

# TEST REPORT

|                                        |                                                                                                                                                     |                                                                                       |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| FCC ID. .... :                         | 2AAS9-L0008                                                                                                                                         |                                                                                       |
| Test Report No..... :                  | TCT221108E036                                                                                                                                       |                                                                                       |
| Date of issue..... :                   | Dec. 16, 2022                                                                                                                                       |                                                                                       |
| Testing laboratory .....               | SHENZHEN TONGCE TESTING LAB                                                                                                                         |                                                                                       |
| Testing location/ address:             | 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China |                                                                                       |
| Applicant's name..... :                | BROWAN COMMUNICATIONS INCORPORATION                                                                                                                 |                                                                                       |
| Address..... :                         | No.15-1, Zhonghua Rd., Hsinchu Industrial Park, Hukou, Hsinchu Hsien, Taiwan 303                                                                    |                                                                                       |
| Manufacturer's name ... :              | BROWAN COMMUNICATIONS INCORPORATION                                                                                                                 |                                                                                       |
| Address..... :                         | No.15-1, Zhonghua Rd., Hsinchu Industrial Park, Hukou, Hsinchu Hsien, Taiwan 303                                                                    |                                                                                       |
| Standard(s) .....                      | FCC CFR Title 47 Part 1.1307                                                                                                                        |                                                                                       |
| Product Name..... :                    | MerryIoT Light S1                                                                                                                                   |                                                                                       |
| Trade Mark .....                       | BROWAN, MerryIoT                                                                                                                                    |                                                                                       |
| Model/Type reference..... :            | L0008                                                                                                                                               |                                                                                       |
| Rating(s)..... :                       | AC 120V/60Hz                                                                                                                                        |                                                                                       |
| Date of receipt of test item .....     | Nov. 08, 2022                                                                                                                                       |                                                                                       |
| Date (s) of performance of test..... : | Nov. 08, 2022 - Dec. 16, 2022                                                                                                                       |                                                                                       |
| Tested by (+signature) ... :           | Rleo LIU                                                                                                                                            |  |
| Check by (+signature).... :            | Beryl ZHAO                                                                                                                                          |  |
| Approved by (+signature):              | Tomsin                                                                                                                                              |  |

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## 1. General Product Information

### 1.1. EUT description

|                            |                                                                                                              |
|----------------------------|--------------------------------------------------------------------------------------------------------------|
| Product Name.....:         | MerryIoT Light S1                                                                                            |
| Model/Type reference.....: | L0008                                                                                                        |
| Sample Number.....:        | TCT221108E025-0101                                                                                           |
| Operation Frequency .....  | For BT/BLE:<br>2402MHz~2480MHz<br>For 2.4G WIFI:<br>2412MHz~2462MHz (802.11b/802.11g/802.11n(HT20))          |
| Modulation Type.....:      | For BT: GFSK, $\pi/4$ -DQPSK, 8DPSK<br>For BLE: GFSK<br>For 2.4G WIFI: DSSS(802.11b), OFDM (802.11g/802.11n) |
| Antenna Type.....:         | Internal Antenna                                                                                             |
| Antenna Gain.....:         | BT/BLE: 1.23dBi<br>2.4G WIFI: 1.23dBi                                                                        |
| Rating(s).....:            | AC 120V/60Hz                                                                                                 |

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

### 1.2. Model(s) list

None.

## 2. General Information

### 2.1. Test environment and mode

| Item                  | Normal condition                                          |
|-----------------------|-----------------------------------------------------------|
| Temperature           | +25°C                                                     |
| Voltage               | AC 120V                                                   |
| Humidity              | 56%                                                       |
| Atmospheric Pressure: | 1008 mbar                                                 |
| Test Mode:            |                                                           |
| Engineering mode:     | Keep the EUT in continuous transmitting by select channel |

### 2.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Equipment | Model No. | Serial No. | FCC ID | Trade Name |
|-----------|-----------|------------|--------|------------|
| /         | /         | /          | /      | /          |

**Note:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

### 3. Facilities and Accreditations

#### 3.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

#### 3.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

## 4. Test Results and Measurement Data

According to §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Remark: 1)

**For BT:** The maximum output power for antenna is 9.21dBm (8.34mW) at 2480MHz, 1.23dBi antenna gain(with 1.33 numeric antenna gain.)

**For BLE:** The maximum output power for antenna is 7.70dBm (5.89mW) at 2480MHz, 1.23dBi antenna gain(with 1.33 numeric antenna gain.)

**For 2.4G WIFI:** The maximum output power for antenna is 19.05dBm (80.35mW) at 2462MHz, 1.23dBi antenna gain(with 1.33 numeric antenna gain.)

2) For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20cm, even if the calculation indicate that the MPE distance would be lesser.

### Calculation:

Given  $E = \frac{\sqrt{30 \cdot P \cdot G}}{d}$  &  $S = \frac{E^2}{3770}$

Where  $E$  = Field strength in Volts / meter

$P$  = Power in Watts

$G$  = Numeric antenna gain

$d$  = Distance in meters

$S$  = Power density in milliwatts / square centimeter

Substituting the MPE safe distance using  $d=20\text{cm}$  into above equation.

Yields:  $S=0.000199 \cdot P \cdot G$

| Mode      | Power(mW) | numeric antenna gain | Power density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Result |
|-----------|-----------|----------------------|-------------------------------------|-----------------------------|--------|
| BT        | 8.34      | 1.33                 | 0.002207                            | 1.0                         | PASS   |
| BLE       | 5.89      | 1.33                 | 0.001559                            |                             |        |
| 2.4G WIFI | 80.35     | 1.33                 | 0.021266                            |                             |        |

\*\*\*\*\*END OF REPORT\*\*\*\*\*