



**TEST REPORT**  
**FCC ID: 2ACC6GR-201THX**  
**For**  
**U-Fairy G.R. IOT Tech CO., Ltd**  
**Plug in switch on/off**

Model No. : GR-201THX

Prepared for : U-Fairy G.R. IOT Tech CO., Ltd

Address : Baihuali Industry District, Changping Town, Dongguan city, China

Prepared by : Shenzhen Alpha Product Testing Co., Ltd.

Address : Building B, East Area of Nanchang Second, Industrial Zone,  
Gushu 2nd Road, Bao'an, Shenzhen, China

Report No. : T1850858 01

Date of Receipt : July 17, 2015

Date of Test : July 18, 2015- July 29, 2015

Date of Report : July 30, 2015

Version Number : REV0

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## DECLARATION

Applicant : U-Fairy G.R. IOT Tech CO., Ltd  
Manufacturer : U-Fairy G.R. IOT Tech CO., Ltd  
Product : Plug in switch on/off  
(A)Model No. : GR-201THX  
(B)Trade Name : N/A  
(C)Power supply : AC 120V/60Hz

Measurement Standard Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.249: 2014, ANSI C63.4:2009**

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....:

Peter Kang  
Test Engineer



Approved by (name + signature).....:

Simple Guan  
Project Manager



Date of issue.....

July 30, 2015

## 1 General Information

### 1.1 Description of Device (EUT)

EUT : Plug in switch on/off

Model No. : GR-201THX

Trade Name : N/A

Type of Antenna : PCB Antenna, Maximum Gain is 1.0dBi.

Operation Frequency : 908.42MHz

Data rate : 9.6/40/100kbps

Channel number : 1

Modulation type : ASK

Power Supply : AC 120V/60Hz

Fundamental field strength (PK) : 79.76 dBuV

Hardware Version : REV:0.1

Software Version : REV.01 201 50322

Applicant : U-Fairy G.R. IOT Tech CO., Ltd

Address : Baihuali Industry District, Changping Town, Dongguan city, China

Manufacturer : U-Fairy G.R. IOT Tech CO., Ltd

Address : Baihuali Industry District, Changping Town, Dongguan city, China

## 1.2 Description of Test Facility

Shenzhen Alpha Product Testing Co., Ltd.

Building B, East Area of Nanchang Second, Industrial Zone, Gushu 2nd  
Road, Bao'an, Shenzhen, China

March 25, 2015 File on Federal Communication Commission  
Registration Number: 203110

July 18, 2014 Certificated by IC  
Registration Number: 12135A

## 2 Summary of Measurement

### 2.1 Summary of test result

| Description of Test Item       | Standard                                    | Results |
|--------------------------------|---|---------|
| Radiated Emission              | Section 15.249&15.209                       | PASS    |
| Occupied bandwidth             | FCC Part 15: 15.215&<br>FCC Part 15: 15.249 | PASS    |
| Band Edge Compliance           | Section 15.249                              | N/A     |
| Power Line Conducted Emissions | FCC Part 15: 15.207                         | PASS    |
| Antenna requirement            | FCC Part 15: 15.203                         | PASS    |
| Note: 1 N/A is not applicable. |   |         |

### 2.2 Test mode

| Tested mode, channel information  |         |                 |
|---|---------|-----------------|
| Mode  | Channel | Frequency (MHz) |
| ASK   | CH1     | 908.42          |
| Note: 1 For the relevant Conducted Measurement, the temporary antenna connector is used during the measurement.                     |         |                 |
| Antenna Connector Impedance: 50 Ω, Cable Loss: 1.0 dB   |         |                 |
| 2 Test for all Data rate 9.6/40/100kbps is performed and only the worst case of Data rate 9.6 kbps was recorded in the test report. |         |                 |

| Channel list |           |   |   |
|--------------|-----------|---|---|
| CH1          | 908.42MHz | / | / |
| /            | /         | / | / |
| /            | /         | / | / |
| /            | /         | / | / |
| /            | /         | / | / |
| /            | /         | / | / |
| /            | /         | / | / |
| /            | /         | / | / |

### 2.3 Block Diagram



### 2.4 Assistant equipment used for test

Description : N/A

Manufacturer : N/A

Model No. : N/A

### 2.5 Test Conditions

|                   |           |
|-------------------|-----------|
| Temperature range | 21-25°C   |
| Humidity range    | 40-75%    |
| Pressure range    | 86-106kPa |

### 2.6 Measurement Uncertainty (95% confidence levels, k=2)

| Item   | MU      | Remark      |
|--|---------|-------------|
| Uncertainty for Power point Conducted Emissions Test                     | 2.70dB  |             |
| Uncertainty for Radiation Emission test in 3m chamber<br>(30MHz to 1GHz) | 3.90 dB | Polarize: V |
|  | 3.92dB  | Polarize: H |
| Uncertainty for Radiation Emission test in 3m chamber<br>(1GHz to 25GHz) | 4.26 dB | Polarize: H |
|  | 4.28 dB | Polarize: V |
| Uncertainty for conducted RF Power                                       | 0.16dB  |             |

## 2.7 Test Equipment

| Equipment           | Manufacture  | Model No.    | Serial No.        | Last cal.  | Cal Interval |
|---------------------|--------------|--------------|-------------------|------------|--------------|
| 3m Semi-Anechoic    | CHENYU       | 9*6*6        | N/A               | 2014.01.20 | 3Year        |
| Spectrum analyzer   | Agilent      | E4407B       | MY49510055        | 2015.01.19 | 1Year        |
| Receiver            | R&S          | ESCI         | 101165            | 2015.01.19 | 1Year        |
| Bilog Antenna       | SCHWARZBECK  | VULB 9168    | 9168-438          | 2014.01.22 | 2Year        |
| Horn Antenna        | SCHWARZBECK  | BBHA 9120 D  | BBHA 9120 D(1201) | 2015.01.21 | 2Year        |
| Active Loop Antenna | Beijing Daze | ZN30900A     | SEL0097           | 2015.01.21 | 1Year        |
| Cable               | Resenberger  | SUCOFLEX 104 | MY6562/4          | 2015.01.19 | 1Year        |
| Cable               | Resenberger  | SUCOFLEX 104 | 309972/4          | 2015.01.19 | 1Year        |
| Cable               | Resenberger  | SUCOFLEX 104 | 329112/4          | 2015.01.19 | 1Year        |
| Pre-amplifier       | Agilent      | 8449B        | 3008A02664        | 2015.03.21 | 1Year        |
| Pre-amplifier       | HP           | HP8347A      | 2834A00455        | 2015.03.21 | 1Year        |
| LISN                | Schwarzbeck  | NSLK8126     | 8126466           | 2015.01.19 | 1Year        |
| Pulse Limiter       | Schwarzbeck  | 9516F        | 9618              | 2015.01.19 | 1Year        |

**Note: Cable test frequency range:**

| Equipment | Manufacture | Model No.    | Serial No. | Test Location | Frequency Rang |
|-----------|-------------|--------------|------------|---------------|----------------|
| Cable     | Resenberger | SUCOFLEX 104 | MY6562/4   | Conducted     | 150KHz-30MHz   |
| Cable     | Resenberger | SUCOFLEX 104 | 309972/4   | Radiation     | 30MHz-2GHz     |
| Cable     | Resenberger | SUCOFLEX 104 | 329112/4   | Radiation     | 1GHz-26.5GHz   |

### 3 Radiation Emission

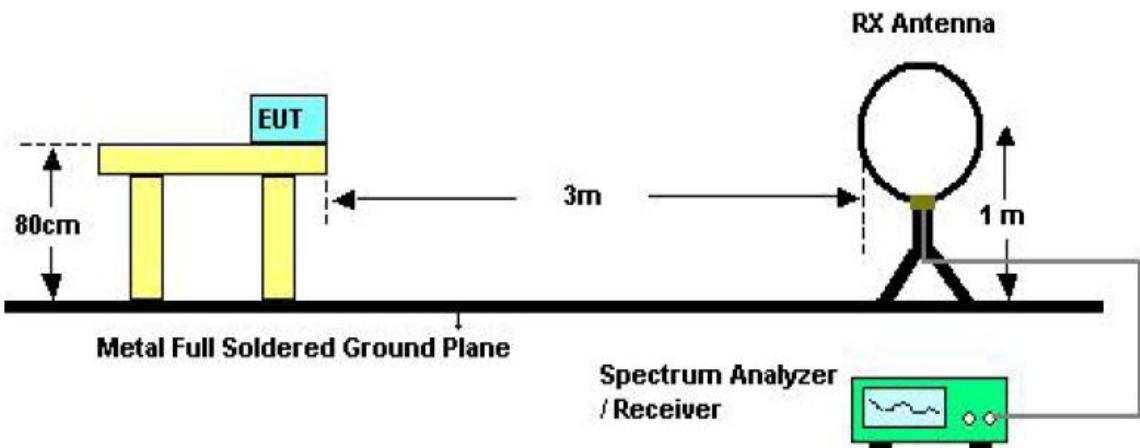
#### 3.1 Radiation Emission Limits(15.209&249)

| Frequency<br>(MHz)   | Field Strength<br>Limits at 3 metres (watts, e.i.r.p.) |            |                            |
|----------------------|--|------------|----------------------------|
|                      | uV/m   | dB uV/m    | Measurement<br>distance(m) |
| 0.009-0.490          | 2400/F(kHz)  | XX         | 300                        |
| 0.490-1.705          | 24000/F(kHz)   | XX         | 30                         |
| 1.705-30             | 30   | 29.5       | 30                         |
| 30~88                | 100(3nW)   | 40         | 3                          |
| 88~216               | 150(6.8nW)   | 43.5       | 3                          |
| 216~960              | 200(12nW)  | 46         | 3                          |
| Above960             | 500(75nW)  | 54         | 3                          |
| Carrier<br>frequency |  | 93.97(AV)  | 3                          |
| Carrier<br>frequency |  | 113.97(PK) | 3                          |

