

# TEST REPORT

**Product Name** : Smart Fairy Lights  
**Brand Mark** : N/A  
**Model No.** : 50597  
**Report Number** : BLA-EMC-202206-A12703  
**FCC ID** : 2AQUQGE50597  
**Date of Sample Receipt** : 2022/6/29  
**Date of Test** : 2022/6/29 to 2022/7/18  
**Date of Issue** : 2022/7/18  
**Test Standard** : 47 CFR Part 1.1307, Part 1.1310  
**Test Result** : Pass

Prepared for:

**Globe Electric Company Inc.**  
**150 Oneida, Montreal, Quebec, Canada, H9R 1A8**

Prepared by:

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Date:

2022/7/18



**REPORT REVISE RECORD**

<b>Version No.</b>	<b>Date</b>	<b>Description</b>
00	2022/7/18	Original

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## 1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
RF Exposure	47 CFR Part 1.1307, Part 1.1310	CFR 47 Part 1.1310	CFR 47 Part 1.1310	PASS

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## 2 GENERAL INFORMATION

<b>Applicant</b>	Globe Electric Company Inc.
<b>Address</b>	150 Oneida, Montreal, Quebec, Canada, H9R 1A8
<b>Manufacturer</b>	Globe Electric Company Inc.
<b>Address</b>	150 Oneida, Montreal, Quebec, Canada, H9R 1A8
<b>Factory</b>	Globe Electric Company Inc.
<b>Address</b>	150 Oneida, Montreal, Quebec, Canada, H9R 1A8
<b>Product Name</b>	Smart Fairy Lights
<b>Test Model No.</b>	50597

## 3 GENERAL DESCRIPTION OF E.U.T.

<b>Hardware Version</b>	ANT_RGB_V5.5
<b>Software Version</b>	V1.0

BLE:

<b>Operation Frequency:</b>	2402MHz-2480MHz
<b>Modulation Type:</b>	GFSK
<b>Channel Spacing:</b>	2MHz
<b>Number of Channels:</b>	40
<b>Antenna Type:</b>	PCB Antenna
<b>Antenna Gain:</b>	2.21dBi (Provided by the applicant)

WIFI:

<b>Operation Frequency:</b>	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz
<b>Modulation Type:</b>	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
<b>Channel Spacing:</b>	5MHz
<b>Number of Channels:</b>	802.11b/g/n(HT20):11 802.11n(HT40):7
<b>Antenna Type:</b>	PCB Antenna
<b>Antenna Gain:</b>	2.21dBi (Provided by the applicant)

#### 4 LABORATORY LOCATION

All tests were performed at:  
BlueAsia of Technical Services(Shenzhen) Co., Ltd.  
Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province,  
China  
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673  
No tests were sub-contracted.

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## 5 RF EXPOSURE COMPLIANCE REQUIREMENT

### 5.1 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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34 .....	614	1.63	*(100)	30
1.34–30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	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:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. 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.

### 5.2 TEST PROCEDURE

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

### 5.3 EUT RF EXPOSURE EVALUATION

**Antenna Gain:** 2.21dBi

**Antenna Gain:** The maximum Gain measured in fully anechoic chamber is 1.663 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

BLE:

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
middle	2440	1.233	1.328	0.0004	1.0	PASS

2.4G WIFI(802.11b):

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
lowest	2412	11.897	15.477	0.0051	1.0	PASS

**Note:** Refer to report No. BLA-EMC-202206-A12701/02 for EUT test Max Conducted Peak Output Power value.

The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation Requirement

**----END OF REPORT----**

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