



## FCC TEST REPORT

Shenzhen mutual Touch Technology Co.,Ltd

intelligent mug warmer

Test Model: HC-804

Prepared for : Shenzhen mutual Touch Technology Co.,Ltd  
Address : 6F, C5 building, Fuyuan Industrial zone, No598,  
Zhoushi road, Baoan district, Shenzhen, China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.  
Address : 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park  
Yabianxueziwei, Shajing Street, Baoan District,  
Shenzhen, 518000, China

Tel : (+86)755-82591330  
Fax : (+86)755-82591332  
Web : www.LCS-cert.com  
Mail : webmaster@LCS-cert.com

Date of receipt of test sample : April 22, 2022  
Number of tested samples : 1  
Sample No. : 220301138A  
Serial number : Prototype  
Date of Test : April 22, 2022 ~ April 30, 2022  
Date of Report : May 07, 2022





| <b>FCC TEST REPORT</b><br><b>FCC 47 CFR Part 15 Subpart B, Class B, ANSI C63.4 -2014</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Report Reference No.</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>: LCS220420038AE</b>                                                                                                                         |
| <b>Date Of Issue</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>: May 07, 2022</b>                                                                                                                           |
| <b>Testing Laboratory Name</b> ....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>: Shenzhen LCS Compliance Testing Laboratory Ltd.</b>                                                                                        |
| <b>Address</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park<br/>Yabianxueziwei, Shajing Street, Baoan District, Shenzhen,<br/>518000, China</b> |
| <b>Testing Location/ Procedure...</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>: Full application of Harmonised standards ■<br/>Partial application of Harmonised standards □<br/>Other standard testing method □</b>       |
| <b>Applicant's Name</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>: Shenzhen mutual Touch Technology Co.,Ltd</b>                                                                                               |
| <b>Address</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>: 6F, C5 building, Fuyuan Industrial zone, No598, Zhoushi<br/>road, Baoan district, Shenzhen, China</b>                                      |
| <b>Test Specification</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                 |
| <b>Standard</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>: FCC 47 CFR Part 15 Subpart B, Class B, ANSI C63.4<br/>-2014</b>                                                                            |
| <b>Test Report Form No.</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>: LCSEMC-1.0</b>                                                                                                                             |
| <b>TRF Originator</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>: Shenzhen LCS Compliance Testing Laboratory Ltd.</b>                                                                                        |
| <b>Master TRF</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>: Dated 2011-03</b>                                                                                                                          |
| <b>SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. All rights reserved.</b><br>This publication may be reproduced in whole or in part for non-commercial purposes as long as the SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. is acknowledged as copyright owner and source of the material. SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. |                                                                                                                                                 |
| <b>Test Item Description</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>: intelligent mug warmer</b>                                                                                                                 |
| <b>Trade Mark</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>: N/A</b>                                                                                                                                    |
| <b>Test Model</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>: HC-804</b>                                                                                                                                 |
| <b>Ratings</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>: Input: DC 5V, 2.4A, 12W Max</b>                                                                                                            |
| <b>Result</b> .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>: Positive</b>                                                                                                                               |

Compiled by:

Vera Deng/ Administrator

Supervised by:

Jin Wang/ Technique principal

Approved by:

Gavin Liang/ Manager



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity

**FCC -- TEST REPORT**

|                          |                       |                                      |
|--------------------------|-----------------------|--------------------------------------|
| <b>Test Report No. :</b> | <b>LCS220420038AE</b> | <u>May 07, 2022</u><br>Date of issue |
|--------------------------|-----------------------|--------------------------------------|

|                          |                                                                                                 |
|--------------------------|-------------------------------------------------------------------------------------------------|
| Test Model .....         | : HC-804                                                                                        |
| EUT.....                 | : intelligent mug warmer                                                                        |
| <b>Applicant.....</b>    | <b>: Shenzhen mutual Touch Technology Co.,Ltd</b>                                               |
| Address.....             | : 6F, C5 building, Fuyuan Industrial zone, No598, Zhoushi road, Baoan district, Shenzhen, China |
| Telephone.....           | : /                                                                                             |
| Fax.....                 | : /                                                                                             |
| <b>Manufacturer.....</b> | <b>: Shenzhen mutual Touch Technology Co.,Ltd</b>                                               |
| Address.....             | : 6F, C5 building, Fuyuan Industrial zone, No598, Zhoushi road, Baoan district, Shenzhen, China |
| Telephone.....           | : /                                                                                             |
| Fax.....                 | : /                                                                                             |
| <b>Factory.....</b>      | <b>: Shenzhen mutual Touch Technology Co.,Ltd</b>                                               |
| Address.....             | : 6F, C5 building, Fuyuan Industrial zone, No598, Zhoushi road, Baoan district, Shenzhen, China |
| Telephone.....           | : /                                                                                             |
| Fax.....                 | : /                                                                                             |