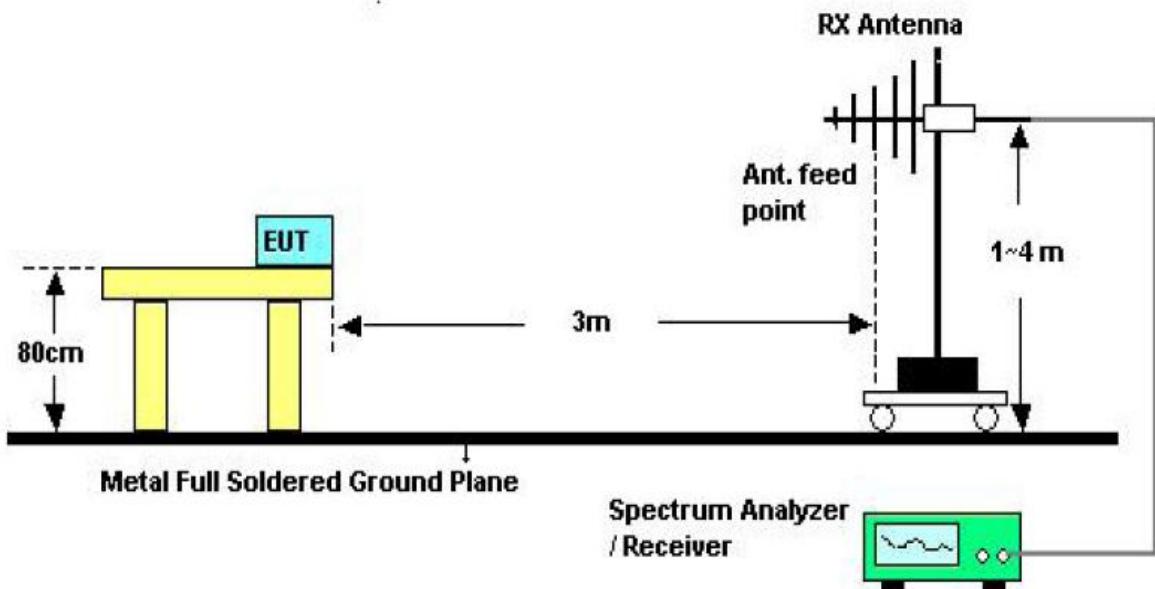
**NOTE:**

- a) The tighter limit applies at the band edges.
- b) Emission Level(dB uV/m)=20log Emission Level(Uv/m)

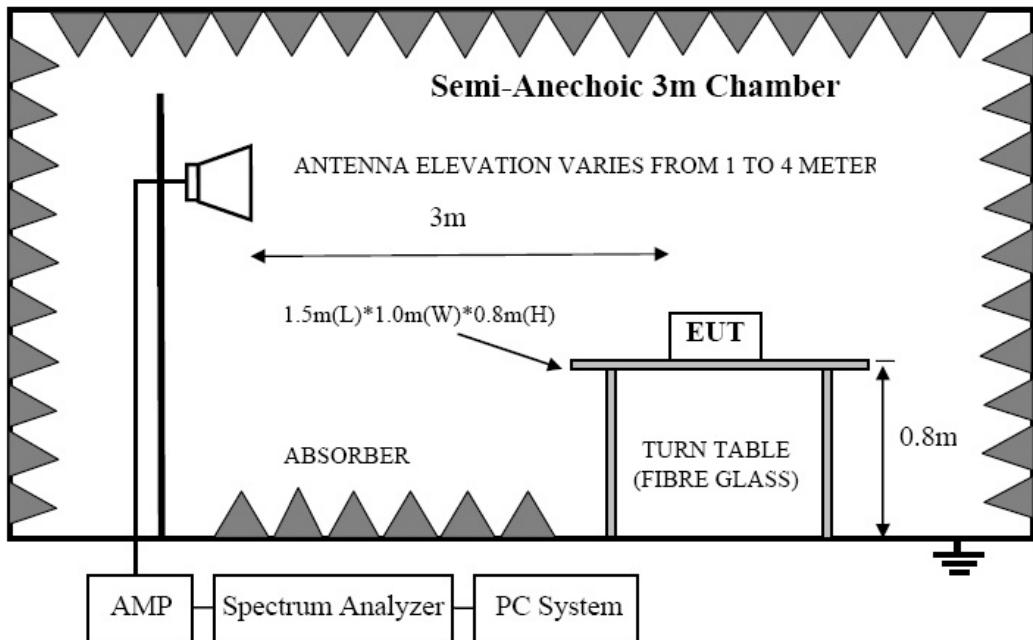
### 3.2 Test Setup



Below 30MHz Test Setup



Above 30MHz Test Setup



### Above 1GHz Test Setup

Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

### 3.3 Test Procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.
- (2) For the actual test configuration, please see the test setup photo.
- (3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.
  - (a) Change work frequency or channel of device if practicable.
  - (b) Change modulation type of device if practicable.
  - (c) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
- (4) Spectrum frequency from 9KHz to 12GHz (tenth harmonic of fundamental frequency) was investigated
- (5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4 2009 on Radiated Emission test.
- (6) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RBW is set at 1MHz, VBW is set at 10Hz for Average measure.

(7) For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane

### 3.4 Test Equipment Setting For emission test.

|              |            |            |
|--------------|------------|------------|
| 9KHz~150KHz  | RBW 200Hz  | VBW 1KHz   |
| 150KHz~30MHz | RBW 9KHz   | VBW 30KHz  |
| 30MHz~1GHz   | RBW 120KHz | VBW 300KHz |
| Above 1GHz   | RBW 1MHz   | VBW 3MHz   |

### 3.5 Test Condition

Continual Transmitting in maximum power.

### 3.6 Test Result

**PASS.**

Note: Test for all x, y, z axes is performed and only the worst case of x axes was recorded in the test report.

We have scanned the 10th harmonic from 9KHz to the EUT.

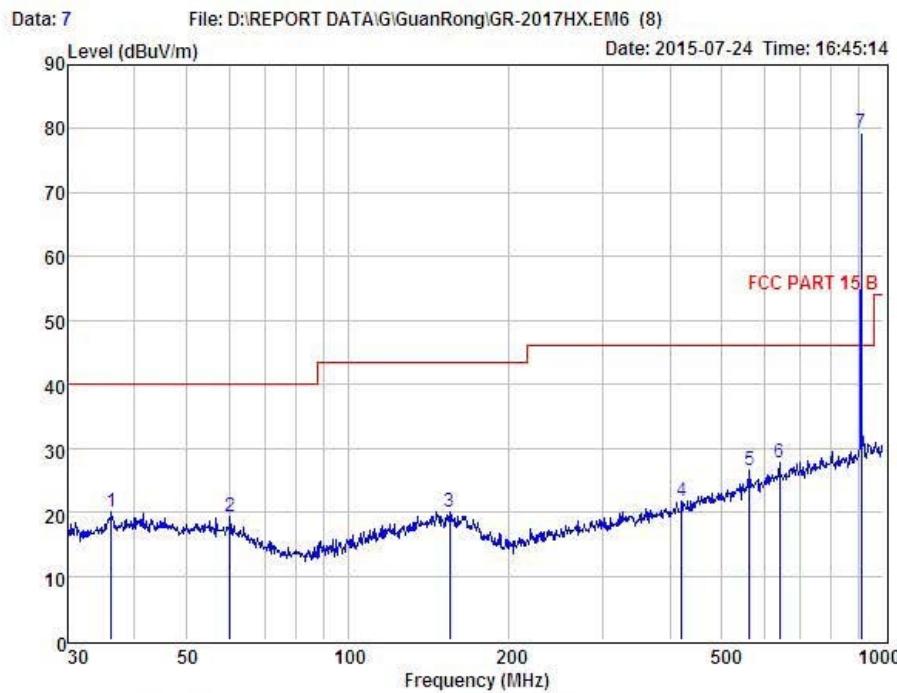
Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: **PASS**

