Shenzhen Most Technology Service Co., Ltd.
No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.

RF Exposure Evaluation Report

Report Reference No..... :	**MTEB23060116-H**	
FCC ID..... :	**2AB2Q-C806ST-A1GE26**	
Compiled by (position+printed name+signature).. :	File administrators Alisa Luo	
Supervised by (position+printed name+signature).. :	Test Engineer Sunny Deng	
Approved by (position+printed name+signature).. :	Manager Yvette Zhou	
Date of issue.....:	June 19,2023	
Representative Laboratory Name. :	**Shenzhen Most Technology Service Co., Ltd.**	
Address..... :	No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China.	
Applicant's name.....:	**LEEDARSON LIGHTING CO., LTD.**	
Address..... :	Xingda Road, Xingtai Industrial Zone, Changtai County, Zhangzhou, Fujian, China	
Test specification/ Standard.....**:**	**47 CFR Part 1.1307** **47 CFR Part 2.1093**	
TRF Originator.....:	Shenzhen Most Technology Service Co., Ltd.	

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Test item description.....:	Smart LED Lamp
Trade Mark .....:	LEEDARSON
Manufacturer.....:	1:LEEDARSON LIGHTING CO., LTD. 2:LEEDARSON IOT TECHNOLOGY (THAILAND) CO., LTD.
Model/Type reference..... :	12B112660WRGB01
Listed Models ..... :	13aSy-C806ST-A1G-xx-E26, 12B112660WRGBxx (Where "y" may be "A" to "Z", which designates for different enclosure pattern design; "xx" may be "00" to "99", which designates for different beam angle, color of eyelet contact, different package of style and CCT.)
Modulation Type..... :	GFSK
Operation Frequency..... :	From 2402MHz to 2480MHz
Hardware Version.....	wifi 2.4G+ble 4.2
Software Version.....	Hubspace
Rating.....:	120V, 60Hz, 78mA, 5.5W
Result.....:	PASS

T E S T R E P O R T

Equipment under Test	:	Smart LED Lamp
Model /Type	:	12B112660WRGB01
Listed Models		13aSy-C806ST-A1G-xx-E26, 12B112660WRGBxx (Where “y” may be “A” to “Z”, which designates for different enclosure pattern design; “xx” may be “00” to “99”, which designates for different beam angle, color of eyelet contact, different package of style and CCT.)
Remark		Their electrical circuit design,layout components used and internal wiring are identical,Only the beam angle, color of eyelet contact, package of style and CCT are different.
Applicant	:	LEEDARSON LIGHTING CO., LTD.
Address	:	Xingda Road, Xingtai Industrial Zone, Changtai County, Zhangzhou, Fujian, China
Manufacturer(1)	:	LEEDARSON LIGHTING CO., LTD.
Address(1)	:	Xingtai Industrial Zone, Economic Development Zone, Changtai County, Zhangzhou City, Fujian Province, P.R.China
Manufacturer(2)	:	LEEDARSON IOT TECHNOLOGY (THAILAND) CO., LTD.
Address(2)	:	71, Moo5,Wellgrow Industrial Easte. Bang Samak, Bang Pakong District, Chachoengsao 24130

Test Result:	**PASS**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2023.06.19	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Standard Requirement

According to §1.1307(e)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.
According to §1.1310 and §2.1091 RF exposure is calculated.
KDB447498 D01: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

2.1.2 Limits

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.

2.1.3 EUT RF Exposure

Measurement Data

BLE

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402MHz)	9.173	9.173±1	10.173
Middle(2441MHz)	9.509	9.509±1	10.509
Highest(2480MHz)	8.731	8.731±1	9.731

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Highest(2441 MHz)	10.509	11.243	-0.35	0.002	1.0	Pass

Note: 1) Refer to report **MTEB23060116-R1** for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(11.243*0.92)/(4*3.1416*20^2)=0.002
Note: 3)EUT's Bluetooth module is more than 20cm away from the human body.

WIFI 2.4G
Antenna Gain: -1.75dBi

IEEE for 802.11b mode			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	19.05	19.05±1	20.05
Middle(2437MHz)	18.54	18.54±1	19.54
Highest(2462MHz)	17.91	17.91±1	18.91

IEEE for 802.11g mode			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	15.04	15.04±1	16.04
Middle(2437MHz)	14.69	14.69±1	15.69
Highest(2462MHz)	14.08	14.08±1	15.08

IEEE for 802.11n(HT20) mode			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	13.48	13.48±1	14.48
Middle(2437MHz)	14.42	14.45±1	15.45
Highest(2462MHz)	13.80	13.80±1	14.80

IEEE for 802.11n(HT40) mode			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	14.07	14.07±1	15.07
Middle(2437MHz)	13.65	13.65±1	14.65
Highest(2462MHz)	13.40	13.40±1	14.40

Worst case: 802.11b mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Highest(2412 MHz)	20.05	101.15	-0.35	0.019	1.0	Pass

Note: 1) Refer to report **MTEB23060116-R2** for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(101.15*0.92)/(4*3.1416*20^2)=0.019Note:
3)EUT's Bluetooth module is more than 20cm away from the human body.

.....THE END OF REPORT.....