

TEST REPORT

Product Name : Multicolor Umbrella Light with Bluetooth®
Speaker
Model Number : LUNA PRO
FCC ID : 2AIUU-SUN27R

Prepared for : ACTIVA LEISURE INC.
Address : No.118, Xianghe West Road, Yinzhou, Ningbo

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Date(s) of Tests : September 29, 2022 to November 29, 2022
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1. TEST RESULT CERTIFICATION

Applicant : ACTIVA LEISURE INC.
Address : No.118, Xianghe West Road,Yinzhou,Ningbo
Manufacturer : ACTIVA LEISURE INC.
Address : No.118, Xianghe West Road,Yinzhou,Ningbo
EUT : Multicolor Umbrella Light with Bluetooth® Speaker
Model Name : LUNA PRO
Trademark : N/A

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
§ 15.247(i), § 2.1093	PASS

The above equipment was tested by EMTEK(DONGGUAN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules FCC § 15.247(i), § 2.1093.

The test results of this report relate only to the tested sample identified in this report

Date of Test : September 29, 2022 to November 29, 2022

Prepared by :

Warren Deng

Warren Deng /Editor

Tim Dong

Reviewer :

Tim Dong /Supervisor



Approve & Authorized Signer :

Sam Lv / Manager

Modified History

Version	Report No.	Revision Date	Summary
	EDG2209260089E00103R	/	Original Report



2. EUT Specification

Characteristics	Description
Product:	Multicolor Umbrella Light with Bluetooth® Speaker
Model Number:	LUNA PRO
Sample:	1#
Device Type:	Bluetooth V5.0
Data Rate:	1Mbps for GFSK modulation 2Mbps for $\pi/4$ -DQPSK modulation 3Mbps for 8DPSK modulation
Modulation:	BT: GFSK, $\pi/4$ -DQPSK, 8DPSK BLE: GFSK
Operating Frequency Range(s) :	2402-2480MHz
Number of Channels:	BT: 79 channels BLE: 40 Channels
Transmit Power Max:	BT: -2.98 dBm(0.000504W) BLE: -3.46 dBm(0.000451W)
Antenna Gain:	-0.76 dBi
Power supply:	DC 9V from Adapter, DC 7.4V from battery
Evaluation applied:	☐ MPE Evaluation ☒ SAR Evaluation

3. Test Requirement:

RF EXPOSURE EVALUATION

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
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π =3.1416

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

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

4. Measurement Result

Antenna gain:-0.76 dBi

BT

Mode	Frequency (MHz)	Output Power (dBm)	Target Power W/tolerance (dBm)	Max tune up power tolerance (dBm)	Max tune up power tolerance (mW)	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	Verdict
GFSK	2402	-4.8	-5±1	-4	0.40	0.000079	1	PASS
	2441	-3.67	-4±1	-3	0.50	0.000100	1	PASS
	2480	-4.17	-5±1	-4	0.40	0.000079	1	PASS
pi/4-DQPSK	2402	-4.55	-5±1	-4	0.40	0.000079	1	PASS
	2441	-3.25	-4±1	-3	0.50	0.000100	1	PASS
	2480	-3.59	-4±1	-3	0.50	0.000100	1	PASS
8-DPSK	2402	-4.38	-5±1	-4	0.40	0.000079	1	PASS
	2441	-2.98	-3±1	-2	0.63	0.000126	1	PASS
	2480	-4.8	-5±1	-4	0.40	0.000079	1	PASS

BLE

Mode	Frequency (MHz)	Output Power (dBm)	Target Power W/tolerance (dBm)	Max tune up power tolerance (dBm)	Max tune up power tolerance (mW)	Power Density at R=20cm (mW/cm ²)	Limit (mW/cm ²)	Verdict
1M	2402	-4.73	-5±1	-4	0.40	0.000089	1	PASS
	2441	-3.46	-4±1	-3	0.50	0.000112	1	PASS
	2480	-4.05	-5±1	-4	0.40	0.000089	1	PASS
2M	2402	-4.73	-5±1	-4	0.40	0.000089	1	PASS
	2441	-3.46	-4±1	-3	0.50	0.000112	1	PASS
	2480	-4.04	-5±1	-4	0.40	0.000089	1	PASS

According to KDB 447498, no stand-alone required for BT antenna, and no simultaneous SAR measurement is required.

*** End of Report ***