**Test Result** according to the standards on page 6: **Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



## Revision History

| Report Version | Issue Date   | Revision Content | Revised By |
|----------------|--------------|------------------|------------|
| 000            | May 07, 2022 | Initial Issue    | --         |
|                |              |                  |            |
|                |              |                  |            |





## TABLE OF CONTENTS

| Test Report Description                                | Page      |
|--------------------------------------------------------|-----------|
| <b>1. SUMMARY OF STANDARDS AND RESULTS .....</b>       | <b>6</b>  |
| <b>1.1. Description of Standards and Results .....</b> | <b>6</b>  |
| <b>2. GENERAL INFORMATION .....</b>                    | <b>7</b>  |
| 2.1. Description of Device (EUT) .....                 | 7         |
| 2.2. Support Equipment List.....                       | 8         |
| 2.3 External I/O Cable.....                            | 8         |
| 2.4. Description of Test Facility .....                | 8         |
| 2.4. Statement of the Measurement Uncertainty .....    | 9         |
| 2.5. Measurement Uncertainty.....                      | 9         |
| <b>3. TEST RESULTS.....</b>                            | <b>10</b> |
| 3.1. POWER LINE CONDUCTED EMISSION MEASUREMENT .....   | 10        |
| 3.2. Radiated emission Measurement.....                | 14        |
| <b>4. TEST SETUP PHOTOGRAPHS OF EUT .....</b>          | <b>19</b> |
| <b>5. EXTERIOR PHOTOGRAPHS OF THE EUT .....</b>        | <b>19</b> |
| <b>6. INTERIOR PHOTOGRAPHS OF THE EUT.....</b>         | <b>19</b> |





## 1. SUMMARY OF STANDARDS AND RESULTS

### 1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

| EMISSION                                   |                                                         |         |         |
|--------------------------------------------|---------------------------------------------------------|---------|---------|
| Description of Test Item                   | Standard                                                | Limits  | Results |
| Conducted disturbance at mains terminals   | FCC 47 CFR Part 15 Subpart B, Class B, ANSI C63.4 -2014 | Class B | PASS    |
| Radiated disturbance                       | FCC 47 CFR Part 15 Subpart B, Class B, ANSI C63.4 -2014 | Class B | PASS    |
| N/A is an abbreviation for Not Applicable. |                                                         |         |         |

#### Test mode:

|        |                  |        |
|--------|------------------|--------|
| Mode 1 | Normal operation | Record |
|--------|------------------|--------|





## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

EUT : intelligent mug warmer

Trade Mark : N/A

Test Model : HC-804

Power Supply : Input: DC 5V, 2.4A, 12W Max

Highest internal frequency (Fx) :  $F_x \leq 108 \text{ MHz}$

| Highest internal frequency (Fx)              | Highest measured frequency              |
|----------------------------------------------|-----------------------------------------|
| $F_x \leq 108 \text{ MHz}$                   | 1 GHz                                   |
| $108 \text{ MHz} < F_x \leq 500 \text{ MHz}$ | 2 GHz                                   |
| $500 \text{ MHz} < F_x \leq 1 \text{ GHz}$   | 5 GHz                                   |
| $F_x > 1 \text{ GHz}$                        | $5 \times F_x$ up to a maximum of 6 GHz |

NOTE 1 For FM and TV broadcast receivers, Fx is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.

Where Fx is unknown, the radiated emission measurements shall be performed up to 6 GHz.



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



## 2.2. Support Equipment List

| Manufacturer | Description | Model | Serial Number | Certificate |
|--------------|-------------|-------|---------------|-------------|
| --           | --          | --    | --            | --          |

## 2.3 External I/O Cable

| I/O Port Description | Quantity | Cable |
|----------------------|----------|-------|
| --                   | --       | --    |

## 2.4. Description of Test Facility

### Site Description

EMC Lab.

: NVLAP Accreditation Code is 600167-0.  
FCC Designation Number is CN5024.  
CAB identifier is CN0071.  
CNAS Registration Number is L4595.  
Test Firm Registration Number: 254912.



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



## 2.4. Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

## 2.5. Measurement Uncertainty

| Test               | Parameters                                              | Expanded Uncertainty (U <sub>lab</sub> ) | Expanded Uncertainty (U <sub>cispr</sub> ) |
|--------------------|---------------------------------------------------------|------------------------------------------|--------------------------------------------|
| Conducted Emission | Level accuracy<br>(9kHz to 150kHz)<br>(150kHz to 30MHz) | $\pm 2.63$ dB<br>$\pm 2.35$ dB           | $\pm 3.8$ dB<br>$\pm 3.4$ dB               |
| Radiated Emission  | Level accuracy<br>(9kHz to 30MHz)                       | $\pm 3.68$ dB                            | N/A                                        |
| Radiated Emission  | Level accuracy<br>(30MHz to 1000MHz)                    | $\pm 3.48$ dB                            | $\pm 5.3$ dB                               |
| Radiated Emission  | Level accuracy<br>(above 1000MHz)                       | $\pm 3.90$ dB                            | $\pm 5.2$ dB                               |

(1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

(2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of  $k=2$ , which for a normal distribution corresponds to a coverage probability of approximately 95%.





### 3. TEST RESULTS

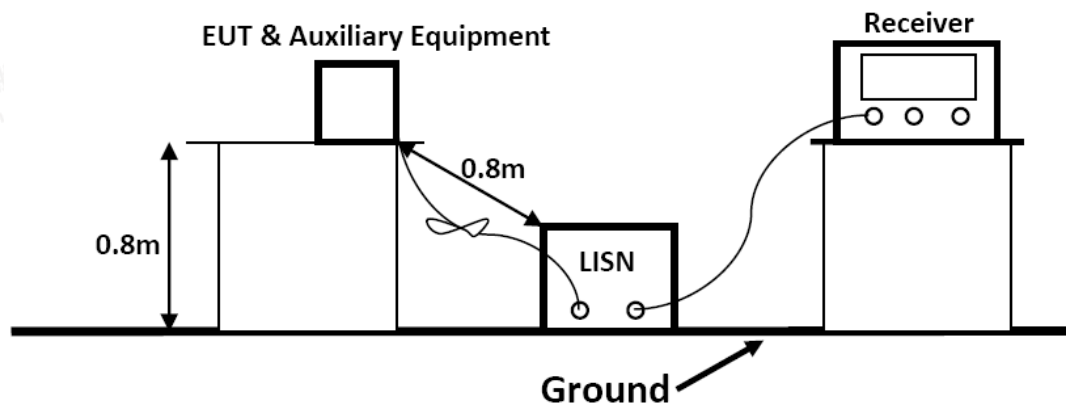
#### 3.1. POWER LINE CONDUCTED EMISSION MEASUREMENT

##### 3.1.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

| Item | Equipment                     | Manufacturer | Model No.  | Serial No.   | Cal Date   | Due Date   |
|------|-------------------------------|--------------|------------|--------------|------------|------------|
| 1    | EMI Test Receiver             | R&S          | ESCI       | 101142       | 2021-06-08 | 2022-06-08 |
| 2    | 10dB Attenuator               | SCHWARZBECK  | VTSD9561-F | 9561-F159    | 2021-06-08 | 2022-06-08 |
| 3    | Artificial Mains Network      | SCHWARZBECK  | NSLK8127   | 8127716      | 2021-06-08 | 2022-06-08 |
| 4    | EMI Test Software             | EZ           | EZ EMC     | N/A          | /          | /          |
| 5    | Asymmetric Artificial Network | SCHWARZBECK  | NTFM 8158  | NTFM8158#120 | 2021-06-08 | 2022-06-08 |
| 6    | Voltage Probe                 | SCHWARZBECK  | KT 9420    | 9420401      | 2021-06-08 | 2022-06-08 |
| 7    | No. 2 shielded Room           | CHENGYU      | 843        | /            | 2020-06-16 | 2023-06-16 |

##### 3.1.2. Block Diagram of Test Setup



##### 3.1.3. Test Standard

###### Power Line Conducted Emission Limits (Class B)

| Frequency (MHz) |   |       | Limit (dB $\mu$ V) |               |
|-----------------|---|-------|--------------------|---------------|
|                 |   |       | Quasi-peak Level   | Average Level |
| 0.15            | ~ | 0.50  | 66.0 ~ 56.0 *      | 56.0 ~ 46.0 * |
| 0.50            | ~ | 5.00  | 56.0               | 46.0          |
| 5.00            | ~ | 30.00 | 60.0               | 50.0          |

NOTE1-The lower limit shall apply at the transition frequencies.

NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

##### 3.1.4. EUT Configuration on Test

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



application.

### 3.1.5. Operating Condition of EUT

3.1.5.1. Setup the EUT as shown on Section 3.1.2

3.1.5.2. Turn on the power of all equipments.

3.1.5.3. Let the EUT work in measuring Mode 1 and measure it.

### 3.1.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2014 on Conducted Emission Measurement.

The bandwidth of the test receiver is set at 9kHz.

