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# FCC Test Report

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Report No.: AGC21L120501-1F2

**FCC ID** : D4CFJ007  
**PRODUCT DESIGNATION** : DRIVEWAY / WIRELESS ALERT  
**BRAND NAME** : FUJING TECH  
**TEST MODEL** : FJ 007  
**CLIENT** : ZHUHAI FUJING TECHNOLOGY CO., LTD.  
**DATE OF ISSUE** : May 21, 2012  
**STANDARD(S)** : FCC Part 15 Rules  
**REPORT VERSION** : V1.0

**Attestation of Global Compliance Co., Ltd.**

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## 1. VERIFICATION OF COMPLIANCE

Applicant:	ZHUHAI FUJING TECHNOLOGY CO., LTD.
Applicant Address:	F4 ZHULONG INDUSTRY BLDG. GUANGSHENG, NANPING, ZHUHAI CITY, CHINA
Manufacturer:	ZHUHAI FUJING TECHNOLOGY CO., LTD.
Manufacturer Address:	F4 ZHULONG INDUSTRY BLDG. GUANGSHENG, NANPING, ZHUHAI CITY, CHINA
Product Description:	DRIVEWAY / WIRELESS ALERT
Brand Name:	FUJING TECH
FCC ID:	FJ 007
Report Number:	AGC21L120501-1F2
Date of Test:	May 14~May 17,2012

### WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance Co., Ltd. for compliance with the requirements set forth in the FCC Rules and Regulations Part 15, the measurement procedure according to ANSI C63.4:2003. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Prepared By	
	Wall Huang      May 21, 2012
Checked By	
	Forrest Lei      May 21, 2012
Authorized By	
	Solger Zhang      May 21, 2012

## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)

EUT Designation:	DRIVEWAY / WIRELESS ALERT
Brand Name:	FUJING TECH
Model Name:	FJ 007
Rated Voltage:	DC 4.5V by battery
Frequency Rating:	433.92MHz
Transmit Power	1mw
Number of Channels:	1 Channel
Type of Antenna:	Integral antenna which designed as an indispensable part of the equipment.
<b>**Note:</b> For more information refer to the circuit diagram form and the user's manual.	

### 2.2. TEST STANDARDS

The following report of is prepared on behalf of the Attestation of Global Compliance Co., Ltd. in accordance with FCC Part 15, Subpart C, and section 15.231, 15.203 and 15.209 of the Federal Communication Commission rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.231, 15.203 and 15.209 of the Federal Communication Commission rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

### 2.3. RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for FCC ID: filing to comply with Section 15.231 of the FCC Part 15, Subpart C Rules.

### 2.4. TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions. The EUT was tested in all three

orthogonal planes and the worse case was showed.

## 2.5. TEST FACILITY

All measurement facilities used to collect the measurement data are located at

### **Attestation of Global Compliance Co., Ltd.**

(1&2F, No.2 Building, Huafeng No.1 Technical, Industrial Park, Sanwei, Xixiang, Baoan District,  
Shenzhen, China)

The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003.

FCC register No.: 259865

## 2.6. ACCESSORIES EQUIPMENT LIST AND DETAILS

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
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## 2.7. EUT PORT&CABLE LIST AND DETAILS

I/O Port Type	Q'TY	Cable	Tested with
--	--	--	--

### 3. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.203 Antenna Requirement	Compliant
§15.207 Conducted Requirement	N/A
§15.209 General Requirement	Compliant
§15.231 (a) Dwell Time Requirement	Compliant
§15.231 (b) Radiated Emission Requirement	Compliant
§15.231 (c) 20 dB Bandwidth Requirement	Compliant

### 4. TEST MODES

No.	Test Mode
1	TX

**\*\*Note:** The test is performed using a new alkaline battery.

## **5. §15.203 ANTENNA REQUIREMENT**

### **5.1. STANDARD APPLICABLE**

According to FCC 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

### **5.2. TEST RESULT**

This product has a PCB antenna, fulfill the requirement of this section.