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



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Condition : FCC PART 15 B 3m POL: VERTICAL

EUT : Plug in switch on/off

Model No : GR-201THX

Test Mode : TX

Power : AC 120V/60Hz

Test Engineer : Peter

Remark :

Temp : 24.2°C

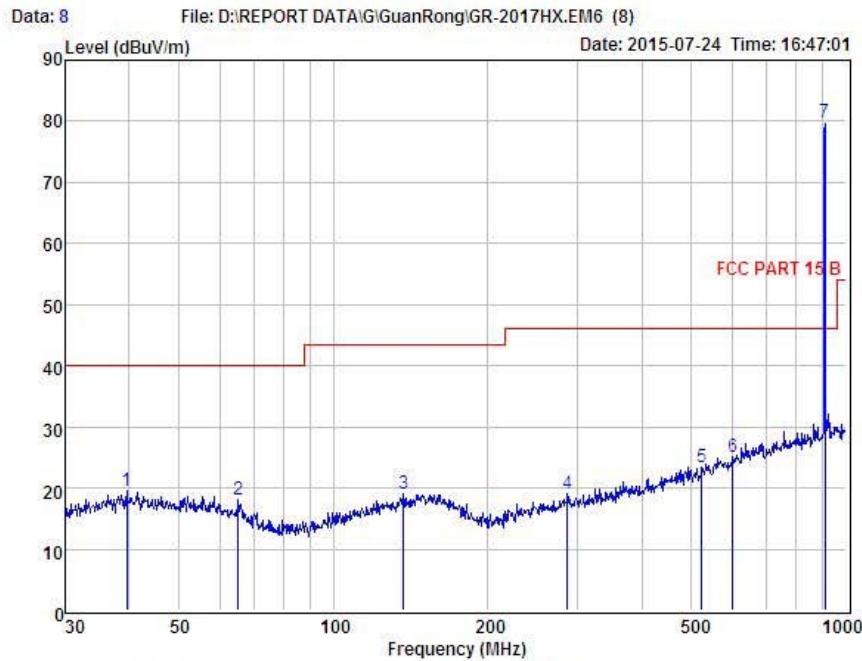
Hum : 54%

| Item | Freq   | Read  | Antenna | Preamp | Cable      | Level | Limit | Margin | Remark |
|------|--------|-------|---------|--------|------------|-------|-------|--------|--------|
|      |        | Level | Factor  | Factor | Cable Loss | dBuV  | dBuV  | dBuV   |        |
|      | MHz    | dBuV  | dB      | dB     | dB         |       |       |        |        |
| 1    | 36.13  | 38.37 | 13.39   | 31.94  | 0.11       | 19.93 | 40.00 | -20.07 | Peak   |
| 2    | 60.28  | 38.11 | 12.75   | 31.75  | 0.24       | 19.35 | 40.00 | -20.65 | Peak   |
| 3    | 154.82 | 36.70 | 14.15   | 31.16  | 0.39       | 20.08 | 43.50 | -23.42 | Peak   |
| 4    | 420.58 | 35.89 | 15.23   | 30.28  | 0.81       | 21.65 | 46.00 | -24.35 | Peak   |
| 5    | 562.66 | 37.04 | 17.60   | 29.47  | 1.34       | 26.51 | 46.00 | -19.49 | Peak   |
| 6    | 640.61 | 36.98 | 18.97   | 29.36  | 1.08       | 27.67 | 46.00 | -18.33 | Peak   |
| 7    | 908.42 | 85.32 | 21.77   | 29.22  | 1.51       | 79.38 |       |        | Peak   |

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



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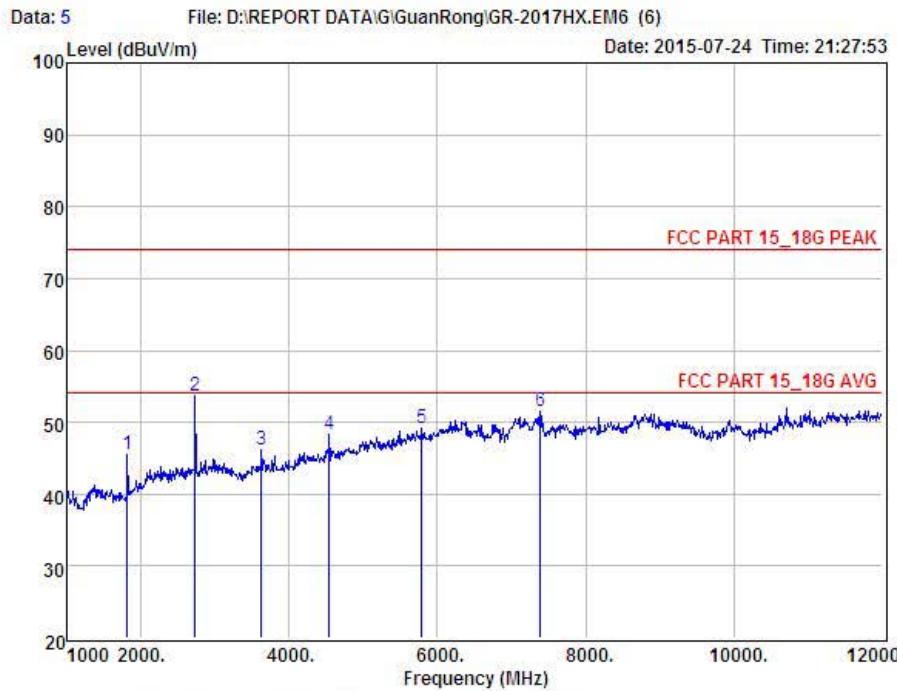
| Condition     | : FCC PART 15 B 3m      |            |                | POL: HORIZONTAL |            |       |       |        |        |
|---------------|-------------------------|------------|----------------|-----------------|------------|-------|-------|--------|--------|
| EUT           | : Plug in switch on/off |            |                |                 |            |       |       |        |        |
| Model No      | : GR-201THX             |            |                |                 |            |       |       |        |        |
| Test Mode     | : TX                    |            |                |                 |            |       |       |        |        |
| Power         | : AC 120V/60Hz          |            |                |                 |            |       |       |        |        |
| Test Engineer | : Peter                 |            |                |                 |            |       |       |        |        |
| Remark        |                         |            |                |                 |            |       |       |        |        |
| Temp          | : 24.2°C                |            |                |                 |            |       |       |        |        |
| Hum           | : 54%                   |            |                |                 |            |       |       |        |        |
| Item          | Freq                    | Read Level | Antenna Factor | Preamp Factor   | Cable Loss | Level | Limit | Margin | Remark |
|               | MHz                     | dBuV       | dB             | dB              | dB         | dBuV  | dBuV  | dBuV   |        |
| 1             | 39.58                   | 37.28      | 14.07          | 31.89           | 0.17       | 19.63 | 40.00 | -20.37 | Peak   |
| 2             | 65.34                   | 38.01      | 11.59          | 31.73           | 0.25       | 18.12 | 40.00 | -21.88 | Peak   |
| 3             | 136.94                  | 36.57      | 13.22          | 31.23           | 0.44       | 19.00 | 43.50 | -24.50 | Peak   |
| 4             | 285.98                  | 36.50      | 12.50          | 30.61           | 0.70       | 19.09 | 46.00 | -26.91 | Peak   |
| 5             | 522.72                  | 35.30      | 16.93          | 29.55           | 0.81       | 23.49 | 46.00 | -22.51 | Peak   |
| 6             | 601.43                  | 35.00      | 18.36          | 29.41           | 1.07       | 25.02 | 46.00 | -20.98 | Peak   |
| 7             | 908.42                  | 85.70      | 21.77          | 29.22           | 1.51       | 79.76 |       |        |        |

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Notes: Above is below 1GHz test data.