The frequency range from 150kHz to 30MHz is investigated

### 3.1.7. Test Results

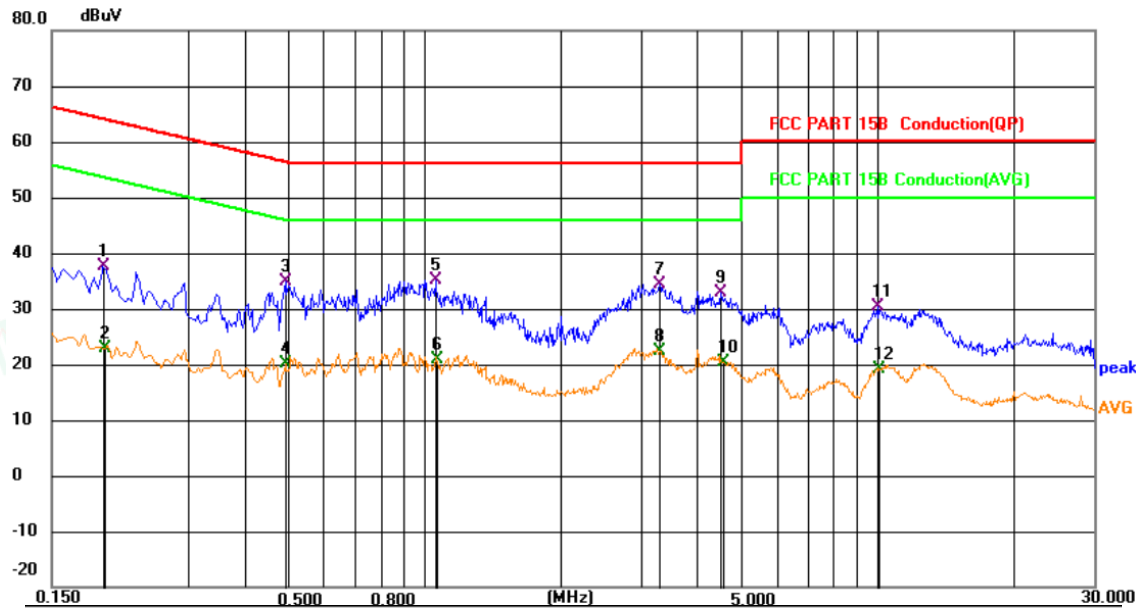
**PASS.**

The test result please refer to the next page.





|                          |                 |               |              |
|--------------------------|-----------------|---------------|--------------|
| Test Model               | HC-804          | Test Mode     | Mode 1       |
| Environmental Conditions | 22.7℃, 53.7% RH | Test Engineer | Monkey Li    |
| Pol                      | Line            | Test Voltage  | AC 120V/60Hz |



| No. | Mk. | Freq.   | Reading | Correct | Measure- | Limit | Margin |          |         |
|-----|-----|---------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz     | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |         | dBuV    | dB      | dBuV     | dBuV  | dB     |          |         |
| 1   |     | 0.1951  | 17.91   | 19.63   | 37.54    | 63.82 | -26.28 | QP       |         |
| 2   |     | 0.1954  | 3.19    | 19.63   | 22.82    | 53.80 | -30.98 | AVG      |         |
| 3   |     | 0.4921  | 15.34   | 19.64   | 34.98    | 56.13 | -21.15 | QP       |         |
| 4   |     | 0.4921  | 0.55    | 19.64   | 20.19    | 46.13 | -25.94 | AVG      |         |
| 5   | *   | 1.0590  | 15.44   | 19.65   | 35.09    | 56.00 | -20.91 | QP       |         |
| 6   |     | 1.0635  | 1.18    | 19.65   | 20.83    | 46.00 | -25.17 | AVG      |         |
| 7   |     | 3.3001  | 14.68   | 19.70   | 34.38    | 56.00 | -21.62 | QP       |         |
| 8   |     | 3.3001  | 2.63    | 19.70   | 22.33    | 46.00 | -23.67 | AVG      |         |
| 9   |     | 4.5195  | 13.18   | 19.70   | 32.88    | 56.00 | -23.12 | QP       |         |
| 10  |     | 4.5646  | 0.64    | 19.70   | 20.34    | 46.00 | -25.66 | AVG      |         |
| 11  |     | 10.0500 | 10.48   | 19.85   | 30.33    | 60.00 | -29.67 | QP       |         |
| 12  |     | 10.0950 | -0.78   | 19.85   | 19.07    | 50.00 | -30.93 | AVG      |         |



Shenzhen LCS Compliance Testing Laboratory Ltd.

