



# MPE Report

Report No.:STS2512454H01

Issued for

Dongguan Huima Synthetic Electronics Co.,Ltd

3rd Floor, Bingding A, No.1 Jiangxing Road, Huangjiang  
Village, Huangjiang Town, Dongguan City, Guangdong  
Province, China

Product Name: RF RGB CONTROLLER

Brand Name: N/A

Model Name: HM-RF-001

Series Model(s): N/A

FCC ID: 2BEMS-HMRF001

Test Standards: FCC 47CFR §2.1093

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the ShenZhen STS Test Services Co., Ltd.

**TEST REPORT**

**Applicant's Name** ..... : Dongguan Huima Synthetic Electronics Co.,Ltd  
**Address**..... : 3rd Floor, Bingding A, No.1 Jiangxing Road, Huangjiang Village,  
Huangjiang Town, Dongguan City, Guangdong Province, China  
**Manufacturer's Name** ..... : Dongguan Huima Synthetic Electronics Co.,Ltd  
**Address**..... : 3rd Floor, Bingding A, No.1 Jiangxing Road, Huangjiang Village,  
Huangjiang Town, Dongguan City, Guangdong Province, China

**Product Description**

**Product Name** ..... : RF RGB CONTROLLER  
**Brand Name** ..... : N/A  
**Model Name**..... : HM-RF-001  
**Series Model(s)**..... : N/A

**Test Standards** ..... : FCC 47CFR §2.1093  
447498 D01 Interim General RF Exposure Guidance v06

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**Date of Test** .....

**Date of receipt of test item** ..... : 19 Nov. 2025  
**Date (s) of performance of tests**..... : 19 Nov. 2025 to 20 Dec. 2025  
**Date of Issue** ..... : 20 Dec. 2025  
**Test Result**..... : **Pass**

Testing Engineer :

(Aaron Bu)

Technical Manager :

(Skylar Li)

Authorized Signatory :

(Bovey Yang)





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**Revision History**

| Rev. | Issue Date   | Report No.    | Effect Page | Contents      |
|------|--------------|---------------|-------------|---------------|
| 00   | 20 Dec. 2025 | STS2512454H01 | ALL         | Initial Issue |
|      |              |               |             |               |



## 1. GENERAL INFORMATION

### 1.1 GENERAL DESCRIPTION OF THE EUT

|                     |                                |                  |
|---------------------|--------------------------------|------------------|
| Product Name        | RF RGB CONTROLLER              |                  |
| Brand Name          | N/A                            |                  |
| Model Name          | HM-RF-001                      |                  |
| Series Model(s)     | N/A                            |                  |
| Model Difference    | N/A                            |                  |
| Product Description | The EUT is a RF RGB CONTROLLER |                  |
|                     | Operation Frequency:           | 433.97MHz        |
|                     | Modulation Type:               | ASK              |
|                     | Antenna Designation:           | Internal antenna |
|                     | Antenna Gain(Peak)             | 0 dbi            |
| Power Rating        | DC 3V From Battery             |                  |
| Adapter             | N/A                            |                  |
| Battery             | N/A                            |                  |
| Hardware Version    | N/A                            |                  |
| Software Version    | N/A                            |                  |

### 1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01



## 2. FCC 47CFR §2.1093 REQUIREMENT

### 2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in KDB 447498 D01 General RF Exposure Guidance v06 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

### 2.2 LIMIT

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

| MHz  | 5   | 10  | 15  | 20  | 25  | mm                                      |
|------|-----|-----|-----|-----|-----|-----------------------------------------|
| 150  | 39  | 77  | 116 | 155 | 194 | SAR Test<br>Exclusion<br>Threshold (mW) |
| 300  | 27  | 55  | 82  | 110 | 137 |                                         |
| 450  | 22  | 45  | 67  | 89  | 112 |                                         |
| 835  | 16  | 33  | 49  | 66  | 82  |                                         |
| 900  | 16  | 32  | 47  | 63  | 79  |                                         |
| 1500 | 12  | 24  | 37  | 49  | 61  |                                         |
| 1900 | 11  | 22  | 33  | 44  | 54  |                                         |
| 2450 | 10  | 19  | 29  | 38  | 48  |                                         |
| 3600 | 8   | 16  | 24  | 32  | 40  |                                         |
| 5200 | 7   | 13  | 20  | 26  | 33  |                                         |
| 5400 | 6   | 13  | 19  | 26  | 32  |                                         |
| 5800 | 6   | 12  | 19  | 25  | 31  |                                         |
|      |     |     |     |     |     |                                         |
| MHz  | 30  | 35  | 40  | 45  | 50  | mm                                      |
| 150  | 232 | 271 | 310 | 349 | 387 | SAR Test<br>Exclusion<br>Threshold (mW) |
| 300  | 164 | 192 | 219 | 246 | 274 |                                         |
| 450  | 134 | 157 | 179 | 201 | 224 |                                         |
| 835  | 98  | 115 | 131 | 148 | 164 |                                         |
| 900  | 95  | 111 | 126 | 142 | 158 |                                         |
| 1500 | 73  | 86  | 98  | 110 | 122 |                                         |
| 1900 | 65  | 76  | 87  | 98  | 109 |                                         |
| 2450 | 57  | 67  | 77  | 86  | 96  |                                         |
| 3600 | 47  | 55  | 63  | 71  | 79  |                                         |
| 5200 | 39  | 46  | 53  | 59  | 66  |                                         |
| 5400 | 39  | 45  | 52  | 58  | 65  |                                         |
| 5800 | 37  | 44  | 50  | 56  | 62  |                                         |



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:

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

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.



## 2.3 TEST RESULT

Trun up

| Mode | Detector | Power (dBuV/m)<br>@3m | Power<br>(dBm) | Max Tune up<br>(dBm) |
|------|----------|-----------------------|----------------|----------------------|
| SRD  | PK       | 70.48                 | -24.72         | -24 ± 1              |

Note: Power(dBm)= dBuV/m@3m -95.2

Evaluation Result

| Mode | Frequency<br>MHz | Separation<br>distance<br>(cm) | Power<br>(dBm) | ERP<br>(mW) | SAR Test<br>Exclusion<br>Threshold | SAR Test<br>Exclusion | Estimated<br>SAR |
|------|------------------|--------------------------------|----------------|-------------|------------------------------------|-----------------------|------------------|
| SRD  | 433.97           | 0.5                            | -23            | 0.00001     | 0.000001                           | Yes                   | /                |

Note:

1. Remark: The worst case gain of the antenna is 0dBi.
2. Threshold at which no SAR required is  $0.000001 \leq 3.0$  for 1-g SAR, Separation distance  $\leq 5\text{mm}$ .

※※※※※END OF THE REPORT※※※※※