

APPLICATION CERTIFICATION FCC Part 15C  
On Behalf of  
Fine Offset Electronics Co., Ltd.

Weather Station(transmitter)

Model No.: WH69E

FCC ID: WA5WH69E

Prepared for : Fine Offset Electronics Co., Ltd.  
Address : 2/F., Building no.3, Ping Shan Minqi Industrial Park,  
Xili Town, Nanshan District, Shenzhen City, China.

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Report Number : ATE20180202  
Date of Test : Feb. 06, 2018-Mar. 02, 2018  
Date of Report : Mar. 03, 2018

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## Test Report Certification

Applicant : Fine Offset Electronics Co., Ltd  
2/F., Building no.3, Ping Shan Minqi Industrial Park, Xili Town,  
Nanshan District, Shenzhen City, China.

Manufacturer : Fine Offset Electronics Co., Ltd  
2/F., Building no.3, Ping Shan Minqi Industrial Park, Xili Town,  
Nanshan District, Shenzhen City, China.

Product : Weather Station(transmitter)

Model No. : WH69E

Trade name : N/A

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 SHENZHEN 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 SHENZHEN 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 SHENZHEN ACCURATE TECHNOLOGY CO. LTD.

Date of Test : Feb. 06, 2018-Mar. 02, 2018

Date of Report: Mar. 03, 2018

Prepared by :

  
  
(Tim Zhang, Engineer)

Approved & Authorized Signer :

  
(Sean Liu, Manager)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

The submitted sample is a Weather Station(transmitter).  
The sample is powered by DC 3V.

|                    |   | Weather Station(transmitter) |
|--------------------|---|------------------------------|
| Frequency          | : | 915MHz                       |
| Number of Channels | : | 1                            |
| Modulation Type    | : | FSK                          |
| Type of Antenna    | : | Integral Antenna             |
| Max antenna gain   | : | 2.15dBi                      |
| Power Supply       | : | DC 3V                        |

### 1.2. Special Accessory and Auxiliary Equipment

N/A

### 1.3. Description of Test Facility

|               |   |  |
|---------------|---|--|
| EMC Lab       | : | Recognition of accreditation by Federal Communications Commission (FCC)<br>The Designation Number is CN1189<br>The Registration Number is 708358 |
|               |   | Listed by Innovation, Science and Economic Development Canada (ISED)<br>The Registration Number is 5077A-2                                       |
|               |   | Accredited by China National Accreditation Service for Conformity Assessment (CNAS)<br>The Registration Number is CNAS L3193                     |
|               |   | Accredited by American Association for Laboratory Accreditation (A2LA)<br>The Certificate Number is 4297.01                                      |
| Name of Firm  | : | Shenzhen Accurate Technology Co., Ltd  |
| Site Location | : | 1/F., Building A, Changyuan New Material Port,<br>Science & Industry Park, Nanshan District,<br>Shenzhen, Guangdong, P.R. China                  |

### 1.4. Measurement Uncertainty

|   |   |             |
|---|---|-------------|
| Conducted Emission Expanded Uncertainty                   | = | 2.23dB, k=2 |
| Radiated emission expanded uncertainty<br>(9kHz-30MHz)    | = | 3.08dB, k=2 |
| Radiated emission expanded uncertainty<br>(30MHz-1000MHz) | = | 4.42dB, k=2 |
| Radiated emission expanded uncertainty<br>(Above 1GHz)    | = | 4.06dB, k=2 |

## 2. MEASURING DEVICE AND TEST EQUIPMENT

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

| Kind of equipment  | Manufacturer              | Type                                    | S/N        | Calibrated dates | Calibrated until |
|--------------------|---------------------------|---|------------|------------------|------------------|
| EMI Test Receiver  | Rohde&Schwarz             | ESCS30                                  | 100307     | Jan. 06, 2018    | Jan. 05, 2019    |
| EMI Test Receiver  | Rohde&Schwarz             | ESPI3                                   | 101526/003 | Jan. 06, 2018    | Jan. 05, 2019    |
| Spectrum Analyzer  | Agilent                   | E7405A                                  | MY45115511 | Jan. 06, 2018    | Jan. 05, 2019    |
| Pre-Amplifier      | Rohde&Schwarz             | CBLU118354<br>0-01                      | 3791       | Jan. 06, 2018    | Jan. 05, 2019    |
| Loop Antenna       | Schwarzbeck               | FMZB1516                                | 1516131    | Jan. 06, 2018    | Jan. 05, 2019    |
| Bilog Antenna      | Schwarzbeck               | VULB9163                                | 9163-323   | Jan. 06, 2018    | Jan. 05, 2019    |
| Horn Antenna       | Schwarzbeck               | BBHA9120D                               | 9120D-655  | Jan. 06, 2018    | Jan. 05, 2019    |
| Horn Antenna       | Schwarzbeck               | BBHA9170                                | 9170-359   | Jan. 06, 2018    | Jan. 05, 2019    |
| LISN               | Rohde&Schwarz             | ESH3-Z5                                 | 100305     | Jan. 06, 2018    | Jan. 05, 2019    |
| LISN               | Schwarzbeck               | NSLK8126                                | 8126431    | Jan. 06, 2018    | Jan. 05, 2019    |
| Highpass Filter    | Wainwright<br>Instruments | WHKX3.6/18<br>G-10SS                    | N/A        | Jan. 06, 2018    | Jan. 05, 2019    |
| Band Reject Filter | Wainwright<br>Instruments | WRCG2400/2<br>485-2375/2510<br>-60/11SS | N/A        | Jan. 06, 2018    | Jan. 05, 2019    |

