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# RF Exposure Evaluation Report

**Report No. :** CQASZ20180800067E-03

**Applicant:** BRIGHT INDUSTRIES COMPANY LIMITED

**Address of Applicant:** UNIT 16 17F GOLDEN ERA PLAZA NO 39-55 SAI YEE STREET MONG KOK HONG KONG

**Manufacturer:** DONG GUAN JIA SHENG LIGHTING TECHNOLOGY CO.,LTD

**Address of Manufacturer:** Shutian Village, Humen Town, Dongguan City, Guangdong Province, China

**Equipment Under Test (EUT):**

**Product:** LED Lighting speaker

**All Model No.:** FWS-17, FLM-17

**Test Model No.:** FWS-17

**Brand Name:** MoriMori

**FCC ID:** 2AJ8KSP1701

**Standards:** 47 CFR Part 1.1307  
47 CFR Part 2.1093  
KDB447498D01 General RF Exposure Guidance v06

**Date of Test:** 2018-08-17 to 2018-08-22

**Date of Issue:** 2018-08-22

**Test Result :** PASS\*

**Tested By:**

*Daisy Qin*

(Daisy Qin)

**Reviewed By:**

*Aaron Ma*

(Aaron Ma)

**Approved By:**

*Jack Ai*

( Jack Ai)



\* In the configuration tested, the EUT complied with the standards specified above.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

## 1 Version

### Revision History Of Report

| Report No.           | Version | Description    | Issue Date |
|----------------------|---------|----------------|------------|
| CQASZ20180800067E-03 | Rev.01  | Initial report | 2018-08-22 |

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### 3 General Information

#### 3.1 Client Information

|                          |                                                                         |
|--------------------------|-------------------------------------------------------------------------|
| Applicant:               | BRIGHT INDUSTRIES COMPANY LIMITED                                       |
| Address of Applicant:    | UNIT 16 17F GOLDEN ERA PLAZA NO 39-55 SAI YEE STREET MONG KOK HONG KONG |
| Manufacturer:            | DONG GUAN JIA SHENG LIGHTING TECHNOLOGY CO.,LTD                         |
| Address of Manufacturer: | Shutian Village, Humen Town, Dongguan City, Guangdong Province, China   |

#### 3.2 General Description of EUT

|                       |                                                   |
|-----------------------|---------------------------------------------------|
| Product Name:         | LED Lighting speaker                              |
| All Model No.:        | FWS-17, FLM-17                                    |
| Test Model No.:       | FWS-17                                            |
| Trade Mark:           | MoriMori                                          |
| Hardware Version:     | V2.1                                              |
| Software Version:     | V0.1                                              |
| Operation Frequency:  | 2402MHz~2480MHz                                   |
| Bluetooth Version:    | V4.0                                              |
| Modulation Type:      | BT classic: GFSK, $\pi/4$ DQPSK<br>BLE: GFSK      |
| Number of Channel:    | BT classic:79<br>BLE:40                           |
| Sample Type:          | portable production                               |
| Test Software of EUT: | FCCAssist 2.4 (manufacturer declare )             |
| Antenna Type:         | PCB antenna                                       |
| Antenna Gain:         | -0.58dBi                                          |
| Power Supply:         | lithium battery:DC3.7V, 1700mAh, Charge by DC5.0V |

## 4 SAR Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 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.

#### 4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$\left[ \frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion

#### 4.1.3 EUT RF Exposure

##### For BT: Measurement Data

| GFSK mode          |                         |
|--------------------|-------------------------|
| Test channel       | Peak Output Power (dBm) |
| Lowest             | -2.110                  |
| Middle             | -1.870                  |
| Highest            | -2.110                  |
| $\pi/4$ DQPSK mode |                         |
| Test channel       | Peak Output Power (dBm) |
| Lowest             | -1.090                  |
| Middle             | -0.950                  |
| Highest            | -1.220                  |

Remark: The Conducted Peak Output Power data refer to report Report No.: CQASZ20180800067E-01

For BLE:

Measurement Data

| GFSK mode    |                         |
|--------------|-------------------------|
| Test channel | Peak Output Power (dBm) |
| Lowest       | 0.82                    |
| Middle       | 0.9                     |
| Highest      | 0.57                    |

Remark: The Conducted Peak Output Power data refer to report Report No.: CQASZ20180800067E-02

BDR, EDR and BLE can not simultaneous transmitting at same time.

The worst case data: BLE\_GFSK\_middle channel

The Max Conducted Peak Output Power is 0.9dBm in middle channel(2.441GHz);

The best case gain of the antenna is -0.58dBi.

EIRP= 0.9dBm - 0.58dBm= 0.32dBm

0.32dBm logarithmic terms convert to numeric result is nearly 1.1mW

According to the formula. calculate the EIRP test result:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot \sqrt{f(\text{GHz})}$$

General RF Exposure =  $(1.1\text{mW} / 5 \text{ mm}) \times \sqrt{2.441\text{GHz}} = 0.34$  ①

SAR requirement:

S= 3.0 ② ;

① < ②.

So the SAR report is not required.