C, D and E is valid for the E and H field measurements.

2. A/m=uT/1.25=(mT/1000)/1.25, V/m=$10^{(((20lg(A/m*10^6)+51.5)-120)/20)}$

2.4 Test Results

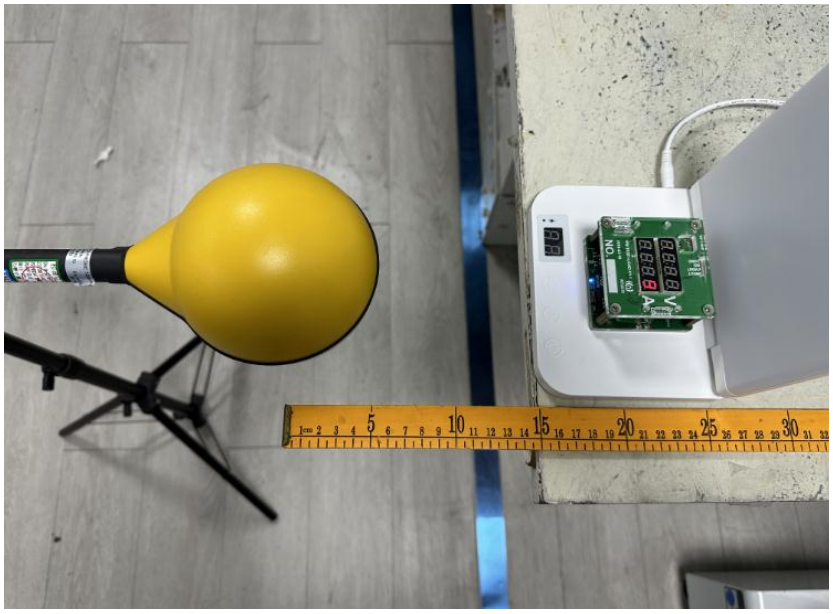
Test Mode		
TM1	EUT + Wireless Charging Load (Battery Status: <1%)	Record
TM2	EUT + Wireless Charging Load (Battery Status: <50%)	Record
TM3	EUT + Wireless Charging Load (Battery Status: <100%)	Record
Note: All test modes were pre-tested, but we only recorded the worst case in this report.		

Field Strength surrounding the EUT.

Load mode	Frequency (KHz)	Field strength (uT) (V/m) (A/m)	Test Position A(15cm)	Test Position B(15cm)	Test Position C(15cm)	Test Position D(15cm)	Test Position E(20cm)	50% Limits	Limits
TM1	147KHz	uT	0.209	0.220	0.236	0.203	0.204	--	--
TM1	147KHz	A/m	0.168	0.176	0.189	0.162	0.163	0.815	1.63
TM1	147KHz	V/m	62.959	66.068	70.934	60.956	61.390	307.0	614.0
TM2	147KHz	uT	0.239	0.214	0.232	0.204	0.219	--	--
TM2	147KHz	A/m	0.191	0.171	0.185	0.163	0.175	0.815	1.63
TM2	147KHz	V/m	71.917	64.270	69.684	61.331	65.806	307.0	614.0
TM3	147KHz	uT	0.243	0.245	0.244	0.213	0.211	--	--
TM3	147KHz	A/m	0.194	0.196	0.195	0.170	0.168	0.815	1.63
TM3	147KHz	V/m	72.965	73.732	73.265	63.966	63.317	307.0	614.0
Results: Pass									

