

APPLICATION CERTIFICATION  
On Behalf of  
Chuango Security Technology Corporation

Multi-Beam IR Sensors  
Model No.: BM4200, AID-420

FCC ID: RJYBM4200

Prepared for : Chuango Security Technology Corporation  
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Report Number : ATE20151888  
Date of Test : Aug 26-Sep15, 2015  
Date of Report : Sep 15, 2015

## TABLE OF CONTENTS

Description	Page
Test Report Certification	
<b>1. GENERAL INFORMATION .....</b>	<b>4</b>
1.1. Description of Device (EUT).....	4
1.2. Special Accessory and Auxiliary Equipment .....	4
1.3. Description of Test Facility .....	5
1.4. Measurement Uncertainty.....	5
<b>2. MEASURING DEVICE AND TEST EQUIPMENT .....</b>	<b>6</b>
<b>3. OPERATION OF EUT DURING TESTING .....</b>	<b>7</b>
3.1. Operating Mode .....	7
3.2. Configuration and peripherals .....	7
<b>4. TEST PROCEDURES AND RESULTS .....</b>	<b>8</b>
<b>5. 20DB BANDWIDTH MEASUREMENT.....</b>	<b>9</b>
5.1. Block Diagram of Test Setup.....	9
5.2. The Requirement For Section 15.215(c).....	9
5.3. Operating Condition of EUT .....	9
5.4. Test Procedure .....	9
5.5. Test Result .....	10
<b>6. BAND EDGE COMPLIANCE TEST .....</b>	<b>11</b>
6.1. Block Diagram of Test Setup.....	11
6.2. The Requirement For Section 15.249.....	11
6.3. EUT Configuration on Measurement .....	11
6.4. Operating Condition of EUT .....	11
6.5. Test Procedure .....	11
6.6. Test Result .....	12
<b>7. AVERAGE FACTOR MEASUREMENT .....</b>	<b>16</b>
7.1. Block Diagram of Test Setup.....	16
7.2. Average factor Measurement according to ANSI C63.10-2013.....	16
7.3. EUT Configuration on Measurement .....	16
7.4. Operating Condition of EUT .....	16
7.5. Test Procedure .....	17
7.6. Measurement Result .....	17
<b>8. RADIATED SPURIOUS EMISSION TEST .....</b>	<b>19</b>
8.1. Block Diagram of Test Setup.....	19
8.2. The Limit For Section 15.249.....	20
8.3. Restricted bands of operation .....	21
8.4. Configuration of EUT on Measurement .....	21
8.5. Operating Condition of EUT .....	21
8.6. Test Procedure .....	22
8.7. The Field Strength of Radiation Emission Measurement Results .....	23
<b>9. ANTENNA REQUIREMENT.....</b>	<b>28</b>
9.1. The Requirement .....	28
9.2. Antenna Construction .....	28

## Test Report Certification

Applicant : Chuango Security Technology Corporation  
Manufacturer : Chuango Security Technology Corporation  
EUT Description : Multi-Beam IR Sensors  
(A) MODEL NO.: BM4200, AID-420  
(B) TRADE NAME: SMANOS  
(C) POWER SUPPLY: DC 3.0V(Battery)

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 : Aug 26, 2015-Sep 15, 2015  
Date of Report : Sep 15, 2015

Prepared by :   
(Tim.zhang, Engineer)

Approved & Authorized Signer :   
( Sean Liu, Manager)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

EUT	:	Multi-Beam IR Sensors
Model Number	:	BM4200, AID-420
Power Supply	:	DC 3V (battery)
Modulation:	:	ASK
Operation Frequency	:	915MHz
Type of Antenna	:	Helical antenna
Max antenna gain	:	2.0dBi
Applicant	:	Chuango Security Technology Corporation.
Address	:	6-17, Overseas Students Pioneer Park, No.108, Jiangbin East Road, Economic & Technological Development Zone, Fuzhou 350015, China.
Manufacturer	:	Chuango Security Technology Corporation.
Address	:	6-17, Overseas Students Pioneer Park, No.108, Jiangbin East Road, Economic & Technological Development Zone, Fuzhou 350015, China.
Date of sample received	:	Aug 26, 2015
Date of Test	:	Aug 26, 2015-Sep 15, 2015

### 1.2. Special Accessory and Auxiliary Equipment

N/A

### 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	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 11, 2015	Jan. 10, 2016
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 11, 2015	Jan. 10, 2016
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 11, 2015	Jan. 10, 2016
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 11, 2015	Jan. 10, 2016
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2015	Jan. 14, 2016
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2015	Jan. 14, 2016
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2015	Jan. 14, 2016
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 15, 2015	Jan. 14, 2016
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 11, 2015	Jan. 10, 2016
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 11, 2015	Jan. 10, 2016
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 11, 2015	Jan. 10, 2016
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 11, 2015	Jan. 10, 2016