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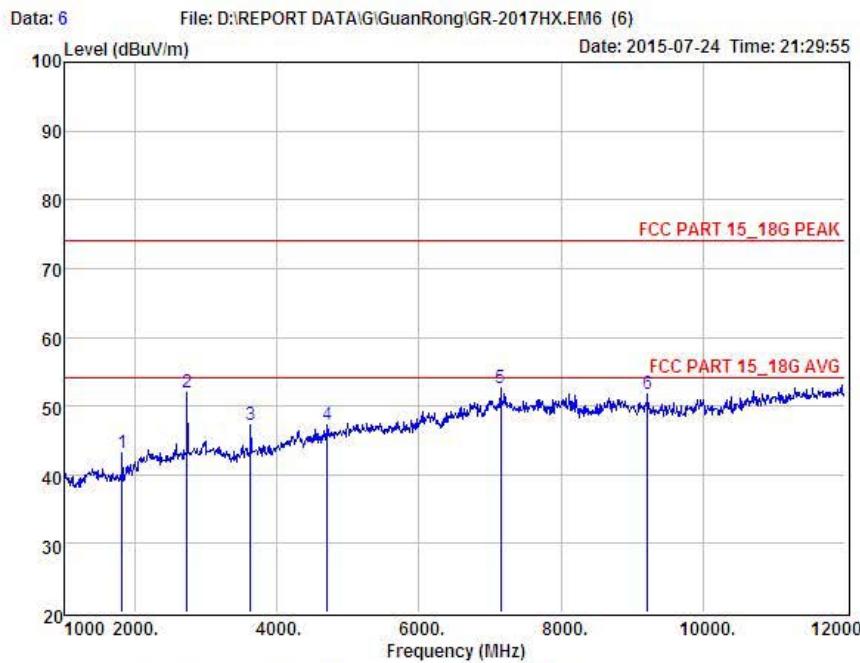


|               |       |                         |                |               |            |       |        |        |        |
|---------------|-------|-------------------------|----------------|---------------|------------|-------|--------|--------|--------|
| Condition     | :     | FCC PART 15_18G PEAK 3m | POL: VERTICAL  |               |            |       |        |        |        |
| EUT           | :     | Plug in switch on/off   |                |               |            |       |        |        |        |
| Model No      | :     | GR-201THX               |                |               |            |       |        |        |        |
| Test Mode     | :     | TX                      |                |               |            |       |        |        |        |
| Power         | :     | AC 120V/60Hz            |                |               |            |       |        |        |        |
| Test Engineer | :     | Peter                   |                |               |            |       |        |        |        |
| Remark        | :     |                         |                |               |            |       |        |        |        |
| Temp          | :     | 24.2°C                  |                |               |            |       |        |        |        |
| Hum           | :     | 54%                     |                |               |            |       |        |        |        |
| Item          | Freq  | Read Level              | Antenna Factor | Preamp Factor | Cable Loss | Level | Limit  | Margin | Remark |
|               | MHz   | dBuV                    | dB             | dB            | dB         | dBuV  | dBuV   | dBuV   |        |
| 11814.00      | 51.93 | 25.03                   | 34.85          | 3.45          | 45.56      | 74.00 | -28.44 | Peak   |        |
| 22727.00      | 56.62 | 27.89                   | 34.98          | 4.21          | 53.74      | 74.00 | -20.26 | Peak   |        |
| 33629.00      | 47.17 | 28.83                   | 34.87          | 4.94          | 46.07      | 74.00 | -27.93 | Peak   |        |
| 44542.00      | 46.57 | 30.68                   | 34.43          | 5.53          | 48.35      | 74.00 | -25.65 | Peak   |        |
| 55785.00      | 44.03 | 32.37                   | 33.61          | 6.29          | 49.08      | 74.00 | -24.92 | Peak   |        |
| 67391.00      | 40.87 | 36.59                   | 33.15          | 7.17          | 51.48      | 74.00 | -22.52 | Peak   |        |

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



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| Item | Freq     | Read Level |       | Antenna Factor | Preamp Factor | Cable Loss | Level | Limit  | Margin | Remark |
|------|----------|------------|-------|----------------|---------------|------------|-------|--------|--------|--------|
|      |          | MHz        | dBuV  |                |               |            |       |        |        |        |
|      | 11814.00 | 49.62      | 25.03 | 34.85          | 3.45          | 43.25      | 74.00 | -30.75 | Peak   |        |
|      | 22272.00 | 54.76      | 27.89 | 34.98          | 4.21          | 51.88      | 74.00 | -22.12 | Peak   |        |
|      | 33629.00 | 48.28      | 28.83 | 34.87          | 4.94          | 47.18      | 74.00 | -26.82 | Peak   |        |
|      | 44707.00 | 44.80      | 31.10 | 34.30          | 5.63          | 47.23      | 74.00 | -26.77 | Peak   |        |
|      | 57149.00 | 42.43      | 36.26 | 33.05          | 7.05          | 52.69      | 74.00 | -21.31 | Peak   |        |
|      | 69217.00 | 40.18      | 37.79 | 34.31          | 8.08          | 51.74      | 74.00 | -22.26 | Peak   |        |

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

**Notes:** Above is Above 1GHz test data

## Radiated Emissions Result of Inside band (908.42MHz)

|                    |                       |                             |                     |
|--------------------|-----------------------|-----------------------------|---------------------|
| <b>EUT</b>         | Plug in switch on/off | <b>Model Name</b>           | GR-201THX           |
| <b>Temperature</b> | 25°C                  | <b>Relative Humidity</b>    | 56%                 |
| <b>Pressure</b>    | 960hPa                | <b>Test voltage</b>         | AC 120V/60Hz        |
| <b>Test Mode</b>   | TX                    | <b>Antenna polarization</b> | Horizontal/Vertical |

| Channel (908.42MHz) |                |                 |                         |                     |                         |                         |                             |                 |              |  |
|---------------------|----------------|-----------------|-------------------------|---------------------|-------------------------|-------------------------|-----------------------------|-----------------|--------------|--|
| Fre.<br>MHz         | Plority<br>H/V | Reading<br>dBuV | Antenna<br>Factor<br>dB | Cable<br>Loss<br>dB | Amplifier<br>Gain<br>dB | Correct<br>Factor<br>dB | Measure<br>Result<br>dBuV/m | Limit<br>dBuV/m | Margin<br>dB |  |
| 908.42              | H              | 85.70 (PK)      | 21.77                   | 1.51                | 29.22                   | -5.94                   | 79.76                       | 113.97 (PK)     | -34.21       |  |
| --                  | H              | --              | --                      | --                  | --                      | --                      | --                          | --              | --           |  |
|                     |                |                 |                         |                     |                         |                         |                             |                 |              |  |
| 908.42              | V              | 85.32 (PK)      | 21.77                   | 1.51                | 29.22                   | -5.94                   | 79.38                       | 113.97 (PK)     | -34.59       |  |
| --                  | V              | --              | --                      | --                  | --                      | --                      | --                          | --              | --           |  |

**Notes:** 1 --Means other frequency and mode comply with standard requirements and at least have 20dB margin.

Correct Factor= Cable Loss+Antenna Factor-Amplifier Gain

Measurement Result=Reading + Correct Factor

Margin=Measurement Result-Limit

2 -Spectrum setting:

a. Peak setting 30MHz-1GHz, RBW=100KHz, VBW=300KHz.

3- PK measure result values is less than the AVG limit values, so AV measure result values test not applicable.

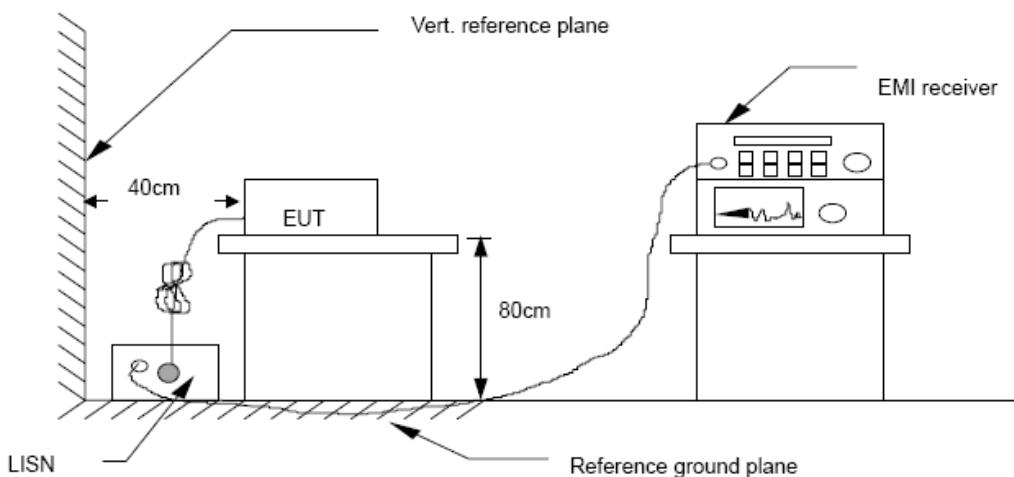
## 4 POWER LINE CONDUCTED EMISSION

### 4.1 Conducted Emission Limits(15.207)

| Frequency<br>MHz | Limits dB( $\mu$ V) |               |
|------------------|---------------------|---------------|
|                  | Quasi-peak Level    | Average Level |
| 0.15 -0.50       | 66 -56*             | 56 - 46*      |
| 0.50 -5.00       | 56                  | 46            |
| 5.00 -30.00      | 60                  | 50            |

Notes: 1. \*Decreasing linearly with logarithm of frequency.  
 2. The lower limit shall apply at the transition frequencies.  
 3. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

### 4.2 Test Setup



#### 4.3 Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines 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 ANSI C63.4-2009 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9 kHz.