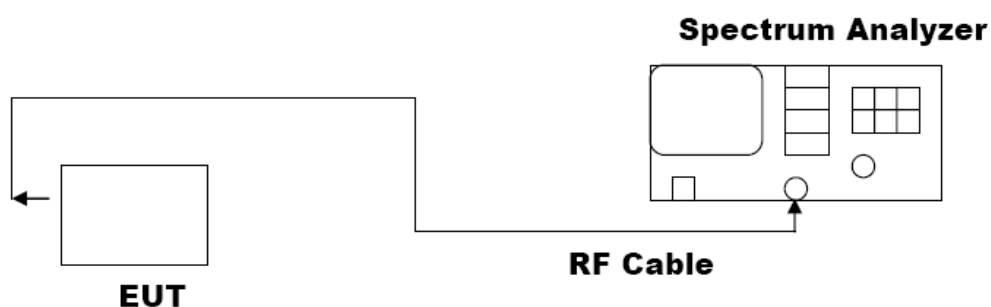


## 6. §15.231 (a) DWELL TIME REQUIREMENT

### 6.1. DESCRIPTION OF REQUIREMENT

The EUT is a manually operated transmitter. According to the §15.231 (a) of FCC part15 rules, a manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

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

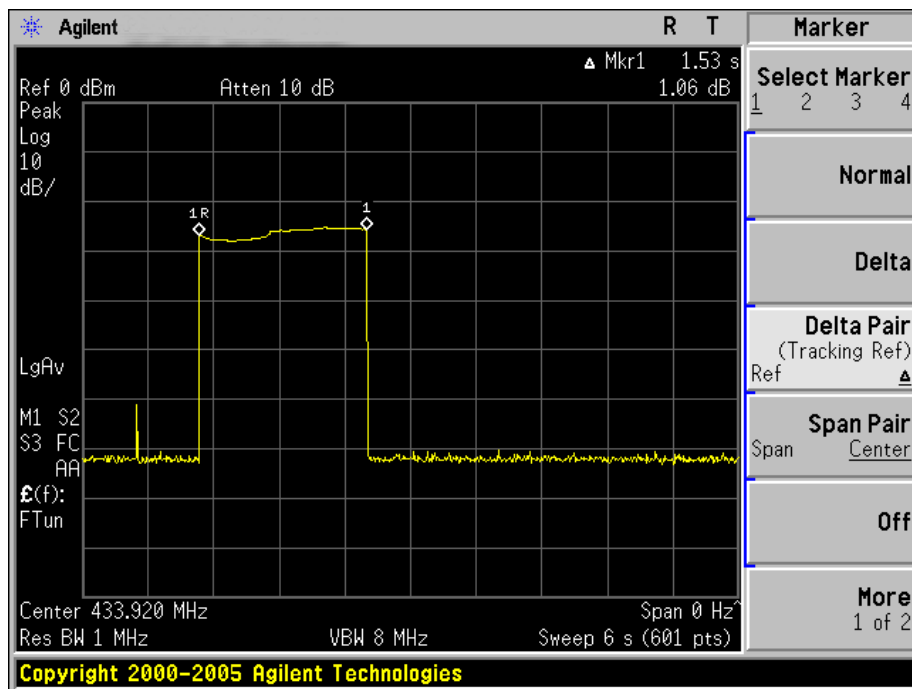


### 6.3. MEASUREMENT PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator, set the EUT work.
3. Set the spectrum analyzer as RBW=1MHz, VBW>=RBW, Span = 0 Hz, Sweep time=6s.
4. Set SPA Trace 1, then View.

