Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640
Fax: +86-755-26648637
Website: www.cqa-cert.com

Report Template Version: V04
Report Template Revision Date: 2018-07-06

RF Exposure Evaluation Report

Report No. :	CQASZ20200901036E-02
Applicant:	ilumi solutions inc.
Address of Applicant:	1800 Preston Park Blvd, Plano, Texas, United States
Equipment Under Test (EUT):	
EUT Name:	LED LAMP
Model No.:	MTMR1650W
Brand Name:	MESHTEK®
FCC ID:	2AEHU-MTMR1650W
Standards:	47 CFR Part 1.1307 47 CFR Part 1.1310 KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2020-09-14
Date of Test:	2020-09-27 to 2020-10-20
Date of Issue:	2020-10-22
Test Result :	**PASS***

***In the configuration tested, the EUT complied with the standards specified above**

Tested By: Tiny You

(Tiny You)

Reviewed By: Sheek Luo

(Sheek Luo)

Approved By:

(Jack Ai)

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20200901036E-02	Rev.01	Initial report	2020-10-22

2 Contents

Page

3 General Information

3.1 Client Information

Applicant:	ilumi solutions inc.
Address of Applicant:	1800 Preston Park Blvd, Plano, Texas, United States
Manufacturer:	Ningbo Dongxing Electric Co., Ltd.
Address of Manufacturer:	Fenglin Industrial Development Zone, Qiaotou Town, Cixi, Ningbo, Zhejiang

3.2 General Description of BT

Product Name:	LED LAMP
Model No.:	MTMR1650W
Trade Mark:	MESHTEK®
Hardware Version:	REV07
Software Version:	Firmware version 0x1b1
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V4.0
Modulation Type:	GFSK
Transfer Rate:	1Mbps
Number of Channel:	40
Product Type:	☐ Mobile ☐ Portable ☒ Fix Location
Test Software of EUT:	PuTTY (manufacturer declare)
Antenna Type:	Integral antenna
Antenna Gain:	0dBi
EUT Power Supply:	AC/DC 12V

4 RF Exposure Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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				
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

F= Frequency in MHz

Friis Formula

Friis transmission formula: Pd = (Pout*G)/(4* Pi * R^2)

Where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm2 . If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

4.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.2 1.1.3 EUT RF Exposure Evaluation

1) For BLE

Antenna Gain: 0dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2403.5MHz)	12.79	12.5±1	13.5	22.387
Middle(2438.9MHz)	15.21	15.5±1	16.5	44.668
Highest(2477.3MHz)	13.94	13.5±1	14.5	28.184

The worst case:

Maximum tune-up Power (mW)	**Antenna Gain (dBi)**	**Power Density at R = 20 cm (mW/cm^2)**	**Limit**	**Result**
44.668	0	0.009	1.0	PASS

Note: 1) Refer to report No. CQASZ20200901036E-01 for EUT test Max Conducted Peak Output Power value.

2) $Pd = (Pout*G)/(4* Pi * R^2)=(44.668*1)/(4*3.1416*20^2)=0.009$