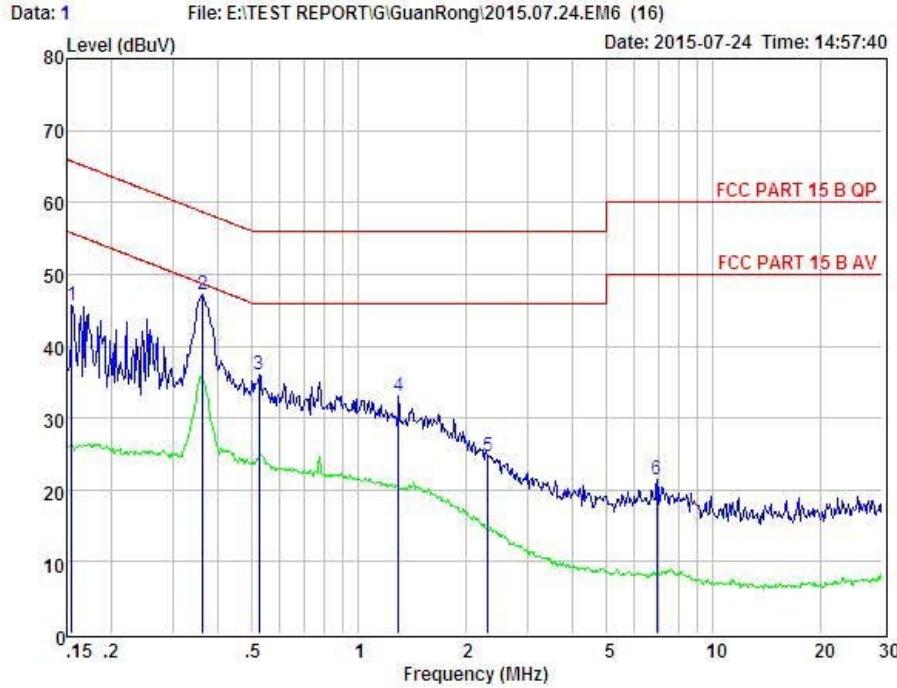
#### 4.4 Test Results

**PASS.**

Detailed information please see the following page.



Shenzhen Certification Technology Service Co., Ltd.  
2F, Building B, East Area of Nanchang Second Industrial Zone,  
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China  
Tel: 4006786199 Fax: +86-755-26736857  
Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)



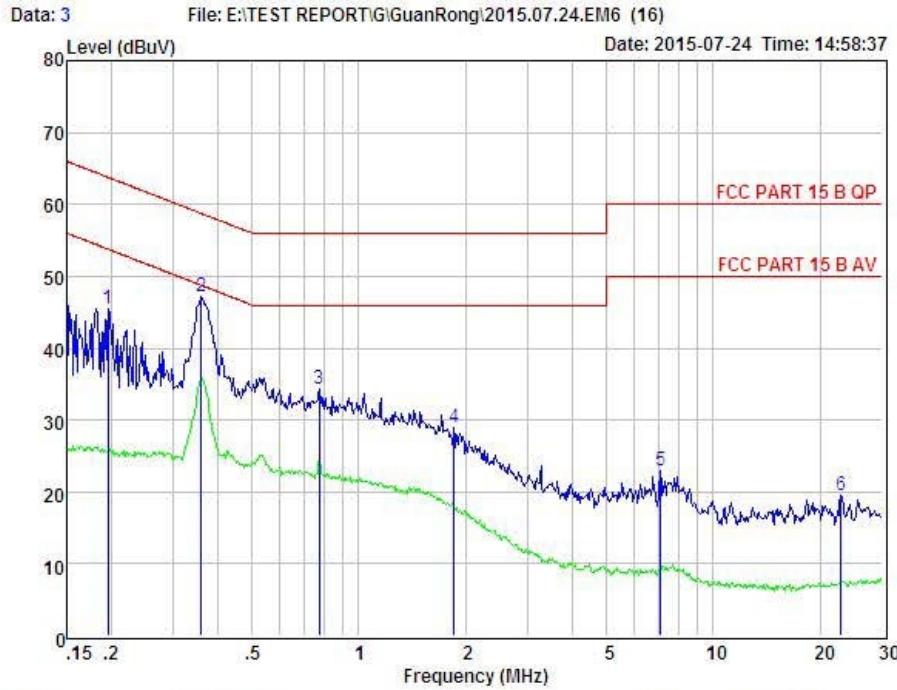
Condition : FCC PART 15 B QP POL: LINE Temp:20.1 °C Hum:45 %  
 EUT : Plug in switch on/off  
 Model No : GR-201THX  
 Test Mode : TX mode  
 Power : AC 120V/60Hz  
 Test Engineer: Peter  
 Remark :

| Item | Freq  | Read  | LISN   | Preamp | Cable | Level | Limit | Margin | Remark |
|------|-------|-------|--------|--------|-------|-------|-------|--------|--------|
|      |       |       | Factor | Factor | Lose  | dBuV  | dBuV  | dBuV   |        |
|      | MHz   | dBuV  | dB     | dB     | dB    |       |       |        |        |
| 1    | 0.155 | 35.92 | 0.03   | -9.72  | 0.10  | 45.77 | 65.74 | -19.97 | Peak   |
| 2    | 0.363 | 37.28 | 0.03   | -9.72  | 0.10  | 47.13 | 58.65 | -11.52 | Peak   |
| 3    | 0.524 | 26.17 | 0.03   | -9.72  | 0.10  | 36.02 | 56.00 | -19.98 | Peak   |
| 4    | 1.296 | 23.23 | 0.05   | -9.71  | 0.10  | 33.09 | 56.00 | -22.91 | Peak   |
| 5    | 2.321 | 14.89 | 0.06   | -9.70  | 0.11  | 24.76 | 56.00 | -31.24 | Peak   |
| 6    | 6.951 | 11.69 | 0.12   | -9.55  | 0.15  | 21.51 | 60.00 | -38.49 | Peak   |

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Website: <http://www.cessz.com> Email: [Service@cessz.com](mailto:Service@cessz.com)



Condition : FCC PART 15 B QP POL: NEUTRAL Temp:20.1 °C Hum:45 %  
 EUT : Plug in switch on/off  
 Model No : GR-201THX  
 Test Mode : TX mode  
 Power : AC 120V/60Hz  
 Test Engineer: Peter  
 Remark :

| Item | Freq   | Read  | LISN   | Preamp | Cable | Level | Limit | Margin | Remark |
|------|--------|-------|--------|--------|-------|-------|-------|--------|--------|
|      |        |       | Factor | Factor | Lose  | dBuV  | dBuV  | dBuV   | dBuV   |
|      | MHz    | dBuV  | dB     | dB     | dB    |       |       |        |        |
| 1    | 0.197  | 35.71 | 0.03   | -9.72  | 0.10  | 45.56 | 63.76 | -18.20 | Peak   |
| 2    | 0.360  | 37.29 | 0.03   | -9.72  | 0.10  | 47.14 | 58.74 | -11.60 | Peak   |
| 3    | 0.775  | 24.45 | 0.00   | -9.71  | 0.10  | 34.26 | 56.00 | -21.74 | Peak   |
| 4    | 1.858  | 19.15 | 0.05   | -9.70  | 0.10  | 29.00 | 56.00 | -27.00 | Peak   |
| 5    | 7.100  | 13.21 | 0.12   | -9.54  | 0.15  | 23.02 | 60.00 | -36.98 | Peak   |
| 6    | 22.896 | 9.21  | 0.42   | -9.55  | 0.43  | 19.61 | 60.00 | -40.39 | Peak   |

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

## 5 Occupied bandwidth

### 5.1 Test limit

Please refer section 15.249

### 5.2 Method of measurement

a) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

b) The test receiver RBW set 30KHz, VBW set 100KHz, Sweep time set auto.

### 5.3 Test Setup

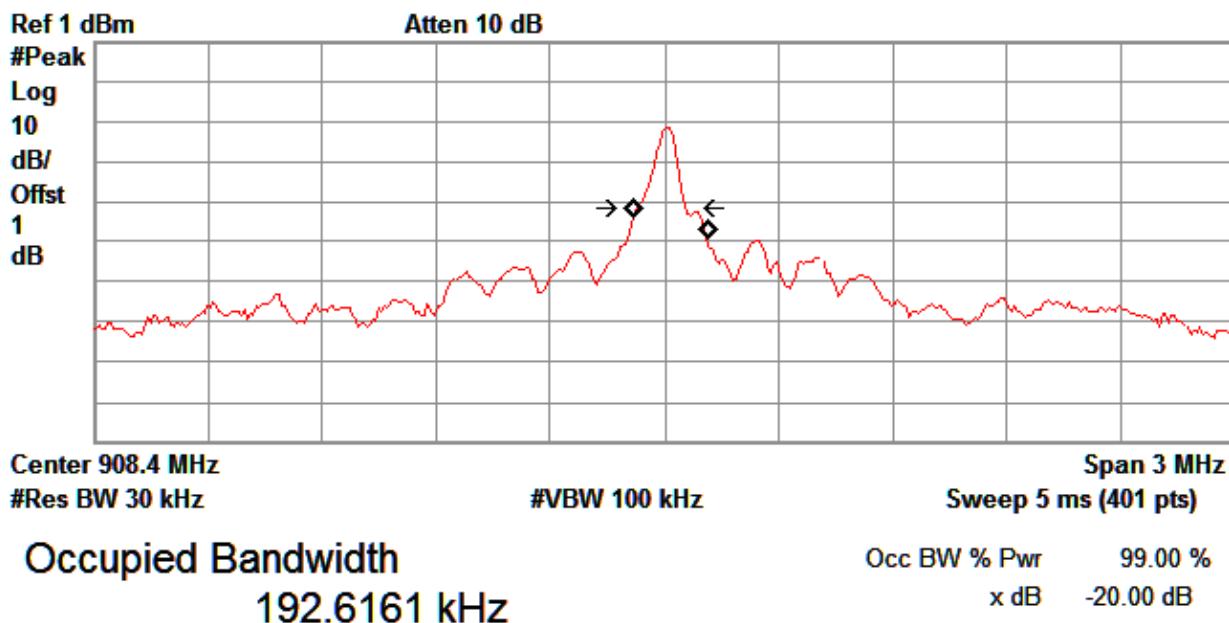


### 5.4 Test Results

**PASS.**

Detailed information please see the following page.

| Frequency | Test Result | Limit | Result |
|-----------|-------------|-------|--------|
| 908.42MHz | 129.042KHz  | /     | Pass   |



Transmit Freq Error 12.511 kHz  
x dB Bandwidth 129.042 kHz



## 6 Antenna Requirement

### 6.1 Standard Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### 6.2 Antenna Connected Construction

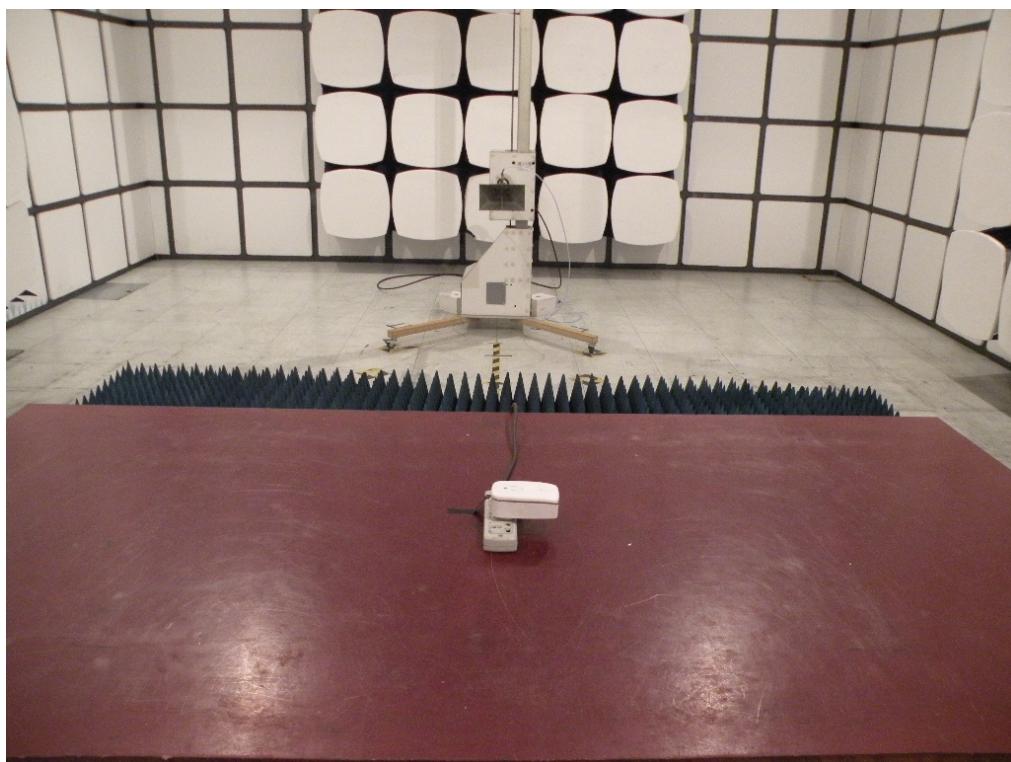
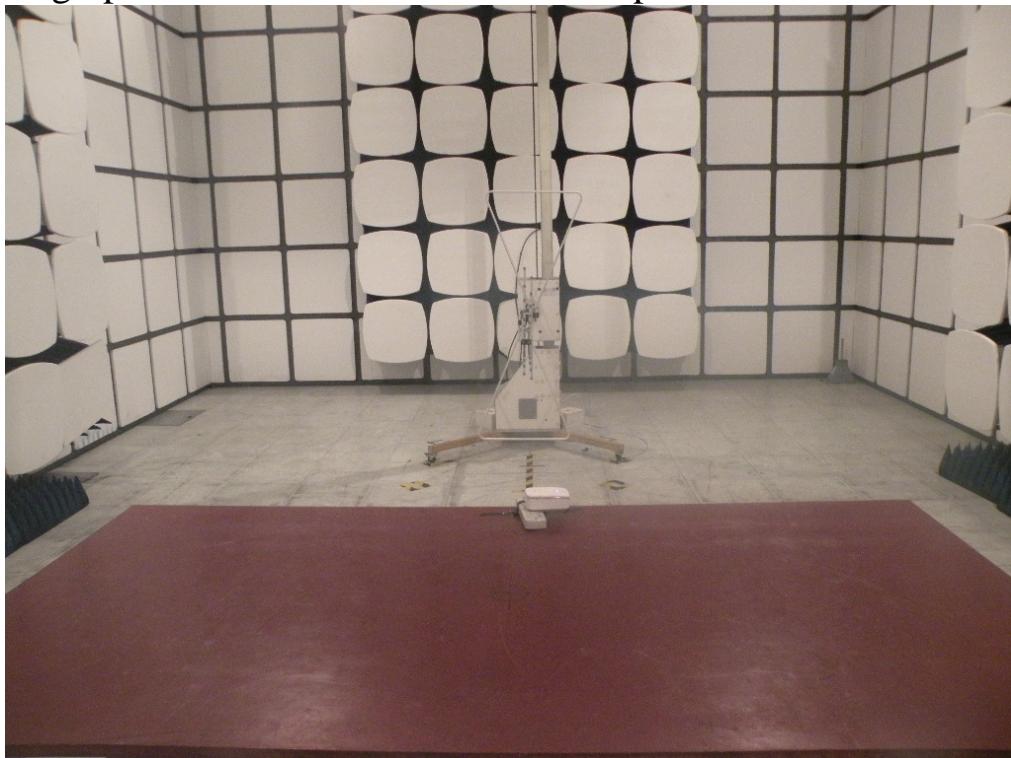
The directional gains of antenna used for transmitting is 1 dBi, and the antenna is designed with no consideration of replacement. Please see EUT photo for details.

### 6.3 Result

The EUT antenna is PCB Antenna. It comply with the standard requirement.