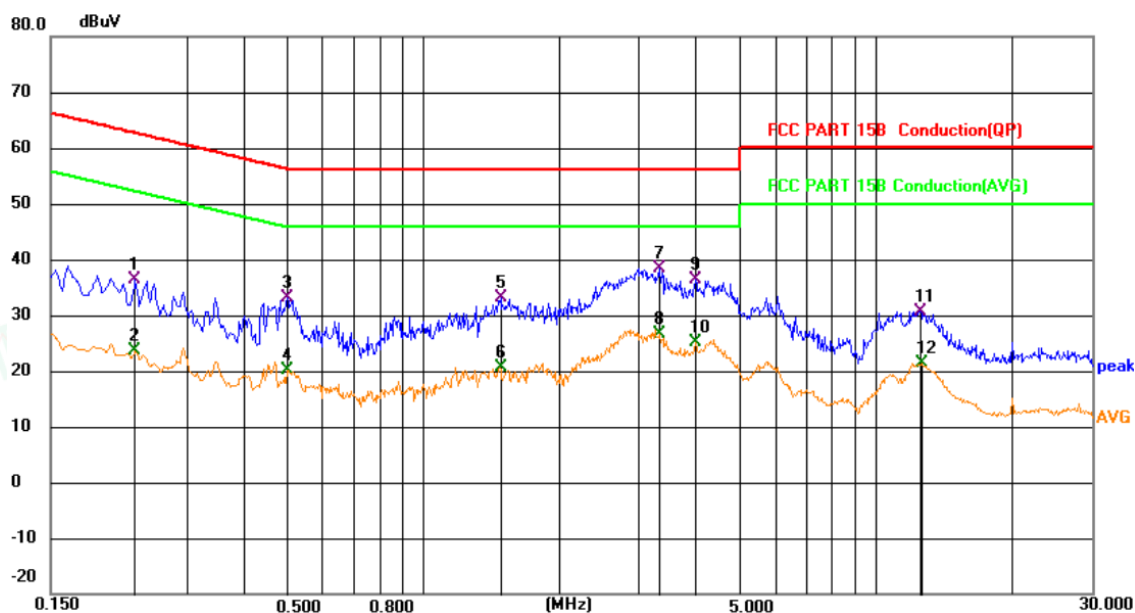
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



|                          |                 |               |              |
|--------------------------|-----------------|---------------|--------------|
| Test Model               | HC-804          | Test Mode     | Mode 1       |
| Environmental Conditions | 22.7℃, 53.7% RH | Test Engineer | Monkey Li    |
| Pol                      | Neutral         | Test Voltage  | AC 120V/60Hz |



| No. | Mk. | Freq.   | Reading | Correct | Measure- | Limit | Margin |          |         |
|-----|-----|---------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz     | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |         | dBuV    | dB      | dBuV     | dBuV  | dB     |          |         |
| 1   |     | 0.2311  | 16.87   | 19.63   | 36.50    | 62.41 | -25.91 | QP       |         |
| 2   |     | 0.2311  | 3.99    | 19.63   | 23.62    | 52.41 | -28.79 | AVG      |         |
| 3   |     | 0.5011  | 13.46   | 19.65   | 33.11    | 56.00 | -22.89 | QP       |         |
| 4   |     | 0.5011  | 0.56    | 19.65   | 20.21    | 46.00 | -25.79 | AVG      |         |
| 5   |     | 1.4821  | 13.51   | 19.66   | 33.17    | 56.00 | -22.83 | QP       |         |
| 6   |     | 1.4821  | 0.86    | 19.66   | 20.52    | 46.00 | -25.48 | AVG      |         |
| 7   | *   | 3.3271  | 18.71   | 19.77   | 38.48    | 56.00 | -17.52 | QP       |         |
| 8   |     | 3.3316  | 6.91    | 19.77   | 26.68    | 46.00 | -19.32 | AVG      |         |
| 9   |     | 4.0021  | 16.66   | 19.80   | 36.46    | 56.00 | -19.54 | QP       |         |
| 10  |     | 4.0021  | 5.26    | 19.80   | 25.06    | 46.00 | -20.94 | AVG      |         |
| 11  |     | 12.5295 | 10.83   | 19.85   | 30.68    | 60.00 | -29.32 | QP       |         |
| 12  |     | 12.6106 | 1.62    | 19.85   | 21.47    | 50.00 | -28.53 | AVG      |         |

\*\*\*Note: 1) Pre-scan all modes and recorded the worst case results in this report.

