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Test Report No.: FS160928N001

## RF EXPOSURE REPORT

|           |                                                                                               |
|-----------|-----------------------------------------------------------------------------------------------|
| Applicant | SZ Telstar CO.,LTD                                                                            |
| Address   | Telstar Technology Park No.12~14,Gangbei Industrial Zone, Ailian, Longgang District, ShenZhen |

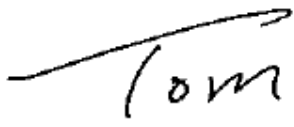
|                                     |                                                                                               |
|-------------------------------------|-----------------------------------------------------------------------------------------------|
| Manufacturer or Supplier            | SZ Telstar CO.,LTD                                                                            |
| Address                             | Telstar Technology Park No.12~14,Gangbei Industrial Zone, Ailian, Longgang District, ShenZhen |
| Product                             | Projector                                                                                     |
| Brand Name                          | miroir, Brookstone                                                                            |
| Model                               | U5                                                                                            |
| Additional Model & Model Difference | M400A, M400, 318490, see item 3.1                                                             |
| Date of tests                       | Oct. 15, 2016 ~ Nov. 08, 2016                                                                 |

☒ FCC Part 2 (Section 2.1091)

☒ KDB 447498 D01

☒ IEEE C95.1

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

|                                                                                     |                                                                                                             |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Tested by Tom Chen<br>Project Engineer / EMC Department                             | Approved by Glyn He<br>Supervisor/ EMC Department                                                           |
|  | <br>Date: Nov. 30, 2016 |

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## RELEASE CONTROL RECORD

| ISSUE NO.    | REASON FOR CHANGE | DATE ISSUED   |
|--------------|-------------------|---------------|
| FS160928N001 | Original release  | Nov. 30, 2016 |

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## 1. CERTIFICATION

|                        |                             |
|------------------------|-----------------------------|
| <b>FCC ID:</b>         | 2AFOW-UST520U5              |
| <b>PRODUCT:</b>        | Projector                   |
| <b>BRAND NAME:</b>     | miroir, Brookstone          |
| <b>MODEL NO.:</b>      | U5                          |
| <b>ADDITIONAL NO.:</b> | M400A, M400, 318490         |
| <b>APPLICANT:</b>      | SZ Telstar CO.,LTD          |
| <b>STANDARDS:</b>      | FCC Part 2 (Section 2.1091) |
|                        | KDB 447498 D01              |
|                        | IEEE C95.1                  |

### NOTE:

1. Additional models M400A, M400, 318490 are identical with the test model U5, except the model number and trade name for marketing purpose.



## 2. RF EXPOSURE LIMIT

### 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> ) | AVERAGE TIME (minutes) |
|-------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE |                               |                               |                                     |                        |
| 300-1500                                              | ...                           | ...                           | F/1500                              | 30                     |
| 1500-100,000                                          | ...                           | ...                           | 1.0                                 | 30                     |

F = Frequency in MHz

## 3. MPE CALCULATION FORMULA

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

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

## 4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Module 1

| Transmitter Circuit | Peak Gain (dBi)                              | Antenna Type          |
|---------------------|----------------------------------------------|-----------------------|
| Chain 0             | 2 dBi For BT, BT-BLE, WIFI 2.4GHz, WIFI 5GHz | Integral FPCB Antenna |
| Chain 1             | 2 dBi For WIFI 2.4GHz(802.11n), WIFI 5GHz    | Integral FPCB Antenna |

For wifi:  $2+10\log(n)=2+10\log 2=2+3.01=5.01\text{dBi}$

Module 2

| Transmitter Circuit | Peak Gain (dBi)  | Antenna Type          |
|---------------------|------------------|-----------------------|
| Chain 0             | 2 dBi For BT-BLE | Integral FPCB Antenna |

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For Module 1

| FREQUENCY BAND (MHz)  | MAX POWER (mW) | ANTENNA GAIN (dBi) | DISTANCE (cm) | POWER DENSITY (mW/cm <sup>2</sup> ) | LIMIT (mW/cm <sup>2</sup> ) |
|-----------------------|----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 2402-2480(BT)         | 3.443          | 2                  | 20            | 0.00109                             | 1.0                         |
| 2402-2480(BT-BLE)     | 7.228          | 2                  | 20            | <b>0.00228</b>                      | 1.0                         |
| 2412-2462(WLAN)       | 212.385        | 5.01               | 20            | <b>0.13392</b>                      | 1.0                         |
| 5180-5240 (WIFI 5GHz) | 40.926         | 5.01               | 20            | 0.02581                             | 1.0                         |
| 5745-5825 (WIFI 5GHz) | 25.763         | 5.01               | 20            | 0.01625                             | 1.0                         |

For Module 2

| FREQUENCY BAND (MHz) | MAX POWER (mW) | ANTENNA GAIN (dBi) | DISTANCE (cm) | POWER DENSITY (mW/cm <sup>2</sup> ) | LIMIT (mW/cm <sup>2</sup> ) |
|----------------------|----------------|--------------------|---------------|-------------------------------------|-----------------------------|
| 2402-2480(BT-BLE)    | 6.779          | 2                  | 20            | 0.00214                             | 1.0                         |



## CONCLUSION:

The module 1 and module 2 can transmit simultaneously, but WIFI 2.4GHz and WIFI 5GHz can not transmit simultaneously, the formula of calculated the MPE is:

$$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \dots \text{etc.} < 1$$

**CPD = Calculation power density**

**LPD = Limit of power density**

Therefore, the worst-case situation is  $0.00228 / 1 + 0.13392 / 1 + 0.00214 / 1 = 0.13834$ , which is less than "1". This confirmed that the device comply with FCC 1.1310 MPE limit.

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