



# **FCC TEST REPORT**

## **FCC PART 15 SUBPART C 15.249**

**Test report**  
**On Behalf of**  
**Shantou Yuxiang Toys Technology co., Ltd.**  
**For**  
**Four-axis Aircraft**  
  
**Model No.: 668-Q1**  
  
**FCC ID: 2AHTI668-Q1**

**Prepared for :** Shantou Yuxiang Toys Technology co., Ltd.  
**SUNSHINE INDUSTRIAL ZONE XIA GUI PU COMMUNITY, LONGHU DISTRICT,  
SHANTOU CITY, GUANGDONG PROVINCE, CHINA**

**Prepared By :** Shenzhen HUAKE Testing Technology Co., Ltd.  
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**Date of Test:** Sep. 20, 2018 ~ Sep. 27, 2018  
**Date of Report:** Sep. 27, 2018  
**Report Number:** HK1809271173E



### TEST RESULT CERTIFICATION

**Applicant's name**..... Shantou Yuxiang Toys Technology co., Ltd.  
 Address ..... SUNSHINE INDUSTRIAL ZONE XIA GUI PU COMMUNITY, LONGHU DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA  
**Manufacture's Name** ..... Shantou Yuxiang Toys Technology co., Ltd.  
 Address ..... SUNSHINE INDUSTRIAL ZONE XIA GUI PU COMMUNITY, LONGHU DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA

**Product description**

Trade Mark: N/A  
 Product name ..... Four-axis Aircraft  
 Model and/or type reference . 668-Q1


Series Models H1, H2, H3, X1, D10, X12, X8, X13, D11, D12, D58, D52, 668-Q2, 668-Q3, 668-Q4, 668-Q5, 668-Q6, 668-Q7, 668-Q8, 668-Q9, 668-Q10, 668-Q11, 668-Q12, 668-A1, 668-A2, 668-A3, 668-A4, 668-A5, 668-A6, 668-A7, 668-A8, 668-A9, 668-A10, 668-A11, 668-A12, 668-X1, 668-X2, 668-X3, 668-X4, 668-X5, 668-X6, 668-X7, 668-X8, 668-X9, 668-X10, 668-X11, 668-X12, 668-R1, 668-R2, 668-R3, 668-R4, 668-R5, 668-R6, 668-R7, 668-R8, 668-R9, 668-R10, 668-R11, 668-R12, 668-H1, 668-H2, 668-H3, 668-H4, 668-H5, 668-H6, 668-H7, 668-H8, 668-H9, 668-H10, 668-H11, 668-H12

Declaration of Difference All the same except for the model name and front appearance.


**Standards** ..... FCC Rules and Regulations Part 15 Subpart C Section 15.249  
 ANSI C63.10: 2013

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**Date of Test**.....:  
 Date (s) of performance of tests.....: Sep. 20, 2018 ~ Sep. 27, 2018  
 Date of Issue.....: Sep. 27, 2018  
 Test Result.....: **Pass**

Testing Engineer :   
 \_\_\_\_\_  
 (Gary Qian)

Technical Manager :   
 \_\_\_\_\_  
 (Eden Hu)

Authorized Signatory :   
 \_\_\_\_\_  
 (Jason Zhou)



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## 1. TEST SUMMARY

### 1.1 TEST PROCEDURES AND RESULTS

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

### 1.2 TEST FACILITY

Test Firm : Shenzhen HUAKE Testing Technology Co., Ltd.

Address : 1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park,  
Fuhai Street, Bao'an District, Shenzhen City, China

Designation Number: : CN1229

Test Firm Registration Number : 616276

### 1.3 MEASUREMENT UNCERTAINTY

Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty(9kHz-30MHz) = 3.08dB, k=2

Radiated emission expanded uncertainty(30MHz-1000MHz) = 4.42dB, k=2

Radiated emission expanded uncertainty(Above 1GHz) = 4.06dB, k=2



## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

|                            |                           |
|----------------------------|---------------------------|
| <b>Operation Frequency</b> | 2416-2480MHz              |
| <b>Field Strength(3m)</b>  | 82.16dBuV/m(Average)@3m   |
| <b>Modulation</b>          | GFSK                      |
| <b>Number of channels</b>  | 3                         |
| <b>Test Channels</b>       | 2416MHz, 2448MHz, 2480MHz |
| <b>Hardware Version</b>    | HR-8A02T                  |
| <b>Software Version</b>    | N/A                       |
| <b>Antenna Designation</b> | Fixed antenna             |
| <b>Antenna Gain</b>        | 0dBi                      |
| <b>Power Supply</b>        | DC 4.5V by battery        |



## 2.2 OPERATION OF EUT DURING TESTING

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

Note:

1. Only the data of the worst case recorded in the test report.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

## 2.3 DESCRIPTION OF TEST SETUP

Operation of EUT during Radiation and Above1GHz Radiation testing:





## 2.4 MEASUREMENT INSTRUMENTS LIST

| Item | Equipment                               | Manufacturer    | Model No.           | Serial No. | Last Cal.     | Cal. Interval |
|------|---|-----------------|---------------------|------------|---------------|---------------|
| 1.   | L.I.S.N.<br>Artificial Mains<br>Network | R&S             | ENV216              | HKE-002    | Dec. 28, 2017 | 1 Year        |
| 2.   | Receiver                                | R&S             | ESCI 7              | HKE-010    | Dec. 28, 2017 | 1 Year        |
| 3.   | RF automatic<br>control unit            | Tonscend        | JS0806-2            | HKE-060    | Dec. 28, 2017 | 1 Year        |
| 4.   | Spectrum analyzer                       | R&S             | FSP40               | HKE-025    | Dec. 28, 2017 | 1 Year        |
| 5.   | Spectrum analyzer                       | Agilent         | N9020A              | HKE-048    | Dec. 28, 2017 | 1 Year        |
| 6.   | Preamplifier                            | Schwarzbeck     | BBV 9743            | HKE-006    | Dec. 28, 2017 | 1 Year        |
| 7.   | EMI Test Receiver                       | Rohde & Schwarz | ESCI 7              | HKE-010    | Dec. 28, 2017 | 1 Year        |
| 8.   | Bilog Broadband<br>Antenna              | Schwarzbeck     | VULB9163            | HKE-012    | Dec. 28, 2017 | 1 Year        |
| 9.   | Loop Antenna                            | Schwarzbeck     | FMZB 1519<br>B      | HKE-014    | Dec. 28, 2017 | 1 Year        |
| 10.  | Horn Antenna                            | Schwarzbeck     | 9120D               | HKE-013    | Dec. 28, 2017 | 1 Year        |
| 11.  | Pre-amplifier                           | EMCI            | EMC051845<br>SE     | HKE-015    | Dec. 28, 2017 | 1 Year        |
| 12.  | Pre-amplifier                           | Agilent         | 83051A              | HKE-016    | Dec. 28, 2017 | 1 Year        |
| 13.  | EMI Test Software<br>EZ-EMC             | Tonscend        | JS1120-B<br>Version | HKE-083    | Dec. 28, 2017 | N/A           |
| 14.  | Shielded room                           | Shiel Hong      | 4*3*3               | HKE-039    | Dec. 28, 2017 | 3 Year        |



### 3. RADIATED EMISSION

#### 3.1. 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 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer. 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/RBW 200Hz for QP                                  |
| Start ~Stop Frequency | 150KHz~30MHz/RBW 9KHz for QP                                  |
| Start ~Stop Frequency | 30MHz~1000MHz/RBW 120KHz for QP                               |
| Start ~Stop Frequency | 1GHz~26.5GHz<br>1.5MHz/5MHz for Peak, 1.5MHz/10Hz for Average |

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

**Test limit for 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   |

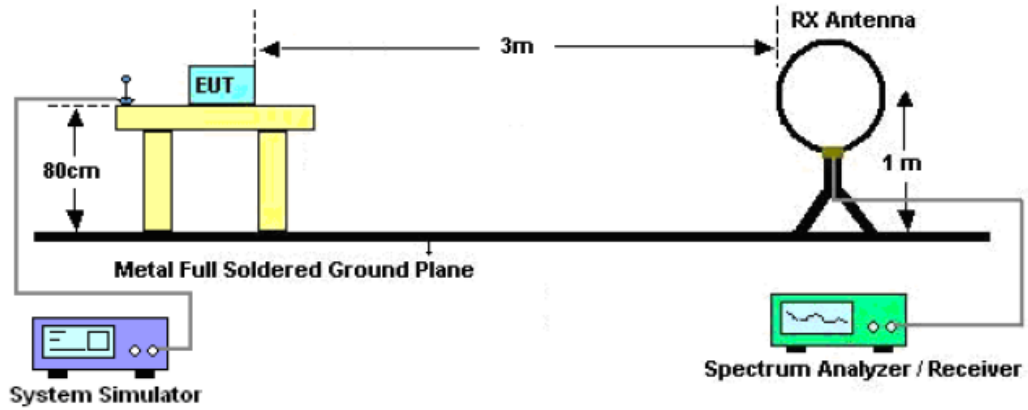
**Test limit for Standard FCC 15.209**

| 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) |          |

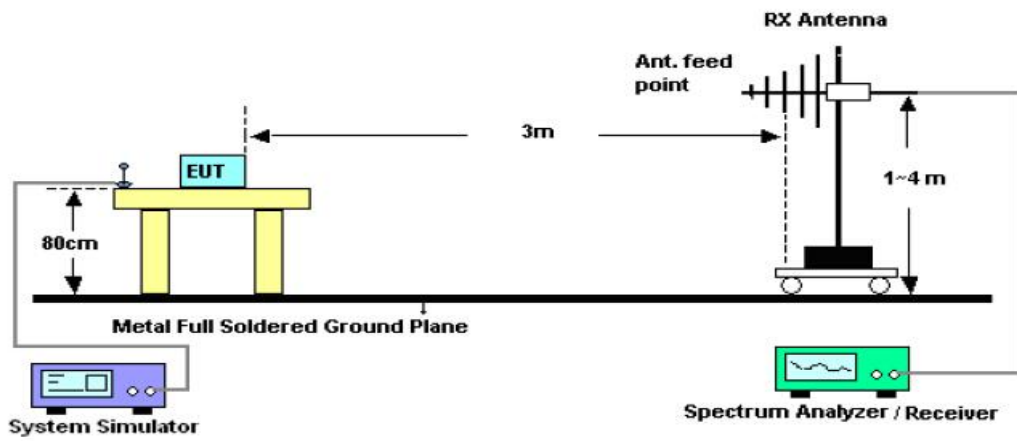
Remark: (1) Emission level  $dB\mu V = 20 \log$  Emission level  $\mu V/m$   
 (2) The smaller limit shall apply at the cross point between two frequency bands.  
 (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

### 3.2. TEST SETUP

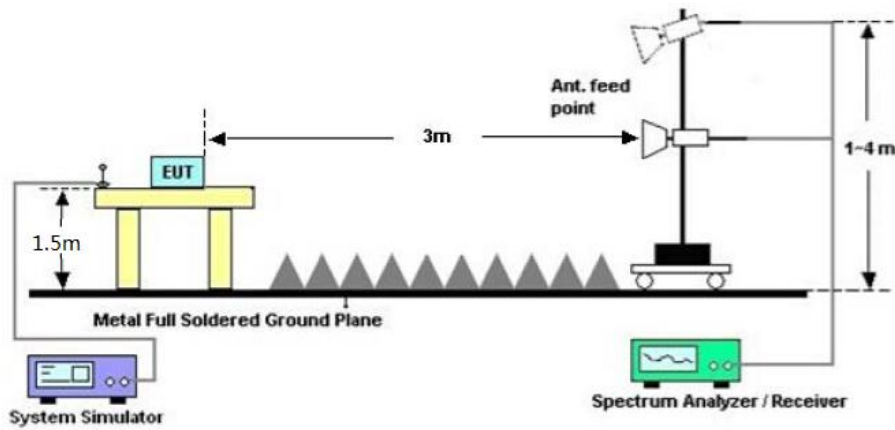
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



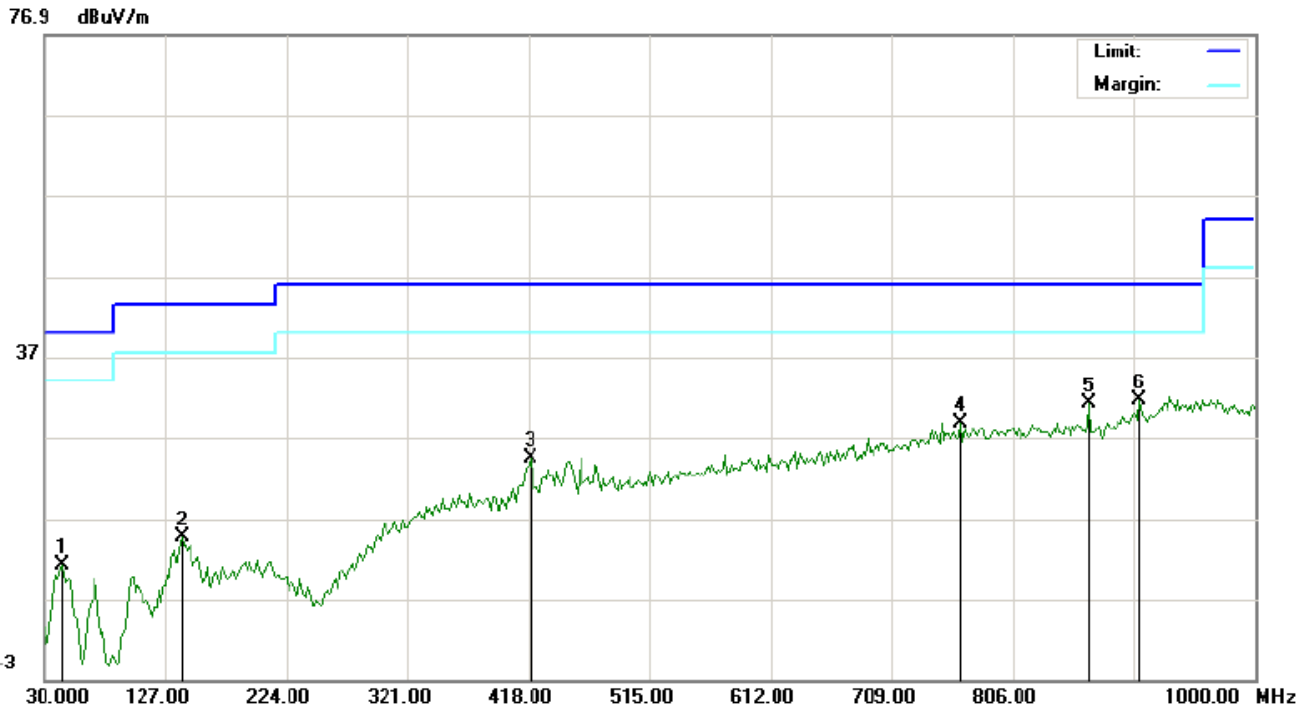


### 3.3. TEST RESULT

#### RADIATED EMISSION BELOW 30MHz

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

#### RADIATED EMISSION BELOW 1GHZ-Horizontal

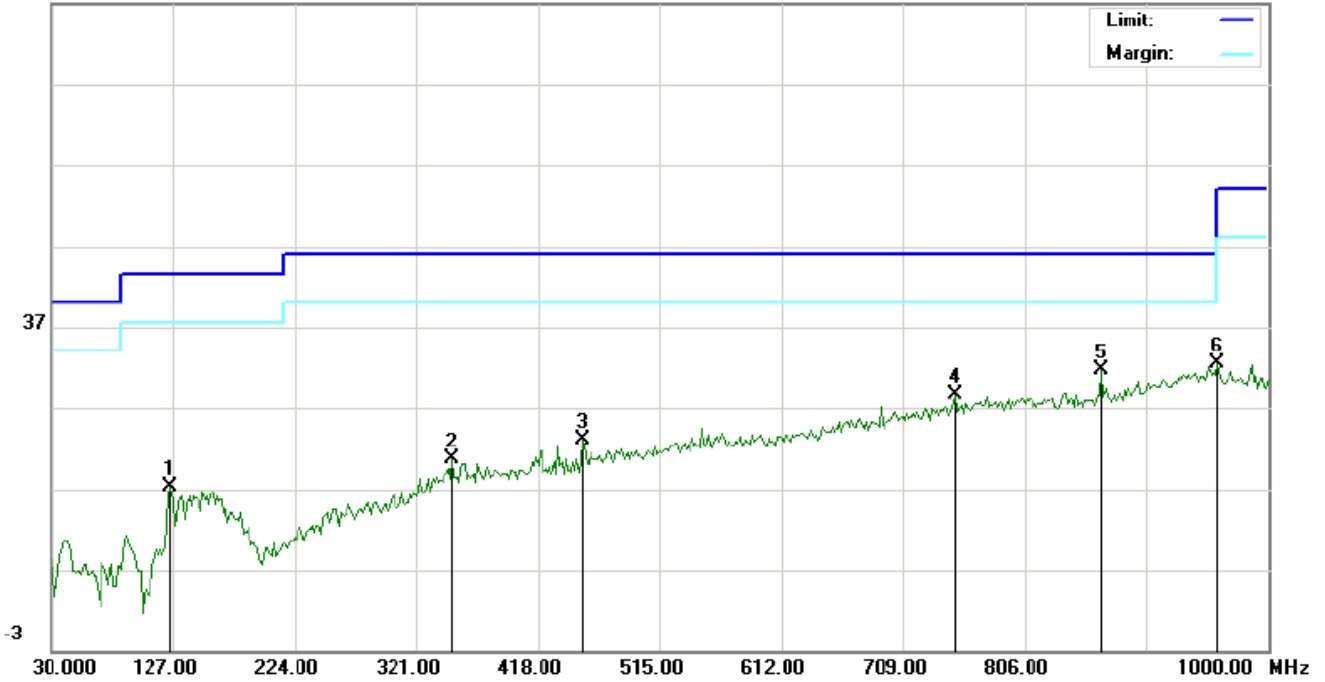


| No. | Mk | Freq.    | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz      | dBuV    | dB/m   | dBuV/m      | dBuV/m | dB     |          | cm             | degree       |         |
| 1   |    | 44.5500  | -0.46   | 11.60  | 11.14       | 40.00  | -28.86 | peak     |                |              |         |
| 2   |    | 139.9333 | -0.61   | 15.17  | 14.56       | 43.50  | -28.94 | peak     |                |              |         |
| 3   |    | 419.6167 | 4.77    | 19.67  | 24.44       | 46.00  | -21.56 | peak     |                |              |         |
| 4   |    | 763.9666 | 2.00    | 26.82  | 28.82       | 46.00  | -17.18 | peak     |                |              |         |
| 5   |    | 867.4333 | 3.51    | 27.76  | 31.27       | 46.00  | -14.73 | peak     |                |              |         |
| 6   | *  | 907.8500 | 2.69    | 28.83  | 31.52       | 46.00  | -14.48 | peak     |                |              |         |



**RADIATED EMISSION BELOW 1GHZ-Vertical**

76.9 dBuV/m



| No. | Mk | Freq.    | Reading | Factor | Measurement | Limit  | Over   | Detector | Antenna Height | Table Degree | Comment |
|-----|----|----------|---------|--------|-------------|--------|--------|----------|----------------|--------------|---------|
|     |    | MHz      | dBuV    | dB/m   | dBuV/m      | dBuV/m | dB     |          | cm             | degree       |         |
| 1   |    | 125.3833 | 8.13    | 9.10   | 17.23       | 43.50  | -26.27 | peak     |                |              |         |
| 2   |    | 350.1000 | 1.79    | 18.74  | 20.53       | 46.00  | -25.47 | peak     |                |              |         |
| 3   |    | 453.5667 | 2.43    | 20.63  | 23.06       | 46.00  | -22.94 | peak     |                |              |         |
| 4   |    | 751.0333 | 2.03    | 26.64  | 28.67       | 46.00  | -17.33 | peak     |                |              |         |
| 5   |    | 867.4333 | 3.86    | 27.76  | 31.62       | 46.00  | -14.38 | peak     |                |              |         |
| 6   | *  | 959.5833 | 2.40    | 29.91  | 32.31       | 46.00  | -13.69 | peak     |                |              |         |

**RESULT: PASS**

Note: 1. Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Measurement-Limit.

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

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

**RADIATED EMISSION ABOVE 1GHZ****Field strength of fundamental emission**

|               |                    |                     |            |
|---------------|--------------------|---------------------|------------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1     |
| Temperature : | 20 °C              | Relative Humidity : | 48%        |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V     |
| Test Mode :   | Mode 1/2/3         | Polarization :      | Horizontal |

| Frequency<br>(MHz) | Meter Reading<br>(dB $\mu$ V) | Factor<br>(dB) | Emission Level<br>(dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin<br>(dB) | Value Type |
|--------------------|-------------------------------|----------------|----------------------------------|--------------------------|----------------|------------|
| 2416.015           | 95.34                         | -9.63          | 85.71                            | 114                      | -28.29         | peak       |
| 2416.015           | 91.79                         | -9.63          | 82.16                            | 94                       | -11.84         | AVG        |
| 2448.014           | 95.12                         | -9.63          | 85.49                            | 114                      | -28.51         | peak       |
| 2448.014           | 91.48                         | -9.63          | 81.85                            | 94                       | -12.15         | AVG        |
| 2480.011           | 94.26                         | -9.63          | 84.63                            | 114                      | -29.37         | peak       |
| 2480.011           | 90.62                         | -9.63          | 80.99                            | 94                       | -13.01         | AVG        |

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

|               |                    |                     |          |
|---------------|--------------------|---------------------|----------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1   |
| Temperature : | 20 °C              | Relative Humidity : | 48%      |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V   |
| Test Mode :   | Mode 1/2/3         | Polarization :      | Vertical |

| Frequency<br>(MHz) | Meter Reading<br>(dB $\mu$ V) | Factor<br>(dB) | Emission Level<br>(dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin<br>(dB) | Value Type |
|--------------------|-------------------------------|----------------|----------------------------------|--------------------------|----------------|------------|
| 2416.015           | 93.44                         | -9.63          | 83.81                            | 114                      | -30.19         | peak       |
| 2416.015           | 89.85                         | -9.63          | 80.22                            | 94                       | -13.78         | AVG        |
| 2448.014           | 93.14                         | -9.63          | 83.51                            | 114                      | -30.49         | peak       |
| 2448.014           | 89.54                         | -9.63          | 79.91                            | 94                       | -14.09         | AVG        |
| 2480.011           | 92.54                         | -9.63          | 82.91                            | 114                      | -31.09         | peak       |
| 2480.011           | 88.78                         | -9.63          | 79.15                            | 94                       | -14.85         | AVG        |

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

**Field strength of spurious emission**

|               |                    |                     |            |
|---------------|--------------------|---------------------|------------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1     |
| Temperature : | 20 °C              | Relative Humidity : | 48%        |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V     |
| Test Mode :   | Mode 1             | Polarization :      | Horizontal |

| Frequency<br>(MHz) | Meter Reading<br>(dB $\mu$ V) | Factor<br>(dB) | Emission Level<br>(dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin<br>(dB) | Value Type |
|--------------------|-------------------------------|----------------|----------------------------------|--------------------------|----------------|------------|
| 4832.030           | 39.54                         | 3.76           | 43.3                             | 74                       | -30.7          | peak       |
| 4832.030           | 34.52                         | 3.76           | 38.28                            | 54                       | -15.72         | AVG        |
| 7248.045           | 38.14                         | 8.17           | 46.31                            | 74                       | -27.69         | peak       |
| 7248.045           | 34.78                         | 8.17           | 42.95                            | 54                       | -11.05         | AVG        |

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

|               |                    |                     |          |
|---------------|--------------------|---------------------|----------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1   |
| Temperature : | 20 °C              | Relative Humidity : | 48%      |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V   |
| Test Mode :   | Mode 1             | Polarization :      | Vertical |

| Frequency<br>(MHz) | Meter Reading<br>(dB $\mu$ V) | Factor<br>(dB) | Emission Level<br>(dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin<br>(dB) | Value Type |
|--------------------|-------------------------------|----------------|----------------------------------|--------------------------|----------------|------------|
| 4832.030           | 39.04                         | 3.76           | 42.8                             | 74                       | -31.2          | peak       |
| 4832.030           | 35.34                         | 3.76           | 39.1                             | 54                       | -14.9          | AVG        |
| 7248.045           | 37.04                         | 8.17           | 45.21                            | 74                       | -28.79         | peak       |
| 7248.045           | 33.64                         | 8.17           | 41.81                            | 54                       | -12.19         | AVG        |

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



|               |                    |                     |            |
|---------------|--------------------|---------------------|------------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1     |
| Temperature : | 20 °C              | Relative Humidity : | 48%        |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V     |
| Test Mode :   | Mode 2             | Polarization :      | Horizontal |

| Frequency<br>(MHz) | Meter Reading<br>(dB $\mu$ V) | Factor<br>(dB) | Emission Level<br>(dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin<br>(dB) | Value Type |
|--------------------|-------------------------------|----------------|----------------------------------|--------------------------|----------------|------------|
| 4896.028           | 37.68                         | 3.76           | 41.44                            | 74                       | -32.56         | peak       |
| 4896.028           | 34.04                         | 3.76           | 37.8                             | 54                       | -16.2          | AVG        |
| 7344.042           | 36.52                         | 8.17           | 44.69                            | 74                       | -29.31         | peak       |
| 7344.042           | 33.01                         | 8.17           | 41.18                            | 54                       | -12.82         | AVG        |

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

|               |                    |                     |          |
|---------------|--------------------|---------------------|----------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1   |
| Temperature : | 20 °C              | Relative Humidity : | 48%      |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V   |
| Test Mode :   | Mode 2             | Polarization :      | Vertical |

| Frequency<br>(MHz) | Meter Reading<br>(dB $\mu$ V) | Factor<br>(dB) | Emission Level<br>(dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin<br>(dB) | Value Type |
|--------------------|-------------------------------|----------------|----------------------------------|--------------------------|----------------|------------|
| 4896.028           | 38.55                         | 3.76           | 42.31                            | 74                       | -31.69         | peak       |
| 4896.028           | 34.79                         | 3.76           | 38.55                            | 54                       | -15.45         | AVG        |
| 7344.042           | 35.64                         | 8.17           | 43.81                            | 74                       | -30.19         | peak       |
| 7344.042           | 32.13                         | 8.17           | 40.3                             | 54                       | -13.7          | AVG        |

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



|               |                    |                     |            |
|---------------|--------------------|---------------------|------------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1     |
| Temperature : | 20 °C              | Relative Humidity : | 48%        |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V     |
| Test Mode :   | Mode 3             | Polarization :      | Horizontal |

| Frequency (MHz) | Meter Reading (dB $\mu$ V) | Factor (dB) | Emission Level (dB $\mu$ V/m) | Limits (dB $\mu$ V/m) | Margin (dB) | Value Type |
|-----------------|----------------------------|-------------|-------------------------------|-----------------------|-------------|------------|
| 4960.022        | 37.68                      | 3.76        | 41.44                         | 74                    | -32.56      | peak       |
| 4960.022        | 34.05                      | 3.76        | 37.81                         | 54                    | -16.19      | AVG        |
| 7440.033        | 36.22                      | 8.17        | 44.39                         | 74                    | -29.61      | peak       |
| 7440.033        | 32.69                      | 8.17        | 40.86                         | 54                    | -13.14      | AVG        |

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

|               |                    |                     |          |
|---------------|--------------------|---------------------|----------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1   |
| Temperature : | 20 °C              | Relative Humidity : | 48%      |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V   |
| Test Mode :   | Mode 3             | Polarization :      | Vertical |

| Frequency (MHz) | Meter Reading (dB $\mu$ V) | Factor (dB) | Emission Level (dB $\mu$ V/m) | Limits (dB $\mu$ V/m) | Margin (dB) | Value Type |
|-----------------|----------------------------|-------------|-------------------------------|-----------------------|-------------|------------|
| 4960.022        | 38.14                      | 3.76        | 41.9                          | 74                    | -32.1       | peak       |
| 4960.022        | 34.75                      | 3.76        | 38.51                         | 54                    | -15.49      | AVG        |
| 7440.033        | 35.72                      | 8.17        | 43.89                         | 74                    | -30.11      | peak       |
| 7440.033        | 32.09                      | 8.17        | 40.26                         | 54                    | -13.74      | 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.

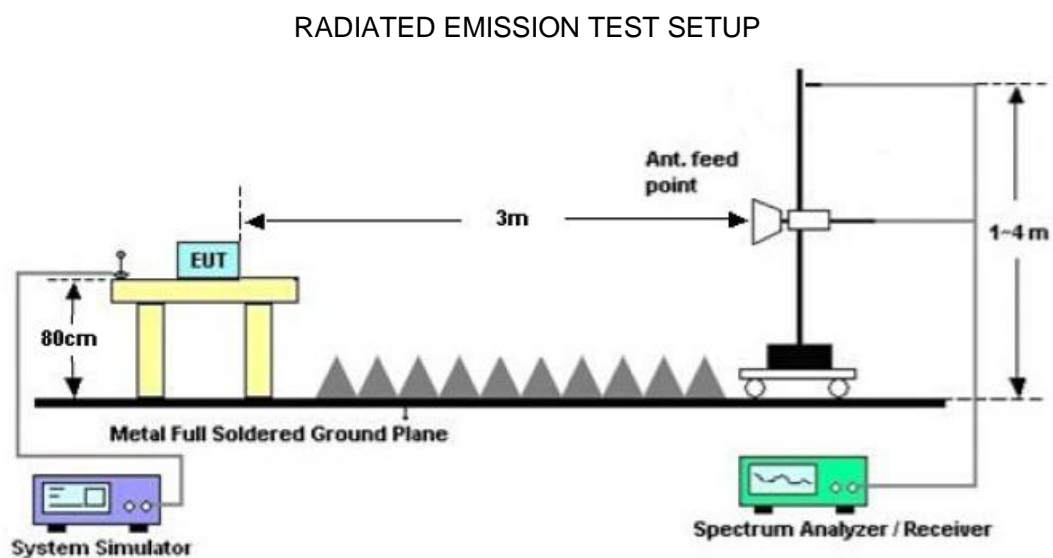


## 4. BAND EDGE EMISSION

### 4.1. 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 3.1.

### 4.2 TEST SETUP



### 4.3 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( $\mu$ V) to represent the Amplitude. Use the F dB( $\mu$ V/m) to represent the Field Strength. So A=F.



|               |                    |                     |            |
|---------------|--------------------|---------------------|------------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1     |
| Temperature : | 20 °C              | Relative Humidity : | 48%        |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V     |
| Test Mode :   | Mode 1             | Polarization :      | Horizontal |

PK Value



AV Value





|               |                    |                     |          |
|---------------|--------------------|---------------------|----------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1   |
| Temperature : | 20 °C              | Relative Humidity : | 48%      |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V   |
| Test Mode :   | Mode 1             | Polarization :      | Vertical |

PK Value



AV Value





|               |                    |                     |            |
|---------------|--------------------|---------------------|------------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1     |
| Temperature : | 20 °C              | Relative Humidity : | 48%        |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V     |
| Test Mode :   | Mode 3             | Polarization :      | Horizontal |

PK Value



AV Value





|               |                    |                     |          |
|---------------|--------------------|---------------------|----------|
| EUT :         | Four-axis Aircraft | Model Name. :       | 668-Q1   |
| Temperature : | 20 °C              | Relative Humidity : | 48%      |
| Pressure :    | 1010 hPa           | Test Voltage :      | DC4.5V   |
| Test Mode :   | Mode 3             | Polarization :      | Vertical |

PK Value



AV Value



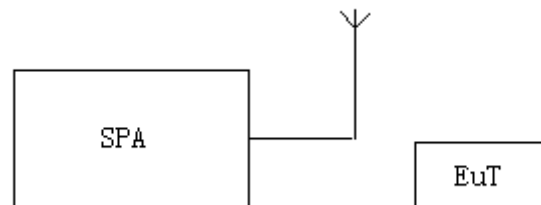


## 5. BANDWIDTH

### 5.1. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 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. Set the EUT Work on the operation frequency individually.
3. Set Span = approximately 2 to 5 times the OBW, centered on a hopping channel  
The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately 3\* RBW; Sweep = auto; Detector function = peak
4. Set SPA Trace 1 Max hold, then View.

### 5.2. TEST SETUP





### 5.3. TEST RESULT

|           |                       |
|-----------|-----------------------|
| TEST ITEM | -20dB BANDWIDTH       |
| TEST MODE | Mode1, Mode 2, Mode 3 |

| Channel        | MHz   | Criteria |
|----------------|-------|----------|
| Low Channel    | 1.316 | PASS     |
| Middle Channel | 1.230 | PASS     |
| High Channel   | 1.176 | PASS     |

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL





### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



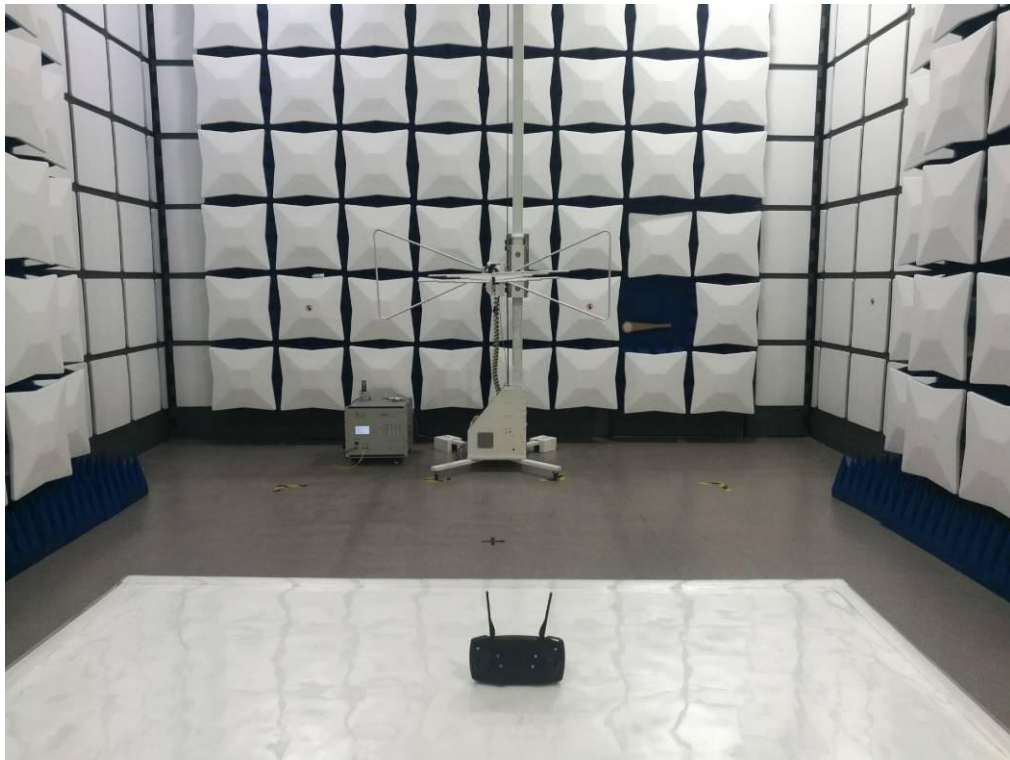
### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL





## 6. PHOTOGRAPH OF TEST

### Radiated Emission



## 7. PHOTOGRAPH OF EUT

ALL VEIW OF EUT





TOP VIEW OF EUT



BOTTOM VIEW OF EUT





FRONT VIEW OF EUT



BACK VIEW OF EUT





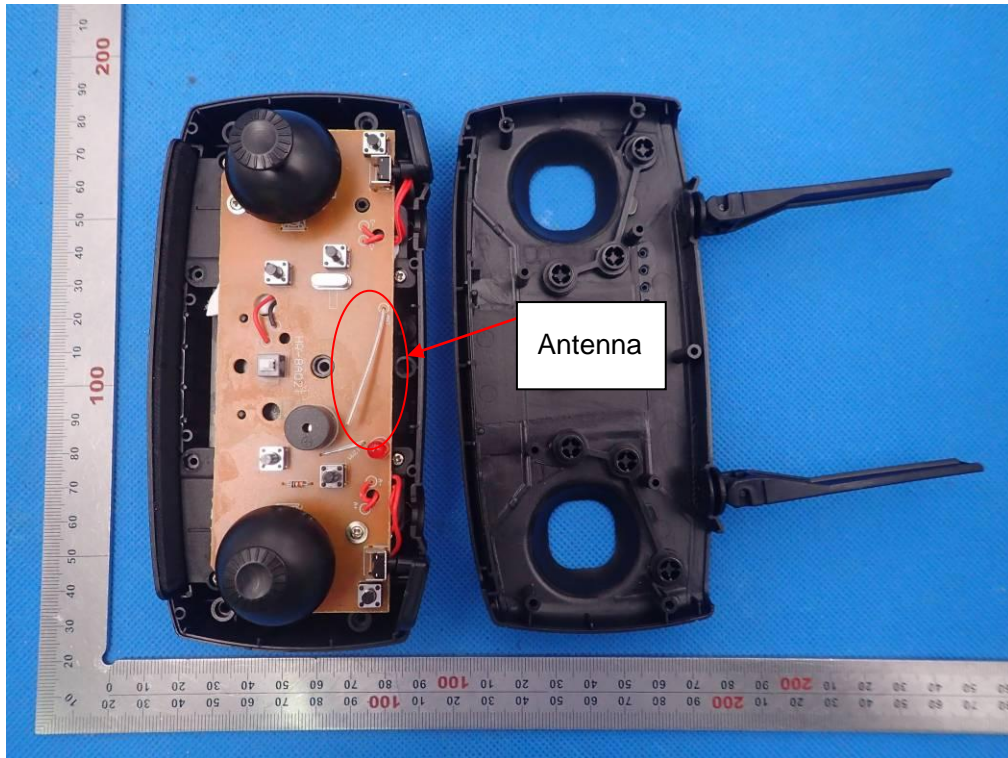
LEFT VIEW OF EUT



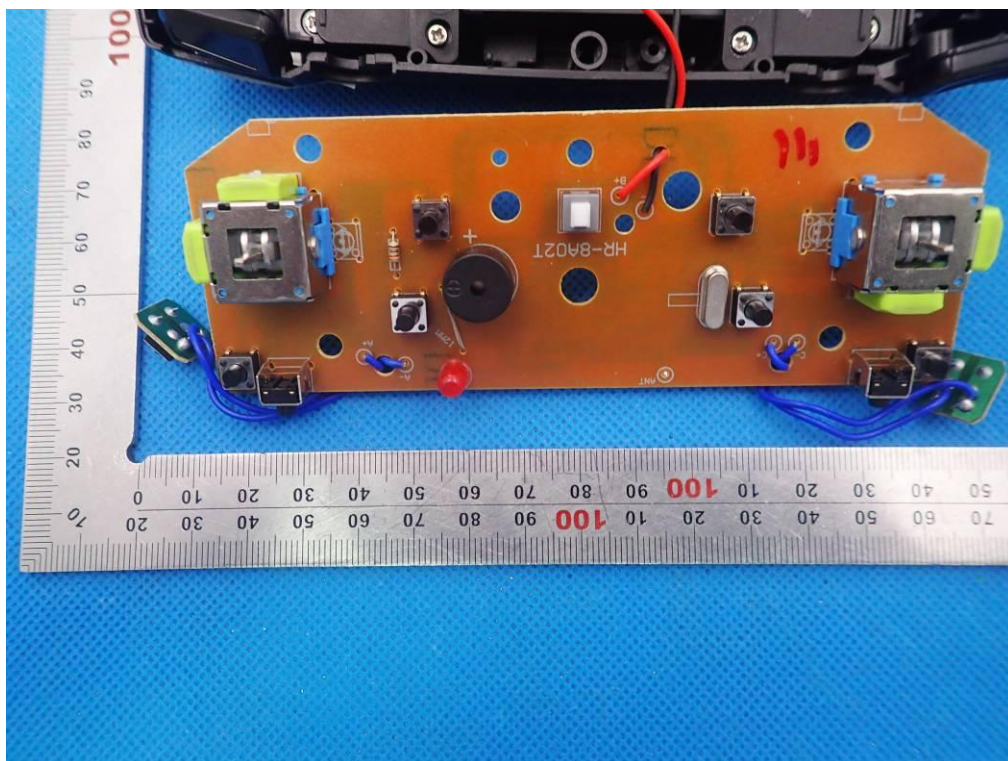
RIGHT VIEW OF EUT



OPEN VIEW OF EUT

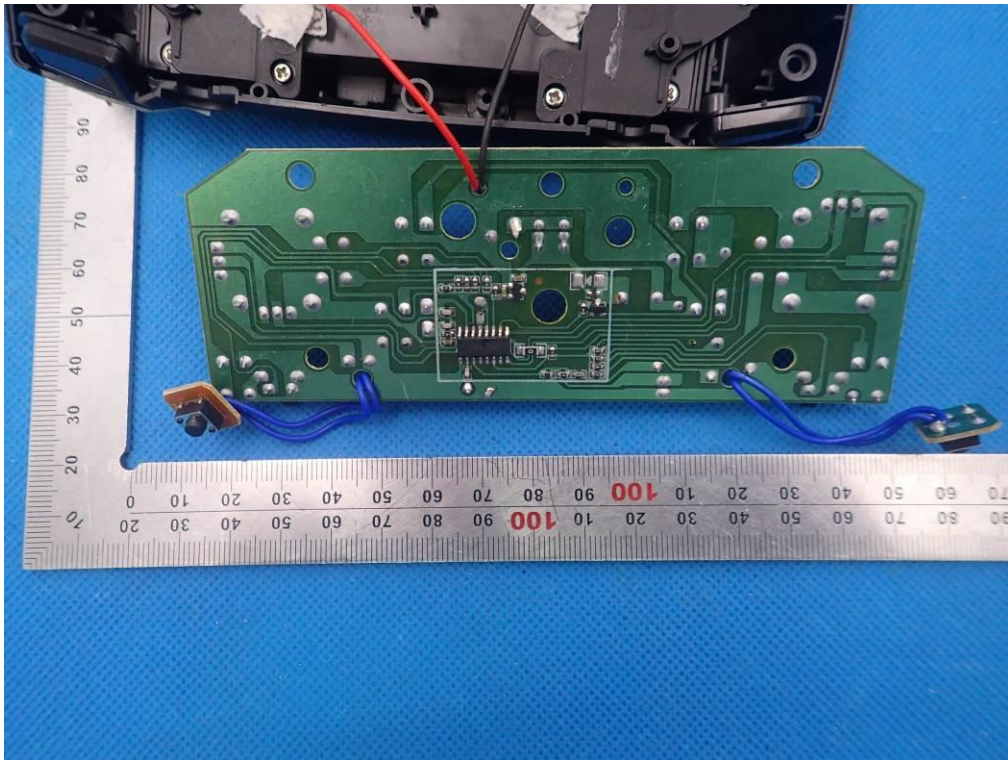


INTERNAL VIEW OF EUT-1





INTERNAL VIEW OF EUT-2



----END OF REPORT----