Shenzhen Most Technology Service Co., Ltd.
East A, 1 floor of New Aolin Factory buiding, Langshan Erlu, North District,
Hi-tech Industry Park, Nanshan,Shenzhen,Guangdong,China

RF Exposure Evaluation Report

Report Reference No..... :	**MTEB23040286-H**
FCC ID..... :	**2AB2Q-A800SG-G1Z**
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.....:	May 12,2023
Representative Laboratory Name. :	**Shenzhen Most Technology Service Co., Ltd.**
Address..... :	East A, 1 floor of New Aolin Factory buiding, Langshan Erlu, North District, Hi-tech Industry 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 1.1310** **KDB447498D01 General RF Exposure Guidance v06**
TRF Originator.....:	Shenzhen Most Technology Service Co., Ltd.

Test item description.....:	LED Lamp
Trade Mark.....:	LEEDARSON
Manufacturer.....:	1:LEEDARSON LIGHTING CO., LTD. 2:ATK Technology Co., Ltd.
Model/Type reference..... :	12CFA1960WCCT01
Listed Models ..... :	13aFA-A800SG-G1Z-03, 12CFA1960WCCT0x, 13aFA-ST800SG-G1Z-03, 12CFST1960CCT0x, 13aFA-G500SG-G1Z-01, 12CFG2560WCCT0x, 13aFA-ST500SG-G3Z-01, 12AFST1960CCT0x, Where "x" may be "1" to "4", which designates for different beam angle, color of eyelet contact, different package of style and CCT.
Modulation Type..... :	GFSK/ CCK/DSSS/ OFDM
Operation Frequency..... :	2402MHz to 2480MHz, 2412MHz2462MHz;
Hardware Version.....	Hubspace
Software Version.....	wifi 2.4G+ble 4.2
Rating.....:	AC 120V/60Hz

Result.....:	**PASS**

T E S T R E P O R T

Equipment under Test	:	LED Lamp
Model /Type	:	12CFA1960WCCT01
Listed Models		13aFA-A800SG-G1Z-03, 12CFA1960WCCT0x, 13aFA-ST800SG-G1Z-03, 12CFST1960CCT0x, 13aFA-G500SG-G1Z-01, 12CFG2560WCCT0x, 13aFA-ST500SG-G3Z-01, 12AFST1960CCT0x, Where "x" may be "1" to "4", 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 appearance、light source strip and sampling resistor 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	:	Xingtai Industrial Zone, Economic Development Zone, Changtai County, Zhangzhou City, Fujian Province, P.R.China
Manufacturer(2)	:	**ATK Technology Co., Ltd.**
Address	:	71 Moo.5 T. Bang Samak, Wellgrow Industrial Estate, A.Bang Pakong District, Chachoengsao Province, 24130 Thailand

Test Result:	**PASS**

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2023.05.12	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06
4.3.1. Standalone SAR test exclusion considerations
Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.1.2 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.

2.1.3 EUT RF Exposure

WIFI and BT do not support simultaneous transmission.
Antenna Gain: -4.16dBi
Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.4 in linear scale. Output Power Into Antenna & RF Exposure Evaluation Distance:

BLE

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2402	8.622	8.622±1	9.622
Middle(2440MHz)	9.270	9.270±1	10.270
Highest(2480MHz)	8.443	8.443±1	9.443

BLE

Worst case: GFSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Middle(2440MHz)	10.27	10.64	-4.16	0.0008	1.0	Pass

Note: 1) Refer to report MTEB23040286-R1 for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(10.64*0.38)/(4*3.1416*20^2)=0.0008

WIFI 2.4G

802.11b			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	20.96	20.96±1	21.96
Middle(2437MHz)	21.55	21.55±1	22.55
Highest(2462MHz)	21.54	21.54±1	22.54

802.11g			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	18.29	18.29±1	19.29
Middle(2437MHz)	18.47	18.47±1	19.47
Highest(2462MHz)	18.56	18.56±1	19.56

802.11n(H20)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2412MHz)	17.26	17.26±1	18.26
Middle(2437MHz)	17.72	17.72±1	18.72
Highest(2462MHz)	17.22	17.22±1	18.22

802.11n(H40)			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power (dBm)
Lowest(2422MHz)	16.84	16.84±1	17.84
Middle(2437MHz)	16.83	16.83±1	17.83
Highest(2452MHz)	16.73	16.73±1	17.73

WIFI 2.4G

Worst case: 802.11b						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Middle(2437MHz)	22.55	179.89	-4.16	0.0136	1.0	Pass

Note: 1) Refer to report MTEB23040286-R2 for EUT test Max Conducted average Output Power value.
Note: 2) Pd = (Pout*G)/(4* Pi * R2)=(285.76*0.38)/(4*3.1416*20^2)=0.0136

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