2) Margin=Reading level + Correct - Limit





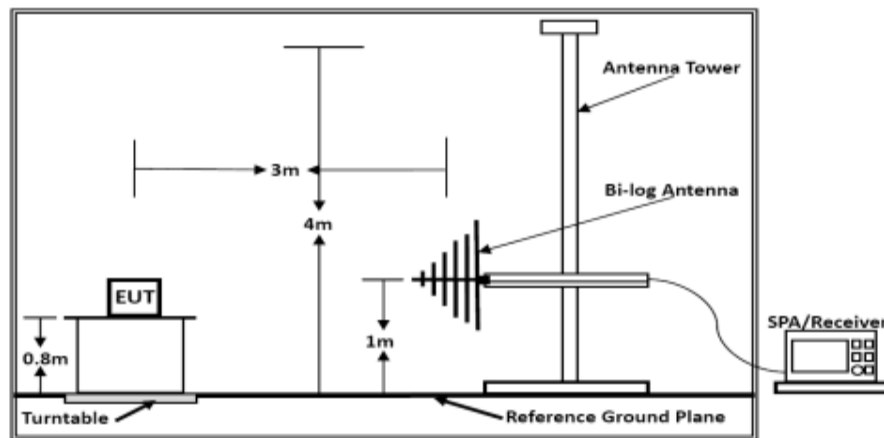
## 3.2. Radiated emission Measurement

### 3.2.1. Test Equipment

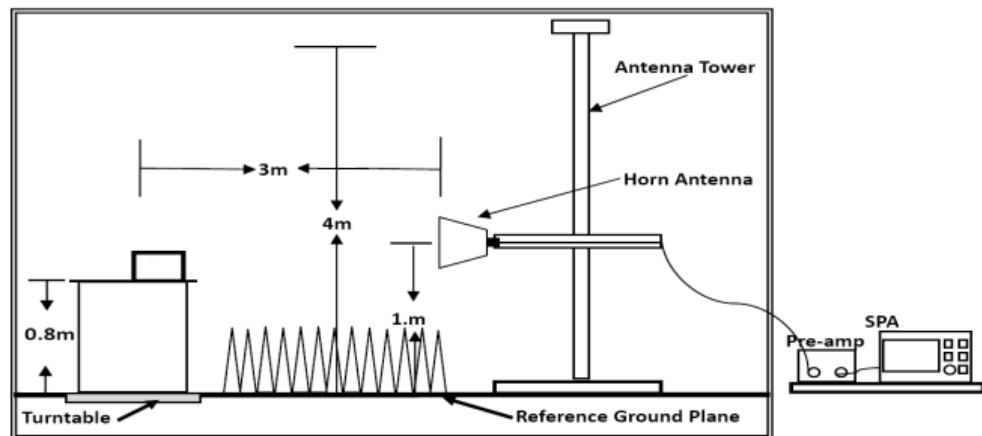
The following test equipments are used during the radiated emission measurement:

| Item | Test equipment           | Manufacturer   | Model No.    | Serial No.    | Cal Date   | Due Date   |
|------|--------------------------|----------------|--------------|---------------|------------|------------|
| 1    | 3m Semi Anechoic Chamber | SIDT FRANKONIA | SAC-3M       | 03CH03-HY     | 2021-06-15 | 2024-06-15 |
| 2    | EMI Test Receiver        | R&S            | ESCI3        | 101010        | 2021-06-08 | 2022-06-08 |
| 3    | Spectrum Analyzer        | Agilent        | N9020A       | MY49100699    | 2021-06-08 | 2022-06-08 |
| 4    | Log-periodic Antenna     | SCHWARZBECK    | VULB9163     | 5094          | 2019-06-23 | 2022-06-23 |
| 5    | Horn Antenna             | ETS-LINDGREN   | 3115         | 00034771      | 2019-06-23 | 2022-06-23 |
| 6    | EMI Test Software        | EZ             | EZ EMC       | N/A           | /          | /          |
| 7    | Positioning Controller   | MF             | BK8807-4A-2T | 2016-0808-008 | /          | /          |

### 3.2.2. Block Diagram of Test Setup



Below 1GHz



Above 1GHz



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



### 3.2.3. Radiated Emission Limit (Class B)

Limits for Radiated Disturbance Below 1GHz

| FREQUENCY<br>MHz                                                                                                                                                                                                                                                                                                                       | DISTANCE<br>Meters   | FIELD STRENGTHS LIMIT                      |                                               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------------------|-----------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                        |                      | $\mu\text{V/m}$                            | $\text{dB}(\mu\text{V})/\text{m}$             |
| 30 ~ 88                                                                                                                                                                                                                                                                                                                                | 3                    | 100                                        | 40                                            |
| 88 ~ 216                                                                                                                                                                                                                                                                                                                               | 3                    | 150                                        | 43.5                                          |
| 216 ~ 960                                                                                                                                                                                                                                                                                                                              | 3                    | 200                                        | 46                                            |
| 960 ~ 1000                                                                                                                                                                                                                                                                                                                             | 3                    | 500                                        | 54                                            |
| Remark: (1) Emission level $(\text{dB})\mu\text{V} = 20 \log \text{Emission level } \mu\text{V/m}$<br>(2) The smaller limit shall apply at the cross point between two frequency bands.<br>(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system. |                      |                                            |                                               |
| Limits for Radiated Emission Above 1GHz                                                                                                                                                                                                                                                                                                |                      |                                            |                                               |
| Frequency<br>(MHz)                                                                                                                                                                                                                                                                                                                     | Distance<br>(Meters) | Peak Limit<br>( $\text{dB}\mu\text{V/m}$ ) | Average Limit<br>( $\text{dB}\mu\text{V/m}$ ) |
| Above 1000                                                                                                                                                                                                                                                                                                                             | 3                    | 74                                         | 54                                            |
| ***Note: The lower limit applies at the transition frequency.                                                                                                                                                                                                                                                                          |                      |                                            |                                               |