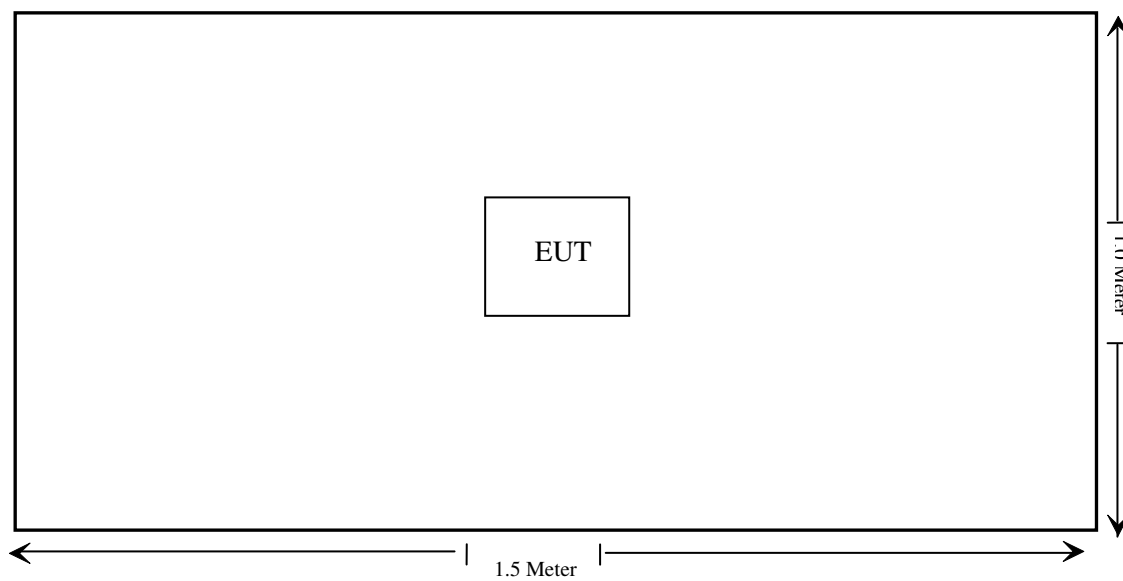
### 3. OPERATION OF EUT DURING TESTING

#### 3.1. Operating Mode

The mode is used: **Transmitting mode**  
TX Channel: 915MHz

#### 3.2. Configuration and peripherals

Block Diagram of Test Setup



#### 4. TEST PROCEDURES AND RESULTS

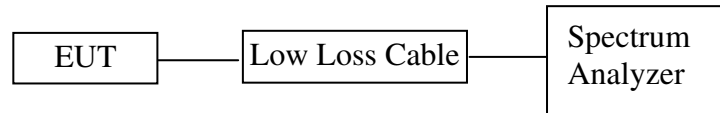
| <b>FCC Rules</b>   | <b>Description of Test</b>            | <b>Result</b> |
|--|---------------------------------------|---------------|
| Section 15.215(c)  | 20dB Bandwidth                        | Compliant     |
| Section 15.249(d)  | Band Edge Compliance Test             | Compliant     |
| Section 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 module is DC 3V, According to the FCC standard requirements, conducted emission is not applicable.



## 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 is 915MHz.

### 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.

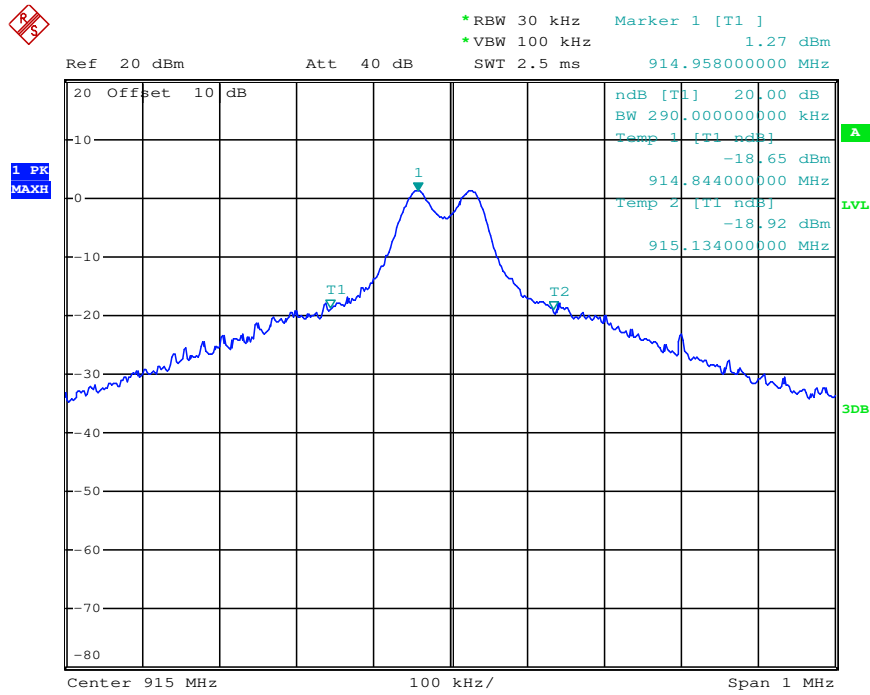
5.4.3. Set RBW of spectrum analyzer to 30 kHz and VBW to 100 kHz, Detector function=peak, Trace=max hold, Sweep=auto.

5.4.4. Set the measured low, middle and high frequency and test 20dB bandwidth with spectrum analyzer.

### 5.5. Test Result

| Frequency (MHz) | 20 dB Bandwidth (MHz) |
|-----------------|-----------------------|
| 915             | 0.290                 |

The spectrum analyzer plots are attached as below.



Date: 2.MAR.2018 16:19:54

## 6. AVERAGE FACTOR MEASUREMENT

### 6.1. Block Diagram of Test Setup



(EUT: Weather Station(transmitter))

### 6.2. Average factor Measurement according to ANSI C63.10-2013

**ANSI C63.10-2013 Section 7.5** Unless otherwise specified, when the radiated emission limits are expressed in terms of the average value of the emission, 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 s (100 ms). In cases where the pulse train exceeds 0.1 s, the measured field strength shall be determined during a 0.1 s interval.<sup>64</sup> The following procedure is an example of how the average value may be determined. The average field strength may be found by measuring the peak pulse amplitude (in log equivalent units) and determining the duty cycle correction factor (in dB) associated with the pulse modulation as shown in Equation (10):

**Average factor in dB = 20 log (duty cycle)**

### 6.3. EUT Configuration on Measurement

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

#### 6.3.1. Weather Station(transmitter)

Model Number : WH69E  
 Serial Number : 1800160  
 Manufacturer : Fine Offset Electronics Co., Ltd.

### 6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX mode measure it.

## 6.5. Test Procedure

6.5.1. The time period over which the duty cycle is measured is 100 milliseconds, or the repetition cycle, whichever is a shorter time frame. The worst case (highest percentage on) duty cycle is used for the calculation.

6.5.2. Set SPA Center Frequency = Fundamental frequency, RBW = 100 kHz, VBW = 300 kHz, Span = 0 Hz.

6.5.3. Set EUT as normal operation.

6.5.4. Set SPA View. Delta Mark time.

## 6.6. Measurement Result

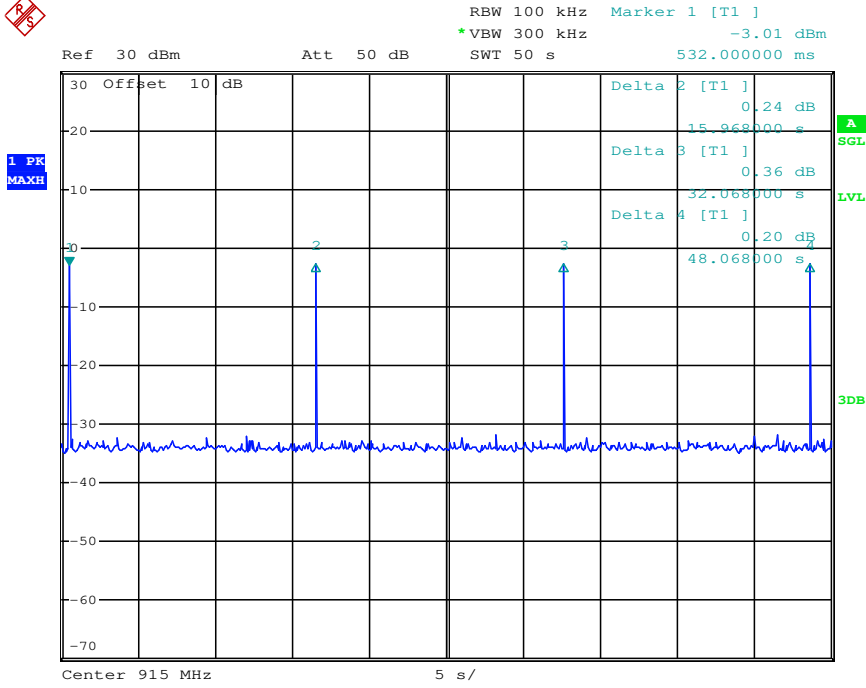
**The duty cycle is simply the on time divided by the period:**

The duration of one cycle = 100ms

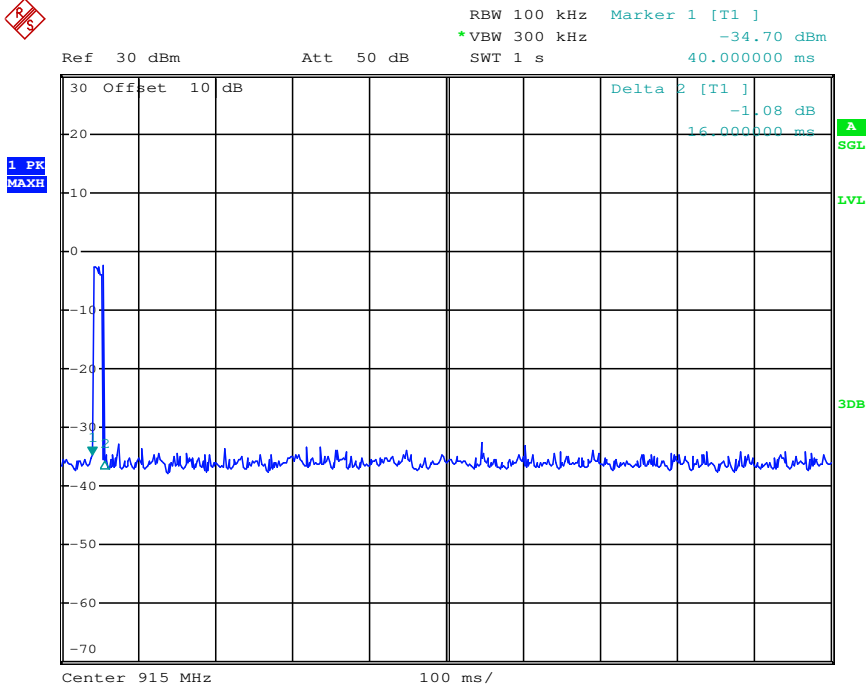
Effective period of the cycle = 16ms

DC = 16ms/100ms = 0.16

**Therefore, the average factor is found by  $20\log 0.16 = -15.9\text{dB}$**



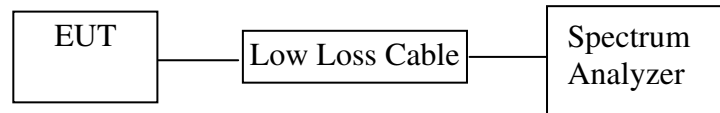
Date: 2.MAR.2018 15:51:18



Date: 2.MAR.2018 15:53:41

## 7. BAND EDGE COMPLIANCE TEST

### 7.1. Block Diagram of Test Setup



(EUT: Weather Station(transmitter))

### 7.2. 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).

### 7.3. EUT Configuration on Measurement

The equipment is 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.

### 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 is 915 MHz.

### 7.5. Test Procedure

Conducted Band Edge:

7.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

7.5.2. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

Radiate Band Edge:

7.5.3. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.

7.5.4. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

7.5.5. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

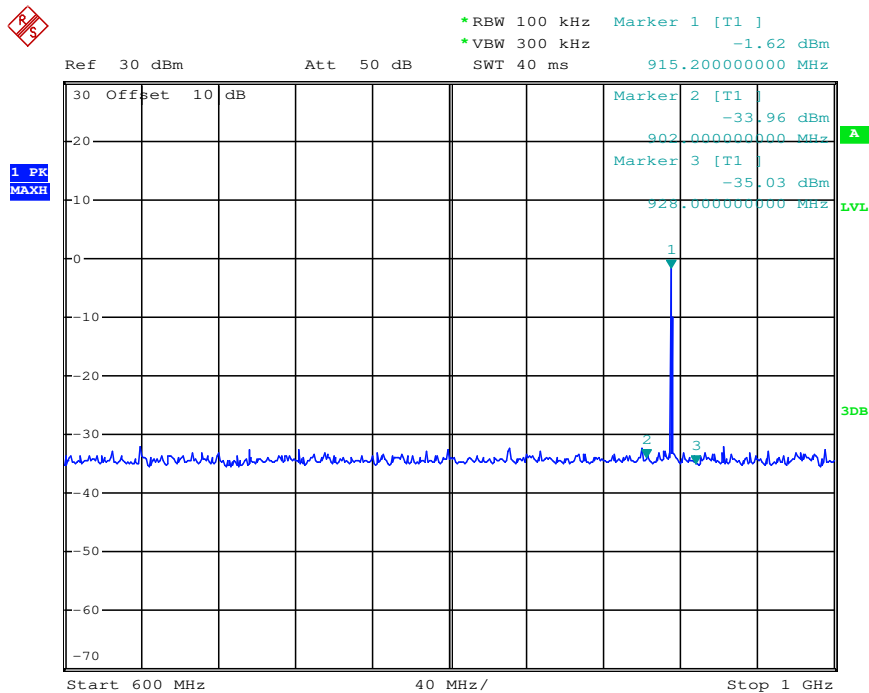
7.5.6. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