## 7 Photographs of Test Setup

### Photographs-Radiated Emission Test Setup in Chamber

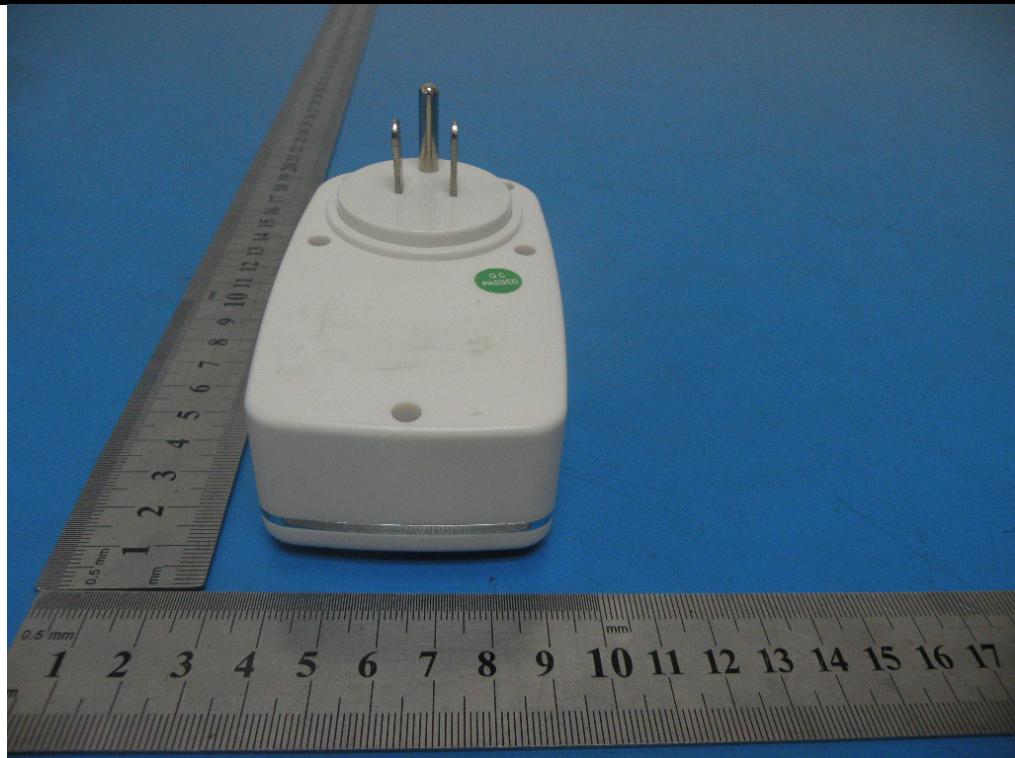


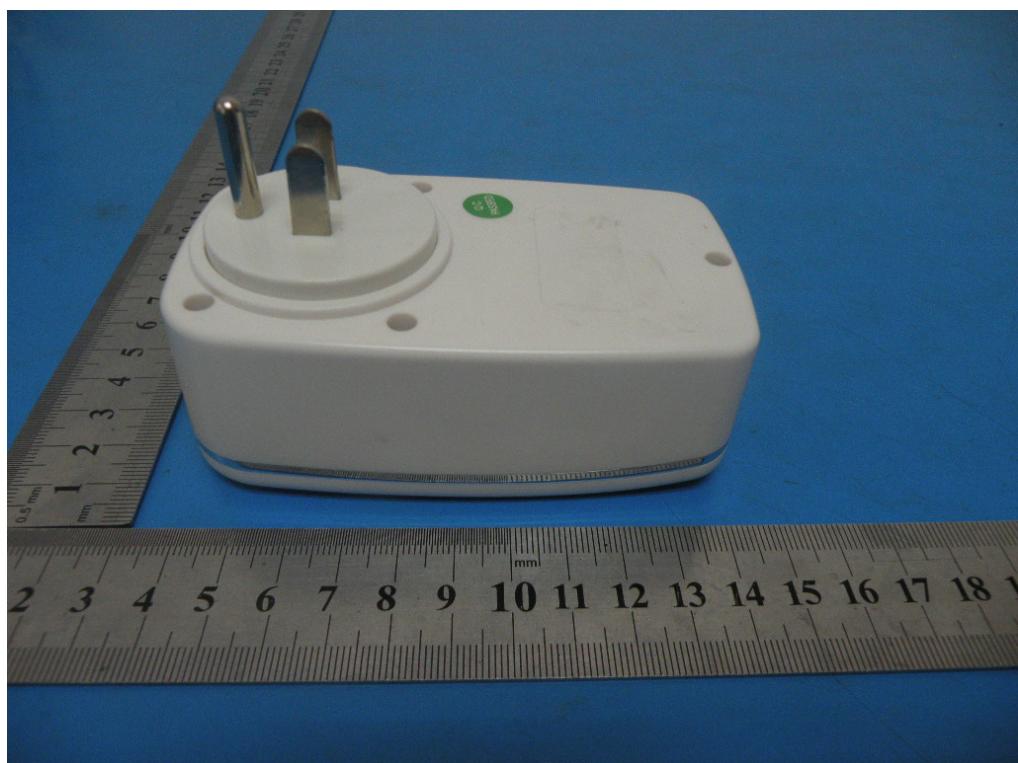
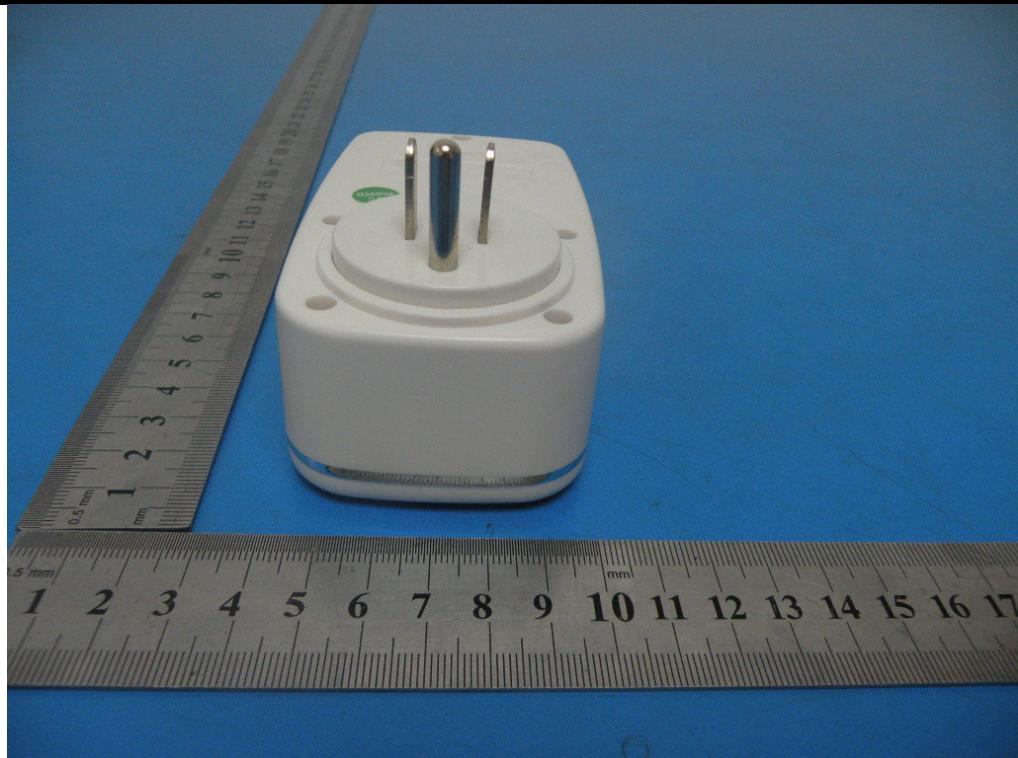
Photographs-Conducted Emission Test Setup

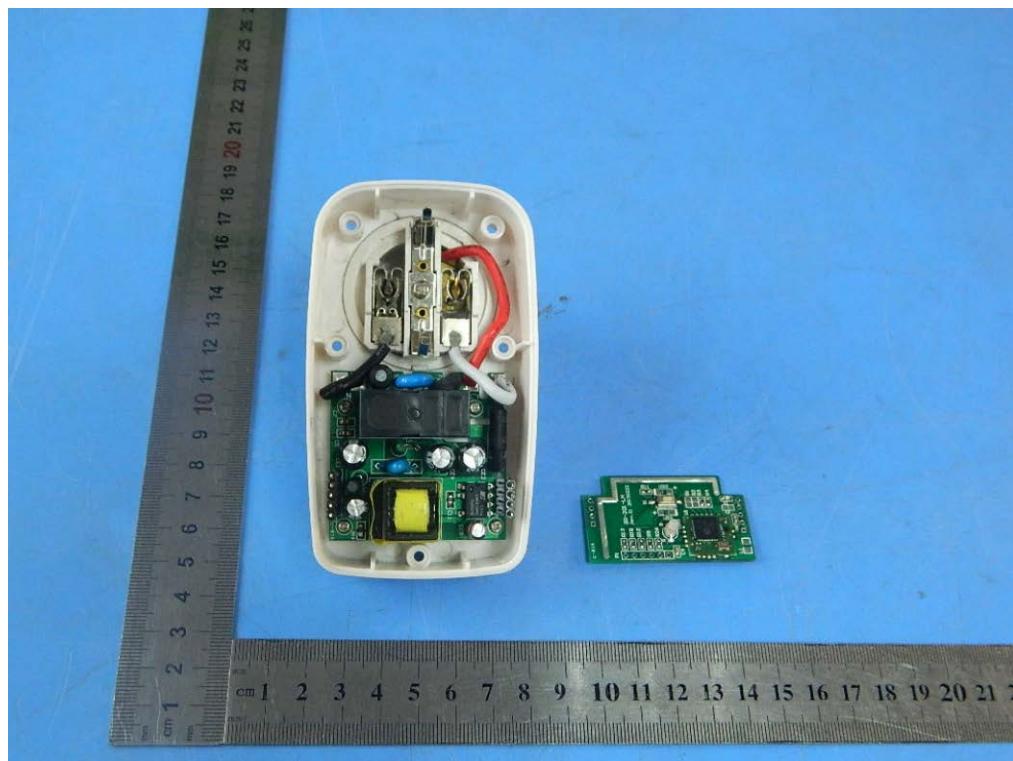


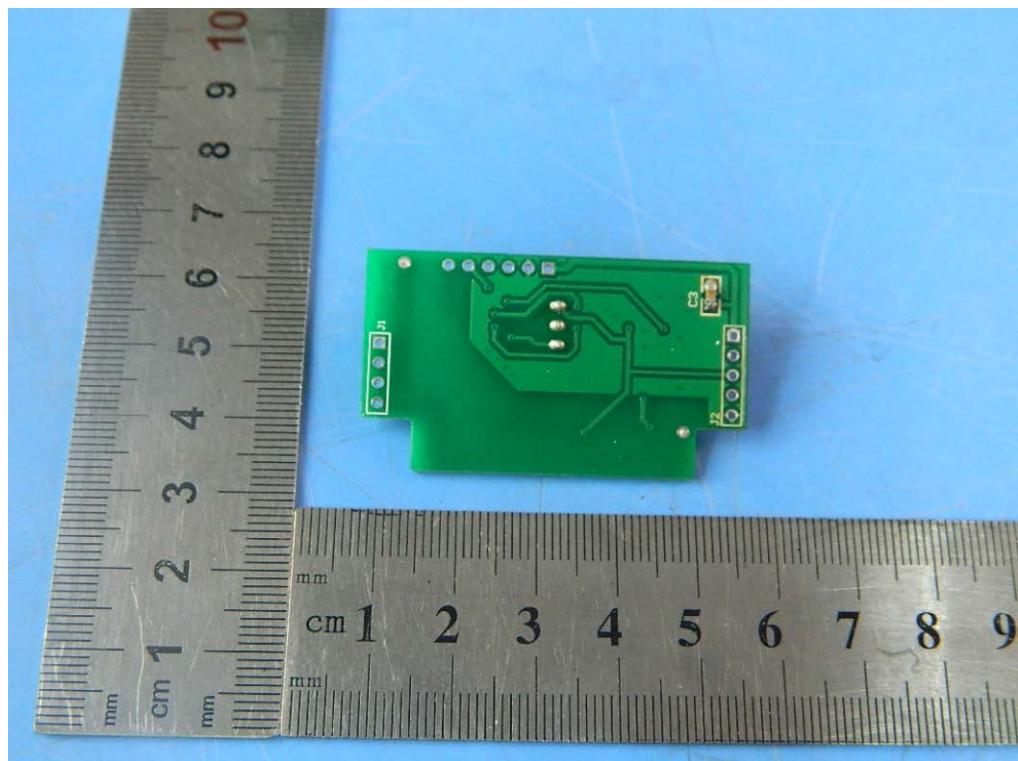
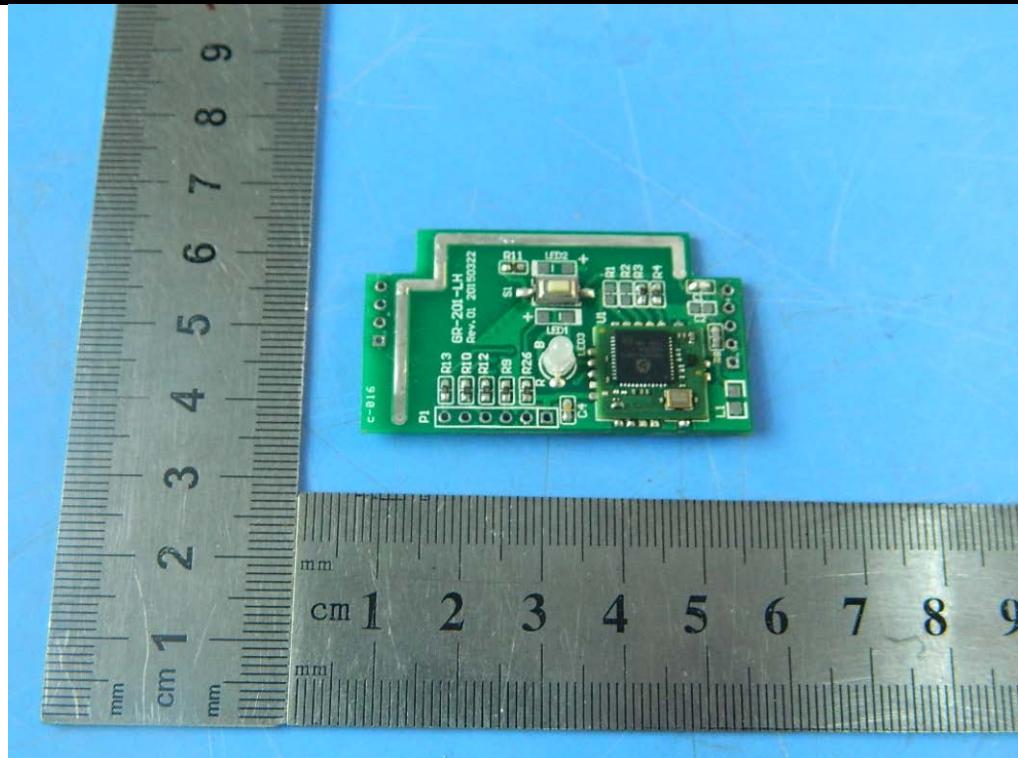
## 8 Photographs of EUT

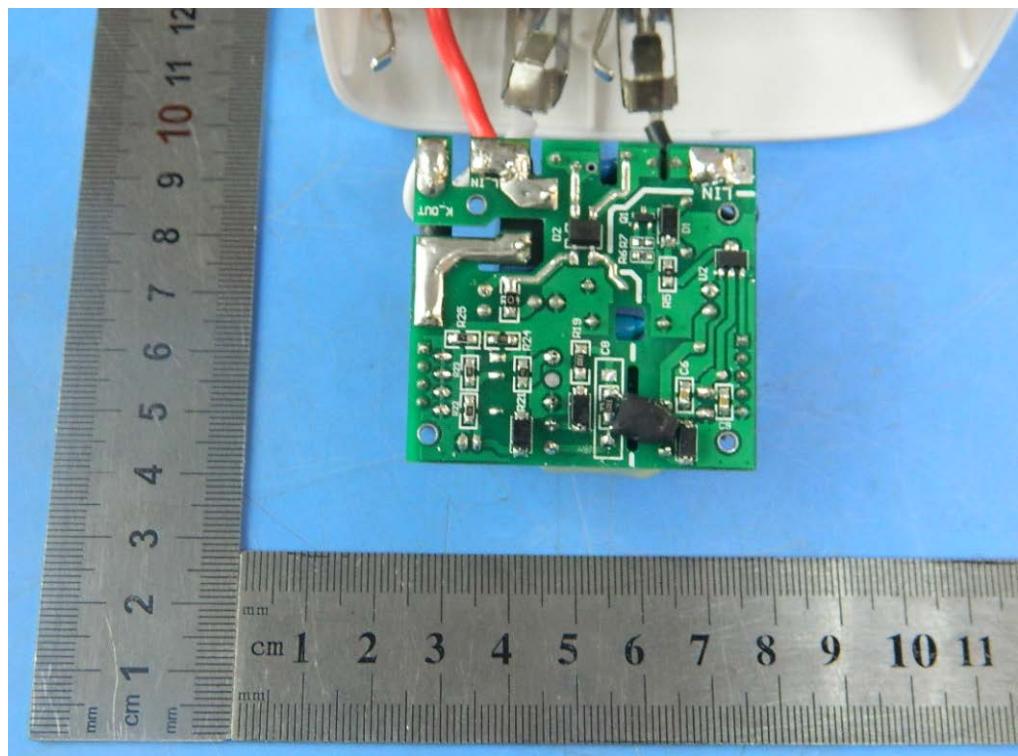
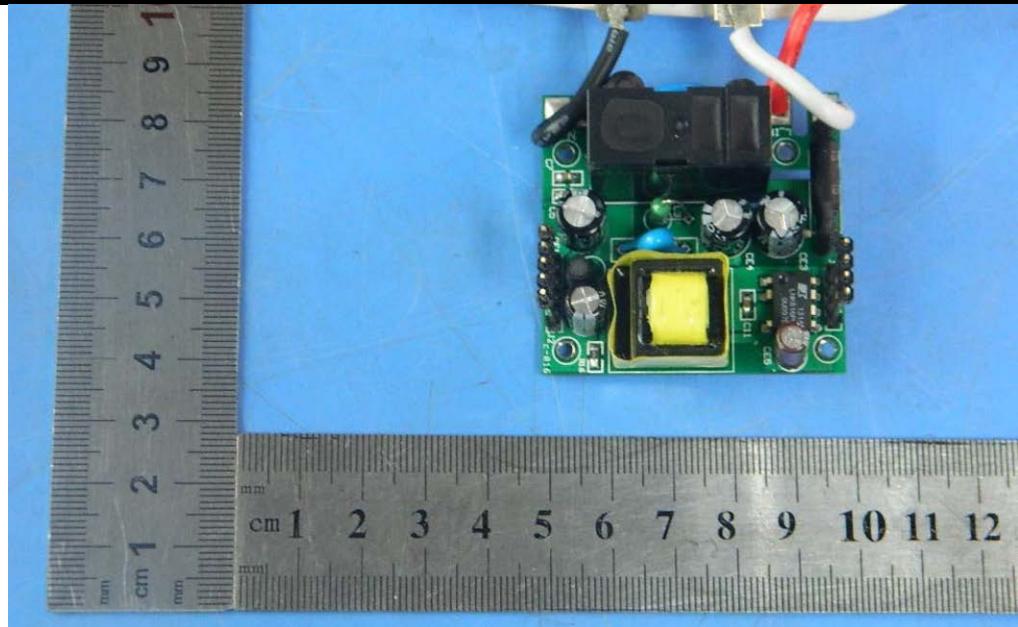












-----END OF REPORT-----