### 6.4. TEST RESULT

PASS



## 7. §15.209, §15.231 (b) RADIATED EMISSION REQUIREMENT

### 7.1. STANDARD APPLICABLE AND LIMITS

**TABLE 1 Field Strength Of Emissions**

Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolts/meter)	Field Strength of Spurious Emissions (microvolts/meter)
40.66 - 40.70	2,250	225
70 - 130	1,250	125
130 - 174	1,250 to 3,750 **	125 to 375 **
174 - 260	3,750	375
260 - 470	3,750 to 12,500 **	375 to 1,250 **
Above 470	12,500	1,250

\*\* linear interpolations

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz,  $\mu\text{V/m}$  at 3 meters =  $56.81818(F) - 6136.3636$ ; for the band 260-470 MHz,  $\mu\text{V/m}$  at 3 meters =  $41.6667(F) - 7083.3333$ . The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

$$**\text{Emission Level(dB } \mu\text{V/m)} = 20\log(41.6667 \cdot F_c(\text{MHz}) - 7083.3333)$$

The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in Section 15.209, whichever limit permits a higher field strength.

**TABLE 2 §15.209 General Radiated Emission Limits**

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBuV/m/ Q.P.)
30~88	3	40.0
88~216	3	43.5
216~960	3	46.0
Above 960	3	54.0

## 7.2. TEST EQUIPMENT LIST AND DETAILS

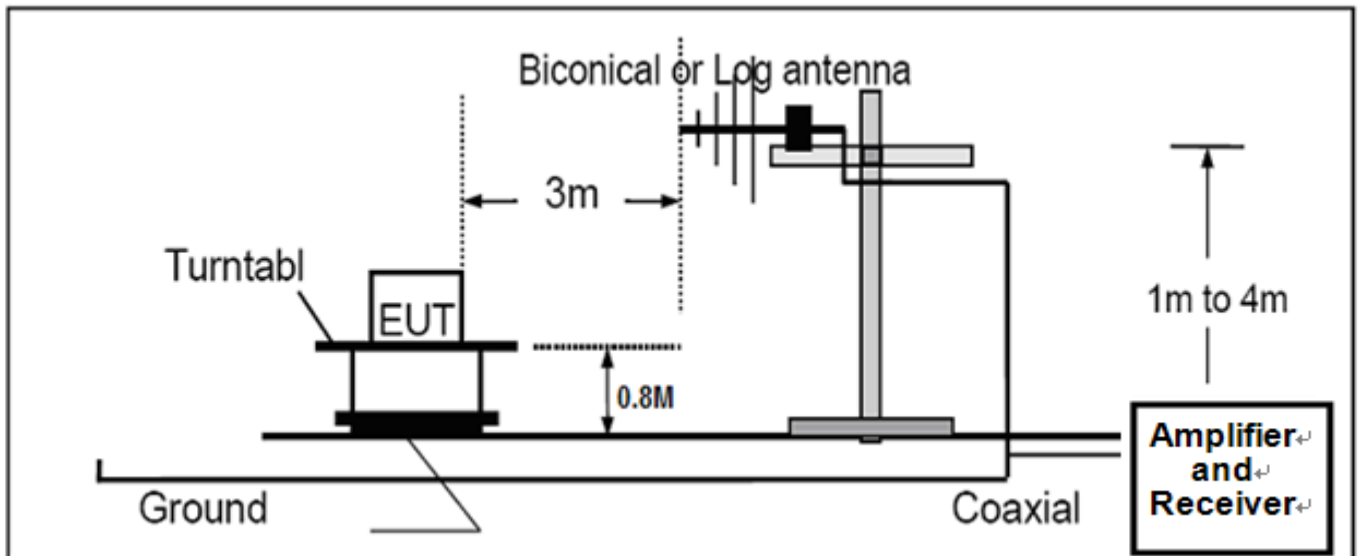
Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	06/27/2011	06/26/2012
BICONICAL ANTENNA	A.H.	SAS-521-4	128	06/27/2011	06/26/2012
POSITIONING CONTROLLER	MF	MF-7802	MF780208147	06/27/2011	06/26/2012