7.5.7. RBW=1MHz, VBW=1MHz

7.5.8. The band edges was measured and recorded.

## 7.6. Test Result

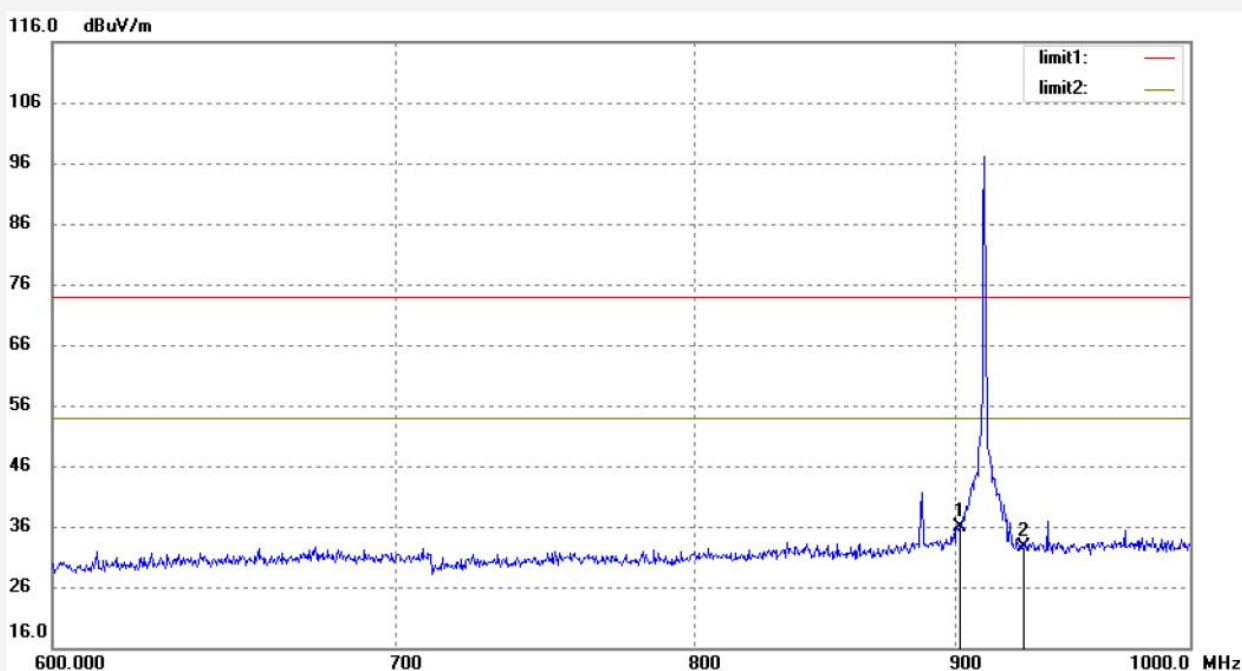
**Pass**



Date: 2.MAR.2018 15:27:03

|  |                          |
|--|--------------------------|
| Job No.: frank2018 #258                        | Polarization: Horizontal |
| Standard: FCC PK                               | Power Source: DC 3V      |
| Test item: Radiation Test                      | Date: 18/03/02/          |
| Temp.( C)/Hum.(%) 25 C / 55 %                  | Time: 9/26/26            |
| EUT: Weather Station(transmitter)              | Engineer Signature:      |
| Mode: TX 915MHz                                | Distance: 3m             |
| Model: WH69E                                   |                          |
| Manufacturer: Fine Offset Electronics Co., Ltd |                          |

Note: Report NO.:ATE20180202

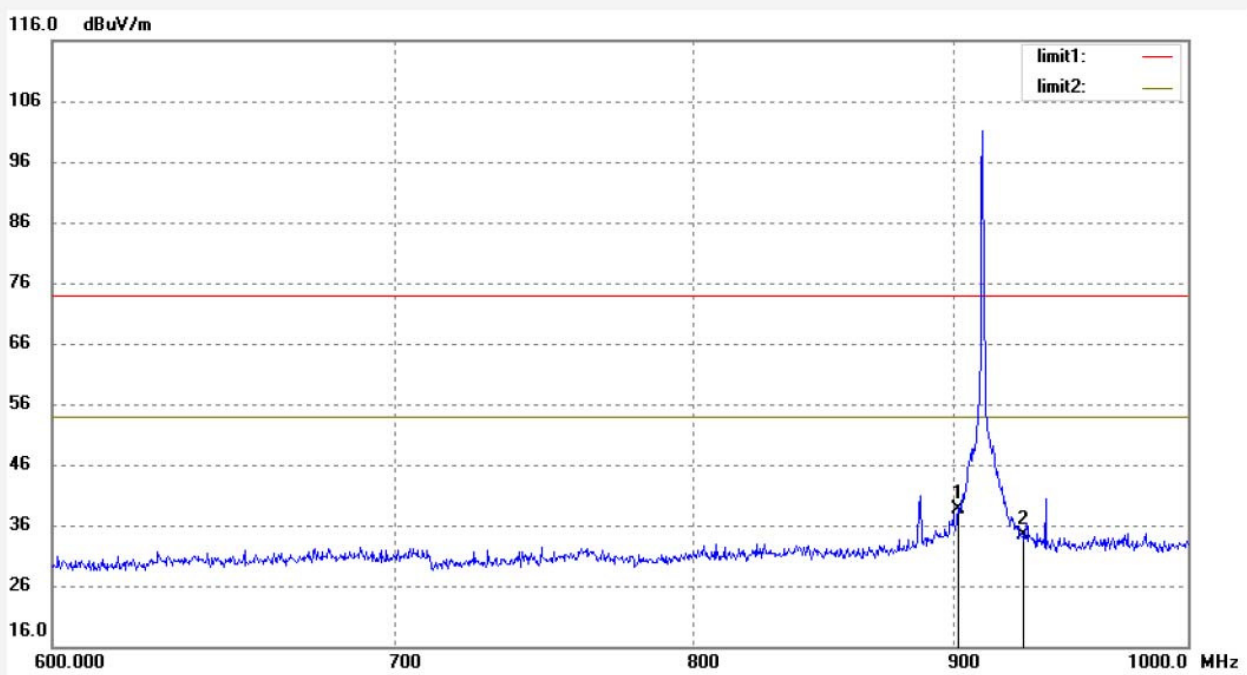


| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 902.0000    | 40.06            | -4.13       | 35.93           | 74.00          | -38.07      | peak     | 200         | 128           |        |
| 2   | 928.0000    | 36.26            | -3.75       | 32.51           | 74.00          | -41.49      | peak     | 200         | 164           |        |



|  |                        |
|--|------------------------|
| Job No.: frank2018 #259                        | Polarization: Vertical |
| Standard: FCC PK                               | Power Source: DC 3V    |
| Test item: Radiation Test                      | Date: 18/03/02/        |
| Temp.( C)/Hum.(%) 25 C / 55 %                  | Time: 9/27/21          |
| EUT: Weather Station(transmitter)              | Engineer Signature:    |
| Mode: TX 915MHz                                | Distance: 3m           |
| Model: WH69E                                   |                        |
| Manufacturer: Fine Offset Electronics Co., Ltd |                        |

Note: Report NO.:ATE20180202



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 902.0000    | 42.67            | -4.13       | 38.54           | 74.00          | -35.46      | peak     | 100         | 312           |        |
| 2   | 928.0000    | 38.21            | -3.75       | 34.46           | 74.00          | -39.54      | peak     | 100         | 187           |        |

Note:

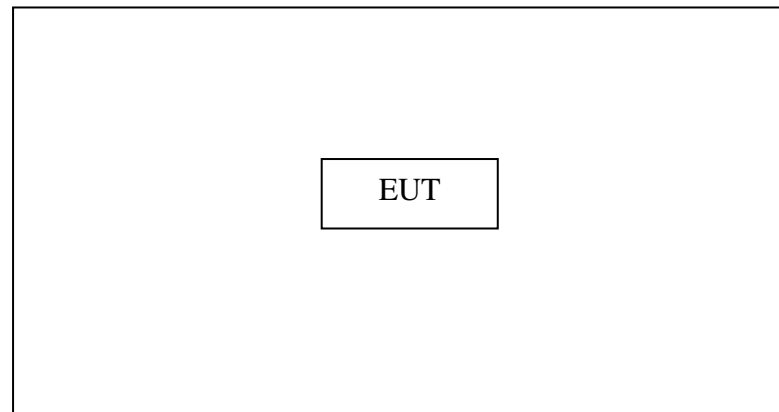
1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is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

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$
3. Display the measurement of peak values.

## 8. RADIATED SPURIOUS EMISSION TEST

### 8.1. Block Diagram of Test Setup

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

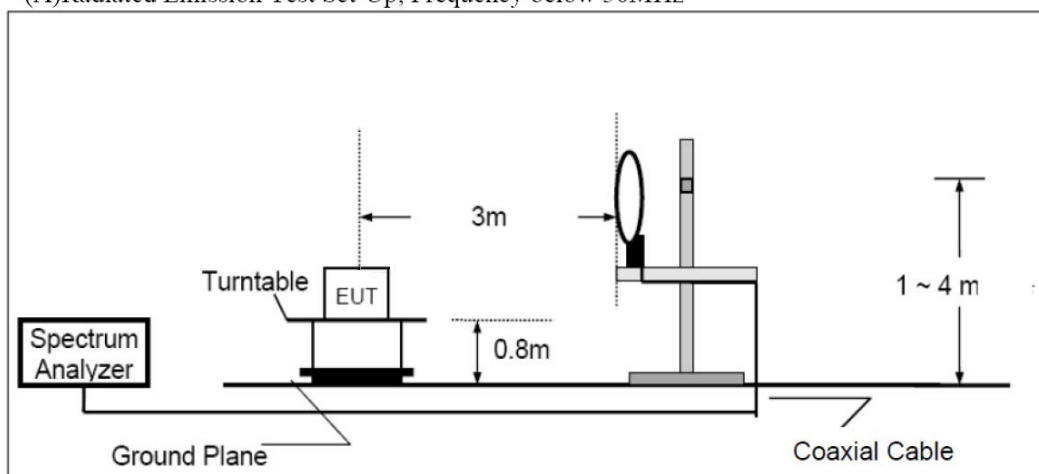


Setup: Transmitting mode

(EUT: Weather Station(transmitter))

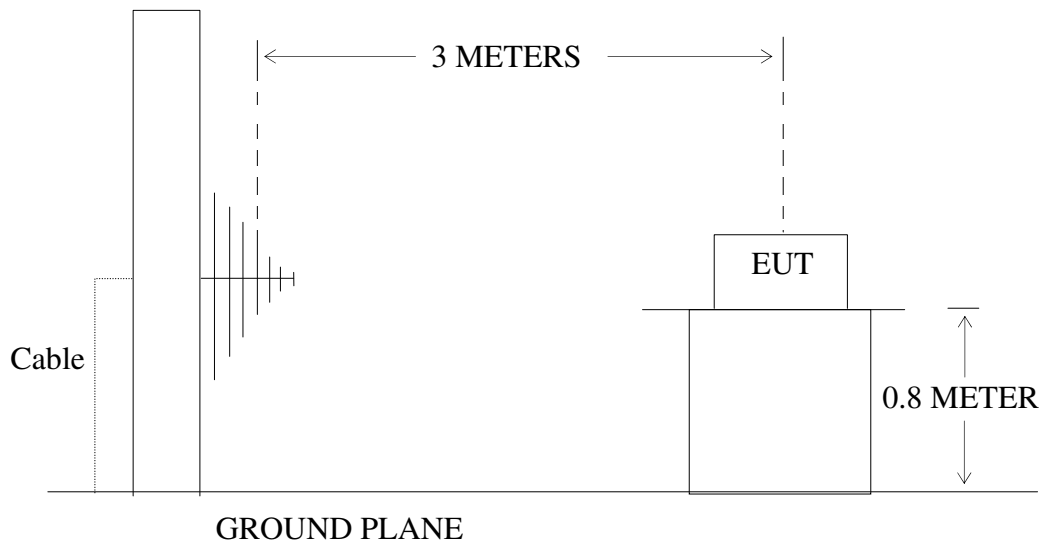
### 8.2. Semi-Anechoic Chamber Test Setup Diagram

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

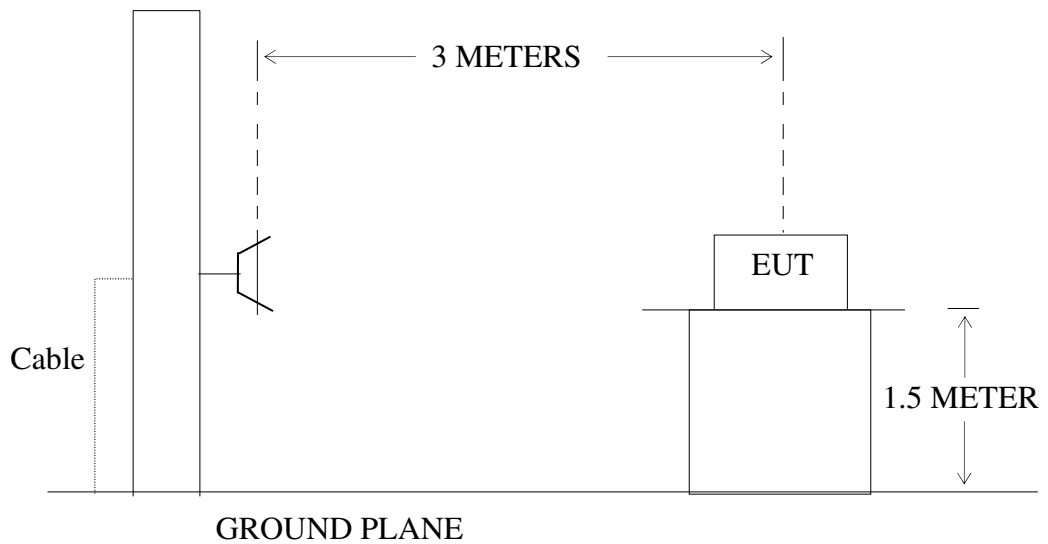


**Radiated emission test setup, test frequency from 30MHz to 1GHz**

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



**Radiated emission test setup, test frequency above 1GHz**



**8.3.The Limit for the field strength of emissions from intentional radiators**

| Fundamental frequency | Field strength of fundamental (millivolts/meter) | Field strength of harmonics (microvolts/meter) |
|-----------------------|--|--|
| 902–928 MHz .....     | 50   | 500  |
| 2400–2483.5 MHz ..... | 50   | 500  |
| 5725–5875 MHz .....   | 50   | 500  |
| 24.0–24.25 GHz .....  | 250  | 2500   |