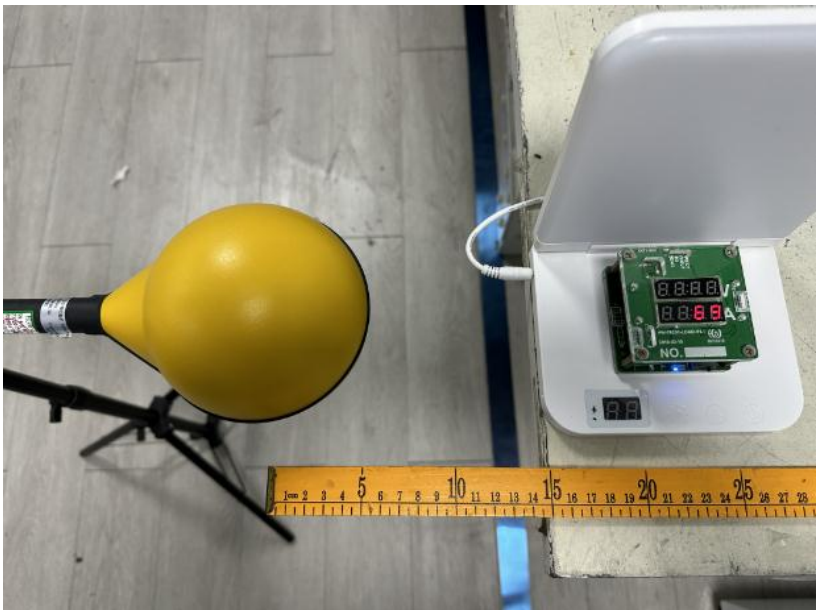
3 Test Setup

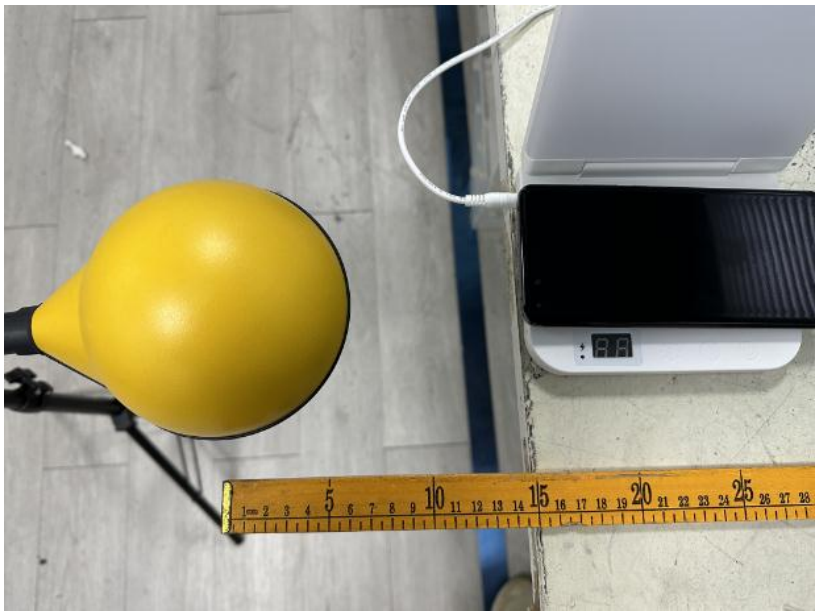
Test Position A



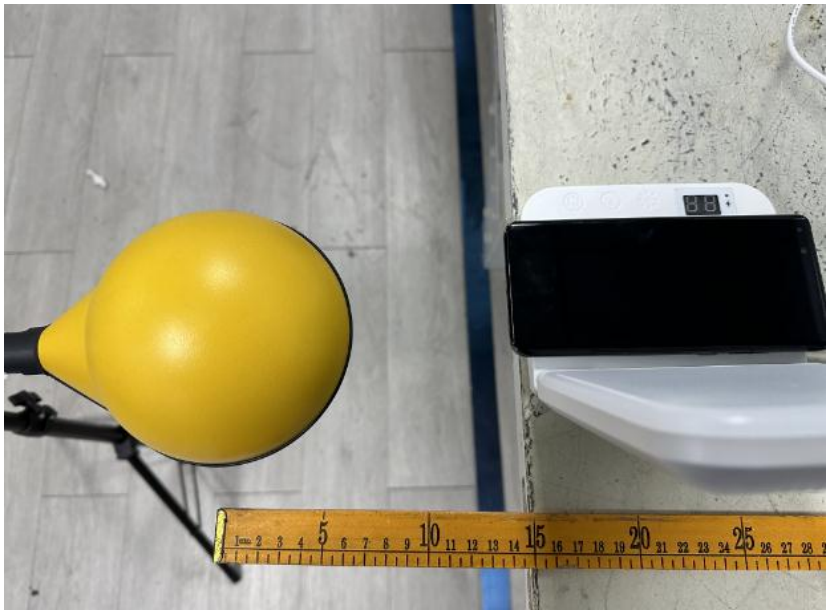
Test Position B

Test Position C





Test PositionD



Test Position E