### 7.3. TEST PROCEDURE

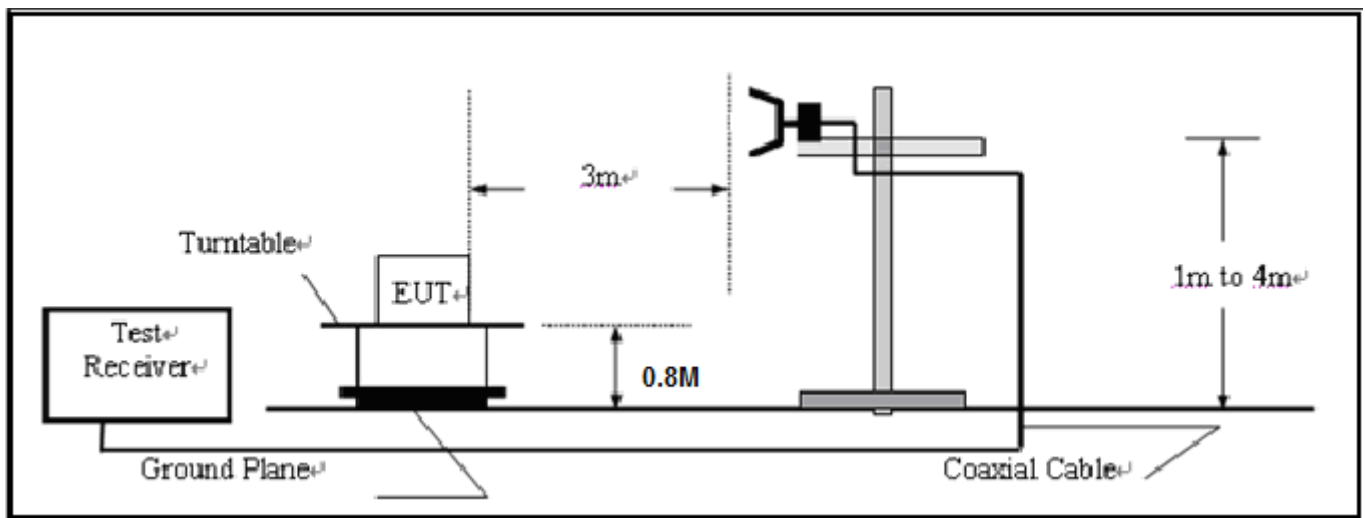
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

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

30MHz-1000MHz:



ABOVE 1000MHz:

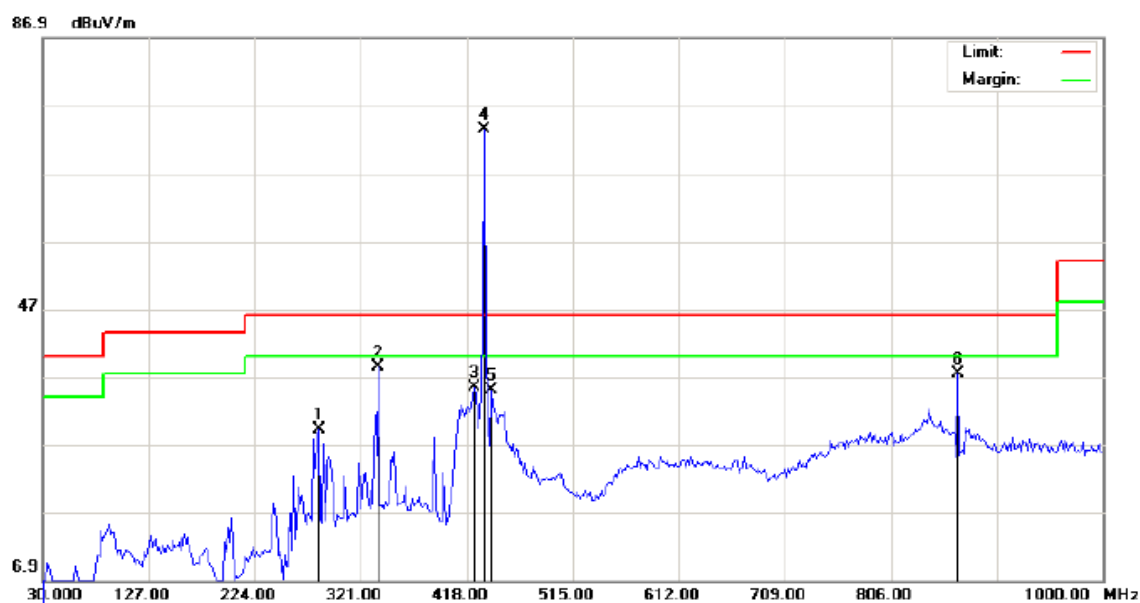


## 7.5. TEST RESULTS/PLOTS

Operation Mode: DRIVEWAY / WIRELESS ALERT Test Date: May 21,2012  
 Temperature: 25°C Tested by: Wall  
 Humidity: 55 % RH

### TEST RESULT OF RADIATED EMISSION TEST (30MHZ-1GHZ)

Horizontal:



Site: site #1

Limit: FCC Class B 3M Radiation

EUT: DRIVEWAY/WIRELESS

M/N: FJ 007

Mode: Transmitting

Note:

Polarization: *Horizontal*

Power: DC 4.5V

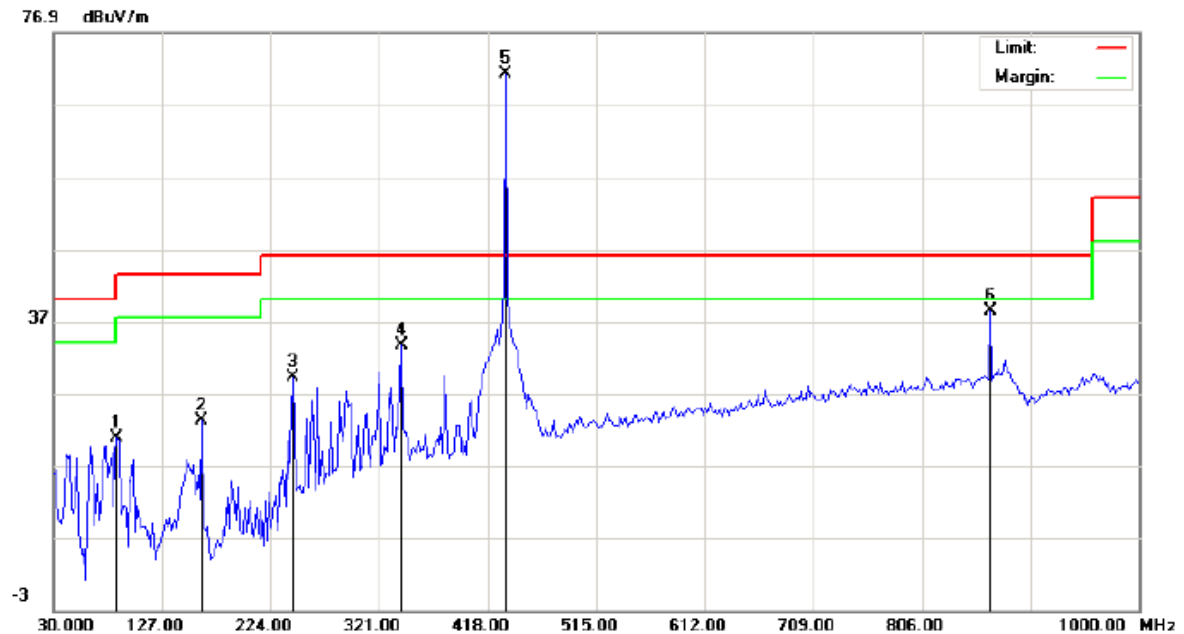
Distance: 3m

Temperature: 26

Humidity: 60 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		282.2000	11.94	17.17	29.11	46.00	-16.89	peak			
2		337.1667	19.49	18.89	38.38	46.00	-7.62	peak			
3		424.4667	14.72	20.67	35.39	46.00	-10.61	peak			
4	*	434.1667	52.13	21.18	73.31	80.79	-7.48	peak			
5		440.6333	13.57	21.48	35.05	46.00	-10.95	peak			
6		867.4333	8.21	29.16	37.37	46.00	-8.63	peak			

Vertical:



Site: site #1

Polarization: *Vertical*

Temperature: 26

Limit: FCC Class B 3M Radiation

Power: DC 4.5V

Humidity: 60 %

EUT: DRIVEWAY/WIRELESS

Distance: 3m

M/N: FJ 007

Mode: Transmitting

Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		86.5832	15.37	5.46	20.83	40.00	-19.17	peak			
2		162.5667	11.62	11.50	23.12	43.50	-20.38	peak			
3		243.4000	14.95	14.23	29.18	46.00	-16.82	peak			
4		340.4000	14.56	18.98	33.54	46.00	-12.46	peak			
5	*	434.1667	49.73	21.47	71.20	80.79	-9.59	peak			
6		867.4333	8.76	29.60	38.36	46.00	-7.64	peak			



**TEST RESULT OF RADIATED EMISSION TEST (ABOVE 1000MHZ)**

Freq. (MHz)	Level (dB uV)	Over Limit (dB)	Limit Line (dB uV)	Remark
--	--	--	--	Seen to Note

**\*\*Note:**

*The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be report.*

## 8. §15.231 (c) 20 DB BANDWIDTH REQUIREMENT

### 8.1. STANDARD APPLICABLE

According to FCC 15.231(c), The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

### 8.2. TEST EQUIPMENT LIST AND DETAILS

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	06/27/2011	06/26/2012

### 8.3. TEST PROCEDURE

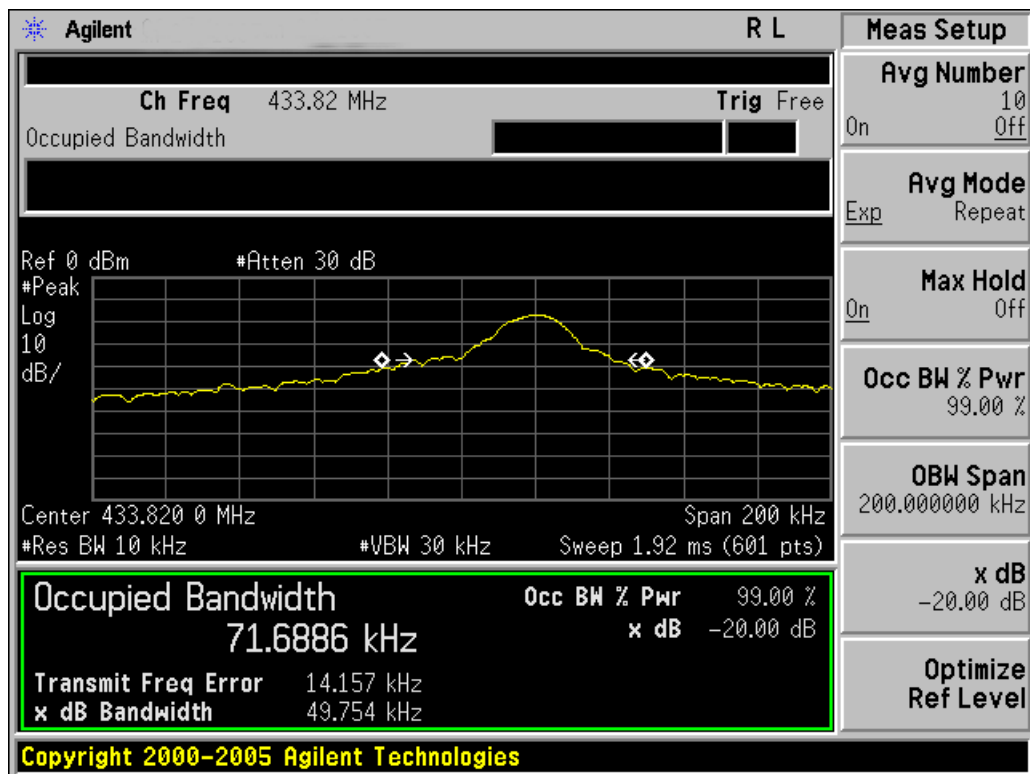
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 3, Set the EUT Work on.
4. Set Span = approximately 2 to 3 times the 20 dB bandwidth, VBW  $\geq$  RBW; Sweep = auto; Detector function = peak
5. Set SPA Trace 1 Max hold, then View.

### 8.4. SUMMARY OF TEST RESULTS/PLOTS

Operation Mode:      DRIVEWAY / WIRELESS ALERT    Test Date:      May 21,2012  
Temperature:      25°C      Tested by:      Wall  
Humidity:      55 % RH

Frequency (MHz)	Emission Bandwidth (KHz)	Limit (KHz)
433.82	49.754	1084.8

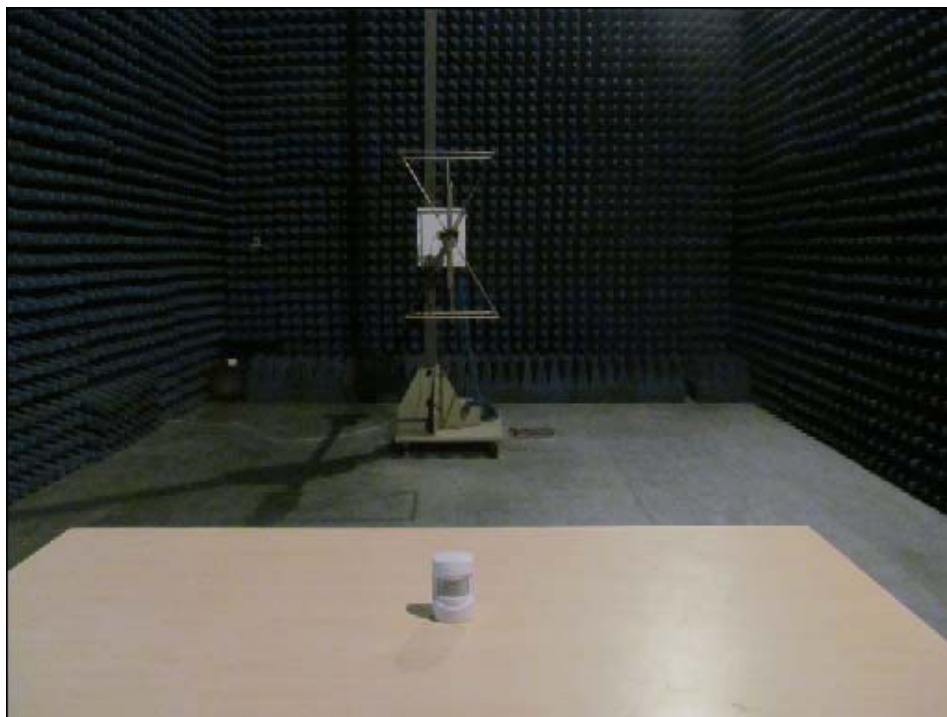
**Test Result: Pass**

**Channel Bandwidth:**

## **APPENDIX 1**

### **PHOTOGRAPHS OF TEST SETUP**

Radiated Emission Test Setup (30MHz-1000MHz)



**APPENDIX 2**  
**PHOTOGRAPHS OF EUT**  
TOP VIEW OF EUT



**BOTTOM VIEW OF EUT**



LEFT VIEW OF EUT



RIGHT VIEW OF EUT



FRONT VIEW OF EUT



BACK VIEW OF EUT



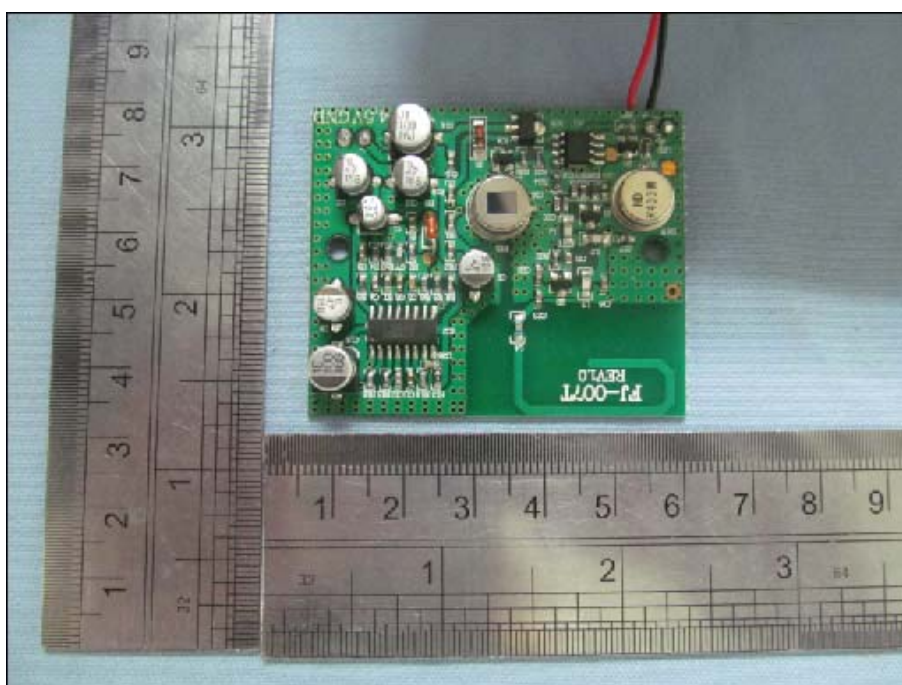
### APPENDIX 3

#### INTERNAL PHOTOGRAPHS OF EUT

OPEN VIEW OF EUT

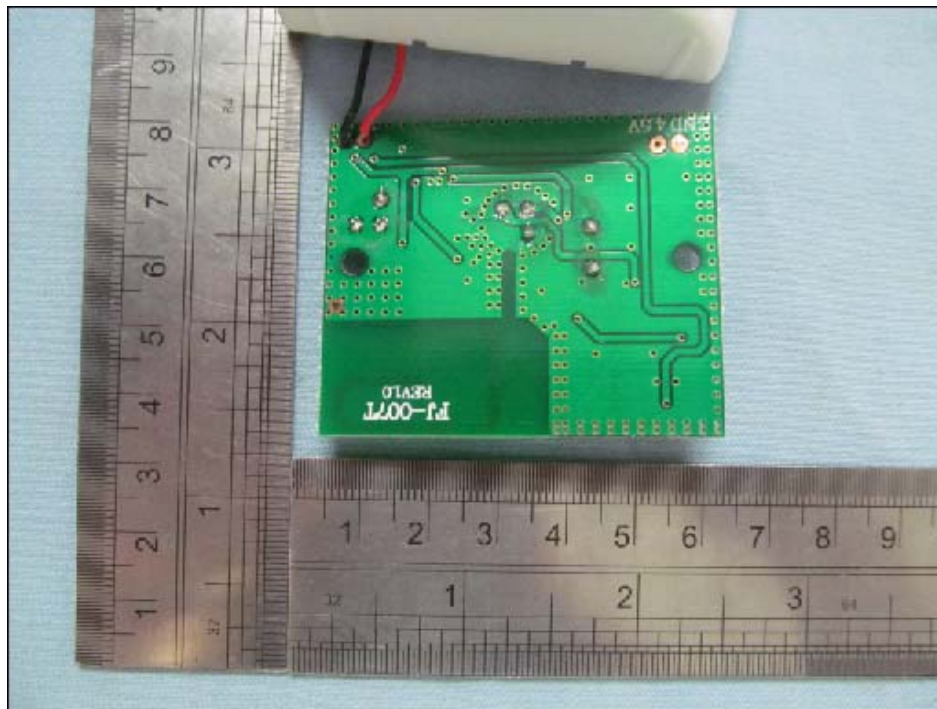


FRONT VIEW OF PCB





BACK VIEW OF PCB



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