## 8.4.Restricted bands of operation

### 8.4.1.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:

| 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     | ( <sup>2</sup> ) |
| 13.36-13.41              |                     |               |                  |

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

<sup>2</sup>Above 38.6

(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 Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

## 8.5.Configuration of EUT on Measurement

The equipment is 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.

## 8.6. Operating Condition of EUT

8.6.1. Setup the EUT and simulator as shown as Section 8.1.

8.6.2. Turn on the power of all equipment.

8.6.3. Let the EUT work in TX modes measure it. The transmit frequency is 915MHz.

## 8.7. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground (Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground (Above 1GHz). 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 bi-log 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 EUT location 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 10GHz 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. 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

## 8.8. The Field Strength of Radiation Emission Measurement Results

### PASS.

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

2. \*: Denotes restricted band of operation.

The QP value of fundamental frequency is:

QP Reading = Peak value + 20log(Duty cycle), QP=Peak-15.9

| Frequency (MHz) | Polarity (H/V) | Peak value (dB $\mu$ V/m) | QP value (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result |
|-----------------|----------------|---------------------------|-------------------------|----------------------|-------------|--------|
| 915             | H              | 98.25                     | 82.35                   | 94.0                 | -11.65      | PASS   |
| 915             | V              | 98.57                     | 82.67                   | 94.0                 | -11.33      | PASS   |

The AV value of harmonics frequency is:

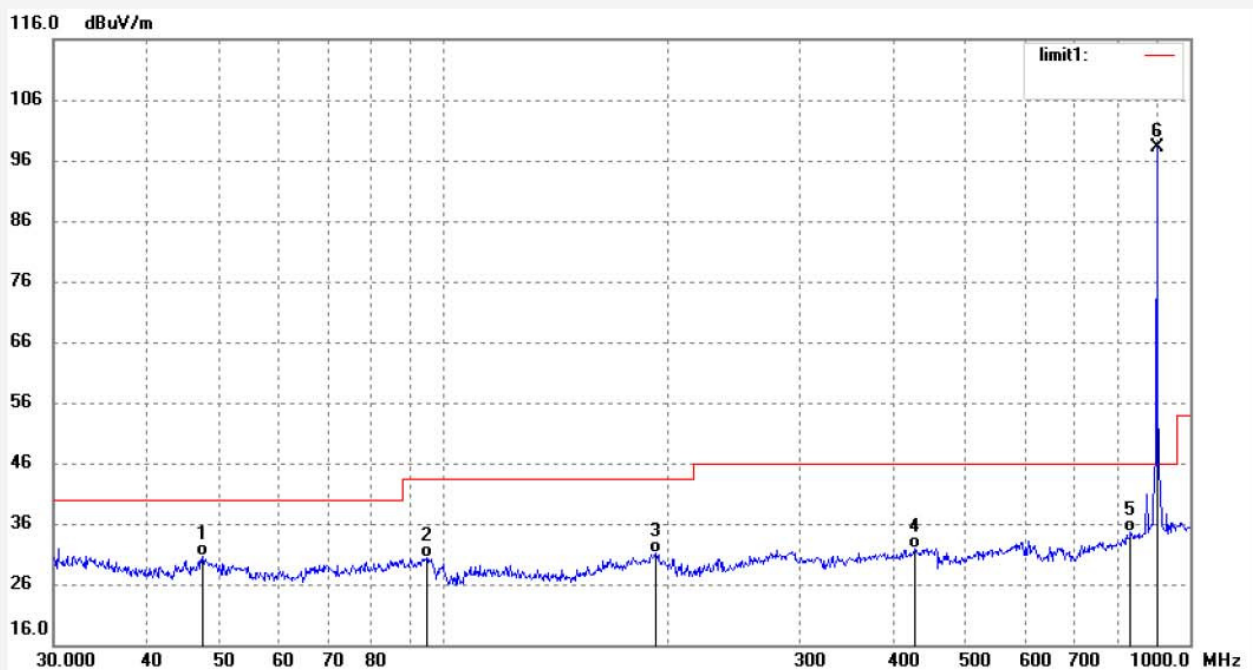
AV Reading = Peak value + 20log(Duty cycle), AV=Peak-15.9

| Frequency (MHz) | Polarity (H/V) | Peak value (dB $\mu$ V/m) | AV value (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Result |
|-----------------|----------------|---------------------------|-------------------------|----------------------|-------------|--------|
| 1830.1          | H              | 60.65                     | 44.75                   | 54.0                 | -9.25       | PASS   |
| 1830.1          | V              | 63.07                     | 47.17                   | 54.0                 | -6.83       | PASS   |



|  |                          |
|--|--------------------------|
| Job No.: frank2018 #231                        | Polarization: Horizontal |
| Standard: FCC 15.249 3M Radiated               | Power Source: DC 3V      |
| Test item: Radiation Test                      | Date: 18/03/01/          |
| Temp.( C)/Hum.(%) 25 C / 55 %                  | Time: 9/55/49            |
| EUT: Weather Station(transmitter)              | Engineer Signature:      |
| Mode: TX 915MHz                                | Distance: 3m             |
| Model: WH69E                                   |                          |
| Manufacturer: Fine Offset Electronics Co., Ltd |                          |

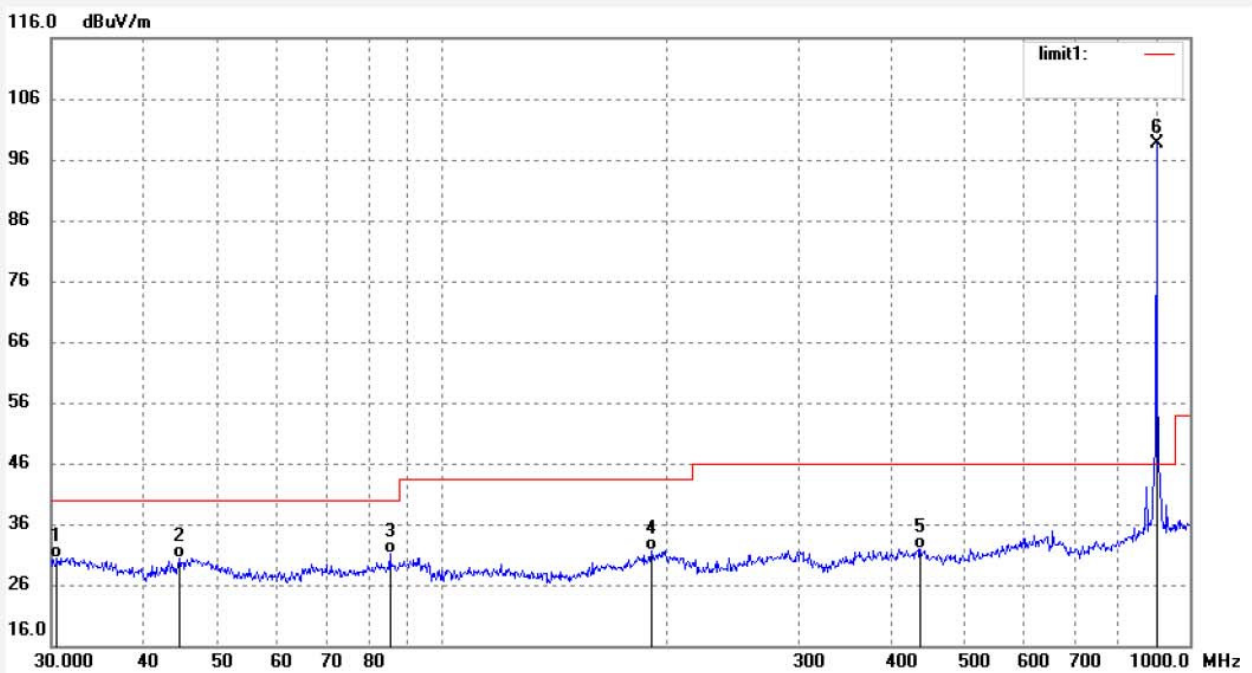
Note: Report NO.:ATE20180202



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 47.5354     | 50.59            | -20.06      | 30.53           | 40.00          | -9.47       | QP       | 200         | 195           |        |
| 2   | 94.9788     | 51.84            | -21.48      | 30.36           | 43.50          | -13.14      | QP       | 200         | 200           |        |
| 3   | 192.4590    | 50.45            | -19.22      | 31.23           | 43.50          | -12.27      | QP       | 200         | 154           |        |
| 4   | 427.2919    | 45.52            | -13.59      | 31.93           | 46.00          | -14.07      | QP       | 200         | 135           |        |
| 5   | 833.0126    | 39.97            | -5.33       | 34.64           | 46.00          | -11.36      | QP       | 200         | 102           |        |
| 6   | 915.0253    | 102.36           | -4.11       | 98.25           |                |             | peak     | 200         | 127           |        |

|  |                        |
|--|------------------------|
| Job No.: frank2018 #232                        | Polarization: Vertical |
| Standard: FCC 15.249 3M Radiated               | Power Source: DC 3V    |
| Test item: Radiation Test                      | Date: 18/03/01/        |
| Temp.( C)/Hum.(%) 25 C / 55 %                  | Time: 9/56/56          |
| EUT: Weather Station(transmitter)              | Engineer Signature:    |
| Mode: TX 915MHz                                | Distance: 3m           |
| Model: WH69E                                   |                        |
| Manufacturer: Fine Offset Electronics Co., Ltd |                        |

Note: Report NO.:ATE20180202



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 30.5317     | 47.36            | -16.88      | 30.48           | 40.00          | -9.52       | QP       | 100         | 320           |        |
| 2   | 44.6221     | 49.66            | -19.36      | 30.30           | 40.00          | -9.70       | QP       | 100         | 340           |        |
| 3   | 85.1770     | 53.53            | -22.40      | 31.13           | 40.00          | -8.87       | QP       | 100         | 34            |        |
| 4   | 190.4411    | 51.03            | -19.41      | 31.62           | 43.50          | -11.88      | QP       | 100         | 147           |        |
| 5   | 436.3956    | 45.27            | -13.33      | 31.94           | 46.00          | -14.06      | QP       | 100         | 102           |        |
| 6   | 915.0253    | 102.68           | -4.11       | 98.57           |                |             | peak     | 100         | 164           |        |



Job No.: frank2018 #234

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: Weather Station(transmitter)

Mode: TX 915MHz

Model: WH69E

Manufacturer: Fine Offset Electronics Co., Ltd

Polarization: Horizontal

Power Source: DC 3V

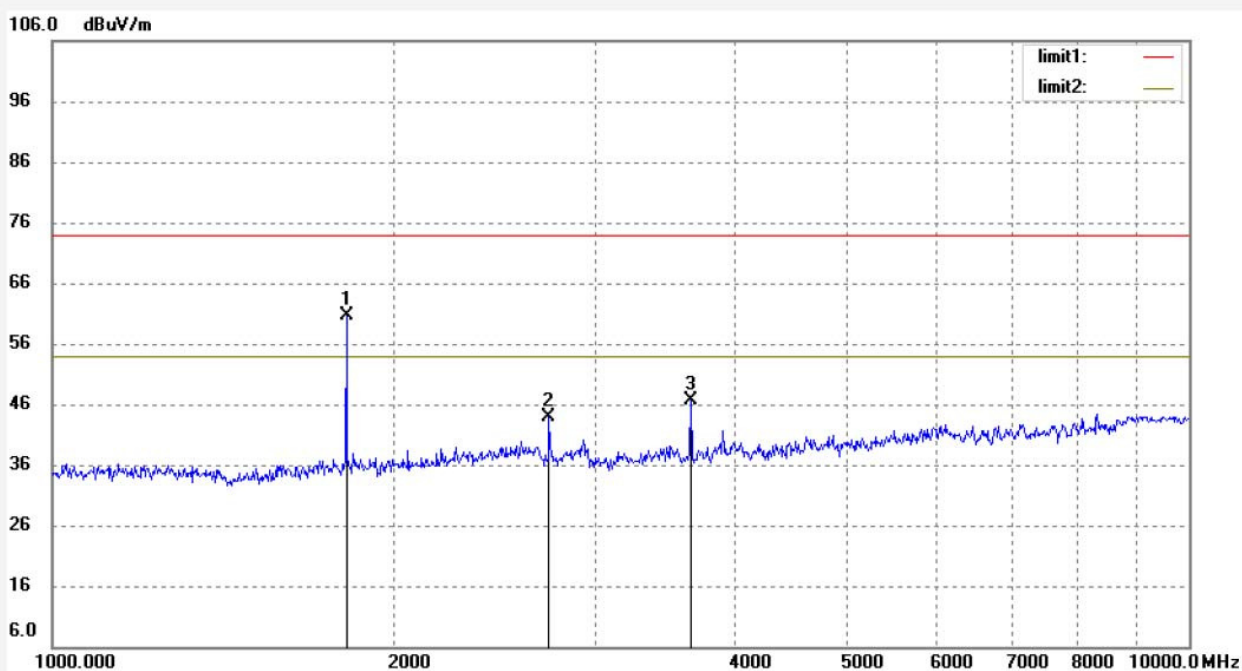
Date: 18/03/01/

Time: 10/00/06

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20180202



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 1830.128    | 70.40            | -9.86       | 60.54           | 74.00          | -13.46      | peak     | 150         | 112           |        |
| 2   | 2745.643    | 50.94            | -7.00       | 43.94           | 74.00          | -30.06      | peak     | 150         | 123           |        |
| 3   | 3660.981    | 50.80            | -4.14       | 46.66           | 74.00          | -27.34      | peak     | 150         | 118           |        |

Job No.: frank2018 #233

Standard: FCC PK

Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 55 %

EUT: Weather Station(transmitter)

Mode: TX 915MHz

Model: WH69E

Manufacturer: Fine Offset Electronics Co., Ltd

Polarization: Vertical

Power Source: DC 3V

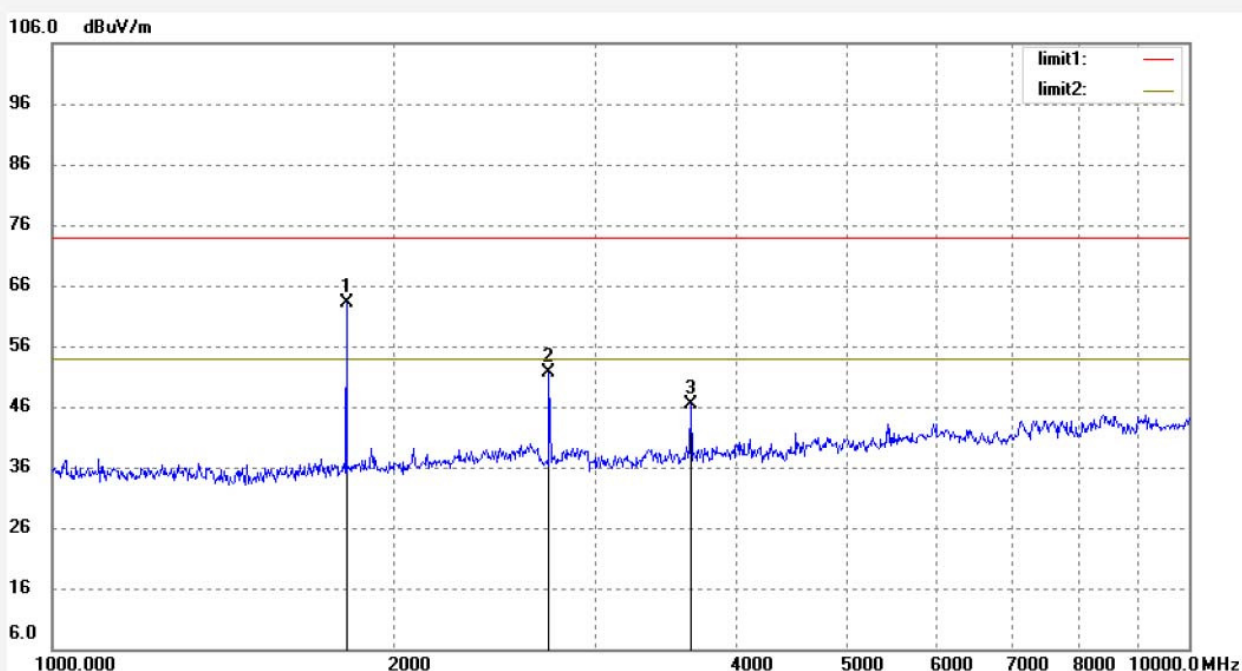
Date: 18/03/01/

Time: 9/59/07

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20180202



| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|-----|-------------|------------------|-------------|-----------------|----------------|-------------|----------|-------------|---------------|--------|
| 1   | 1830.728    | 72.93            | -9.86       | 63.07           | 74.00          | -10.93      | peak     | 150         | 126           |        |
| 2   | 2745.643    | 58.73            | -7.00       | 51.73           | 74.00          | -22.27      | peak     | 150         | 178           |        |
| 3   | 3660.981    | 50.52            | -4.14       | 46.38           | 74.00          | -27.62      | peak     | 150         | 127           |        |

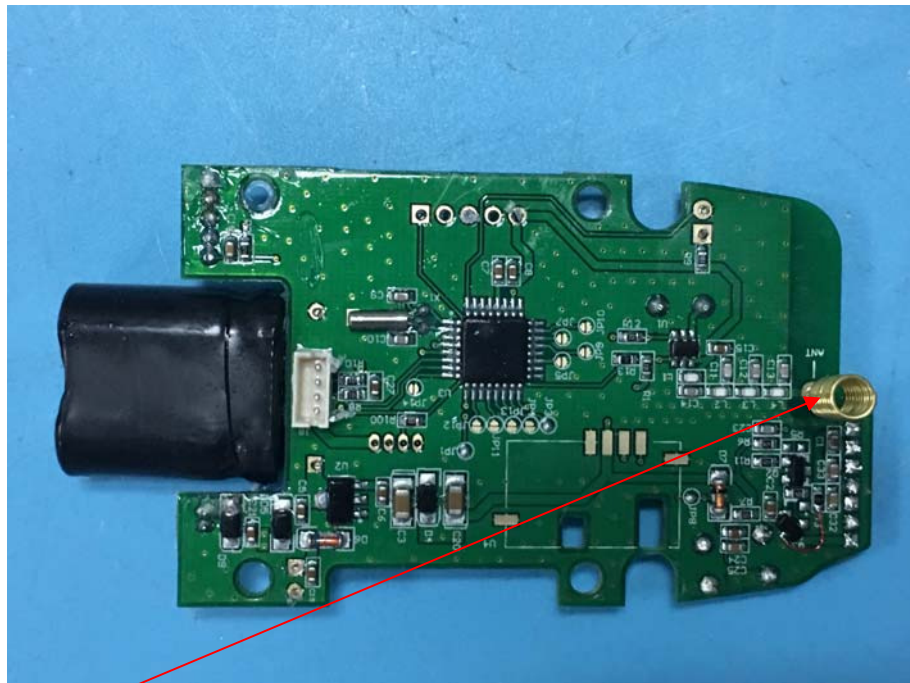
## 9. ANTENNA REQUIREMENT

### 9.1. 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.

### 9.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 2.15dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna