# FCC Test Report

Report No.: AGC08837190703FE03

| | | |
|---|---|---|
| **FCC ID** | : | 2AT3TYL393 |
| **APPLICATION PURPOSE** | : | Original Equipment |
| **PRODUCT DESIGNATION** | : | Remote control series |
| **BRAND NAME** | : | N/A |
| **MODEL NAME** | : | YL393 |
| **SERIES MODEL** | | See Page 5 |
| **APPLICANT** | : | YANG LIN TOYS |
| **DATE OF ISSUE** | : | Aug. 07, 2019 |
| **STANDARD(S)**<br>**TEST PROCEDURE(S)** | : | FCC Part 15 Rules |
| **REPORT VERSION** | : | V1.0 |

Attestation of Global Compliance (Shenzhen) Co., Ltd

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# REPORT REVISE RECORD

| Report Version | Revise Time | Issued Date | Valid Version | Notes |
|---|---|---|---|---|
| V1.0 | / | Aug. 07, 2019 | Valid | Initial Release |

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## 1. VERIFICATION OF CONFORMITY

| | |
|---|---|
| **Applicant** | YANG LIN TOYS |
| **Address** | SAN ZHONG ROAD, DONG HU INDUSTRIAL PARK, CHENGHAI DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA |
| **manufacturer** | YANG LIN TOYS |
| **Address** | SAN ZHONG ROAD, DONG HU INDUSTRIAL PARK, CHENGHAI DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA |
| **Factory** | YANG LIN TOYS |
| **Address** | SAN ZHONG ROAD, DONG HU INDUSTRIAL PARK, CHENGHAI DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA |
| **Product Designation** | Remote control series |
| **Brand Name** | N/A |
| **Test Model** | YL393 |
| **Series Model** | See Page 5 |
| **Difference description** | All the same except for the model name and color |
| **Date of test** | Jul. 31, 2019 to Aug. 06, 2019 |
| **Deviation** | None |
| **Condition of Test Sample** | Normal |
| **Test Result** | Pass |
| **Report Template** | AGCRT-US-BR/RF |

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.249.

| | | |
|---|---|---|
| Prepared By | Draven Li<br>(Project Engineer) | Aug. 06, 2019 |
| Reviewed By | Max Zhang<br>(Reviewer) | Aug. 07, 2019 |
| Approved By | Forrest Lei<br>(Authorized Officer) | Aug. 07, 2019 |

# 2. GENERAL INFORMATION

## 2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

| | |
|---|---|
| **Operation Frequency** | 2.407 GHz to 2.477GHz |
| **Maximum field strength** | 83.72dBuV/m(Average)@3m |
| **Modulation** | GFSK |
| **Number of channels** | 3 |
| **Antenna Gain** | 2.1dBi |
| **Antenna Designation** | Wired Antenna (Met 15.203 Antenna requirement) |
| **Hardware Version** | HD-118T-A |
| **Software Version** | V1.0 |
| **Power Supply** | DC 6V by Battery |

**Series Model:**

YL363, YL373, YL383, YL363-1, YL373-1, YL383-1, YL393-1, YL212, YL232, YL242, YL252, YL262, YL272, YL282, YL292, YL414, YL424, YL434, YL464, YL474, YL484, YL494, YL515, YL525, YL535, YL545, YL565, YL575, YL585, YL595, YL616, YL626, YL636, YL646, YL656, YL676, YL686, YL696, YL717, YL727, YL737, YL747, YL757, YL767, YL787, YL797, YL818, YL828, YL838, YL848, YL858, YL868, YL878, YL898, YL919, YL929, YL939, YL949, YL959, YL969, YL979, YL989

## 2.2. TABLE OF CARRIER FREQUENCY

| Channel Number | Frequency | Channel Number | Frequency | Channel Number | Frequency |
|---|---|---|---|---|---|
| 1 | 2407MHz | 2 | 2445MHz | 3 | 2477MHz |

## 3. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in measurement” (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission, Uc = ±3.2 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±3.9 dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±4.8 dB

## 4. DESCRIPTION OF TEST MODES

| NO. | TEST MODE DESCRIPTION |
|---|---|
| 1 | Low channel GFSK |
| 2 | Middle channel GFSK |
| 3 | High channel GFSK |

Note:
1. All the test modes can be supply by battery, only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

# 5. SYSTEM TEST CONFIGURATION

## 5.1. CONFIGURATION OF EUT SYSTEM

EUT

## 5.2 EQUIPMENT USED IN TESTED SYSTEM

| Item | Equipment | Model No. | ID or Specification | Remark |
|---|---|---|---|---|
| 1 | Remote control series | YL393 | 2AT3TYL393 | EUT |

## 5.3. SUMMARY OF TEST RESULTS

| FCC RULES | DESCRIPTION OF TEST | RESULT |
|---|---|---|
| §15.249&15.209 | Radiated Emission | Compliant |
| §15.249 | Band Edges | Compliant |
| §15.215 | 20dB bandwidth | Compliant |
| §15.207 | Conducted Emission | N/A |

Note: The conducted limits are not required for devices which only employ battery power for operation.

## 6. TEST FACILITY

| | |
|---|---|
| **Test Site** | Attestation of Global Compliance (Shenzhen) Co., Ltd |
| **Location** | 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China |
| **Designation Number** | CN1259 |
| **FCC Test Firm Registration Number** | 975832 |
| **A2LA Cert. No.** | 5054.02 |
| **Description** | Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA |

### TEST EQUIPMENT OF RADIATED EMISSION TEST

| Equipment | Manufacturer | Model | S/N | Cal. Date | Cal. Due |
|---|---|---|---|---|---|
| TEST RECEIVER | R&S | ESCI | 10096 | Jun. 12, 2019 | Jun. 11, 2020 |
| EXA Signal Analyzer | Aglient | N9010A | MY53470504 | Dec. 20, 2018 | Dec. 19, 2019 |
| 2.4GHz Fliter | EM Electronics | 2400-2500MHz | N/A | Feb. 27, 2019 | Feb. 26, 2020 |
| Attenuator | ZHINAN | E-002 | N/A | Aug. 28, 2018 | Aug. 27, 2019 |
| Horn antenna | SCHWARZBECK | BBHA 9170 | #768 | Sep. 21, 2017 | Sep. 20, 2020 |
| Active loop antenna (9K-30MHz) | ZHINAN | ZN30900C | 18051 | Jun. 14, 2018 | Jun. 13, 2020 |
| Double-Ridged Waveguide Horn | ETS LINDGREN | 3117 | 00034609 | May. 26, 2018 | May. 25, 2020 |
| Broadband Preamplifier | ETS LINDGREN | 3117PA | 00225134 | Oct. 25, 2018 | Oct. 24, 2019 |
| ANTENNA | SCHWARZBECK | VULB9168 | D69250 | Sep. 28, 2017 | Sep. 27, 2019 |

# 7. RADIATED EMISSION

## 7.1TEST LIMIT

**Standard FCC15.249**

| Fundamental Frequency | Field Strength of Fundamental (millivolts/meter) | Field Strength of Harmonics (microvolts/meter) |
|---|---|---|
| 900-928MHz | 50 | 500 |
| 2400-2483.5MHz | 50 | 500 |
| 5725-5875MHz | 50 | 500 |
| 24.0-24.25GHz | 250 | 2500 |

**Standard FCC 15.209**

| Frequency (MHz) | Distance Meters | Field Strengths Limit | |
|---|---|---|---|
| | | μ V/m | dB(μV)/m |
| 0.009 ~ 0.490 | 300 | 2400/F(kHz) | --- |
| 0.490 ~ 1.705 | 30 | 24000/F(kHz) | --- |
| 1.705 ~ 30 | 30 | 30 | --- |
| 30 ~ 88 | 3 | 100 | 40.0 |
| 88 ~ 216 | 3 | 150 | 43.5 |
| 216 ~ 960 | 3 | 200 | 46.0 |
| 960 ~ 1000 | 3 | 500 | 54.0 |
| Above 1000 | 3 | Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average) | |

Remark: (1) Emission level dB μ V = 20 log Emission level μ V/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

## 7.2. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use minimum resolution bandwidth of 1 MHz. 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.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

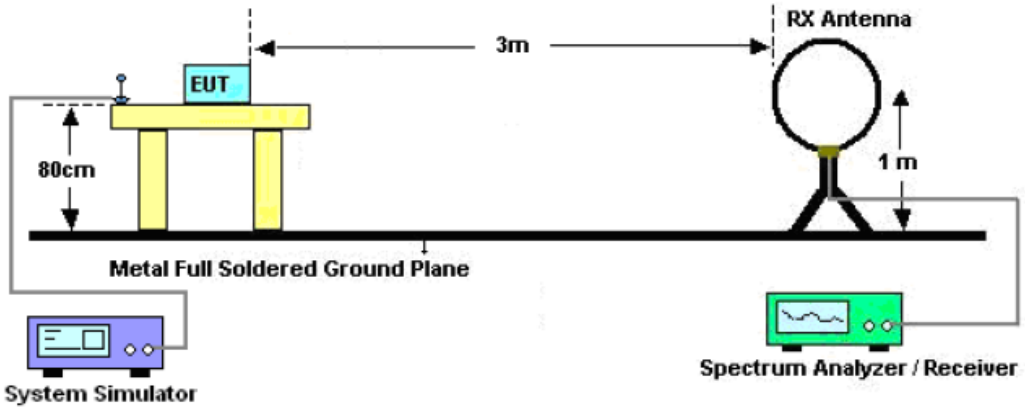
The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter | Setting |
|---|---|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP |
| Start ~Stop Frequency | 1GHz~26.5GHz<br>RBW 2MHz/ VBW 6MHz for Peak,<br>RBW 2MHz/1kHz for Average |

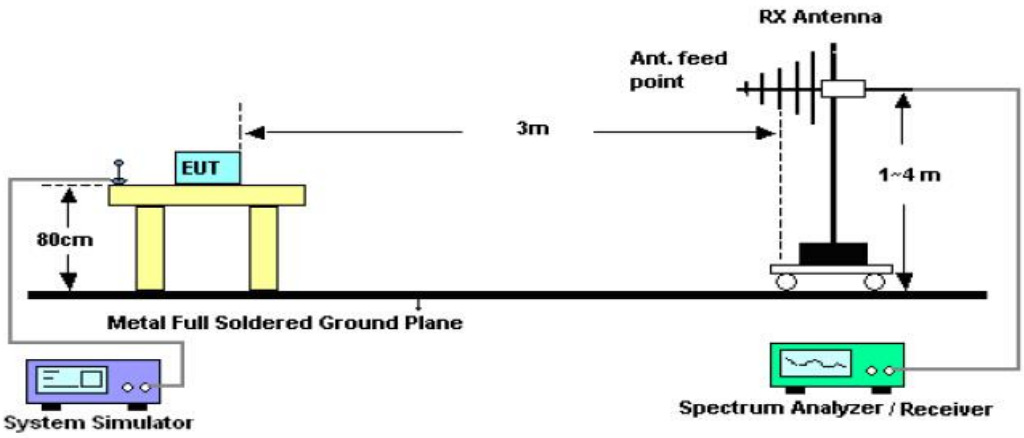
| Receiver Parameter | Setting |
|---|---|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP |

## 7.3. TEST SETUP

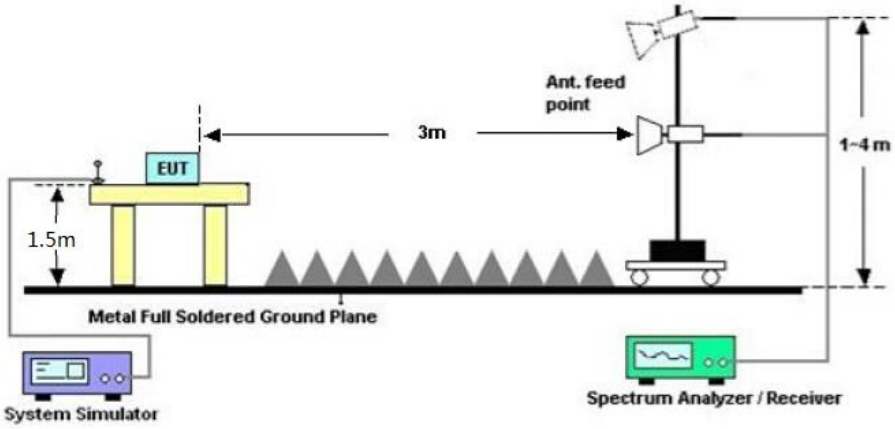
Radiated Emission Test-Setup Frequency Below 30MHz




RADIATED EMISSION TEST SETUP 30MHz-1000MHz




RADIATED EMISSION TEST SETUP ABOVE 1000MHz



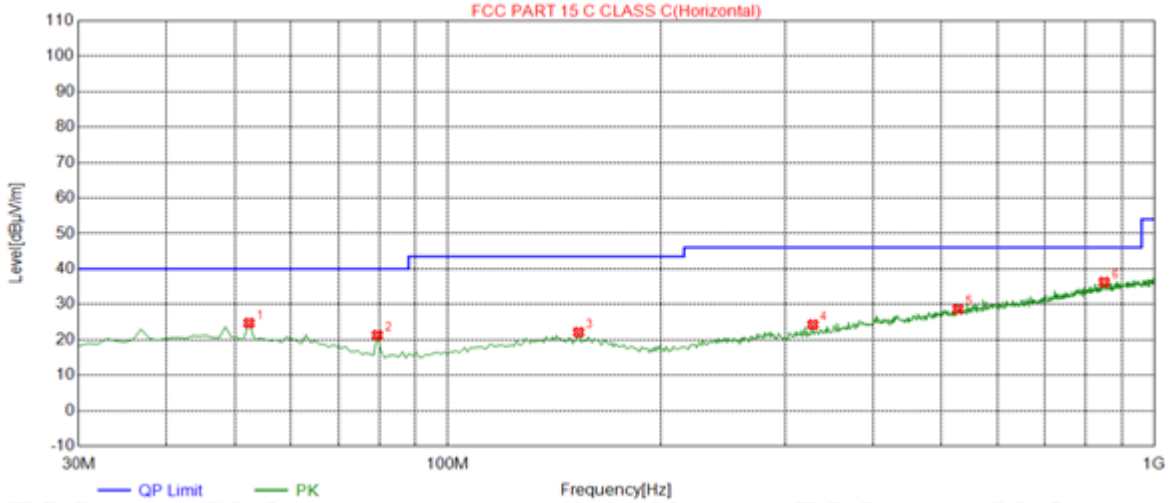
## 7.4. TEST RESULT

### RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

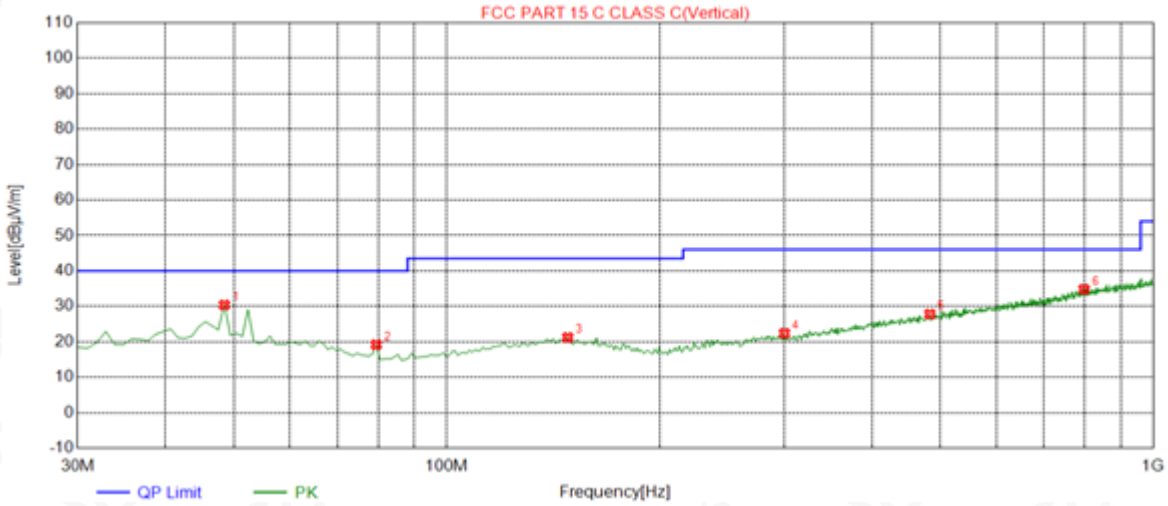
### RADIATED EMISSION 30MHz- 1GHZ

| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010 hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 1 | Polarization : | Horizontal |




| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
|---|---|---|---|---|---|---|---|---|
| 1 | 52.3100 | 24.72 | 14.49 | 40.00 | 15.28 | 150 | 208 | Horizontal |
| 2 | 79.4700 | 21.29 | 10.26 | 40.00 | 18.71 | 100 | 88 | Horizontal |
| 3 | 153.1900 | 22.10 | 14.91 | 43.50 | 21.40 | 100 | 303 | Horizontal |
| 4 | 328.7600 | 24.26 | 17.02 | 46.00 | 21.74 | 100 | 2 | Horizontal |
| 5 | 527.6100 | 28.63 | 22.80 | 46.00 | 17.37 | 100 | 224 | Horizontal |
| 6 | 849.6500 | 36.27 | 29.30 | 46.00 | 9.73 | 150 | 0 | Horizontal |

| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010 hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 1 | Polarization : | Vertical |




| NO. | Freq. [MHz] | Level [dBµV/m] | Factor [dB] | Limit [dBµV/m] | Margin [dB] | Height [cm] | Angle [°] | Polarity |
|---|---|---|---|---|---|---|---|---|
| 1 | 48.4300 | 30.39 | 14.71 | 40.00 | 9.61 | 100 | 205 | Vertical |
| 2 | 79.4700 | 19.18 | 10.26 | 40.00 | 20.82 | 150 | 5 | Vertical |
| 3 | 148.3400 | 21.22 | 14.88 | 43.50 | 22.28 | 150 | 356 | Vertical |
| 4 | 300.6300 | 22.38 | 15.92 | 46.00 | 23.62 | 150 | 357 | Vertical |
| 5 | 482.9900 | 27.82 | 21.79 | 46.00 | 18.18 | 100 | 295 | Vertical |
| 6 | 798.2400 | 34.81 | 28.47 | 46.00 | 11.19 | 100 | 320 | Vertical |

**RESULT: PASS**

**Note:**

Factor=Antenna Factor + Cable loss, Margin=Result-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

## FIELD STRENGTH OF FUNDAMENTAL

| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010 hPa | Test Voltage ： | DC 6V |
| Test Modulation ： | GFSK | Polarization : | Horizontal |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 2407.024 | 96.54 | -9.61 | 86.93 | 114.00 | -27.07 | peak |
| 2407.024 | 92.33 | -9.61 | 82.72 | 94.00 | -11.28 | AVG |
| 2445.024 | 96.89 | -9.28 | 87.61 | 114.00 | -26.39 | peak |
| 2445.024 | 92.47 | -9.28 | 83.19 | 94.00 | -10.81 | AVG |
| 2477.024 | 97.25 | -9.14 | 88.11 | 114.00 | -25.89 | peak |
| 2477.024 | 92.86 | -9.14 | 83.72 | 94.00 | -10.28 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010 hPa | Test Voltage ： | DC 6V |
| Test Modulation ： | GFSK | Polarization : | Vertical |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 2407.024 | 95.14 | -9.61 | 85.53 | 114.00 | -28.47 | peak |
| 2407.024 | 90.86 | -9.61 | 81.25 | 94.00 | -12.75 | AVG |
| 2445.024 | 95.66 | -9.28 | 86.38 | 114.00 | -27.62 | peak |
| 2445.024 | 91.31 | -9.28 | 82.03 | 94.00 | -11.97 | AVG |
| 2477.024 | 96.04 | -9.14 | 86.90 | 114.00 | -27.10 | peak |
| 2477.024 | 91.65 | -9.14 | 82.51 | 94.00 | -11.49 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

## RADIATED EMISSION ABOVE 1GHZ

| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010 hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 1 | Polarization : | Horizontal |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4814.048 | 49.11 | 3.76 | 52.87 | 74.00 | -21.13 | peak |
| 4814.048 | 44.86 | 3.76 | 48.62 | 54.00 | -5.38 | AVG |
| 7221.072 | 46.02 | 8.17 | 54.19 | 74.00 | -19.81 | peak |
| 7221.072 | 41.96 | 8.17 | 50.13 | 54.00 | -3.87 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010 hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 1 | Polarization : | Vertical |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4814.048 | 46.78 | 3.76 | 50.54 | 74.00 | -22.45 | peak |
| 4814.048 | 42.98 | 3.76 | 46.74 | 54.00 | -5.96 | AVG |
| 7221.072 | 45.26 | 8.17 | 53.43 | 74.00 | -23.29 | peak |
| 7221.072 | 41.17 | 8.17 | 49.34 | 54.00 | -9.74 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010 hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 2 | Polarization : | Horizontal |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4890.048 | 48.88 | 3.78 | 52.66 | 74.00 | -21.34 | peak |
| 4890.048 | 44.61 | 3.78 | 48.39 | 54.00 | -5.61 | AVG |
| 7335.072 | 46.95 | 8.23 | 55.18 | 74.00 | -18.82 | peak |
| 7335.072 | 41.14 | 8.23 | 49.37 | 54.00 | -4.63 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010 hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 2 | Polarization : | Vertical |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4890.048 | 48.69 | 3.78 | 52.47 | 74.00 | -21.53 | peak |
| 4890.048 | 44.78 | 3.78 | 48.56 | 54.00 | -5.44 | AVG |
| 7335.072 | 45.66 | 8.23 | 53.89 | 74.00 | -20.11 | peak |
| 7335.072 | 40.88 | 8.23 | 49.11 | 54.00 | -4.89 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010 hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 3 | Polarization : | Horizontal |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4954.048 | 50.13 | 3.81 | 53.94 | 74.00 | -20.06 | peak |
| 4954.048 | 46.98 | 3.81 | 50.79 | 54.00 | -3.21 | AVG |
| 7431.072 | 44.24 | 8.27 | 52.51 | 74.00 | -21.49 | peak |
| 7431.072 | 40.07 | 8.27 | 48.34 | 54.00 | -5.66 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010 hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 3 | Polarization : | Vertical |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4954.048 | 48.94 | 3.81 | 52.75 | 74.00 | -21.25 | peak |
| 4954.048 | 44.17 | 3.81 | 47.98 | 54.00 | -6.02 | AVG |
| 7431.072 | 46.03 | 8.27 | 54.30 | 74.00 | -19.70 | peak |
| 7431.072 | 41.65 | 8.27 | 49.92 | 54.00 | -4.08 | AVG |
| Remark: | | | | | | |
| Factor = Antenna Factor + Cable Loss – Pre-amplifier. | | | | | | |

**Note:** Other emissions from 8G to 25 GHz are considered as ambient noise. No recording in the test report.
Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Measurement-Limit.
The “Factor” value can be calculated automatically by software of measurement system.
The GFSK modulation was the worst case and only the data of worst recorded in this report.