### 3.2.4. EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 3.2.5. Operating Condition of EUT

3.2.5.1. Setup the EUT as shown in Section 3.2.2.

3.2.5.2. Let the EUT work in test Mode 1 and measure it.

### 3.2.6. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2014 on radiated emission measurement.

### 3.2.7. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of spectrum analyzer and receiver





| Receiver Parameter     | Setting                                    |
|------------------------|--------------------------------------------|
| Attenuation            | Auto                                       |
| Start ~ Stop Frequency | 9kHz~150kHz / RB/VB 200Hz/1KHz for QP/AVG  |
| Start ~ Stop Frequency | 150kHz~30MHz / RB/VB 9kHz/30KHz for QP/AVG |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB/VB 120kHz/1MHz for QP   |

| Spectrum Parameter                        | Setting                                           |
|-------------------------------------------|---------------------------------------------------|
| Attenuation                               | Auto                                              |
| Start Frequency                           | 1000 MHz                                          |
| Stop Frequency                            | 10th carrier harmonic                             |
| RB / VB (Emission in restricted band)     | 1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average |
| RB / VB (Emission in non-restricted band) | 1MHz / 1MHz for Peak, 1 MHz / 1/B kHz for Average |

The frequency range from 30MHz to 1000MHz and above 1000MHz is checked.

### 3.2.8. Radiated Emission Noise Measurement Result

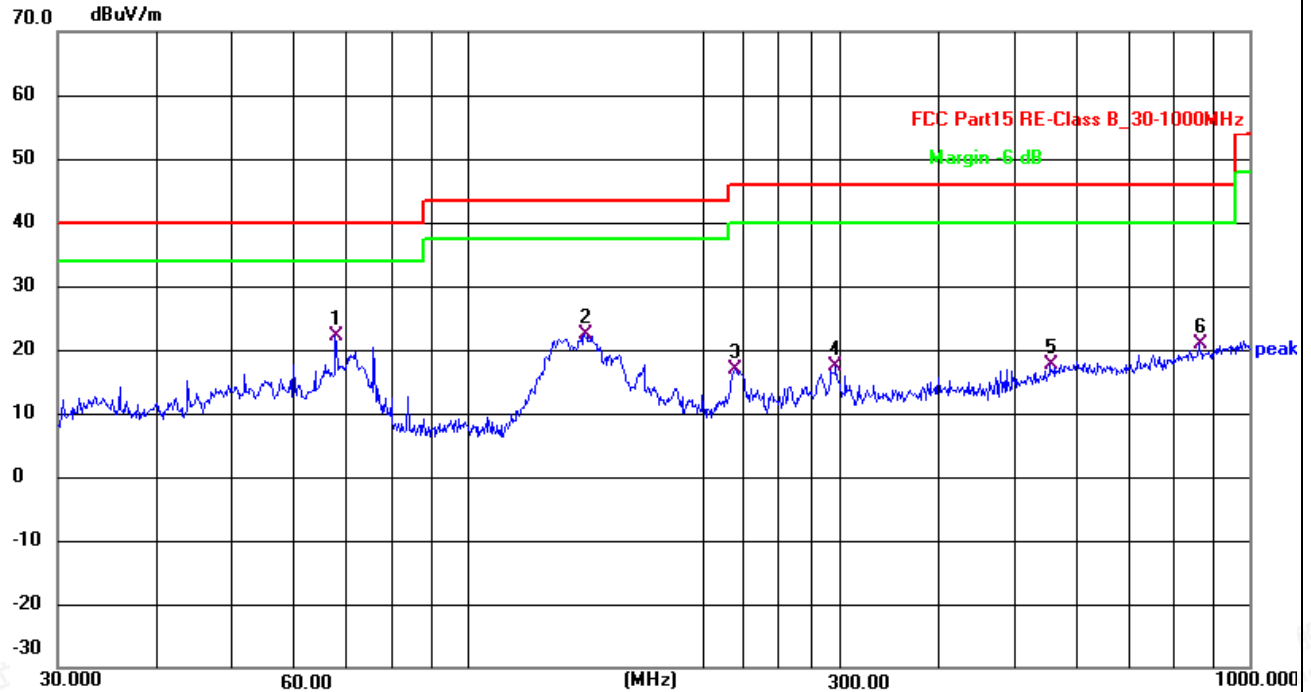
**PASS.**

The scanning waveforms please refer to the next page.





|                          |                 |                   |              |
|--------------------------|-----------------|-------------------|--------------|
| Test Model               | HC-804          | Test Mode         | Mode 1       |
| Environmental Conditions | 23.5℃, 52.2% RH | Detector Function | Quasi-peak   |
| Pol                      | Vertical        | Distance          | 3m           |
| Test Engineer            | Monkey Li       | Test Voltage      | AC 120V/60Hz |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 67.9129         | 41.36          | -19.33        | 22.03          | 40.00          | -17.97      | QP       |
| 2   | 141.3298        | 43.23          | -20.75        | 22.48          | 43.50          | -21.02      | QP       |
| 3   | 219.8449        | 33.87          | -16.88        | 16.99          | 46.00          | -29.01      | QP       |
| 4   | 296.1836        | 33.01          | -15.57        | 17.44          | 46.00          | -28.56      | QP       |
| 5   | 556.7744        | 29.08          | -11.55        | 17.53          | 46.00          | -28.47      | QP       |
| 6   | 863.0562        | 29.61          | -8.82         | 20.79          | 46.00          | -25.21      | QP       |



Shenzhen LCS Compliance Testing Laboratory Ltd.