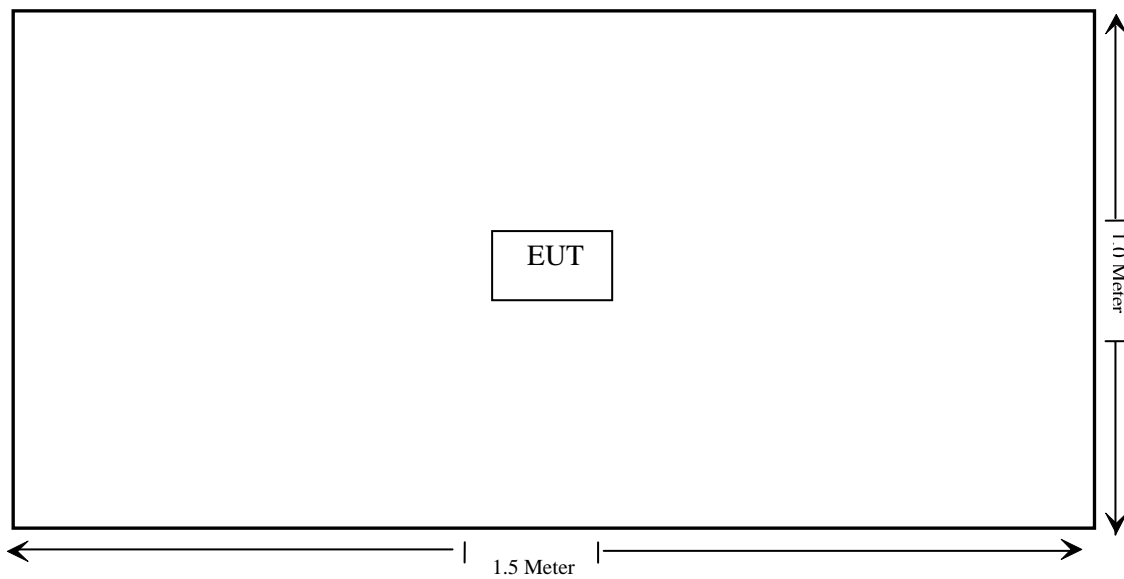
### 3. OPERATION OF EUT DURING TESTING

#### 3.1. Operating Mode

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

#### 3.2. Configuration and peripherals

Block Diagram of Test Setup



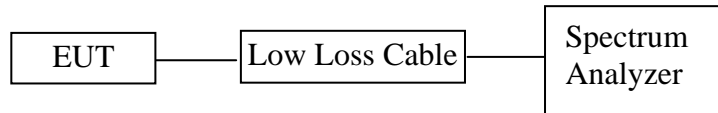
#### 4. TEST PROCEDURES AND RESULTS

<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), Section 15.209(a), Section 15.249, Section 15.35	Radiated Spurious Emission Test	Compliant
Section 15.207	AC Power Line Conducted Emission Test	N/A (note: The EUT is powered by battery, so this test does not apply)
Section 15.203	Antenna Requirement	Compliant



## 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.

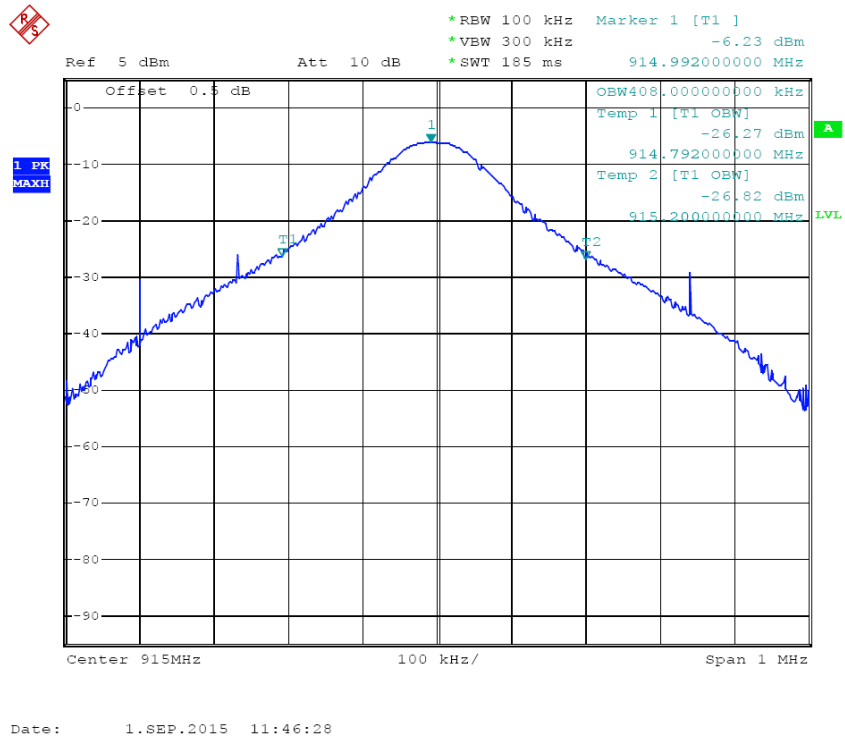
5.4.3. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz, Detector function=peak, Trace=max hold, Sweep=auto.

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

### 5.5. Test Result

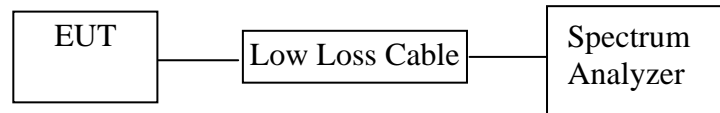
Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
1	915	0.408

The spectrum analyzer plots are attached as below.



## 6. BAND EDGE COMPLIANCE TEST

### 6.1. Block Diagram of Test Setup



### 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. 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 modes measure it. The transmit frequency is 915 MHz.

### 6.5. Test Procedure

Conducted Band Edge:

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

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

**Radiated Band Edge:****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.

**Test Procedure:**

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 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.

Let the EUT work in TX modes then measure it.

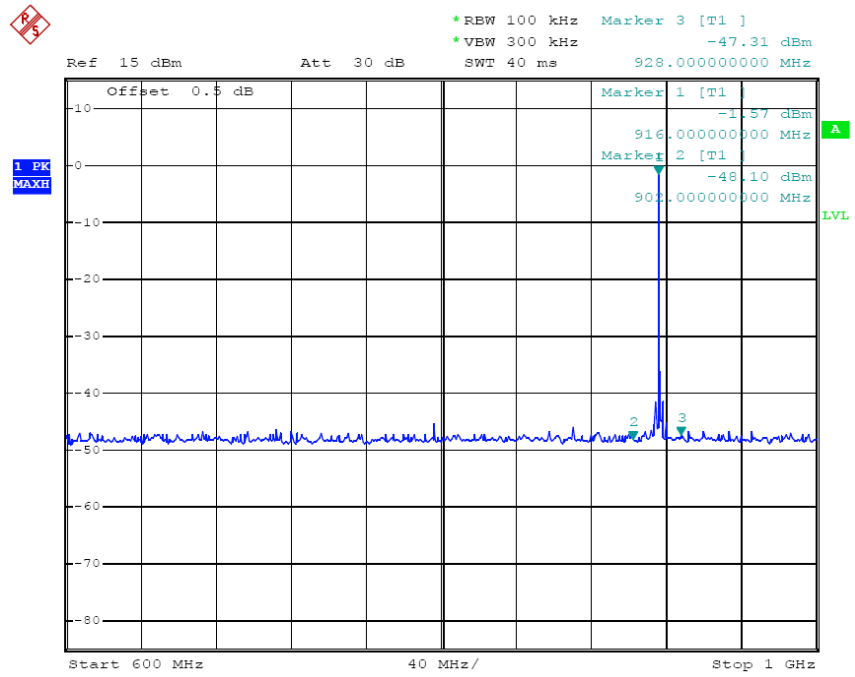
During the radiated emission test, the spectrum analyzer was set with the following configurations:

- 1.The resolution bandwidth of test receiver/spectrum analyzer is 100KHz and video bandwidth is 300KHz for peak measurement with peak detector at frequency Below 1GHz.
- 2.The resolution bandwidth of test receiver/spectrum analyzer is 100KHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency Below 1GHz.
- 3.All modes of operation were investigated and the worst-case emissions are reported.

**6.6.Test Result**

**Pass**

### Conducted Band Edge Result



Date: 15.SEP.2000 10:41:23

## Radiated Band Edge Result


**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 2# Chamber

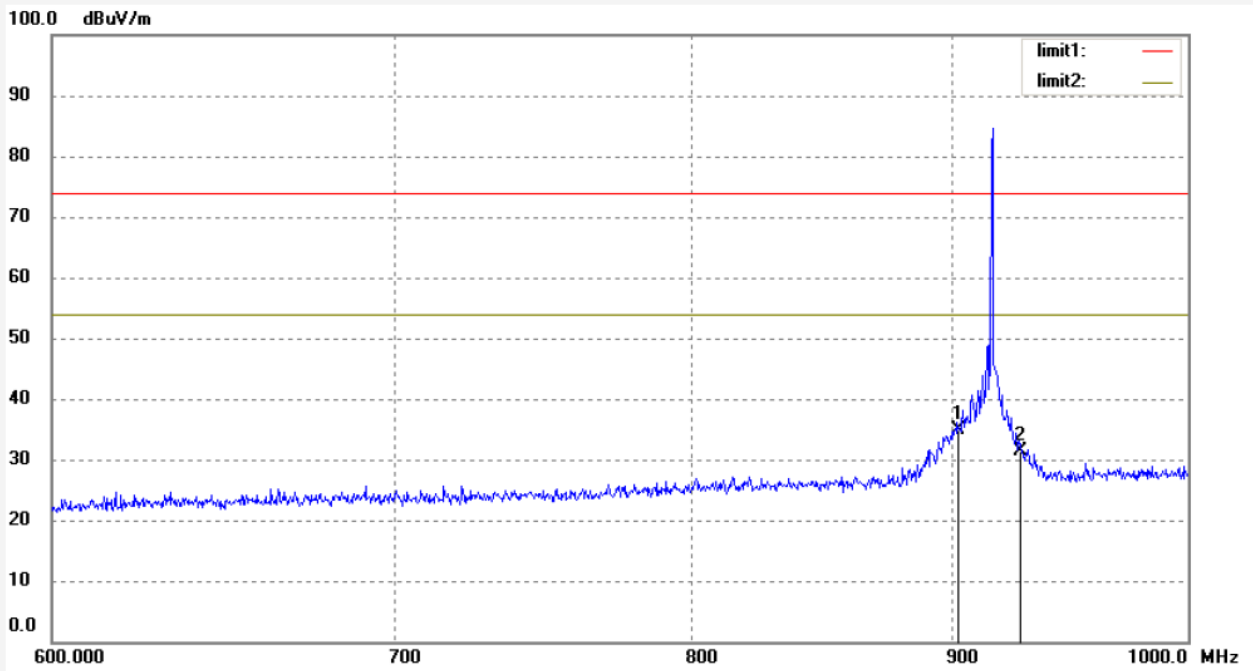
Tel:+86-0755-26503290

Fax:+86-0755-26503396

 Job No.: STAR2015 #597  
 Standard: RSS-210 PK  
 Test item: Radiation Test  
 Temp.( C)/Hum.(%) 23 C / 48 %  
 EUT: Multi-Beam IR Sensors  
 Mode: TX 915  
 Model: BM4200  
 Manufacturer: Chuango

 Polarization: Horizontal  
 Power Source: DC 3V  
 Date: 15/09/11/  
 Time: 8/39/15  
 Engineer Signature:  
 Distance: 3m

Note: Report NO.:ATE20151888



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	34.65	0.28	34.93	74.00	-39.07	peak			
2	928.0000	30.57	0.80	31.37	74.00	-42.63	peak			

Job No.: STAR2015 #598

Standard: FCC PK

Test item: Radiation Test

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

EUT: Multi-Beam IR Sensors

Mode: TX 915

Model: BM4200

Manufacturer: Chuango

Polarization: Vertical

Power Source: DC 3V

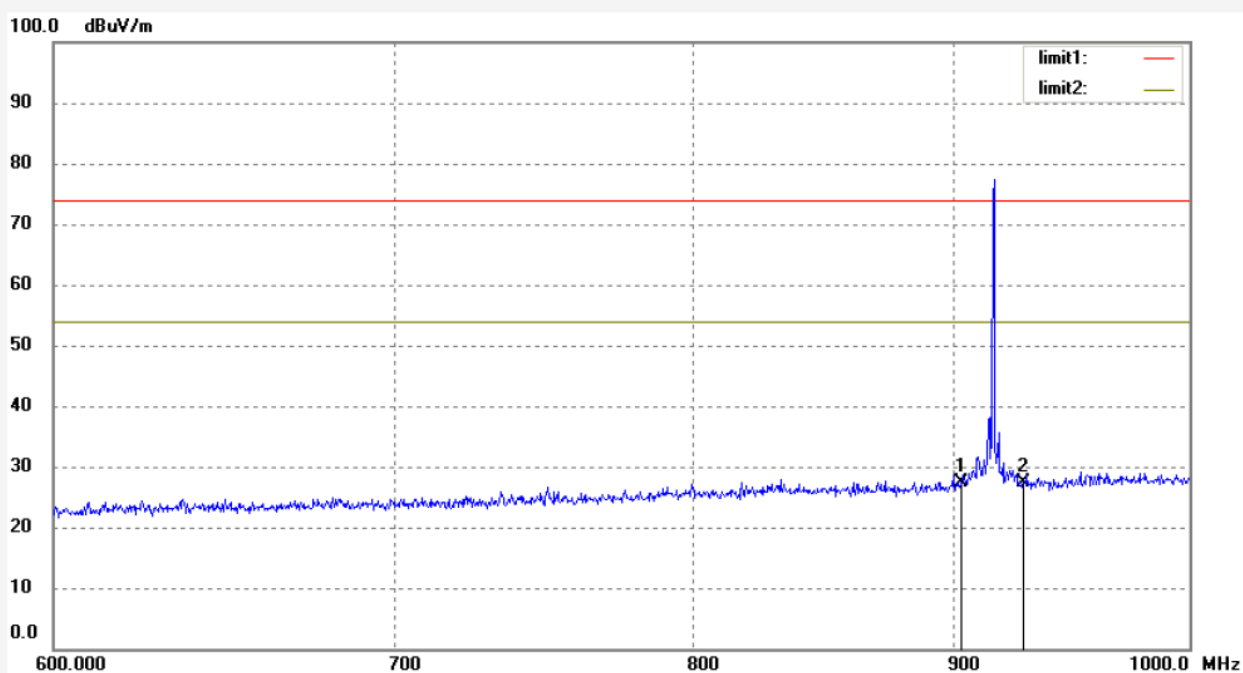
Date: 15/09/11/

Time: 8/42/11

Engineer Signature:

Distance: 3m

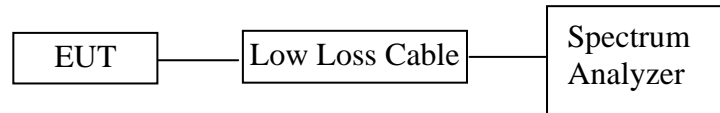
Note: Report NO.:ATE20151888



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	27.12	0.28	27.40	74.00	-46.60	peak			
2	928.0000	26.48	0.80	27.28	74.00	-46.72	peak			

## 7. AVERAGE FACTOR MEASUREMENT

### 7.1. Block Diagram of Test Setup



### 7.2. 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. 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)**

### 7.3. 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.

### 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 mode measure it.



### 7.5. Test Procedure

7.5.1. 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.

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

7.5.3. Set EUT as normal operation.

7.5.4. Set SPA View. Delta Mark time.

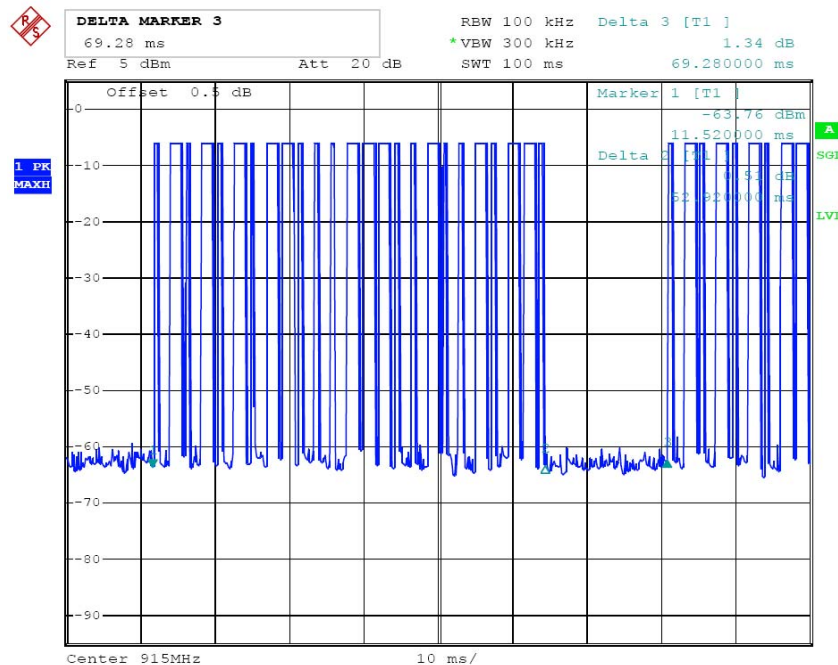
### 7.6. Measurement Result

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

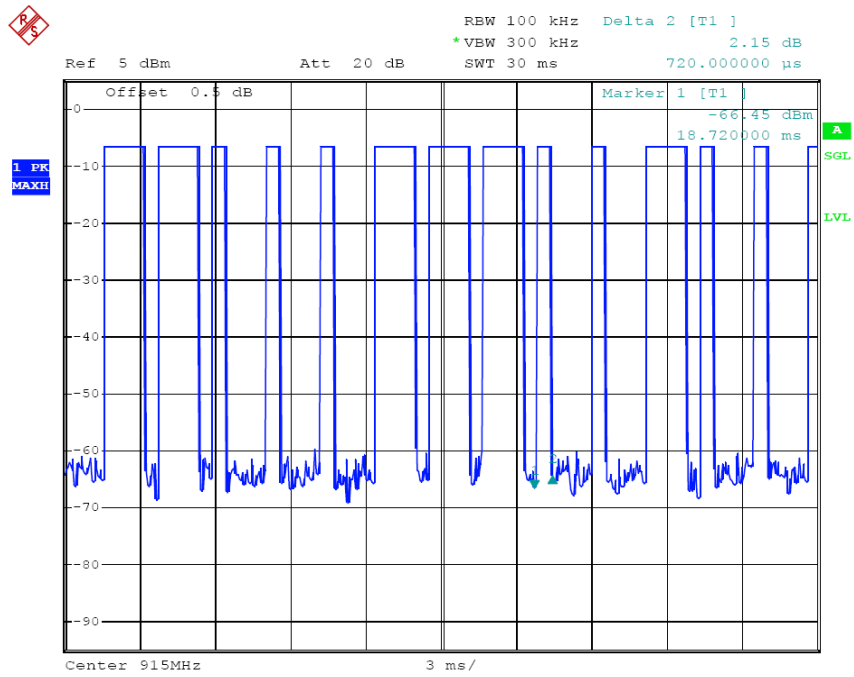
$$\text{Effective period of the cycle} = (0.72 \times 17) + (1.8 \times 17) \text{ms} = 42.84 \text{ ms}$$

$$\text{DC} = 42.84 \text{ms} / 100 \text{ms} = 0.4284$$

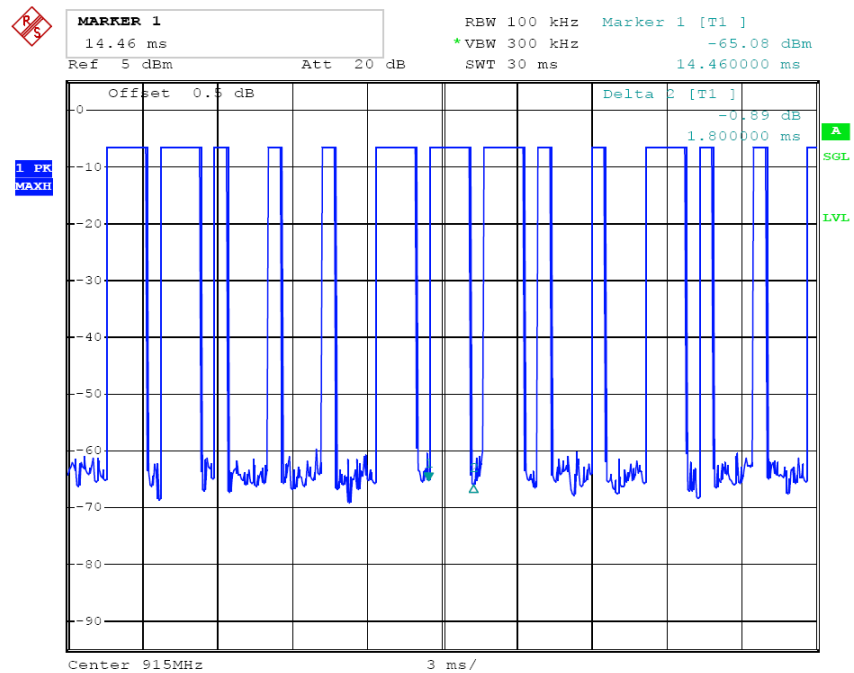
**Therefore, the average factor is found by  $20 \log 0.4284 = -7.36 \text{dB}$**



Date: 1.SEP.2015 11:56:32



Date: 1.SEP.2015 11:55:25

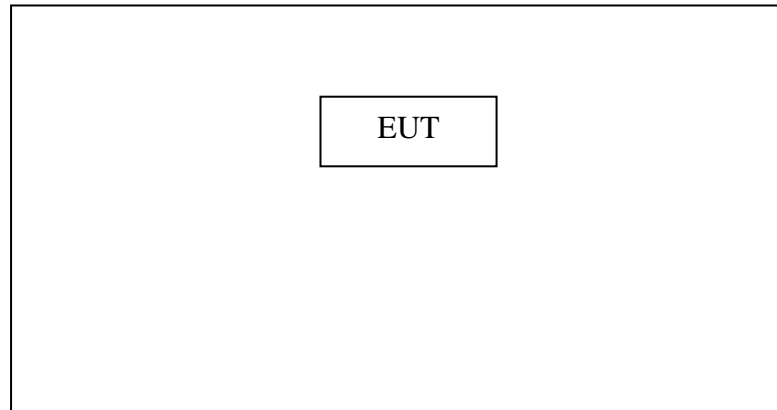


Date: 1.SEP.2015 11:55:04

## 8. RADIATED SPURIOUS EMISSION TEST

### 8.1. Block Diagram of Test Setup

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



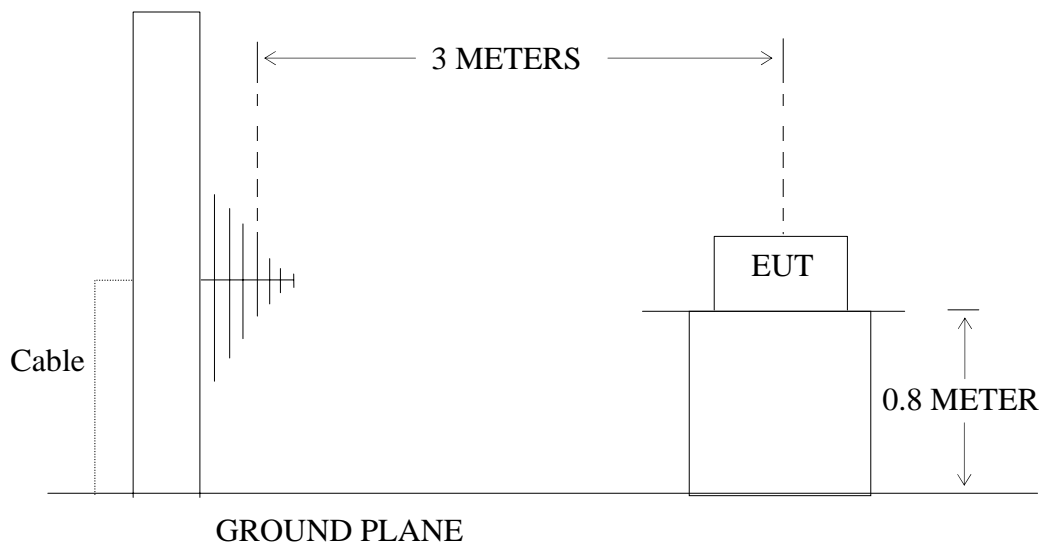
Setup: Transmitting mode

(EUT: Multi-Beam IR Sensors)

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

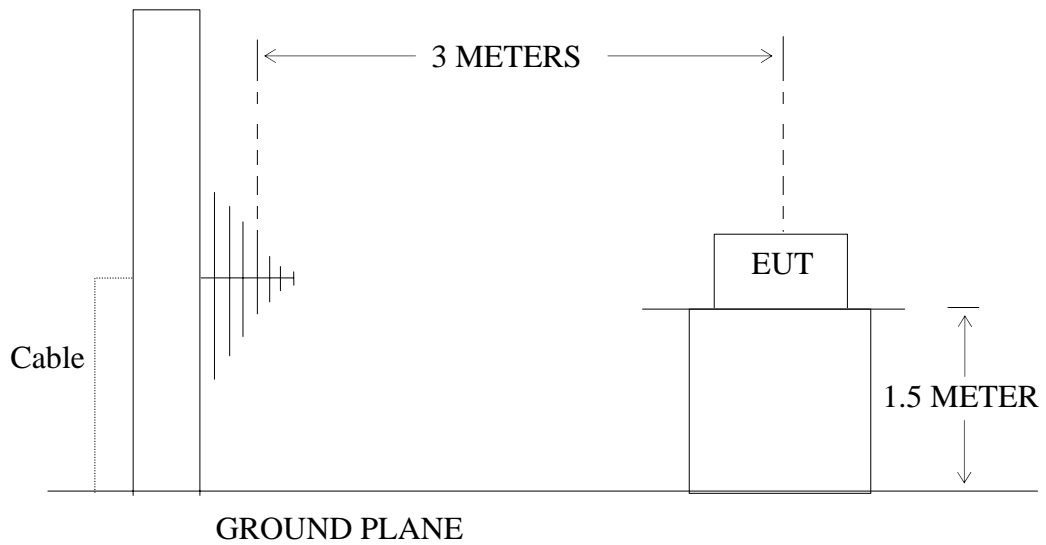
**Below 1GHz**

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



**Above 1GHz**

ANTENNA ELEVATION VARIES FROM 1 TO 4 METERS



**8.2. 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).

### 8.3.Restricted bands of operation

#### 8.3.1.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.

### 8.4.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.

### 8.5.Operating Condition of EUT

8.5.1.Setup the EUT and simulator as shown as Section 7.1.

8.5.2.Turn on the power of all equipment.

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

## 8.6. 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 frequency range from 30MHz to 10000MHz is checked.

Result = Reading + Corrected Factor

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

During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

### 8.7.The Field Strength of Radiation Emission Measurement Results PASS.

EUT: Multi-Beam IR Sensors  
 Model No.: BM4200, AID-420 Power Supply: DC 3V  
 Test Mode: TX Test Engineer: Star

Frequency (MHz)	Reading (dBμV/m)	Factor Corr. (dB)	Average Factor (dB)	Result(dBμV/m)		Limit(dBμV/m)		Margin(dB)		Polarization
	PEAK			AV	PEAK	AV	AV	PEAK		
<b>915</b>	<b>84.05</b>	<b>0.49</b>	<b>-7.36</b>	<b>77.18</b>	<b>84.54</b>	<b>94.0</b>	<b>114.0</b>	<b>-16.82</b>	<b>-29.46</b>	Horizontal
1828	60.41	-9.75	-7.36	43.30	50.66	54.0	74.0	-10.70	-23.34	
<b>915</b>	<b>74.46</b>	<b>0.49</b>	<b>-7.36</b>	<b>67.59</b>	<b>74.95</b>	<b>94.0</b>	<b>114.0</b>	<b>-26.41</b>	<b>-39.05</b>	Vertical
1828	56.12	-9.75	-7.36	39.01	46.37	54.0	74.0	-14.99	-27.63	

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:  

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$
 Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain
3. The spectral diagrams display the measurement of peak values.
4. Average value= PK value + Average Factor (duty factor)
5. If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.
6. The EUT is tested radiation emission in three axes(X,Y,Z). The worst emissions are reported in three axes.



**ACCURATE TECHNOLOGY CO., LTD.**

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

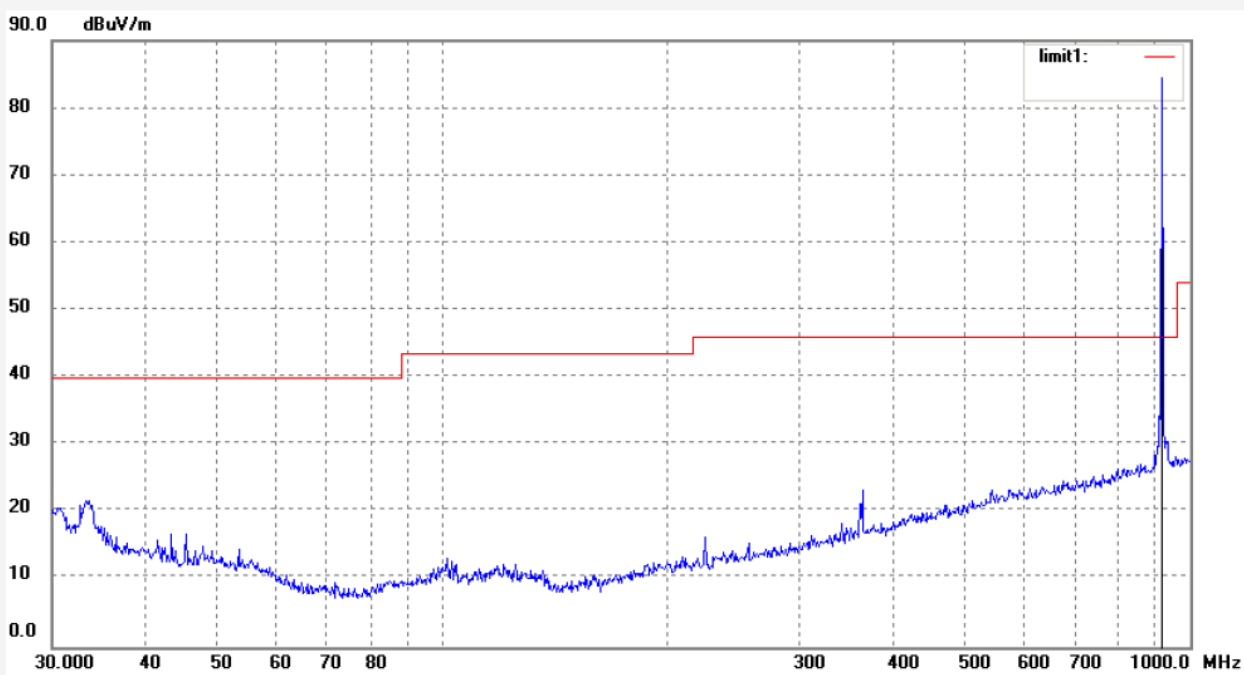
Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: star2015 #542	Polarization: Horizontal
Standard: FCC PART 15B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 15/09/01/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 9/15/20
EUT: Multi-Beam IR Sensors	Engineer Signature:
Mode: TX 915	Distance: 3m
Model: BM4200	
Manufacturer: Chuango	

Note: Report NO.:ATE20151888



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	916.0687	84.05	0.49	84.54			peak			





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Science & Industry Park,Nanshan Shenzhen,P.R.China

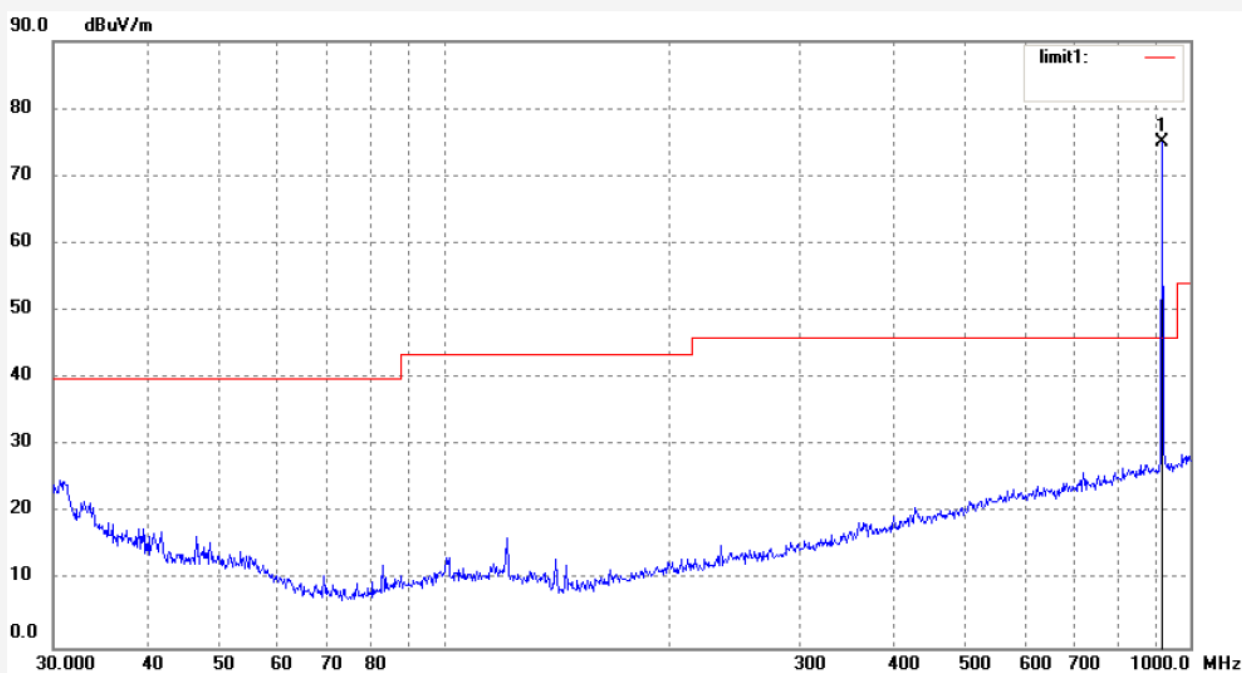
Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: star2015 #543	Polarization: Vertical
Standard: FCC PART 15B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 15/09/01/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 9/19/15
EUT: Multi-Beam IR Sensors	Engineer Signature:
Mode: TX 915	Distance: 3m
Model: BM4200	
Manufacturer: Chuango	

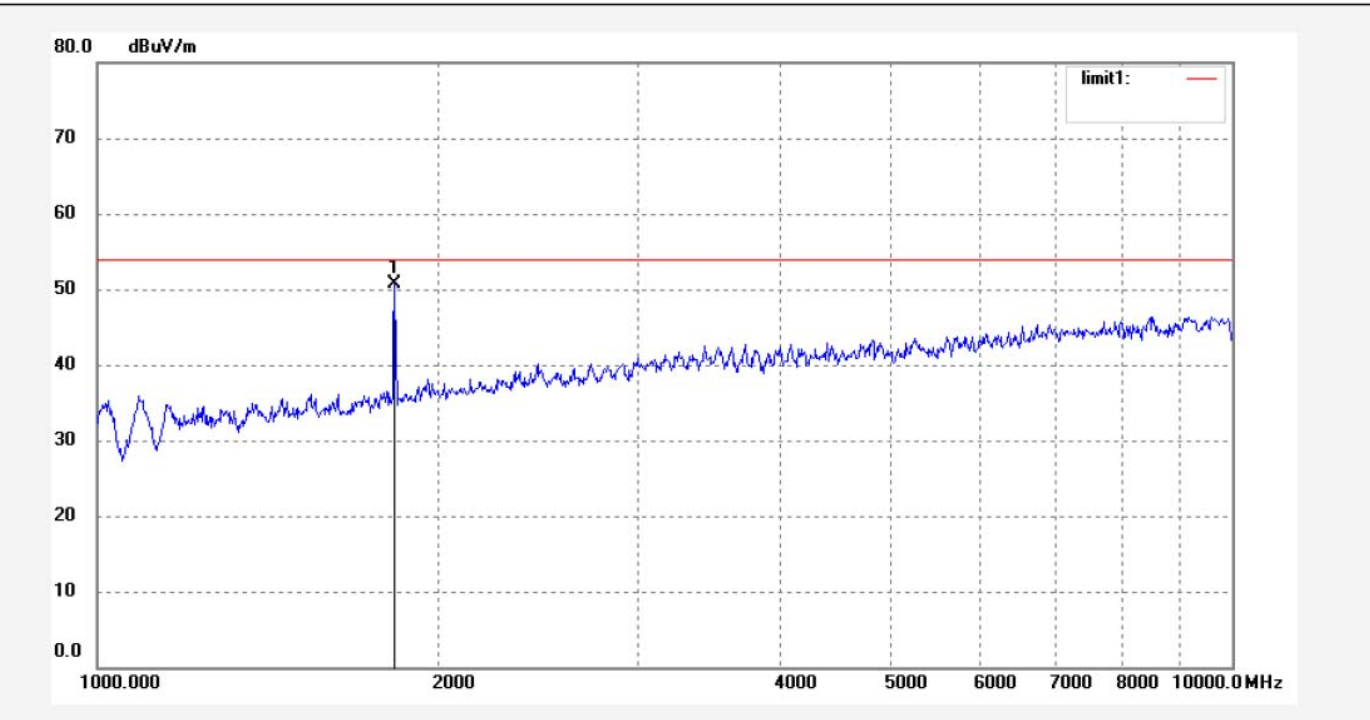
Note: Report NO.:ATE20151888



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	916.0687	74.46	0.49	74.95			peak			

Job No.: star2015 #554	Polarization: Horizontal
Standard: FCC PART 15B 3M Radiated	Power Source: DC 3V
Test item: Radiation Test	Date: 15/09/01/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 9/42/27
EUT: Multi-Beam IR Sensors	Engineer Signature:
Mode: TX 915	Distance: 3m
Model: BM4200	
Manufacturer: Chuango	

Note: Report NO.:ATE20151888



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1828.100	60.41	-9.75	50.66	74.00	-23.34	peak			

Job No.: star2015 #553

Standard: FCC PART 15B 3M Radiated

Test item: Radiation Test

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

EUT: Multi-Beam IR Sensors

Mode: TX 915

Model: BM4200

Manufacturer: Chuango

Polarization: Vertical

Power Source: DC 3V

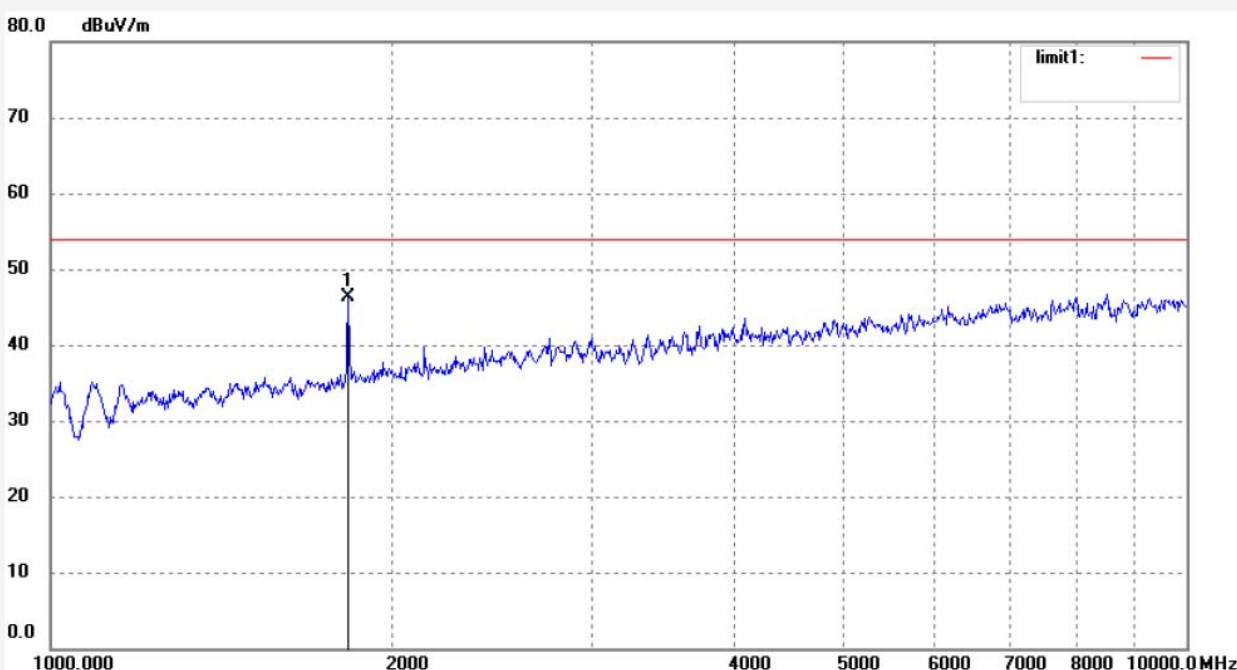
Date: 15/09/01/

Time: 9/39/31

Engineer Signature:

Distance: 3m

Note: Report NO.:ATE20151888



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	1828.100	56.12	-9.75	46.37	74.00	-27.63	peak			

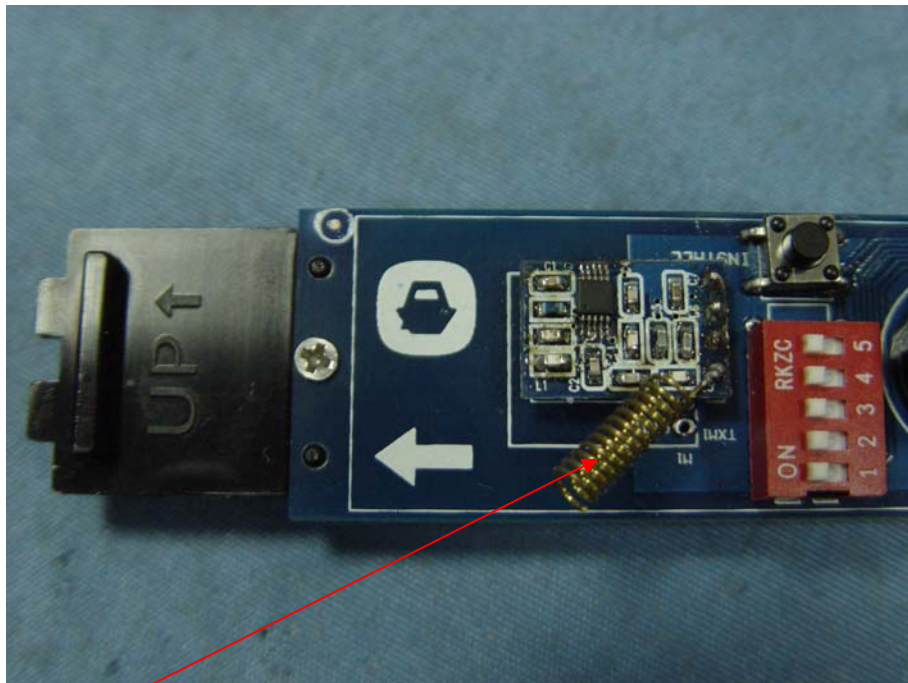
## 9. ANTENNA REQUIREMENT

### 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 2.0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna