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# APPLICATION CERTIFICATION FCC Part 15C On Behalf of China Industries Ltd T/A Wow! Stuff

Ai Camera Drone Model No.: TX-1027

FCC ID: YCR-TX-1027H

Prepared for : China Industries Ltd T/A Wow! Stuff

Address : Creative Industries Centre, Wolverhampton Science

Park, Wolverhampton, WV10 9TG UK

Prepared by : ACCURATE TECHNOLOGY CO., LTD

Address : F1, Bldg. A, Chan Yuan New Material Port, Keyuan

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Tel: (0755) 26503290 Fax: (0755) 26503396

Report Number: ATE20160957

Date of Test : May 20, 2016--Jun 14, 2016

Date of Report : Jun 15, 2016





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Test Report Certification

# Applicant China Industries Ltd T/A Movel Ct. ff

Applicant : China Industries Ltd T/A Wow! Stuff

Address : Creative Industries Centre, Wolverhampton Science Park,

Wolverhampton, WV10 9TG UK

Manufacturer: China Industries Ltd T/A Wow! Stuff

Address : Creative Industries Centre, Wolverhampton Science Park,

Wolverhampton, WV10 9TG UK

Product : Ai Camera Drone

Model No. : TX-1027
Trade Name : TX Juice

Measurement Procedure Used:

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

The EUT was tested according to FCC 47CFR 15.249 for compliance to FCC 47CFR 15.249 requirements

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.249 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test:

Date of Report:

Prepared by:

Approved & Authorized Signer:

May 20, 2016--Jun 14, 2016

Jun 15, 2016

(Tim.zhang, Engineer)



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# 1. GENERAL INFORMATION

# 1.1.Description of Device (EUT)

EUT : Ai Camera Drone

Model Number : TX-1027

Power Supply : 4.5V DC (power by battery)

Operate Frequency : 2410-2473MHz

Antenna Gain : 0dBi

Antenna type : Internal Antenna

Applicant : China Industries Ltd T/A Wow! Stuff

Address : Creative Industries Centre, Wolverhampton Science Park,

Wolverhampton, WV10 9TG UK

Manufacturer : China Industries Ltd T/A Wow! Stuff

Address : Creative Industries Centre, Wolverhampton Science Park,

Wolverhampton, WV10 9TG UK

Date of sample received: May 20, 2016

Date of Test : May 20, 2016--Jun 14, 2016

## 1.2. Special Accessory and Auxiliary Equipment

N/A



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# 1.3.Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC

The Registration Number is 752051

Listed by Industry Canada

The Registration Number is 5077A-2

Accredited by China National Accreditation Committee

for Laboratories

The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.

Science & Industry Park, Nanshan, Shenzhen, Guangdong

P.R. China

## 1.4. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2

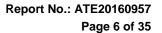
(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2

(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2

(Above 1GHz)

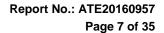




2. MEASURING DEVICE AND TEST EQUIPMENT

**Table 1: List of Test and Measurement Equipment** 

| Kind of equipment  | Manufacturer              | Туре                                    | S/N        | Calibrated dates | Cal. Interval |
|--------------------|---------------------------|---|------------|------------------|---------------|
| EMI Test Receiver  | Rohde&Schwarz             | ESCS30                                  | 100307     | Jan. 09, 2016    | One Year      |
| EMI Test Receiver  | Rohde&Schwarz             | ESPI3                                   | 101526/003 | Jan. 09, 2016    | One Year      |
| Spectrum Analyzer  | Agilent                   | E7405A                                  | MY45115511 | Jan. 09, 2016    | One Year      |
| Pre-Amplifier      | Rohde&Schwarz             | CBLU118354<br>0-01                      | 3791       | Jan. 09, 2016    | One Year      |
| Loop Antenna       | Schwarzbeck               | FMZB1516                                | 1516131    | Jan. 14, 2016    | One Year      |
| Bilog Antenna      | Schwarzbeck               | VULB9163                                | 9163-323   | Jan. 14, 2016    | One Year      |
| Horn Antenna       | Schwarzbeck               | BBHA9120D                               | 9120D-655  | Jan. 14, 2016    | One Year      |
| Horn Antenna       | Schwarzbeck               | BBHA9120D                               | 9120D-1067 | Jan. 14, 2016    | One Year      |
| LISN               | Rohde&Schwarz             | ESH3-Z5                                 | 100305     | Jan. 09, 2016    | One Year      |
| LISN               | Schwarzbeck               | NSLK8126                                | 8126431    | Jan. 09, 2016    | One Year      |
| Highpass Filter    | Wainwright<br>Instruments | WHKX3.6/18<br>G-10SS                    | N/A        | Jan. 09, 2016    | One Year      |
| Band Reject Filter | Wainwright<br>Instruments | WRCG2400/2<br>485-2375/2510<br>-60/11SS | N/A        | Jan. 09, 2016    | One Year      |





3. OPERATION OF EUT DURING TESTING

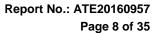
# 3.1. Carrier Frequency of Channels

| Channel | Frequeeny (MHz) | Channel | Frequeeny (MHz) | Channel | Frequeeny (MHz) | Channe 1 | Frequeeny (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|----------|-----------------|
| 1       | 2410            | 4       | 2429            | 7       | 2451            | 10       | 2473            |
| 2       | 2417            | 5       | 2437            | 8       | 2459            |          |                 |
| 3       | 2423            | 6       | 2442            | 9       | 2461            |          |                 |

# 3.2.Configuration and peripherals

EUT

Figure 1 Setup: Transmitting mode





4. TEST PROCEDURES AND RESULTS

| FCC Rules  | Description of Test                   | Result    |  |  |
|--|---------------------------------------|-----------|--|--|
| Section 15.215(c)  | 20dB Bandwidth                        | Compliant |  |  |
| Section 15.249(d)  | Band Edge Compliance Test             | Compliant |  |  |
| Section 15.205(a),<br>Section 15.209(a),<br>Section 15.249,<br>Section 15.35 | Radiated Spurious Emission Test       | Compliant |  |  |
| Section 15.207   | AC Power Line Conducted Emission Test | N/A       |  |  |
| Section 15.203   | Antenna Requirement                   | Compliant |  |  |

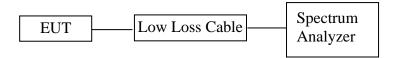
Note: The power supply mode of the EUT is DC 4.5V, According to the FCC standard requirements, conducted emission is not applicable.



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## 5. 20DB BANDWIDTH MEASUREMENT

## 5.1.Block Diagram of Test Setup



# 5.2. The Requirement For Section 15.215(c)

The bandwidth of a frequency hopping channel is the 20 dB emission bandwidth, measured with the hopping stopped. The system RF bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset while the long-term distribution appears evenly distributed.

## 5.3. Operating Condition of EUT

- 5.3.1. Setup the EUT and simulator as shown as Section 5.1.
- 5.3.2. Turn on the power of all equipment.
- 5.3.3.Let the EUT work in TX modes measure it. The transmit frequency are 2410, 2442, 2473MHz.

#### 5.4.Test Procedure

- 5.4.1.Place the EUT on the table and set it in transmitting mode.
- 5.4.2.Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 5.4.3.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz, Detector function=peak, Trace=max hold, Sweep=auto.
- 5.4.4. Set the measured low, middle and high frequency and test 20dB bandwidth with spectrum analyzer.

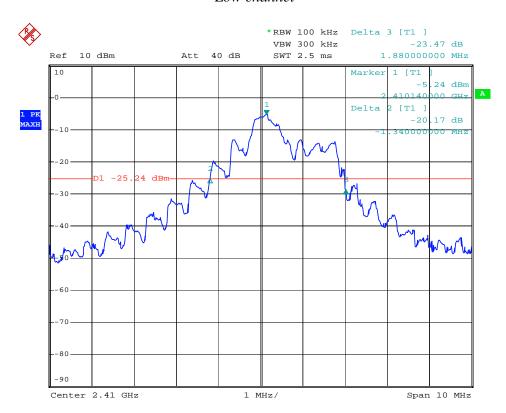


# 5.5.Test Result

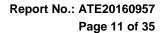
| Channel | Frequency(MHz) | 20 dB<br>Bandwidth(MHz) |
|---------|----------------|-------------------------|
| Low     | 2410           | 3.220                   |
| Middle  | 2442           | 3.760                   |
| High    | 2473           | 3.800                   |

The spectrum analyzer plots are attached as below.

## Low channel



Date: 8.JUN.2016 10:43:35



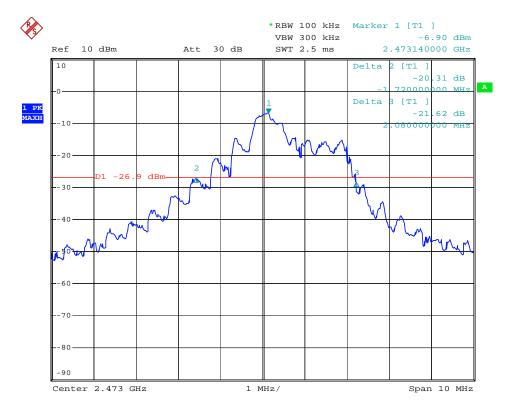


#### Middle channel



Date: 8.JUN.2016 10:57:31

# High channel



Date: 8.JUN.2016 10:26:56

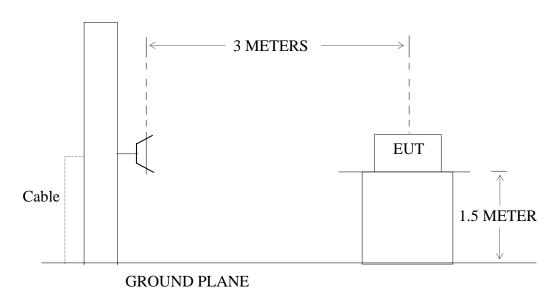


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## 6. BAND EDGE COMPLIANCE TEST

## 6.1.Block Diagram of Test Setup

#### ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS

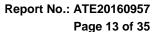


# 6.2. The Requirement For Section 15.249

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

## 6.3.EUT Configuration on Measurement

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





## 6.4. Restricted bands of operation

#### 6.4.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

| permitted in any of the frequency bands listed below: |                     |               |               |  |  |  |  |  |  |  |
|---|---------------------|---------------|---------------|--|--|--|--|--|--|--|
| MHz   | MHz                 | MHz           | GHz           |  |  |  |  |  |  |  |
| 0.090-0.110   | 16.42-16.423        | 399.9-410     | 4.5-5.15      |  |  |  |  |  |  |  |
| <sup>1</sup> 0.495-0.505                              | 16.69475-16.69525   | 608-614       | 5.35-5.46     |  |  |  |  |  |  |  |
| 2.1735-2.1905   | 16.80425-16.80475   | 960-1240      | 7.25-7.75     |  |  |  |  |  |  |  |
| 4.125-4.128   | 25.5-25.67          | 1300-1427     | 8.025-8.5     |  |  |  |  |  |  |  |
| 4.17725-4.17775                                       | 37.5-38.25          | 1435-1626.5   | 9.0-9.2       |  |  |  |  |  |  |  |
| 4.20725-4.20775                                       | 73-74.6             | 1645.5-1646.5 | 9.3-9.5       |  |  |  |  |  |  |  |
| 6.215-6.218   | 74.8-75.2           | 1660-1710     | 10.6-12.7     |  |  |  |  |  |  |  |
| 6.26775-6.26825                                       | 108-121.94          | 1718.8-1722.2 | 13.25-13.4    |  |  |  |  |  |  |  |
| 6.31175-6.31225                                       | 123-138             | 2200-2300     | 14.47-14.5    |  |  |  |  |  |  |  |
| 8.291-8.294   | 149.9-150.05        | 2310-2390     | 15.35-16.2    |  |  |  |  |  |  |  |
| 8.362-8.366   | 156.52475-156.52525 | 2483.5-2500   | 17.7-21.4     |  |  |  |  |  |  |  |
| 8.37625-8.38675                                       | 156.7-156.9         | 2690-2900     | 22.01-23.12   |  |  |  |  |  |  |  |
| 8.41425-8.41475                                       | 162.0125-167.17     | 3260-3267     | 23.6-24.0     |  |  |  |  |  |  |  |
| 12.29-12.293  | 167.72-173.2        | 3332-3339     | 31.2-31.8     |  |  |  |  |  |  |  |
| 12.51975-12.52025                                     | 240-285             | 3345.8-3358   | 36.43-36.5    |  |  |  |  |  |  |  |
| 12.57675-12.57725                                     | 322-335.4           | 3600-4400     | $\binom{2}{}$ |  |  |  |  |  |  |  |
| 13.36-13.41   |                     |               |               |  |  |  |  |  |  |  |

<sup>&</sup>lt;sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

## 6.5. Operating Condition of EUT

- 6.5.1. Setup the EUT and simulator as shown as Section 6.1.
- 6.5.2. Turn on the power of all equipment.
- 6.5.3.Let the EUT work in TX modes measure it. The transmit frequency are 2410, 2473MHz.

<sup>&</sup>lt;sup>2</sup>Above 38.6



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#### 6.6.Test Procedure

## Radiate Band Edge:

- 6.6.1. The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.
- 6.6.2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
- 6.6.3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 6.6.4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

6.6.5. The band edges was measured and recorded.

#### 6.7.Test Result

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

- 3. Display the measurement of peak values.
- 4. The average measurement was not performed when peak measured data under the limit of average detection.



Site: 2# Chamber

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Report No.: ATE20160957

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Job No.: STAR2015\_tmp #50

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Ai Camera Drone Mode: TX 2473MHz

Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Note: Report NO.:ATE20160957

Polarization: Horizontal Power Source: DC 4.5V

Date: 2016-5-24 Time: 1:38:01 Engineer Signature:

Distance: 3m

| 90.0 | dBuV/m                     |                   |                         |  |                            |                          |                       |                 |   |        |     |
|------|----------------------------|-------------------|-------------------------|--|----------------------------|--------------------------|-----------------------|-----------------|---|--------|-----|
| 00.0 |                            |                   |                         |  |                            |                          |                       |                 | limit1:                                 | _      |     |
| 80   |                            | v                 |                         |  |                            |                          |                       |                 | limit2:                                 |        |     |
| 70   |                            |                   |                         | 2277722222222  |                            |                          |                       | 101011111       | 0-11-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0- |        |     |
| 60   |                            |                   |                         |  |                            |                          |                       |                 |   |        |     |
| 50   |                            |                   |                         |  |                            |                          |                       |                 |   |        |     |
| 40   | mm-mm                      | Mar               | 2 Walland               | hand more market   |                            |                          |                       |                 |   |        |     |
| 30   |                            |                   |                         | The self of the se | alken Marketer drawn       | Madriotherande           | apasity.compressions, | Madeenfrepassel | highpotensille fichiloso                |        |     |
| 20   |                            |                   |                         |  |                            |                          |                       |                 |   |        |     |
| 10   |                            |                   |                         |  |                            |                          |                       |                 |   |        |     |
|      |                            |                   |                         |  |                            |                          |                       |                 |   |        |     |
| 0.0  |                            |                   |                         | -  |                            |                          |                       |                 |   | 2600.0 |     |
|      | 440.000                    |                   |                         |  |                            |                          |                       |                 |   |        | MHz |
| 24   | Freq.                      | Reading (dBuV/m)  | Factor<br>(dB)          | Result<br>(dBuV/m)   | Limit<br>(dBuV/m)          | Margin<br>(dB)           | Detector              | Height (cm)     | Degree<br>(deg.)                        | Remark | MHz |
| 24   |                            |                   | Factor<br>(dB)<br>-7.37 | Result<br>(dBuV/m)<br>43.07  | Limit<br>(dBuV/m)<br>74.00 | Margin<br>(dB)<br>-30.93 | Detector<br>peak      |                 |   | Remark | MHz |
| 0.0  | Freq.<br>(MHz)             | (dBuV/m)          | (dB)                    | (dBuV/m)   | (dBuV/m)                   | (dB)                     | Detector              |                 |   | Remark | MHz |
| 24   | Freq.<br>(MHz)<br>2483.500 | (dBuV/m)<br>50.44 | (dB)<br>-7.37           | (dBuV/m)<br>43.07  | (dBuV/m)<br>74.00          | (dB)<br>-30.93           | peak                  |                 |   | Remark | MHz |



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Report No.: ATE20160957

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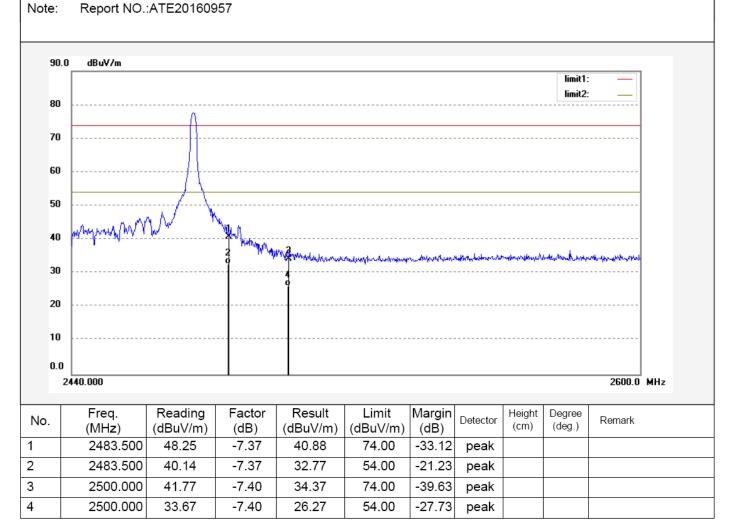
Job No.: STAR2015\_tmp #49 Polarization: Vertical
Standard: FCC PK Power Source: DC 4.5V

Test item: Radiation Test Power Source: DC 4.5

Temp.( C)/Hum.(%) 23 C / 48 % Time: 1:37:02
EUT: Ai Camera Drone Engineer Signature:

Mode: TX 2473MHz Distance: 3m Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff





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Report No.: ATE20160957

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Job No.: STAR2015\_tmp #51

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Ai Camera Drone Mode: TX 2410MHz

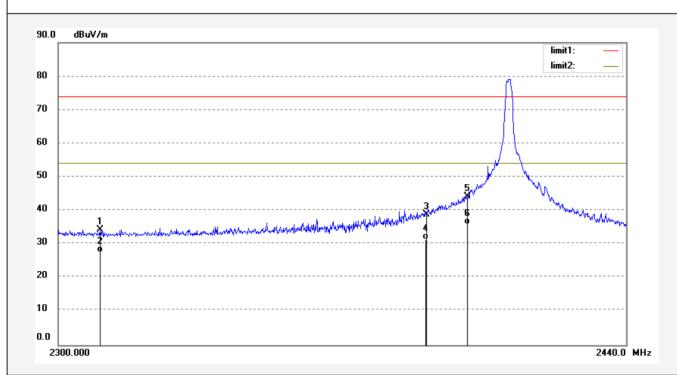
Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Note: Report NO.:ATE20160957

Polarization: Horizontal Power Source: DC 4.5V

Date: 2016-5-24
Time: 1:40:08
Engineer Signature:
Distance: 3m



| No. | Freq.<br>(MHz) | Reading (dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 2310.000       | 42.09            | -7.81          | 34.28              | 74.00             | -39.72         | peak     |                |                  |        |
| 2   | 2310.000       | 35.40            | -7.81          | 27.59              | 54.00             | -26.41         | peak     |                |                  |        |
| 3   | 2390.000       | 46.45            | -7.53          | 38.92              | 74.00             | -35.08         | peak     |                |                  |        |
| 4   | 2390.000       | 39.01            | -7.53          | 31.48              | 54.00             | -22.52         | peak     |                |                  |        |
| 5   | 2400.000       | 51.76            | -7.46          | 44.30              | 74.00             | -29.70         | peak     |                |                  |        |
| 6   | 2400.000       | 43.27            | -7.46          | 35.81              | 54.00             | -18.19         | peak     |                |                  |        |



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Job No.: STAR2015\_tmp #52 Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Ai Camera Drone Mode: TX 2410MHz

Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

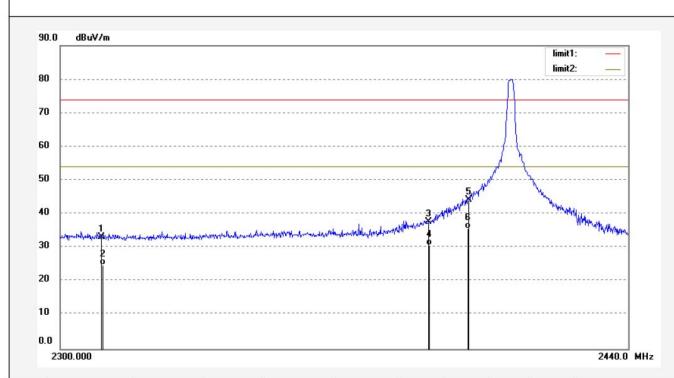
Note: Report NO.:ATE20160957

Power Source: DC 4.5V Date: 2016-5-24 Time: 1:41:14

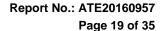
Vertical

Polarization:

Engineer Signature:
Distance: 3m



| No. | Freq.<br>(MHz) | Reading (dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 2310.000       | 40.97            | -7.81          | 33.16              | 74.00             | -40.84         | peak     |                |                  |        |
| 2   | 2310.000       | 32.77            | -7.81          | 24.96              | 54.00             | -29.04         | peak     | 83             |                  |        |
| 3   | 2390.000       | 45.14            | -7.53          | 37.61              | 74.00             | -36.39         | peak     |                |                  |        |
| 4   | 2390.000       | 38.35            | -7.53          | 30.82              | 54.00             | -23.18         | peak     |                |                  |        |
| 5   | 2400.000       | 51.68            | -7.46          | 44.22              | 74.00             | -29.78         | peak     |                |                  |        |
| 6   | 2400.000       | 43.14            | -7.46          | 35.68              | 54.00             | -18.32         | peak     |                |                  |        |





# 7. RADIATED SPURIOUS EMISSION TEST

# 7.1.Block Diagram of Test Setup

## 7.1.1.Block diagram of connection between the EUT and peripherals

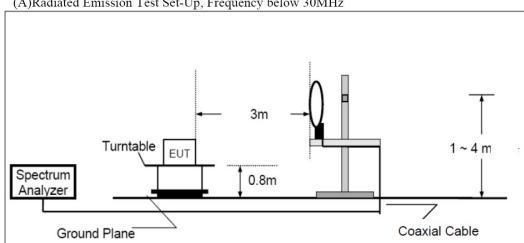


Setup: Transmitting mode

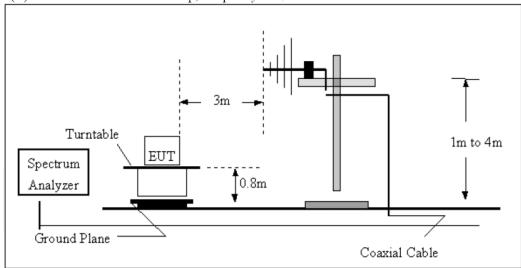
(EUT: Ai Camera Drone)

## 7.1.2.Semi-Anechoic Chamber Test Setup Diagram

(A)Radiated Emission Test Set-Up, Frequency below 30MHz

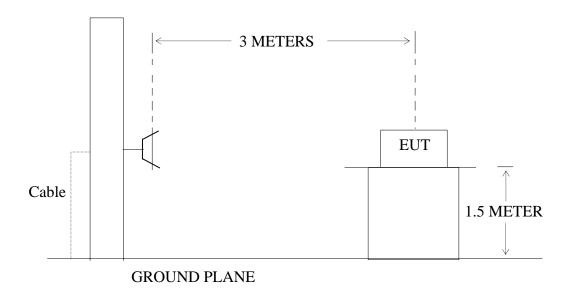


(B)Radiated Emission Test Set-Up, Frequency 30-1000MHz





#### (C) Radiated Emission Test Set-Up, Frequency above 1GHz



#### 7.2. The Limit For Section 15.249

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph A8.4(4), the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

## 7.3. Configuration of EUT on Measurement

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

## 7.4. Operating Condition of EUT

- 7.4.1. Setup the EUT and simulator as shown as Section 7.1.
- 7.4.2. Turn on the power of all equipment.
- 7.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2410, 2442, 2473MHz.



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#### 7.5.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter(Below 1GHz) and 1.5m(above 1GHz) high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 9 kHz in below 30MHz, and set at 120 kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 9 kHz to 25GHz is checked.

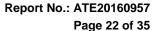
The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

RBW (120 kHz), VBW (300 kHz) for QP detector below 1GHz Peak detector above 1GHz RBW (1 MHz), VBW (3MHz) for Peak measurement RBW (1 MHz), VBW (10Hz) for AV measurement

The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain





7.6. The Field Strength of Radiation Emission Measurement Results **PASS**.

#### From 9kHz to 30MHz

| Frequency(MHz) | Quasi Peak<br>(dBµV/m) | Azimuth | Polarity (H/V) | Factors (dBµV/m) | Limit (dBµV/m) | Margin (dB) |
|----------------|------------------------|---------|----------------|------------------|----------------|-------------|
| 2.02           | 40.55                  | 36      | Н              | -54.15           | 69.5           | -28.95      |
| 14.25          | 35.22                  | 205     | Н              | -52.01           | 69.5           | -34.28      |
| 3.68           | 42.74                  | 352     | V              | -53.27           | 69.5           | -26.76      |
| 17.35          | 36.24                  | 15      | V              | -51.25           | 69.5           | -33.26      |

Part 15 Section 15.31(f)(2) (9kHz-30MHz) Limit at 3m=Limit at 300m-40\*log(300(m)/3(m)) Limit at 3m=Limit at 30m-40\*log(30(m)/3(m))

#### **Fundamental Radiated Emissions**

| Frequency | Reading(dBµV/m) |       | Factor(dB) | Result(dBµV/m) |       | Limit(dBµV/m) |        | Marg  | in(dB) | Polarization |
|-----------|-----------------|-------|------------|----------------|-------|---------------|--------|-------|--------|--------------|
| (MHz)     | AV              | PEAK  | Corr.      | AV             | PEAK  | AV            | PEAK   | AV    | PEAK   |              |
| 2410      | 80.43           | 89.32 | -7.43      | 73.00          | 81.89 | 94.00         | 114.00 | 21.00 | 32.11  | Vertical     |
| 2410      | 79.46           | 87.40 | -7.43      | 72.03          | 79.97 | 94.00         | 114.00 | 21.97 | 34.03  | Horizontal   |
| 2442      | 75.32           | 84.96 | -7.35      | 67.97          | 77.61 | 94.00         | 114.00 | 26.03 | 36.39  | Vertical     |
| 2442      | 80.00           | 88.40 | -7.35      | 72.65          | 81.05 | 94.00         | 114.00 | 21.35 | 32.95  | Horizontal   |
| 2473      | 76.10           | 84.47 | -7.36      | 68.74          | 77.11 | 94.00         | 114.00 | 25.26 | 36.89  | Vertical     |
| 2473      | 75.04           | 83.19 | -7.36      | 67.68          | 75.83 | 94.00         | 114.00 | 26.32 | 38.17  | Horizontal   |

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

- 2. \*: Denotes restricted band of operation.
- 3. The EUT is tested radiation emission in three axes. The worst emissions are reported in all channels.
- 4. The radiation emissions from 18-25GHz are not reported, because the test values lower than the limits of 20dB.
- 5. The average measurement was not performed when peak measured data under the limit of average detection.
- 6. The 18-25GHz emissions are not reported, because the levels are too low against the limit



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Page 23 of 35
Site: 2# Chamber

Report No.: ATE20160957

Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star2015 #1155 Polarization: Horizontal Standard: FCC Class B 3M Radiated Power Source: DC 4.5V

Date: 2016-5-24 Time: 1:11:17 Engineer Signature:

Distance: 3m

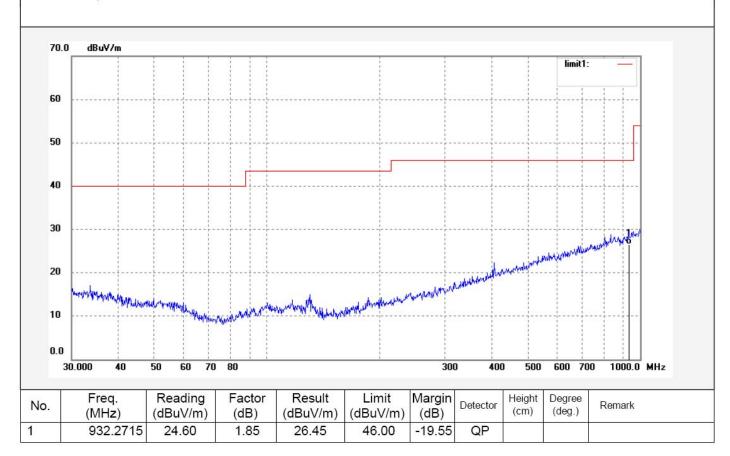
Temp.( C)/Hum.(%) 23 C / 48 % EUT: Ai Camera Drone Mode: TX 2410MHz

Test item: Radiation Test

Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Note: Report NO.:ATE20160957





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Distance: 3m

Site: 2# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Report No.: ATE20160957

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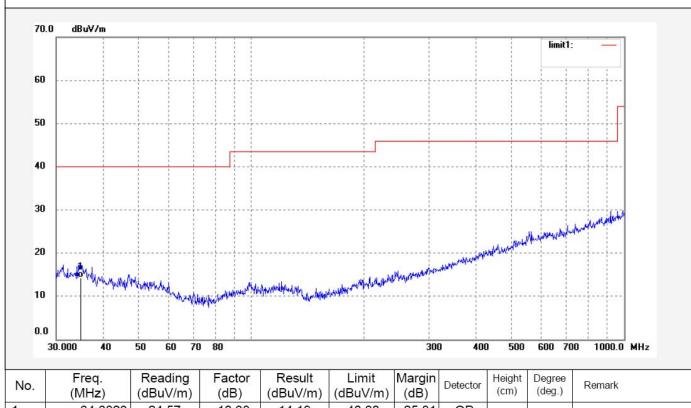
Job No.: star2015 #1156 Vertical Standard: FCC Class B 3M Radiated Power Source: DC 4.5V

Test item: Radiation Test Date: 2016-5-24 Temp.( C)/Hum.(%) 23 C / 48 % Time: 1:12:01 EUT: Ai Camera Drone Engineer Signature:

Mode: TX 2410MHz Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Report NO.:ATE20160957 Note:



| No. | Freq.<br>(MHz) | Reading (dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) |       | Margin<br>(dB) | Detector | Height (cm) | Degree<br>(deg.) | Remark |
|-----|----------------|------------------|----------------|--------------------|-------|----------------|----------|-------------|------------------|--------|
| 1   | 34.8823        | 24.57            | -10.38         | 14.19              | 40.00 | -25.81         | QP       |             |                  |        |



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China Report No.: ATE20160957 Page 25 of 35 Site: 2# Chamber

Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star2015 #1158 Polarization: Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Ai Camera Drone Mode: TX 2442MHz

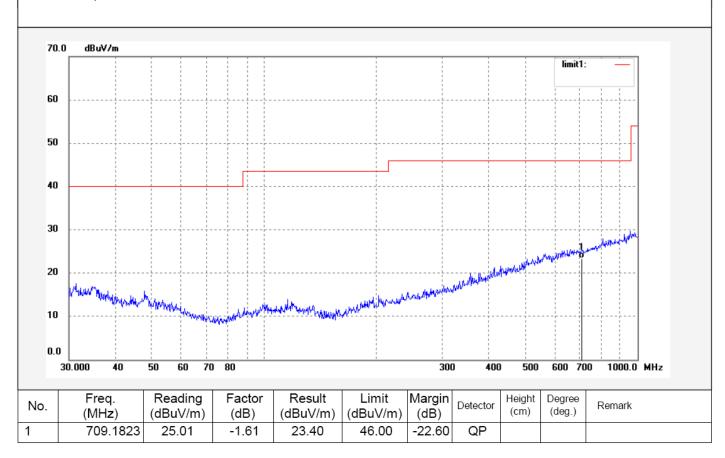
Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Report NO.:ATE20160957 Note:

Horizontal Power Source: DC 4.5V

Date: 2016-5-24 Time: 1:14:29 Engineer Signature: Distance: 3m





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Fax:+86-0755-26503396

Report No.: ATE20160957

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Job No.: star2015 #1157

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Ai Camera Drone Mode: TX 2442MHz

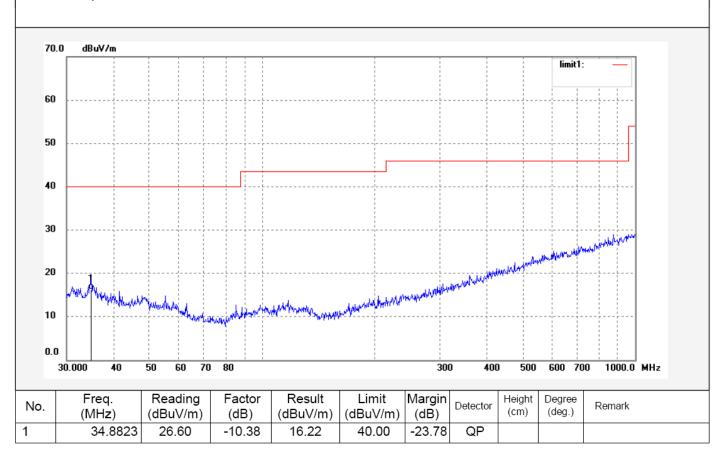
Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Note: Report NO.:ATE20160957

Polarization: Vertical Power Source: DC 4.5V

Date: 2016-5-24
Time: 1:13:27
Engineer Signature:
Distance: 3m





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Site: 2# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Report No.: ATE20160957

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Polarization: Horizontal Power Source: DC 4.5V

Date: 2016-5-24 Time: 1:14:58 Engineer Signature:

Distance: 3m

Job No.: star2015 #1159 Standard: FCC Class B 3M Radiated

TX 2473MHz Mode: Model: TX-1027

EUT:

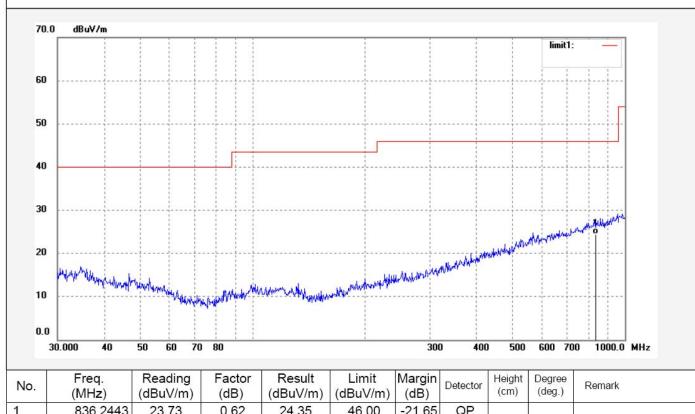
Test item: Radiation Test

Manufacturer: China Industries Ltd T/A Wow! Stuff

Report NO.:ATE20160957 Note:

Temp.( C)/Hum.(%) 23 C / 48 %

Ai Camera Drone





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Site: 2# Chamber

Tel:+86-0755-26503290 Fax:+86-0755-26503396

Report No.: ATE20160957

Job No.: star2015 #1160 Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Ai Camera Drone Mode: TX 2473MHz

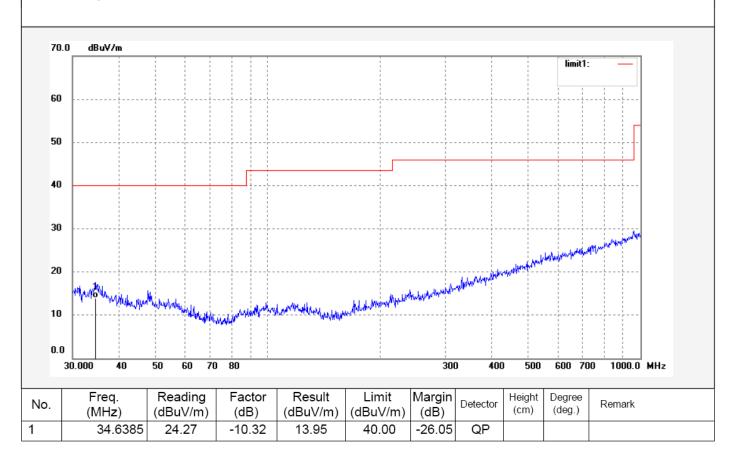
Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Note: Report NO.:ATE20160957

Polarization: Vertical Power Source: DC 4.5V

Date: 2016-5-24 Time: 1:16:17 Engineer Signature: Distance: 3m





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## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 2# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star2015 #1162

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Ai Camera Drone Mode: TX 2410MHz

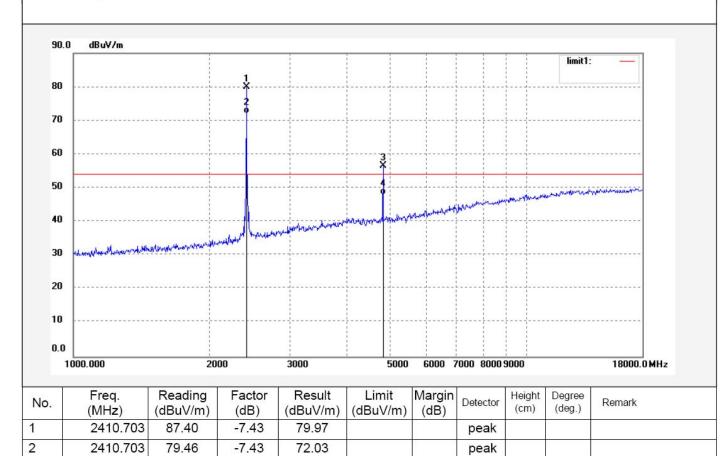
Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Note: Report NO.:ATE20160957

Polarization: Horizontal Power Source: DC 4.5V Date: 2016-5-24

Time: 1:21:21
Engineer Signature:
Distance: 3m



-22.59

-5.86

peak

peak

74.00

54.00

Note: Average measurement with peak detection at No.2&4

-0.21

-0.21

56.59

48.14

56.80

48.35

3

4

4820.016

4820.016



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Job No.: star2015 #1161

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Ai Camera Drone Mode: TX 2410MHz

Model: TX-1027

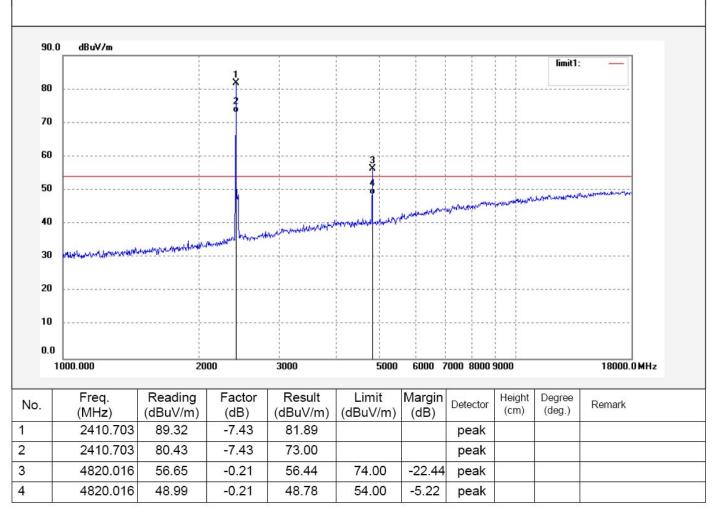
Manufacturer: China Industries Ltd T/A Wow! Stuff

Note: Report NO.:ATE20160957

Polarization: Vertical Power Source: DC 4.5V

Date: 2016-5-24 Time: 1:19:56 Engineer Signature:

Distance: 3m





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Report No.: ATE20160957

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Job No.: star2015 #1163

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 23 C / 48 %

EUT: Ai Camera Drone Mode: TX 2442MHz

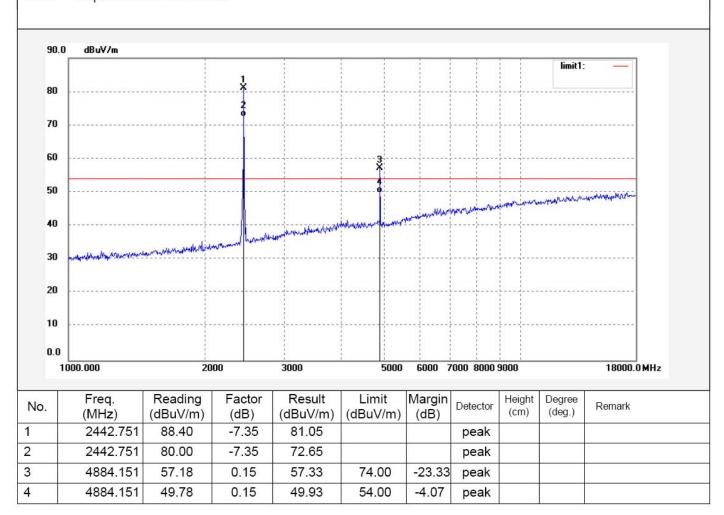
Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Note: Report NO.:ATE20160957

Polarization: Horizontal Power Source: DC 4.5V

Date: 2016-5-24
Time: 1:23:32
Engineer Signature:
Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Page 32 of 35
Site: 2# Chamber

Report No.: ATE20160957

Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star2015 #1164 Polarization: Vertical
Standard: FCC Class B 3M Radiated Power Source: DC 4.5V

Standard: FCC Class B 3M Radiated Power Source: DC 4.5'
Test item: Radiation Test Date: 2016-5-24

Temp.( C)/Hum.(%) 23 C / 48 % Time: 1:24:53

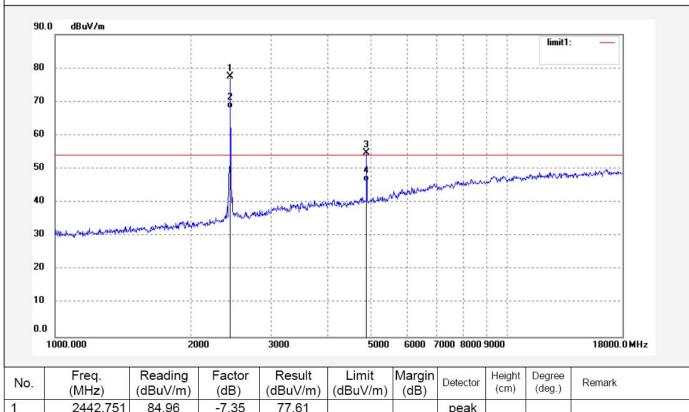
EUT: Ai Camera Drone Engineer Signature:

Mode: TX 2442MHz Distance: 3m

Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Note: Report NO.:ATE20160957



| No. | Freq.<br>(MHz) | Reading<br>(dBuV/m) | Factor<br>(dB) | Result<br>(dBuV/m) | Limit<br>(dBuV/m) | Margin<br>(dB) | Detector | Height<br>(cm) | Degree<br>(deg.) | Remark |
|-----|----------------|---------------------|----------------|--------------------|-------------------|----------------|----------|----------------|------------------|--------|
| 1   | 2442.751       | 84.96               | -7.35          | 77.61              |                   |                | peak     |                |                  |        |
| 2   | 2442.751       | 75.32               | -7.35          | 67.97              | 1                 |                | peak     |                |                  |        |
| 3   | 4884.151       | 54.62               | 0.15           | 54.77              | 74.00             | -20.77         | peak     |                |                  |        |
| 4   | 4884.151       | 46.16               | 0.15           | 46.31              | 54.00             | -7.69          | peak     |                |                  |        |



Test item:

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Report No.: ATE20160957

Site: 2# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: star2015 #1166 Polarization: Horizontal Standard: FCC Class B 3M Radiated Power Source: DC 4.5V

Date: 2016-5-24 Time: 1:47:41

Engineer Signature: Distance: 3m

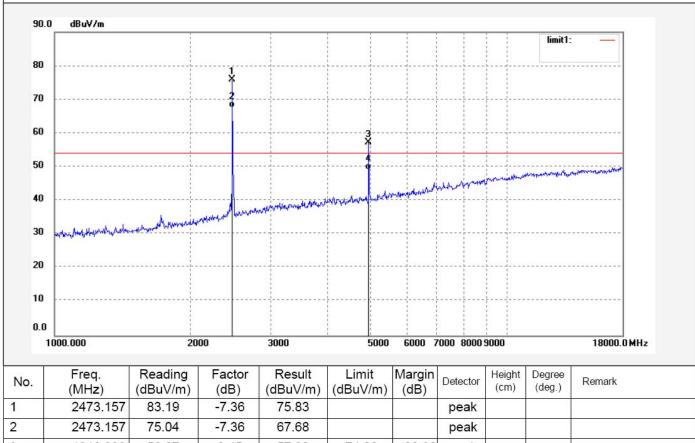
Temp.( C)/Hum.(%) 23 C / 48 %

Radiation Test

EUT: Ai Camera Drone Mode: TX 2473MHz Model: TX-1027

Manufacturer: China Industries Ltd T/A Wow! Stuff

Report NO.:ATE20160957 Note:



3 4946.993 56.87 0.45 57.32 74.00 -23.32peak 4 4946.993 48.62 0.45 49.07 54.00 -4.93 peak





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Site: 2# Chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Report No.: ATE20160957

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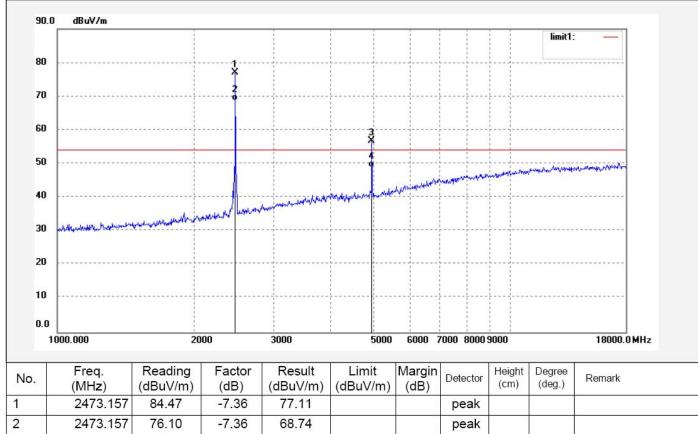
Job No.: star2015 #1165 Polarization: Vertical Standard: FCC Class B 3M Radiated Power Source: DC 4.5V

Test item: Radiation Test Date: 2016-5-24

Temp.( C)/Hum.(%) 23 C / 48 % Time: 1:27:00 EUT: Ai Camera Drone Engineer Signature: Mode: TX 2473MHz Distance: 3m

Model: TX-1027 Manufacturer: China Industries Ltd T/A Wow! Stuff

Note: Report NO.:ATE20160957



3 4946.966 56.42 0.46 56.88 74.00 -22.88 peak 4 4946.966 48.44 0.46 48.90 54.00 -5.10 peak



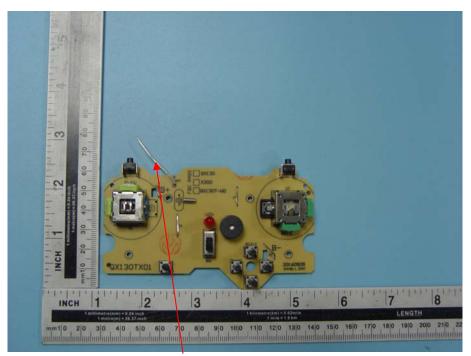
8. ANTENNA REQUIREMENT

# 8.1. The Requirement

According to Section 15.203, 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.

## 8.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna