



RF Exposure Evaluation Declaration

Report No.: S20241010265301E03

Issue Date: 01-14-2025

Applicant: L&S Lighting Equipment (Shanghai) Co.,Ltd
Address: Building NO.1,Lane 255 Longpan Road,Malu Town, Jiading District ;Shanghai China
FCC ID: 2BD9AS05051-4052
Product: matter controller
Model No.: LITE MT; LITE MT RP; LITE BT1
Trade Mark: **L&S**
FCC Rule Part(s): CFR 47, FCC Part 2.1091 Radio frequency radiation exposure evaluation: mobile devices.
Item Receipt date: Oct. 23, 2024
Test Date: Nov. 05, ~ Dec. 19, 2024

Compiled By

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Senior Test Engineer

Approved By

(Line Chen)

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The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 558074 D01. Test results reported herein relate only to the item(s) tested.

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The test report must not be used by the client to claim product certifications, approval, or endorsement by NVLAP, NIST or any agency of U.S. Government.

Revision History

Report No.	Version	Description	Issue Date
S20241010265301E03	Rev. 01	/	01-14-2025

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	matter controller
Main Test Model:	LITE MT
Additional Model:	LITE MT RP; LITE BT1
Model Description:	LITE MT, LITE MT RP and LITE BT1 are identical to each other in all aspects, Schematic, Hardware version, structure and internal photos are same, only different as below: LITE MT RP has a reverse polarity of output terminal compared to LITE MT. LITE BT1 has a updated software compared to LITE MT.
Trade Mark:	L&S
Input Voltage Range:	DC 24V 6.25A
Wi-Fi Specification:	802.11b/g/n-HT20/n-HT40
Bluetooth Version:	5.1
Software Version:	1.10
Hardware Version:	1.0
Note:	This information is provided by the Customer and its authenticity is the responsibility of the Customer.

1.2. Product Specification Subjective to this Report

Frequency Range:	802.11b/g/n-HT20: 2412 ~ 2472MHz 802.11n-HT40: 2422 ~ 2462MHz BLE:2402~2480MHz
Channel Number:	802.11b/g/n-HT20: 13 802.11n-HT40: 5 BLE: 40
Antenna Type:	PCB antenna
Antenna Gain:	-1.3dBi
Type of Modulation:	802.11b/g/n: CCK/DBPSK/BPSK/OFDM/QPSK//DQPSK/16QAM/64QAM BLE: GFSK
Data Rate:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: MCS0~MCS7 BLE:1Mbps
Note:	/

2. RF Exposure Evaluation

2.1. Limits

According to FCC 1.1310: 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 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f = Frequency in MHz

Calculation Formula: $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

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 is the limit of MPE, 1mW/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.

2.2. Test Result of RF Exposure Evaluation

Product	matter controller					
Test Item	RF Exposure Evaluation					

Mode	Frequency (MHz)	Maximum Conducted OutputPower (dBm)	Antenna Gain (dBi)	PG		MPE (mW/cm ²)	MPE Limits (mW/cm ²)
				(dBm)	(mW)		
WIFI	2412~2462	16.57	-1.3	15.27	33.651	0.0067	1.00
BLE	2402~2480	5.77	-1.3	4.47	2.799	0.0006	1.00

Remark: 1. MPE use distance is 20cm from manufacturer declaration of user manual.

Remark: 2. Use the maximum gain of all bands when evaluating

CONCLUSION:

The Max Power Density at R (20 cm) = 0.0067mW/cm² < 1mW/cm².

So the EUT complies with the requirement.

The End