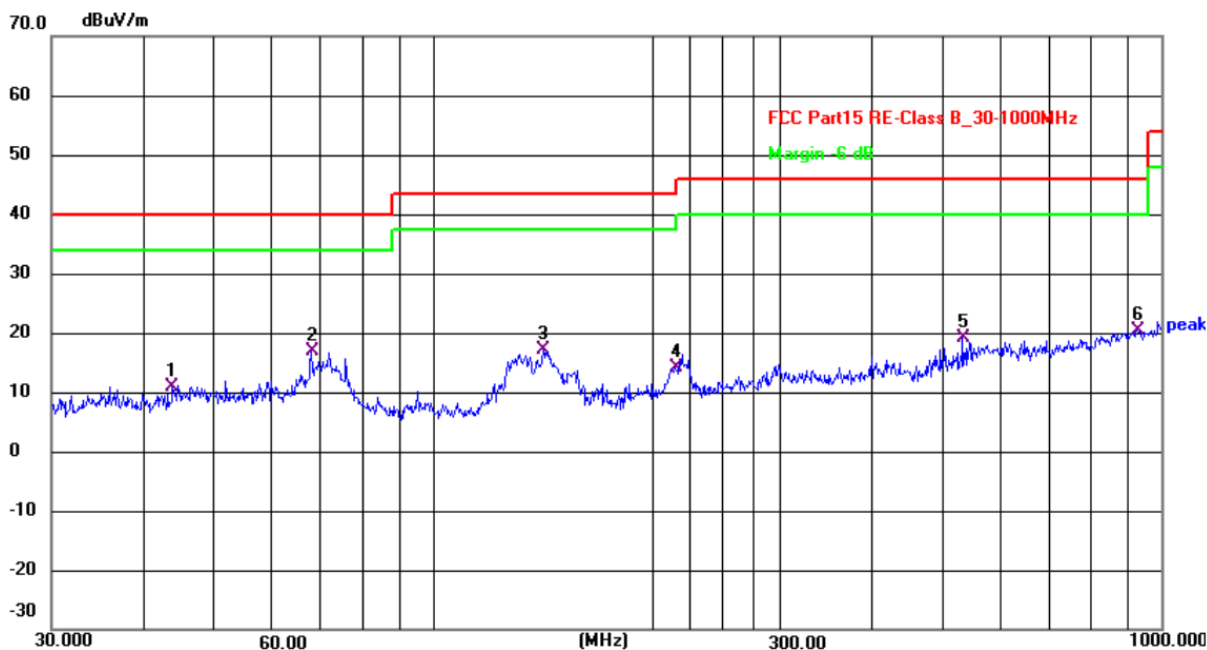
Add: 101, 201 Bldg A &amp; 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



|                          |                  |                   |              |
|--------------------------|------------------|-------------------|--------------|
| Test Model               | HC-804           | Test Mode         | Mode 1       |
| Environmental Conditions | 23.5°C, 52.2% RH | Detector Function | Quasi-peak   |
| Pol                      | Horizontal       | Distance          | 3m           |
| Test Engineer            | Monkey Li        | Test Voltage      | AC 120V/60Hz |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 43.9658         | 27.92          | -17.03        | 10.89          | 40.00          | -29.11      | QP       |
| 2   | 68.1514         | 36.21          | -19.35        | 16.86          | 40.00          | -23.14      | QP       |
| 3   | 141.8262        | 37.71          | -20.70        | 17.01          | 43.50          | -26.49      | QP       |
| 4   | 215.2678        | 31.00          | -16.99        | 14.01          | 43.50          | -29.49      | QP       |
| 5   | 533.8321        | 31.53          | -12.40        | 19.13          | 46.00          | -26.87      | QP       |
| 6   | 925.7563        | 28.34          | -7.93         | 20.41          | 46.00          | -25.59      | QP       |

Note: 1. Pre-Scan all mode, Thus record worse case mode result in this report.

2. Margin=Reading level + Correct - Limit



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



#### 4. TEST SETUP PHOTOGRAPHS OF EUT

Please refer to separated files for Test Setup Photos of the EUT.

#### 5. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

#### 6. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

-----THE END OF TEST REPORT-----