# 8. BAND EDGE EMISSION

## 8.1. MEASUREMENT PROCEDURE

1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.

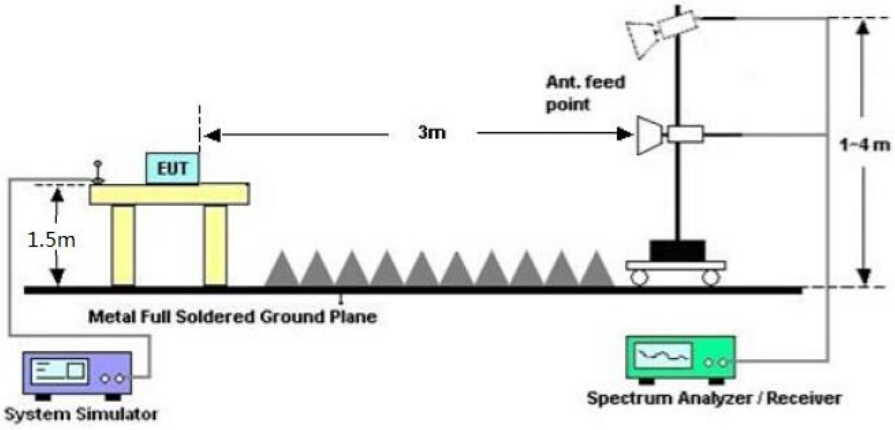
2. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: (a) PEAK: RBW=1MHz, VBW=3MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz ; VBW=1/on time(1KHz) / Sweep=AUTO

3. Other procedures refer to clause 7.2.

## 8.2 TEST SETUP

RADIATED EMISSION TEST SETUP



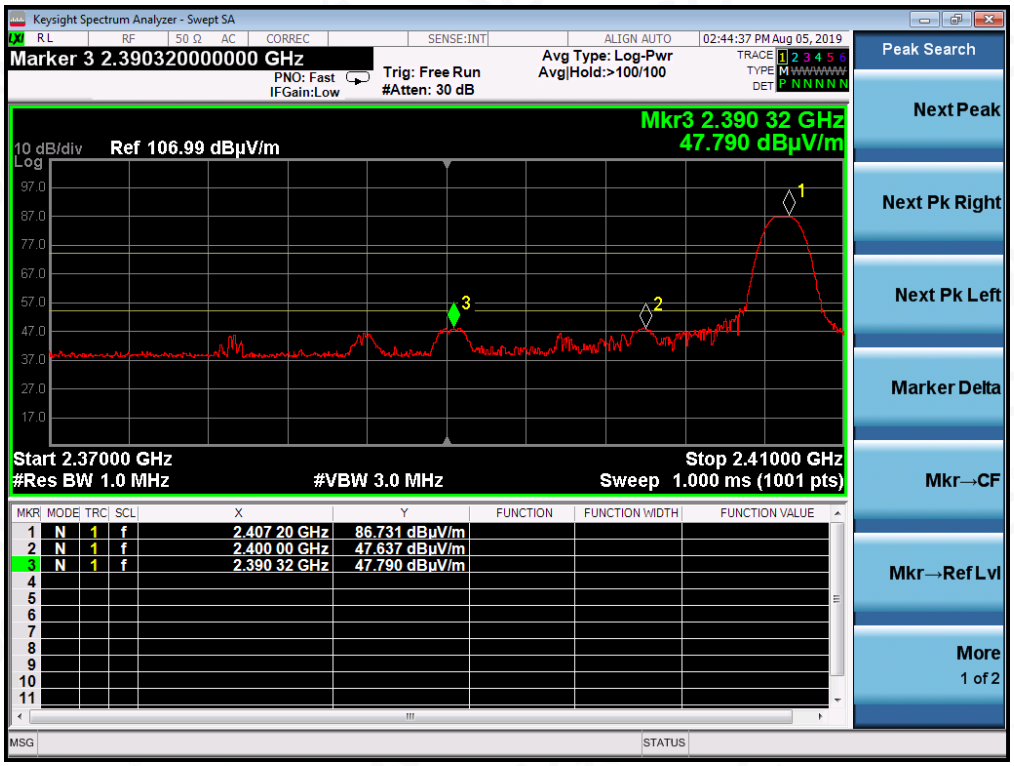

## 8.3 RADIATED TEST RESULT

**Note**:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. The factor had been edited in the “Input Correction” of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μV) to represent the Amplitude. Use the F dB(μV/m) to represent the Field Strength. So A=F.

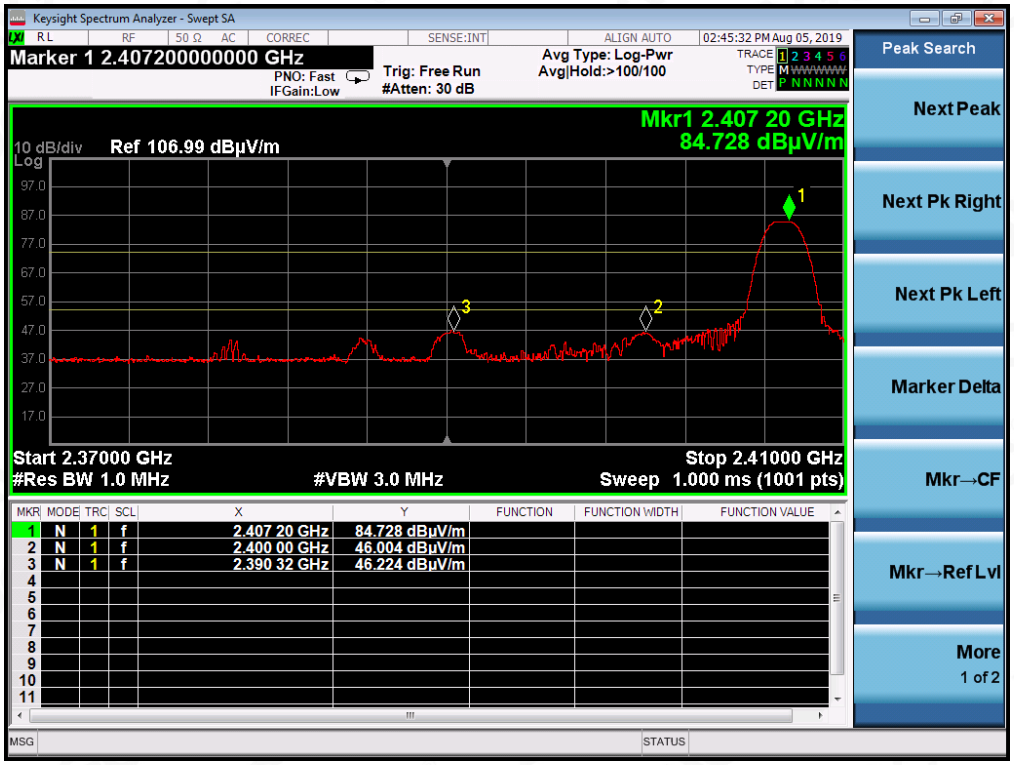
| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 1 | Polarization : | Horizontal |

Peak Value



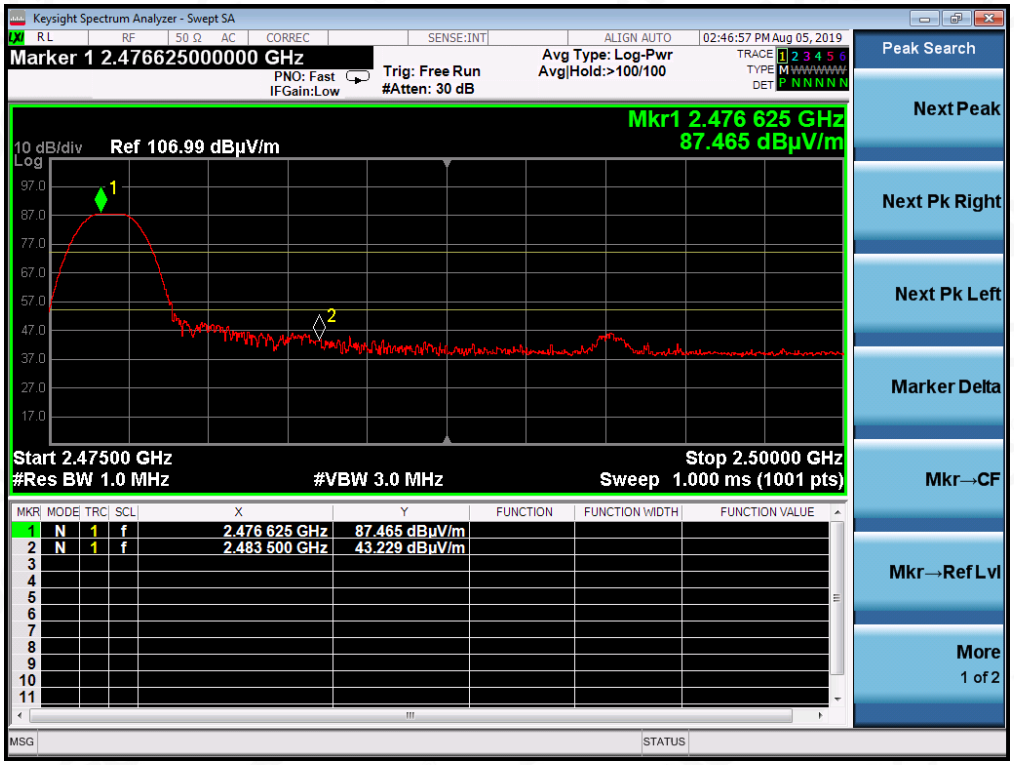
| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 1 | Polarization : | Vertical |

Peak Value



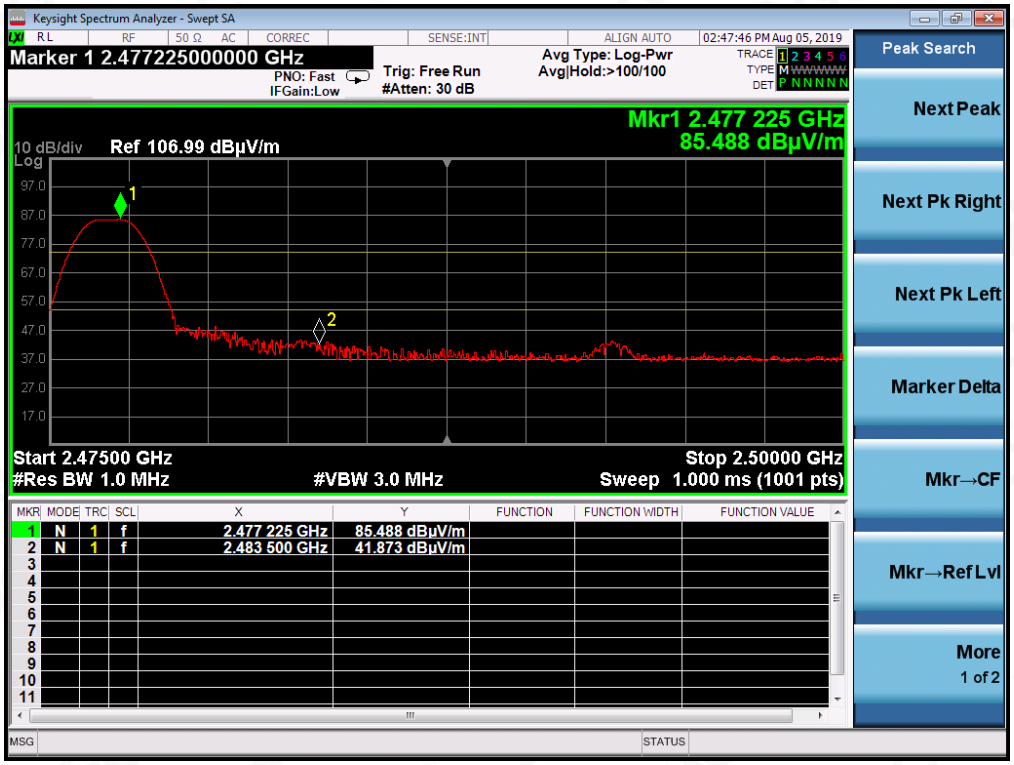
| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 3 | Polarization : | Horizontal |

Peak Value



| | | | |
|---|---|---|---|
| EUT： | Remote control series | Model Name. ： | YL393 |
| Temperature： | 20 ℃ | Relative Humidtity： | 48% |
| Pressure： | 1010hPa | Test Voltage ： | DC 6V |
| Test Mode ： | Mode 3 | Polarization : | Vertical |

Peak Value



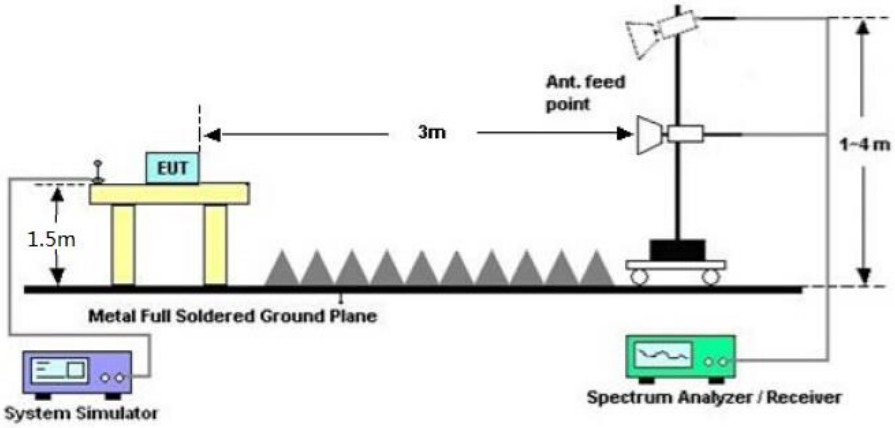

Note: The value of the peak emission are less than the average limits, so the average value are deemed to comply with the average limits without test.

# 9. 20DB BANDWIDTH

## 9.1. MEASUREMENT PROCEDURE

1. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
2. Set SPA Centre Frequency = Operation Frequency, RBW= 30 KHz, VBW⩾3×RBW.
3. Set SPA Trace 1 Max hold, then View.

## 9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

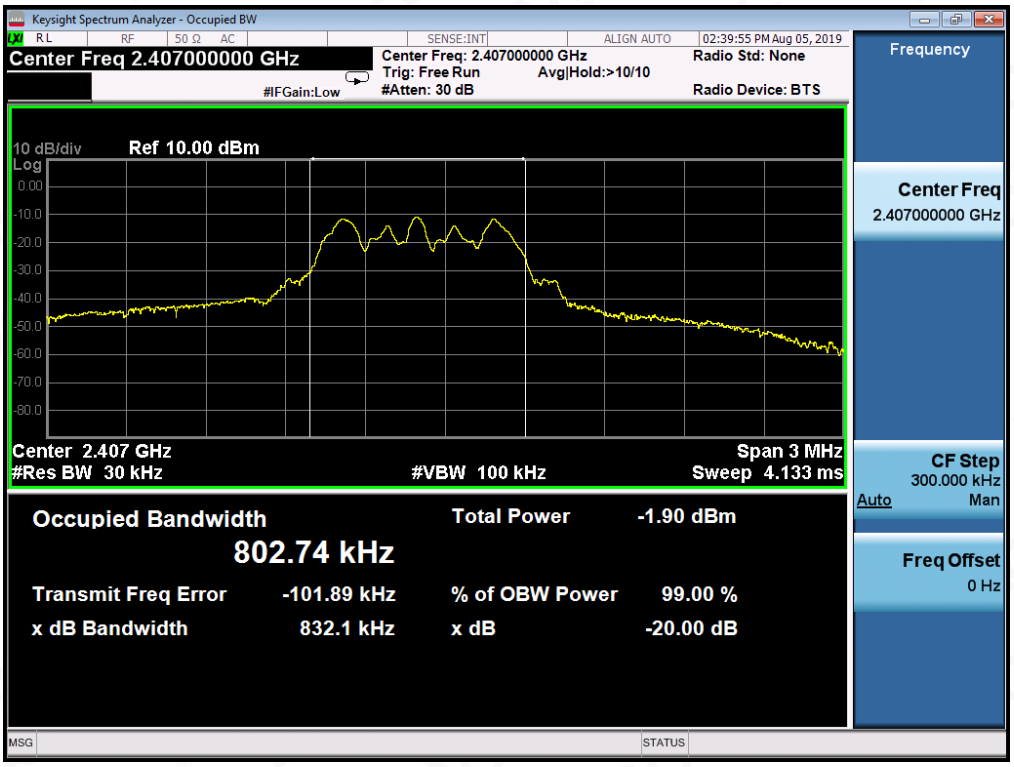


## 9.3. MEASUREMENT RESULTS

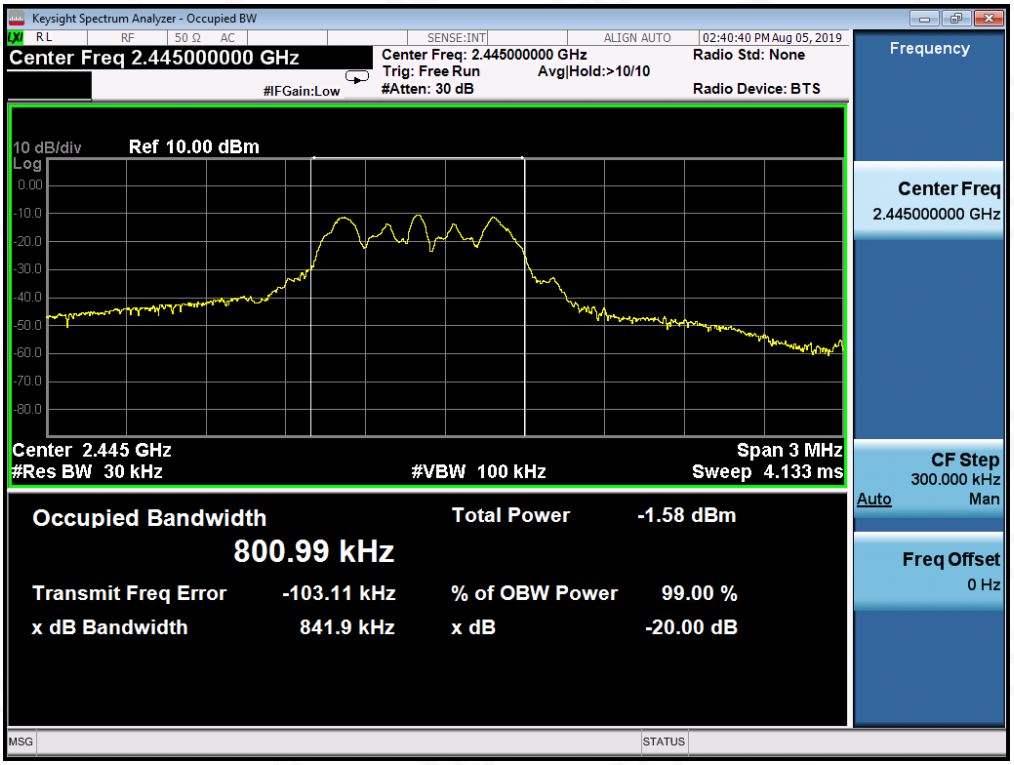
| | |
|---|---|
| **TEST ITEM** | 20DB BANDWIDTH |
| **TEST MODULATION** | GFSK |

| Test Data (MHz) | | Criteria |
|---|---|---|
| Low Channel | 0.8321 | PASS |
| Middle Channel | 0.8419 | PASS |
| High Channel | 0.8258 | PASS |

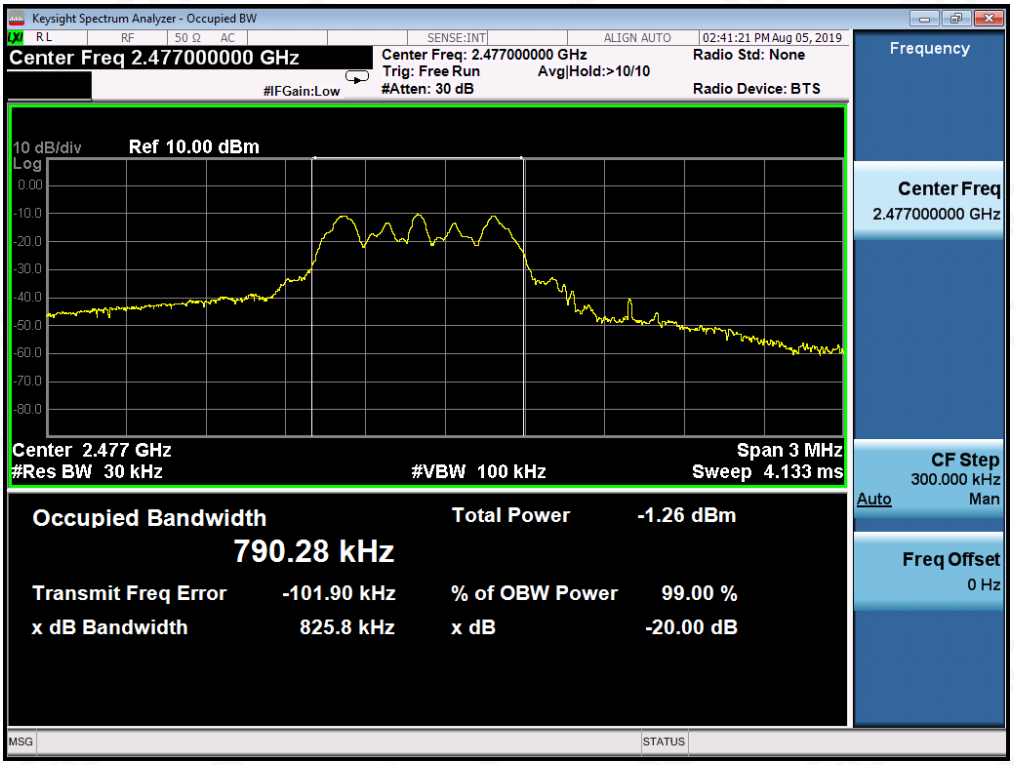
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

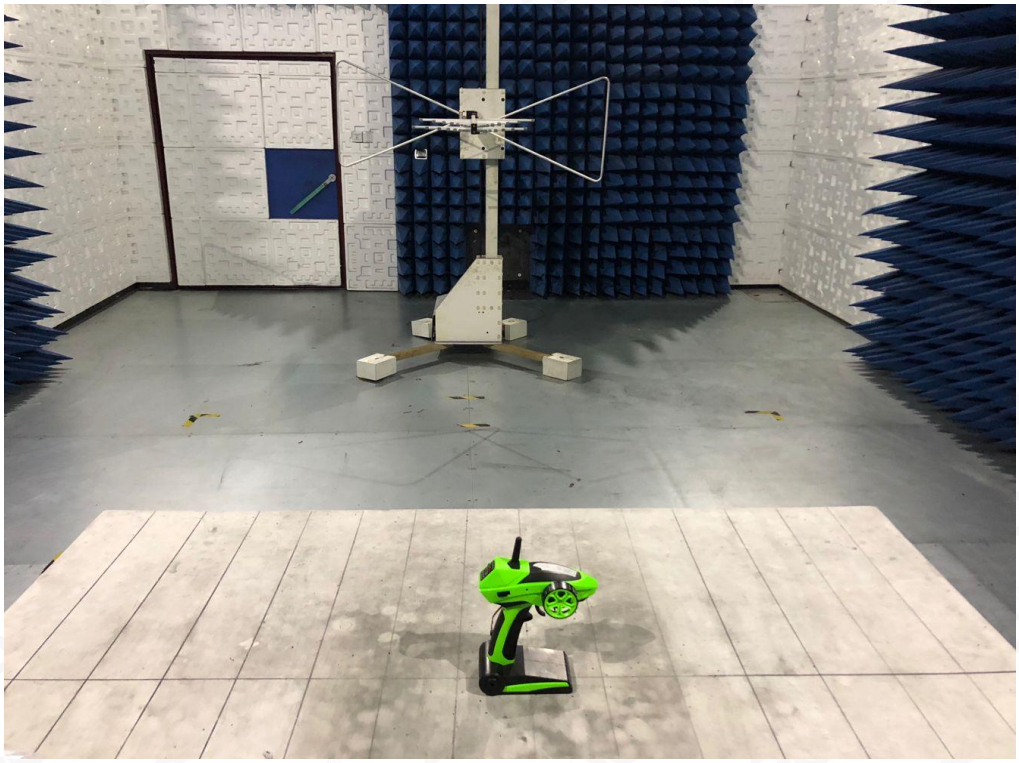



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

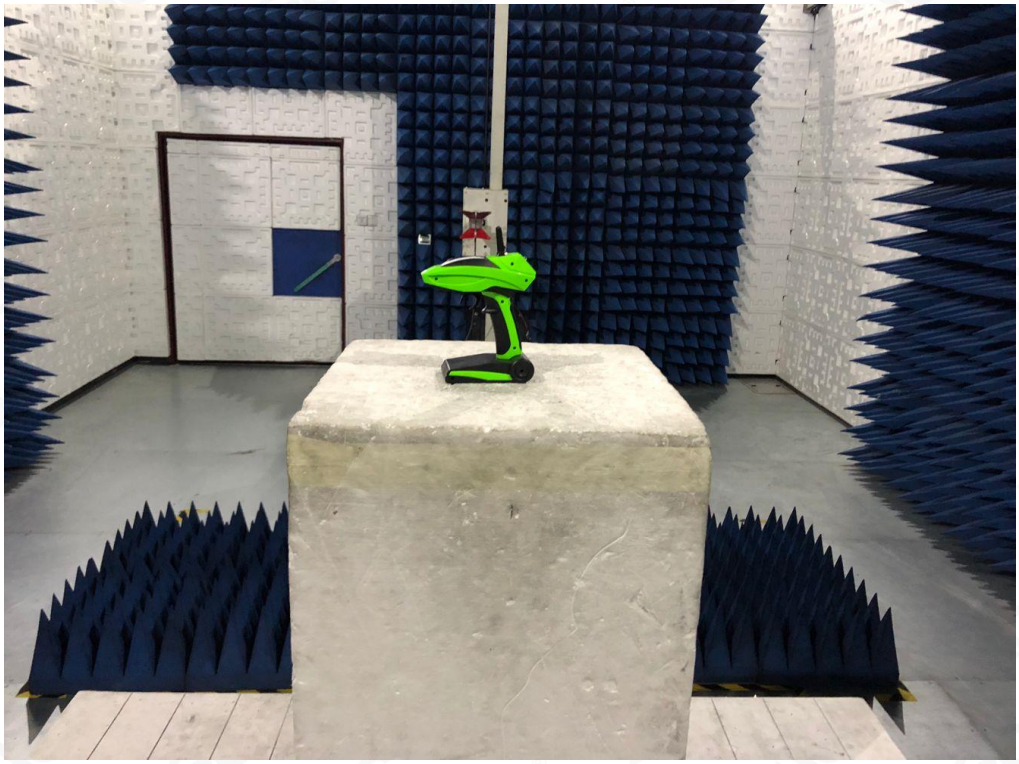


## APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ

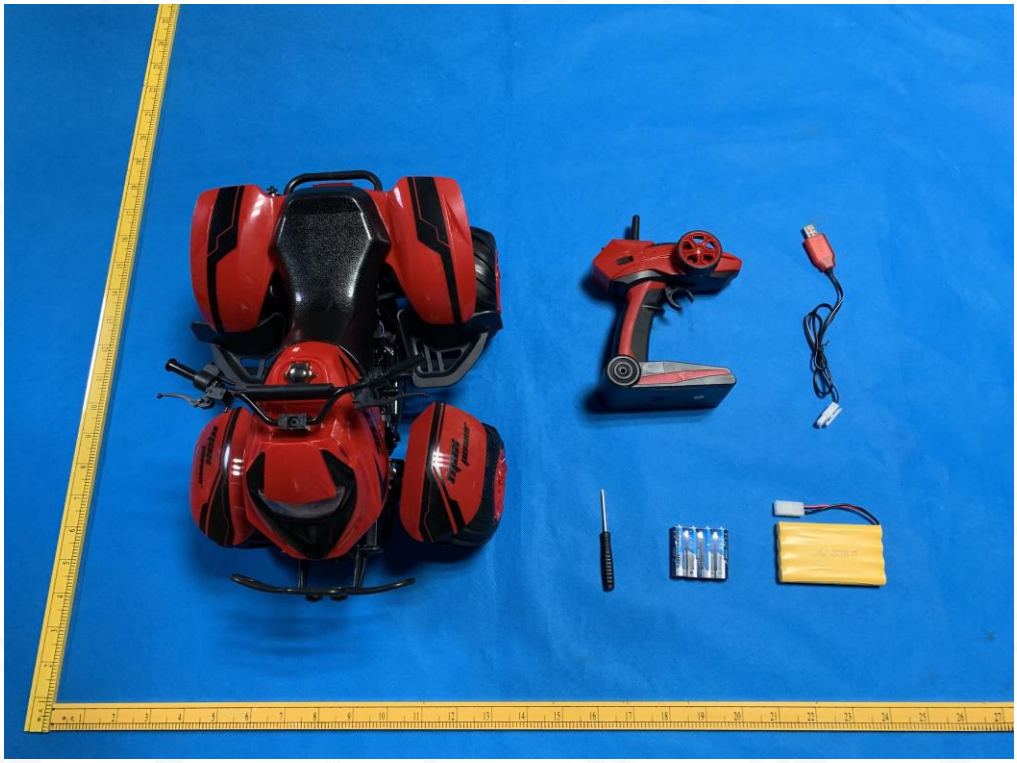


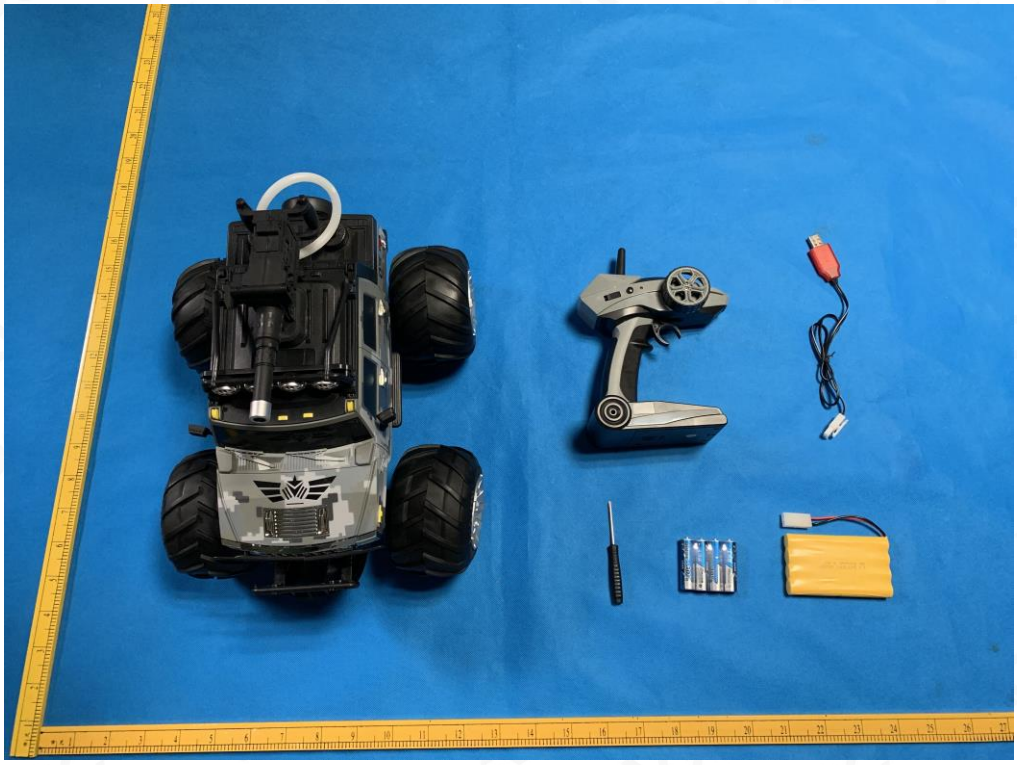
FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ

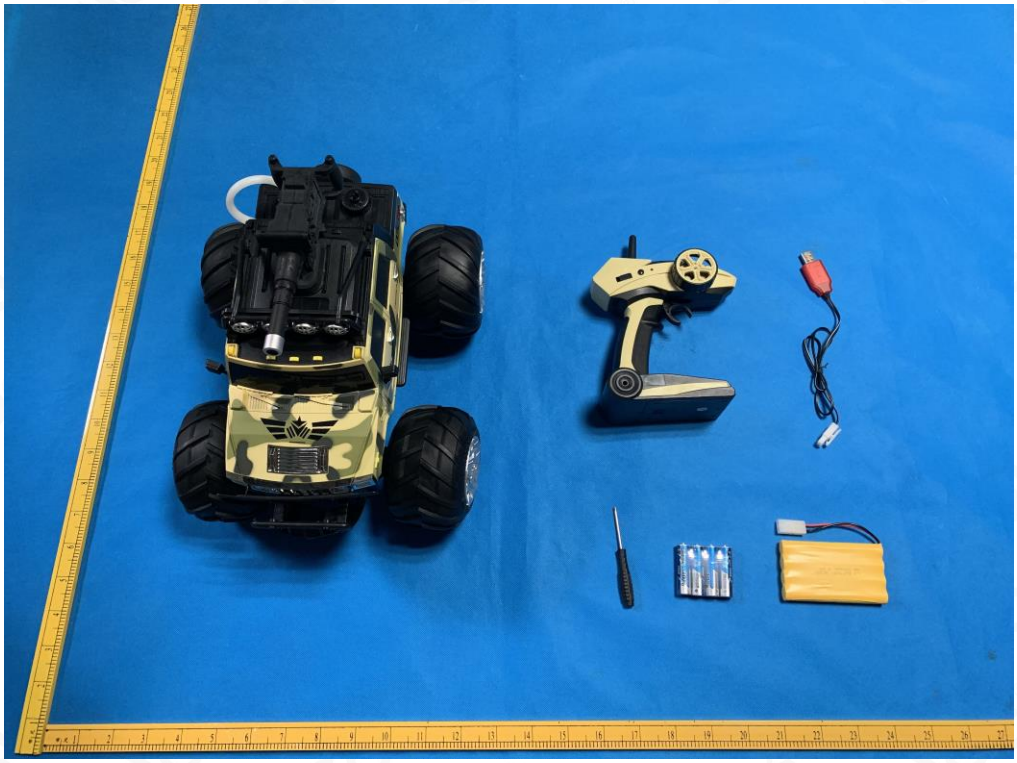


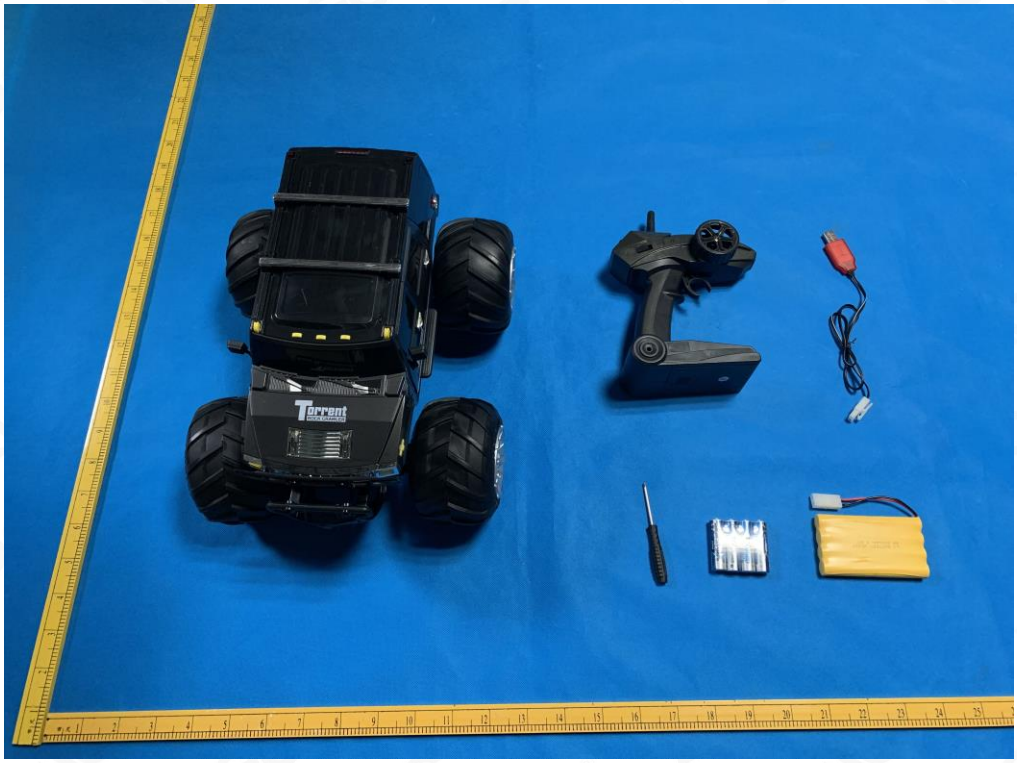
# APPENDIX B: PHOTOGRAPHS OF THE EUT

ALL VIEW OF EUT

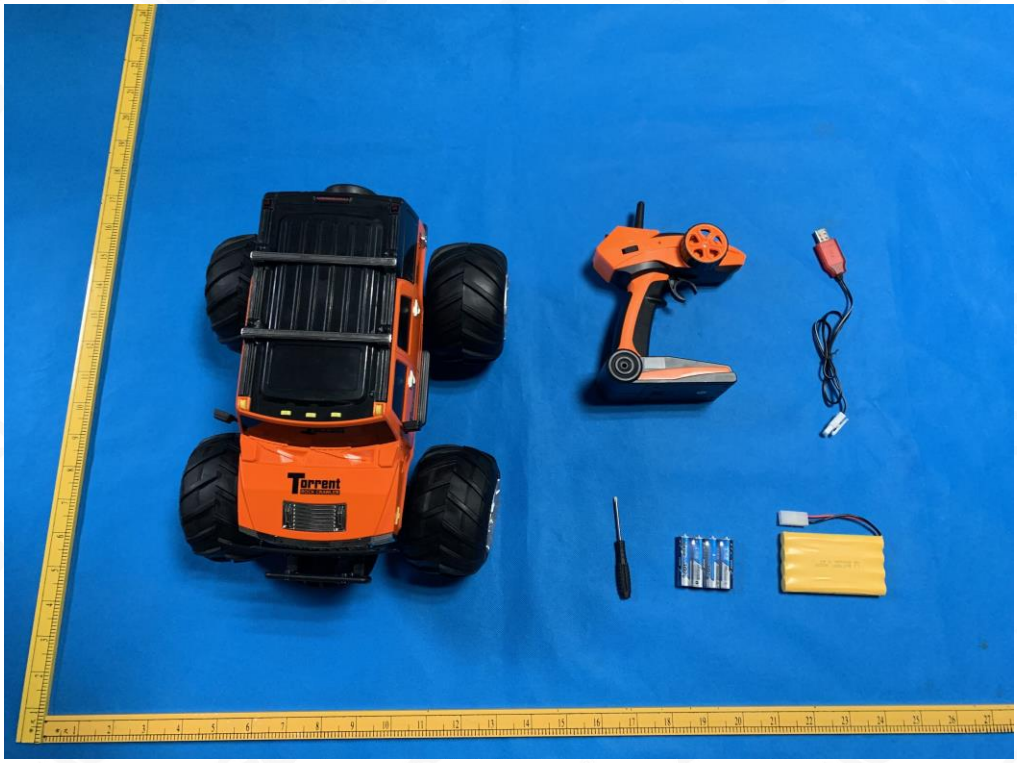




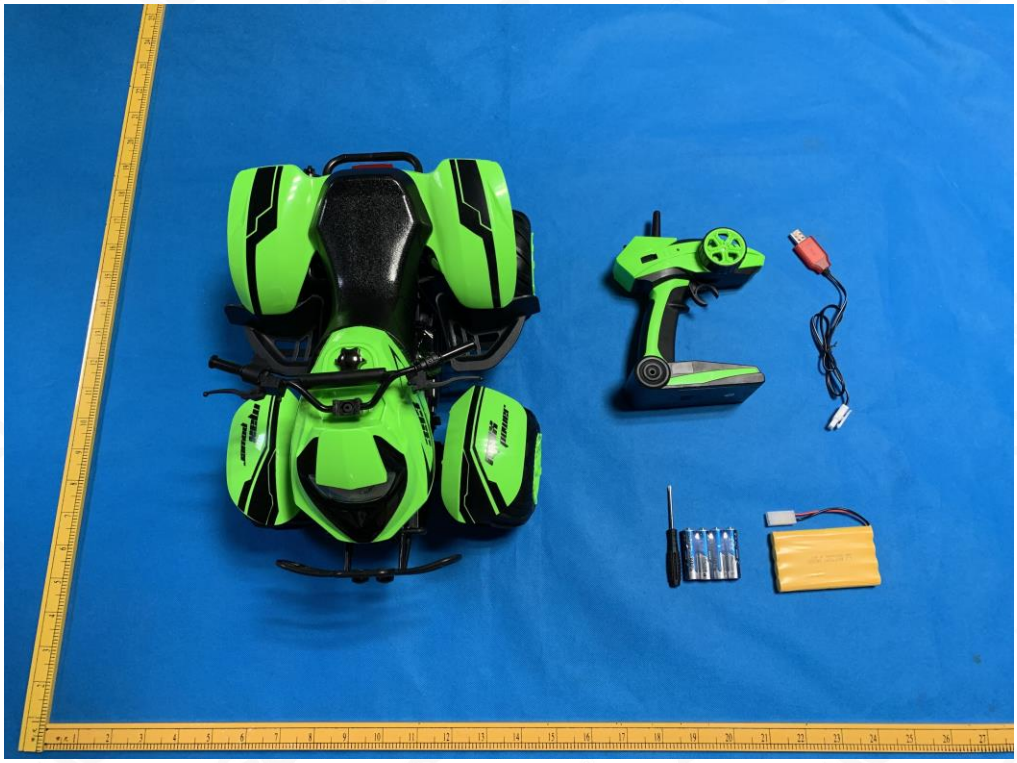



Terrent

Torrent


Torrent

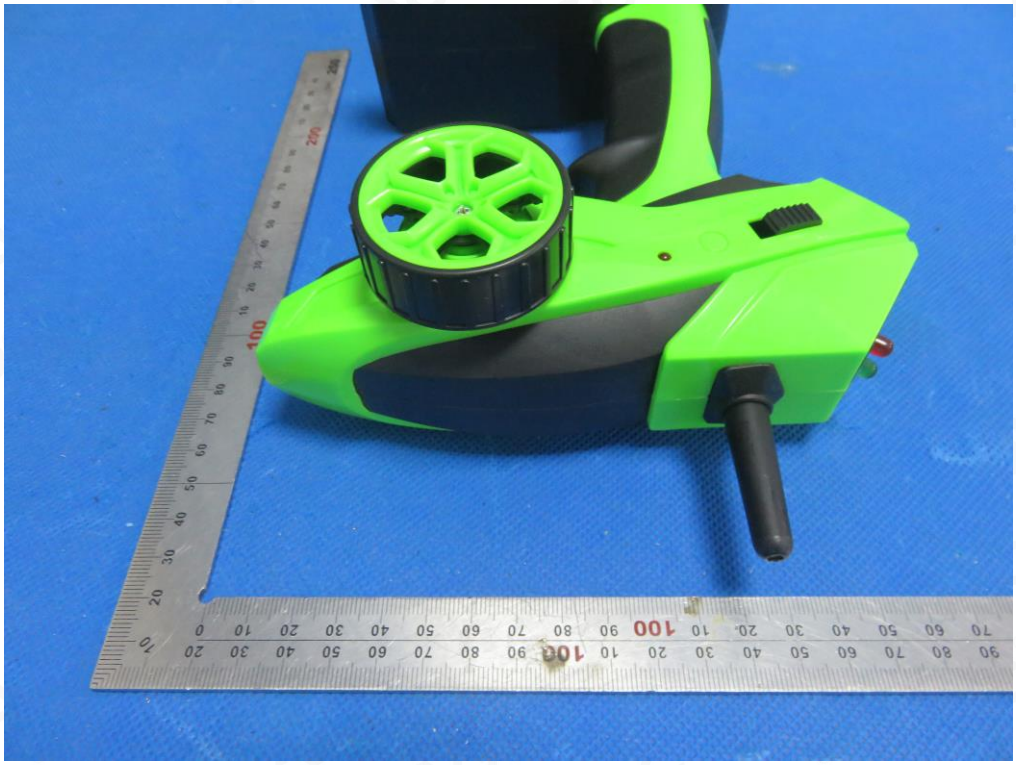
Torrent



TOP VIEW OF EUT

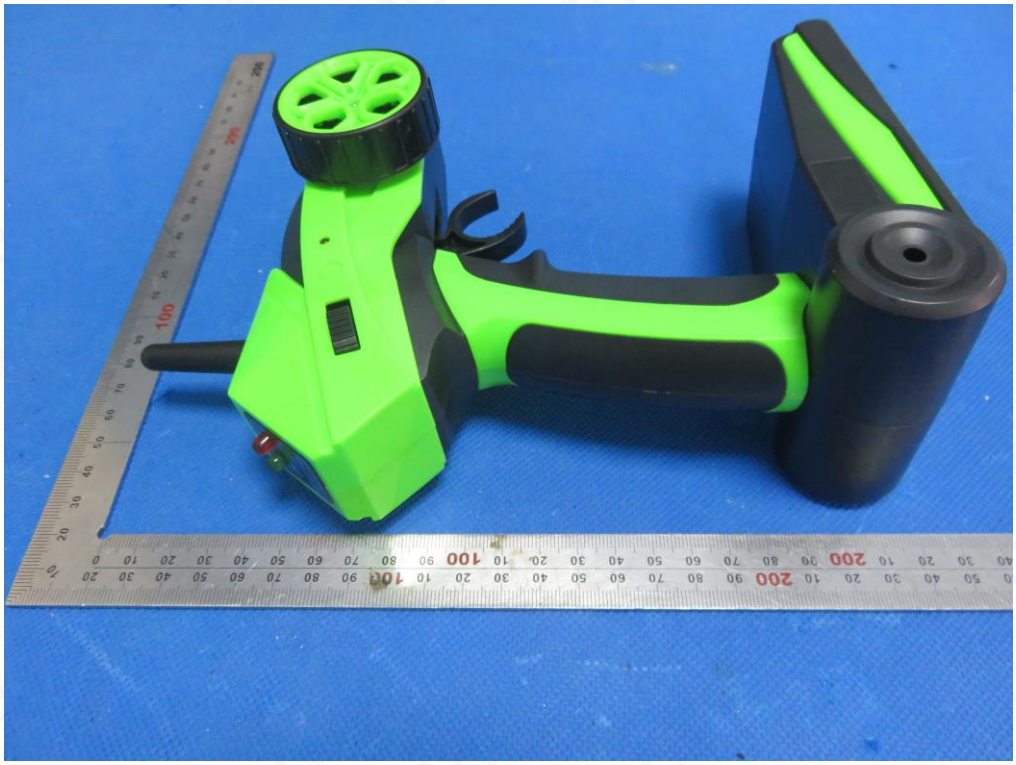
BOTTOM VIEW OF EUT

FRONT VIEW OF EUT



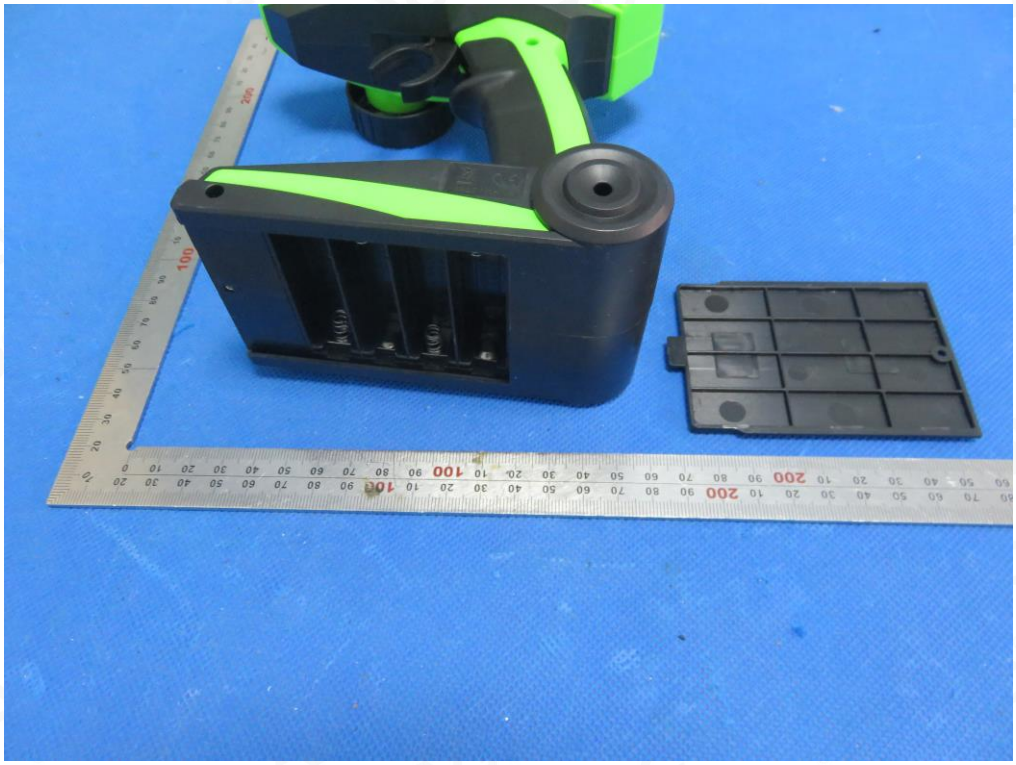
BACK VIEW OF EUT

LEFT VIEW OF EUT

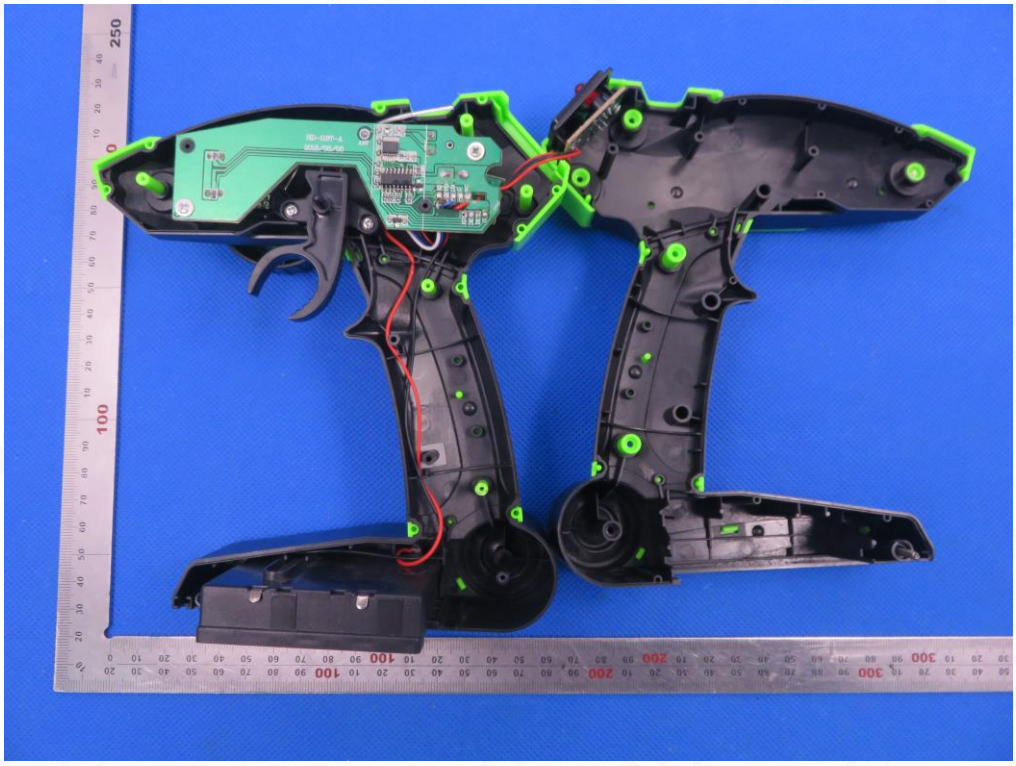


RIGHT VIEW OF EUT

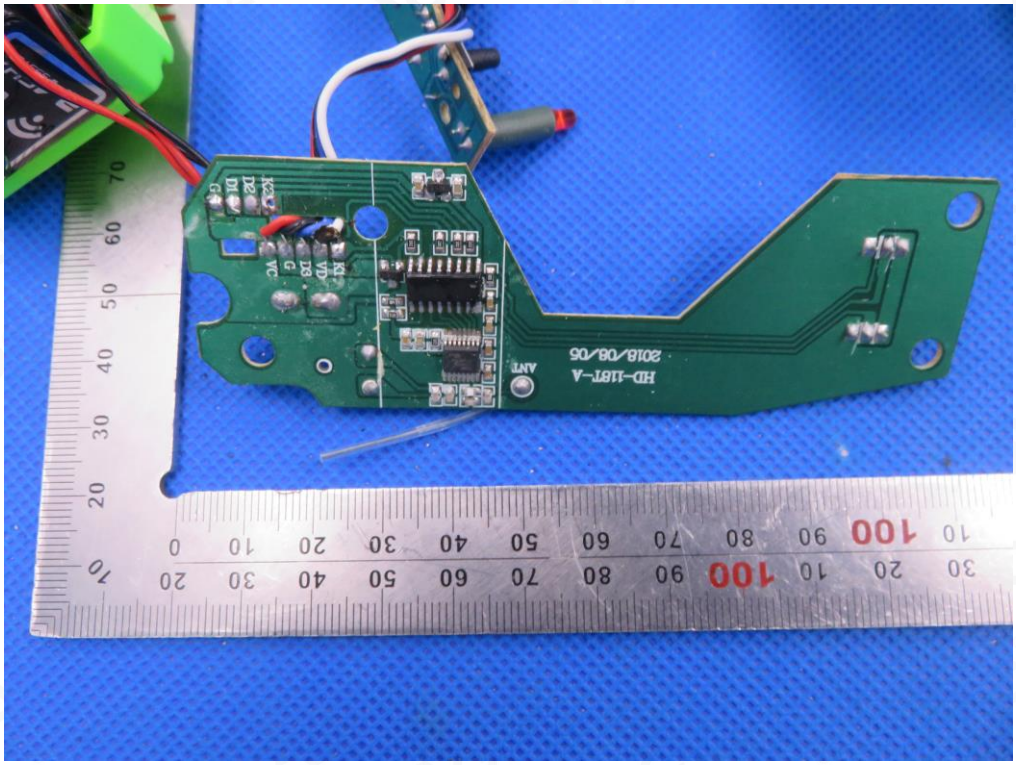
OPEN VIEW OF EUT-1



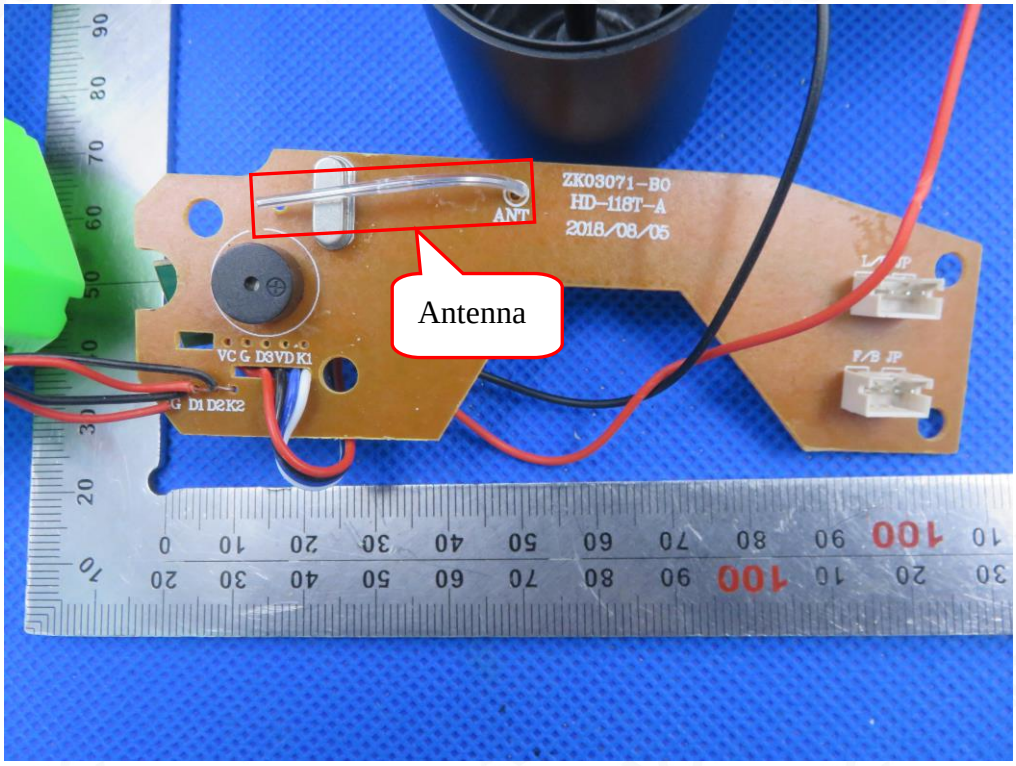
OPEN VIEW OF EUT-2



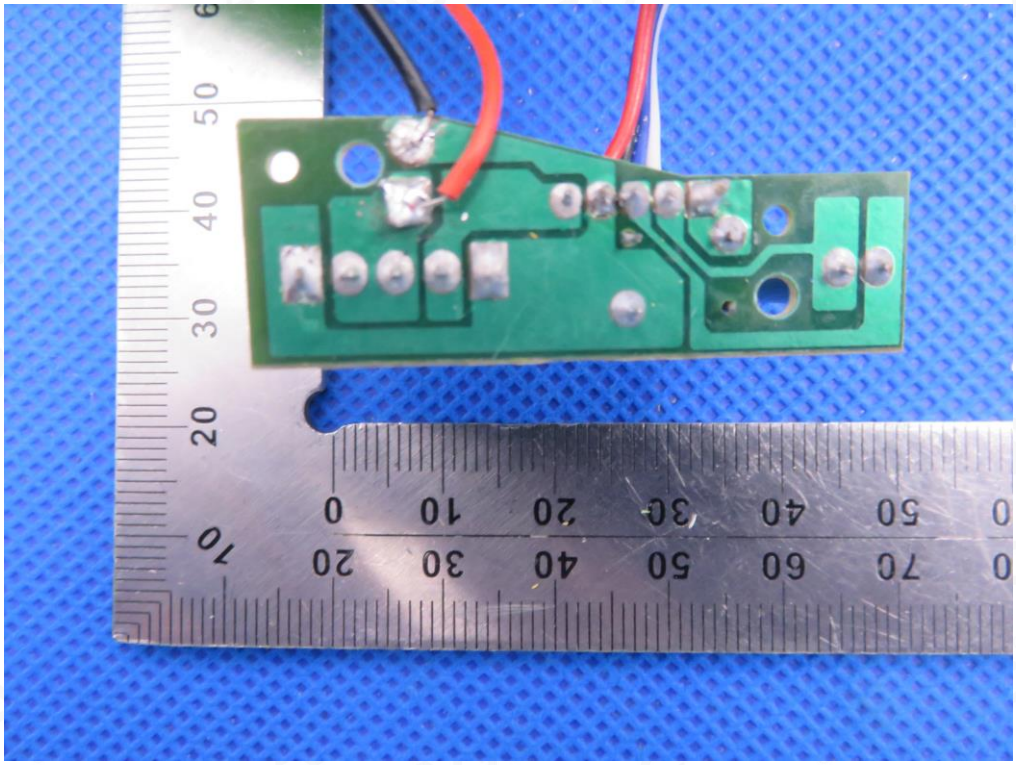
INTERNAL VIEW OF EUT-1



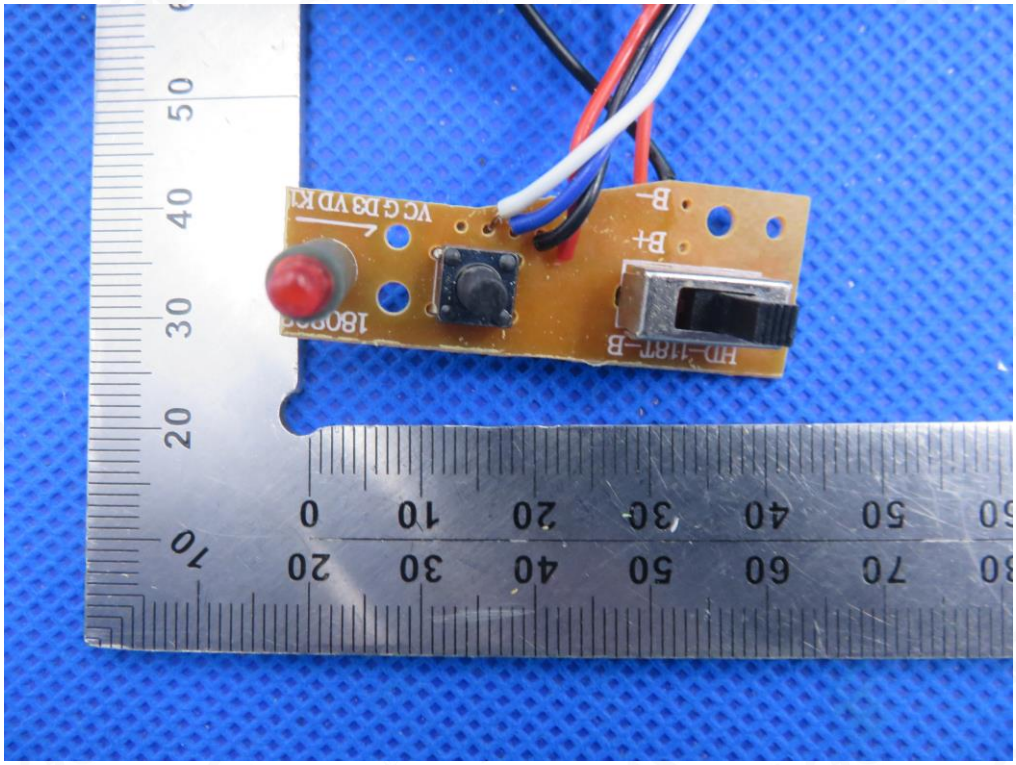

INTERNAL VIEW OF EUT-2



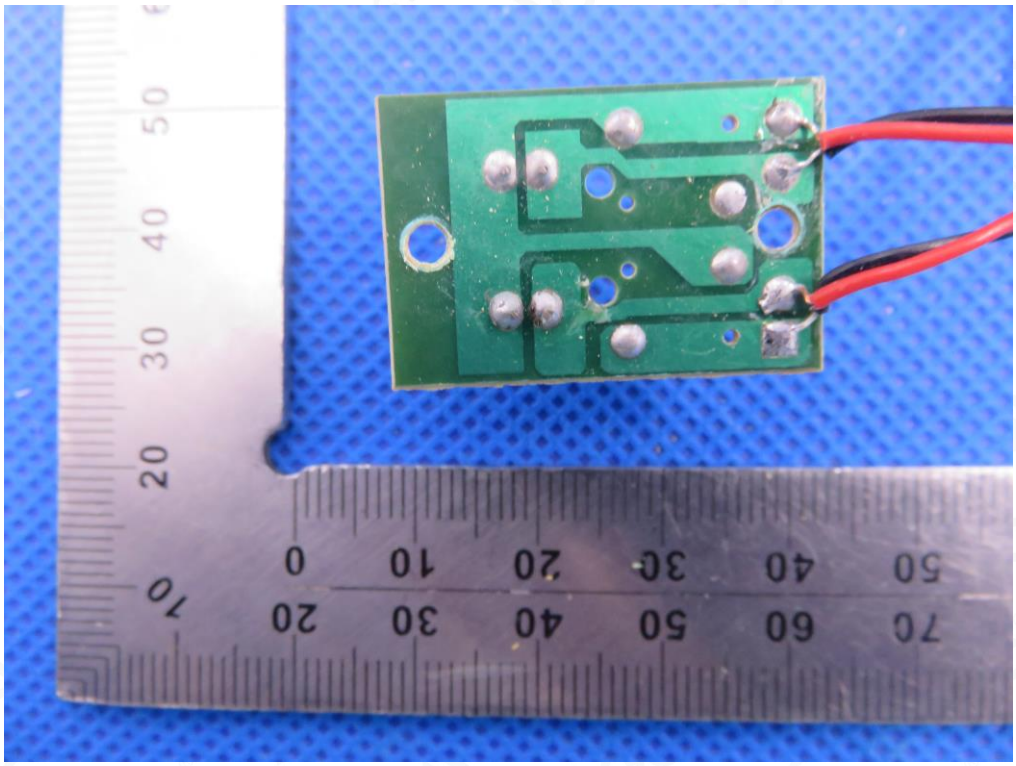
INTERNAL VIEW OF EUT-3



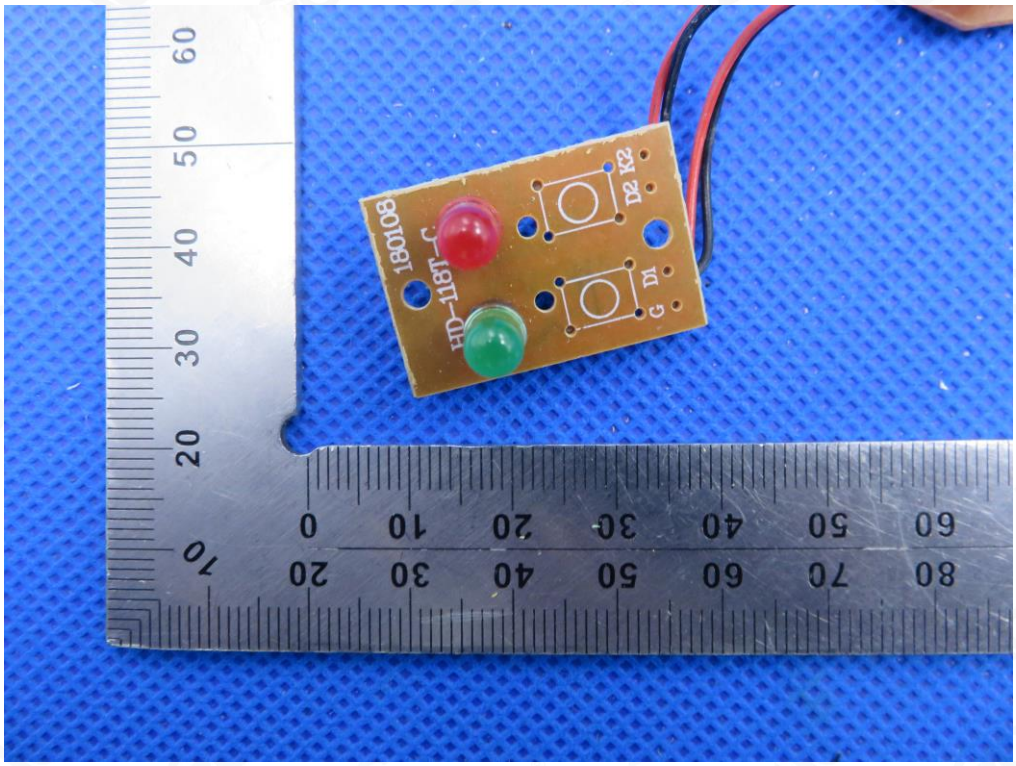
INTERNAL VIEW OF EUT-4



INTERNAL VIEW OF EUT-5



INTERNAL VIEW OF EUT-6




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