
FCC Test Report

Report No.: AGC02A120301F1

FCC ID : YMURF1M
PRODUCT DESIGNATION : RF1M
BRAND NAME : RFRemotech
MODEL NAME : RF1M
CLIENT : RFRemotech Company
DATE OF ISSUE : Mar.20, 2012
STANDARD(S) : FCC Part 15 Rules

Attestation of Global Compliance Co., Ltd.

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TABLE OF CONTENTS

1. VERIFICATION OF COMPLIANCE	2
2. PRODUCT INFORMATION	3
3. TEST FACILITY	4
4. SUPPORT EQUIPMENT LIST	5
5. TEST MODE	5
6. SUMMARY OF TEST RESULTS	5
7. MEASUREMENT UNCERTAINTY	5
8. FCC RADIATED EMISSION TEST	6
8.1 TEST EQUIPMENT OF RADIATED EMISSION	6
8.2 LIMITS OF RADIATED EMISSION TEST	6
8.3 BLOCK DIAGRAM OF RADIATED EMISSION TEST	6
8.4 PROCEDURE OF RADIATED EMISSION TEST	7
8.5 TEST RESULT OF RADIATED EMISSION TEST	8
APPENDIX 1	12
PHOTOGRAPHS OF TEST SETUP	12
APPENDIX 2	13
PHOTOGRAPHS OF EUT	13

1. VERIFICATION OF COMPLIANCE

Applicant:	RFRemotech Company 18E, No.445,Tianhe Bei Rd., Guangzhou 510610, China
Manufacturer:	RFRemotech Company 18E, No.445,Tianhe Bei Rd., Guangzhou 510610, China
Product Designation:	RF1M
Brand name:	RFRemotech
Model Name:	RF1M
Hardware Version:	V1.0
Software Version:	V1.0
FCC ID:	YMURF1M
Measurement Procedure:	ANSI C63.4: 2003
File Number:	AGC02A120301F1
Date of test:	Mar.16, 2012 to Mar.19, 2012
Deviation:	None
Condition of Test Sample:	Normal

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.

Tested By :



Curoky Chen Mar.20, 2012

Reviewed By :



Forrest Lei Mar.20, 2012

Approved By:



Solger Zhang Mar.20, 2012

2. PRODUCT INFORMATION

Housing Type: Plastic

EUT Rating Voltage: DC 6.0V by 4*1.5V Alkaline Cells

I/O Port Information (Applicable Not Applicable)

I/O Port of EUT			
I/O Port Type	Q'TY	Cable	Tested with
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3. TEST FACILITY

Facility	Attestation of Global Compliance Co., Ltd.
Location:	1F, No.2 Building, Huafeng No.1 Technical, Industrial Park, Sanwei, Xixiang, Baoan District, Shenzhen, China
Description:	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2003.
Site Filing:	The FCC Registration Number is 259865
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4 requirements that meet industry regulatory agency and accreditation agency requirement.

4. SUPPORT EQUIPMENT LIST

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
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**Note: The above equipment was placed in worse case positions to maximize emission signals during emission test.

5. TEST MODE

Normal Operating

6. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.107	Conduction Emission	N/A
§15.109	Radiated Emission	Compliant

***Note: The EUT received DC6V power from batteries, so conduction emission test is not applicable.

7. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in Measurement” (GUM) published by ISO.

- Uncertainty of Conducted Emission, $U_c = \pm 2.75\text{dB}$
- Uncertainty of Radiated Emission, $U_c = \pm 3.2\text{dB}$

8. FCC RADIATED EMISSION TEST

8.1 TEST EQUIPMENT OF RADIATED EMISSION

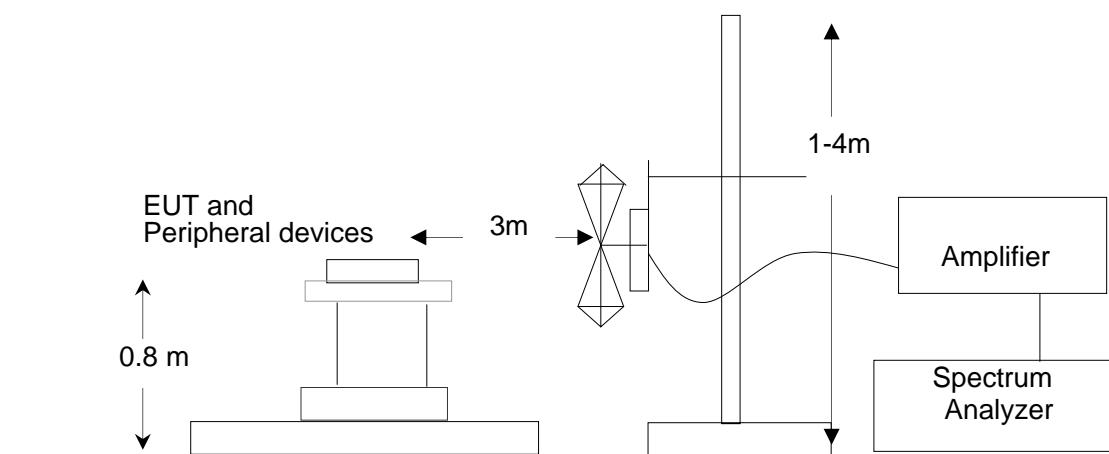
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	06/27/2011	06/26/2012
ANTENNA	A.H.	SAS-521-4	128	06/27/2011	06/26/2012
HORN ANTENNA	EM	EM-AH-10180	N/A	06/27/2011	06/26/2012
AMPLIFIER	EM	EM30180	0607030	06/27/2011	06/26/2012
POSITIONING CONTROLLER	MF	MF-7802	MF780208147	06/27/2011	06/26/2012

8.2 LIMITS OF RADIATED EMISSION TEST

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

**Note: The lower limit shall apply at the transition frequency.

8.3 BLOCK DIAGRAM OF RADIATED EMISSION TEST

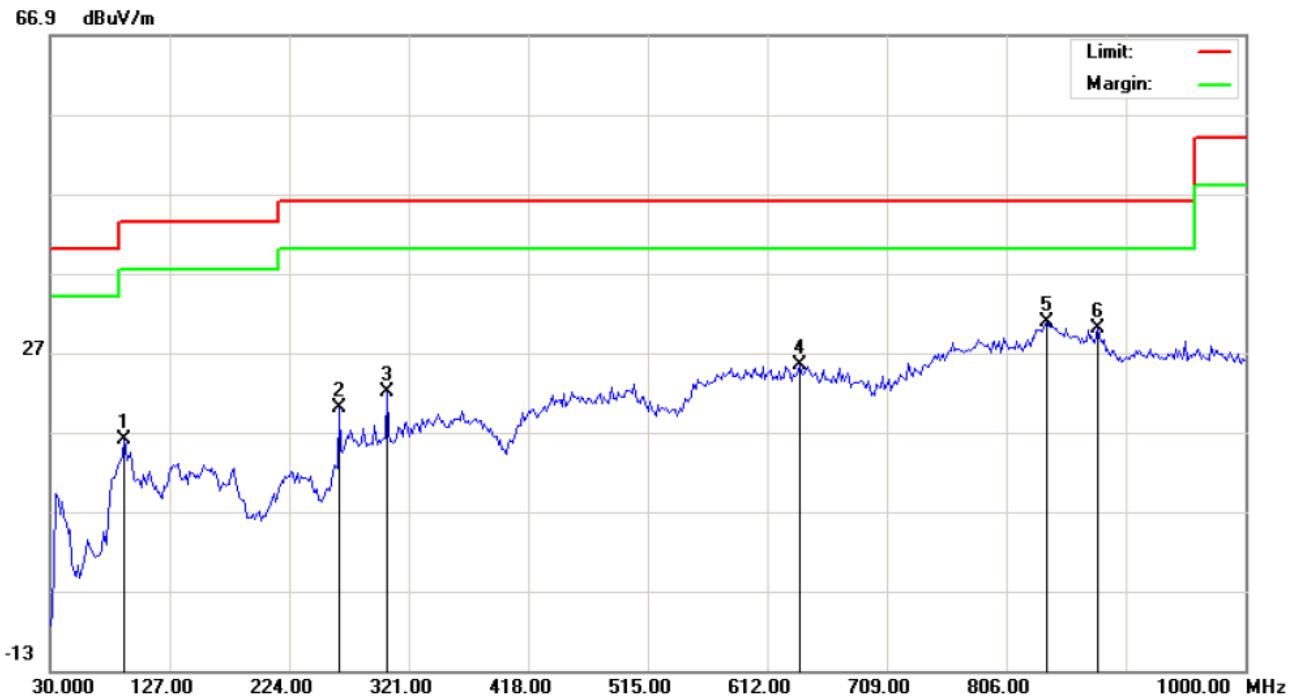


8.4 PROCEDURE OF RADIATED EMISSION TEST

- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per ANSI C63.4.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- 4) The EUT received DC6V power from 4*1.5V alkaline cells and received signal from the transmitter.
- 5) The antenna was placed at 3 meter away from the EUT as stated in FCC Part 15. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
- 6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- 7) The test mode(s) were scanned during the test.
- 8) Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented.

8.5 TEST RESULT OF RADIATED EMISSION TEST

Radiated Emission Test Below 1G–Horizontal -3m



Site: site #1

Polarization: *Horizontal*

Temperature: 26

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT: RF1M

Distance: 3m

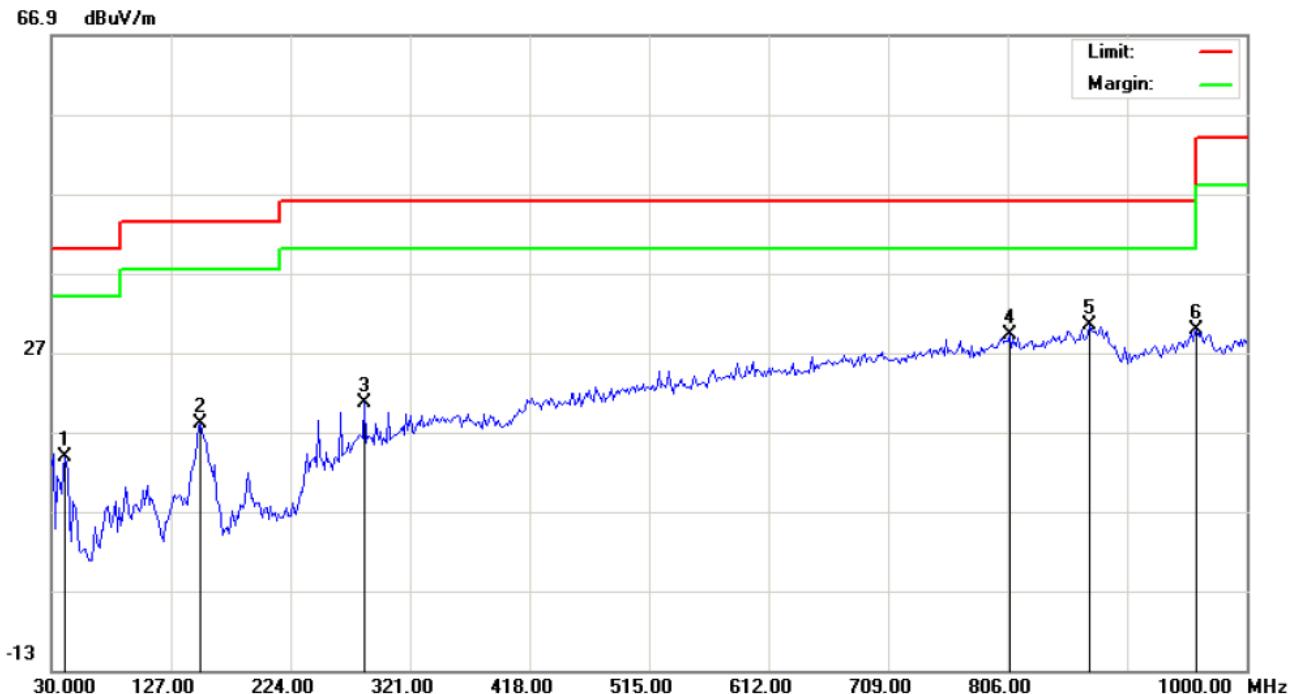
M/N: RF1M

Mode: Normal Operating

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		89.8167	-1.06	17.11	16.05	43.50	-27.45	peak			
2		264.4167	5.31	14.71	20.02	46.00	-25.98	peak			
3		303.2167	4.73	17.21	21.94	46.00	-24.06	peak			
4		637.8667	0.66	24.77	25.43	46.00	-20.57	peak			
5	*	838.3333	-0.35	31.08	30.73	46.00	-15.27	peak			
6		880.3667	0.72	29.19	29.91	46.00	-16.09	peak			

Radiated Emission Test Below 1G–Vertical -3m



Site: site #1

Polarization: **Vertical**

Temperature: 26

Limit: FCC Class B 3M Radiation

Power:

Humidity: 60 %

EUT: RF1M

Distance: 3m

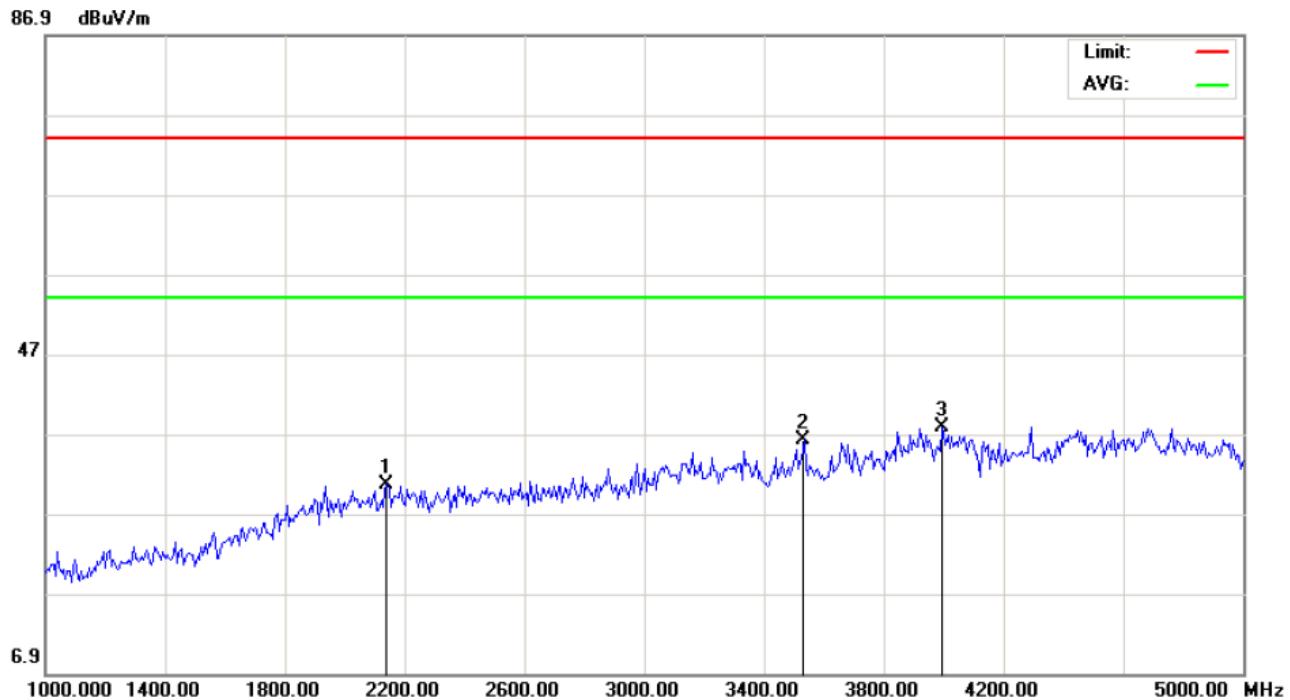
M/N: RF1M

Mode: Normal Operating

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		41.3167	8.55	5.32	13.87	40.00	-26.13	peak			
2		151.2500	-0.60	18.55	17.95	43.50	-25.55	peak			
3		283.8167	3.47	17.16	20.63	46.00	-25.37	peak			
4		807.6167	1.17	28.12	29.29	46.00	-16.71	peak			
5	*	872.2833	0.41	29.93	30.34	46.00	-15.66	peak			
6		959.5833	0.91	28.92	29.83	46.00	-16.17	peak			

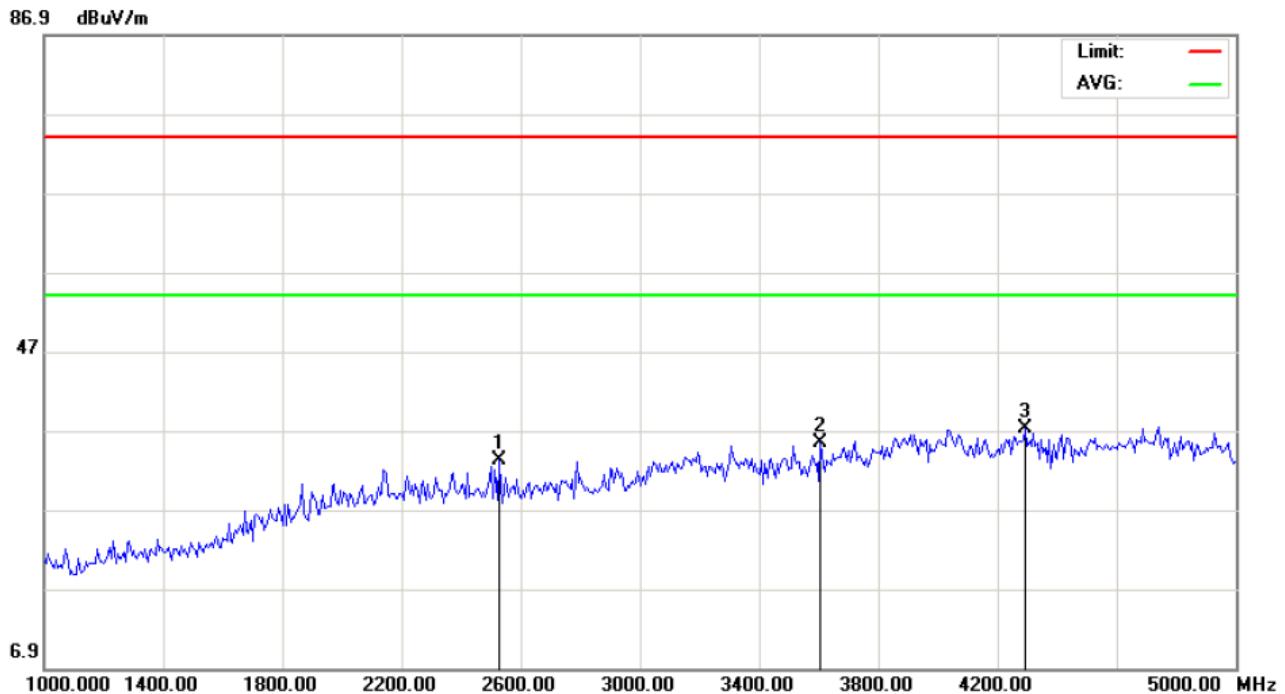
Radiated Emission Test Above 1G—Horizontal -3m



Site: site #1 Polarization: *Horizontal* Temperature: 26
 Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %
 EUT: RF1M Distance: 3m
 M/N: RF1M
 Mode: Normal Operating
 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		2140.000	20.56	10.03	30.59	74.00	-43.41	peak			
2		3533.333	23.94	12.32	36.26	74.00	-37.74	peak			
3	*	3993.333	22.74	15.15	37.89	74.00	-36.11	peak			

Radiated Emission Test Above 1G–Vertical -3m

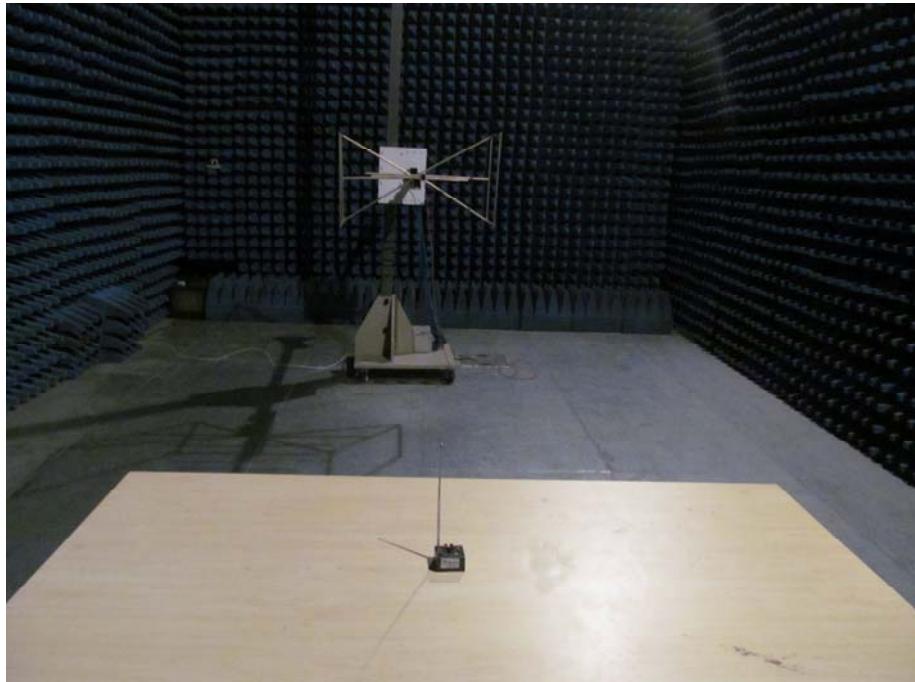


Site: site #1 Polarization: **Vertical** Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK) Power: Humidity: 60 %
EUT: RF1M Distance: 3m
M/N: RF1M
Mode: Normal Operating
Note:

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		2526.667	22.66	10.49	33.15	74.00	-40.85	peak			
2		3606.667	22.70	12.77	35.47	74.00	-38.53	peak			
3	*	4293.333	26.92	10.32	37.24	74.00	-36.76	peak			

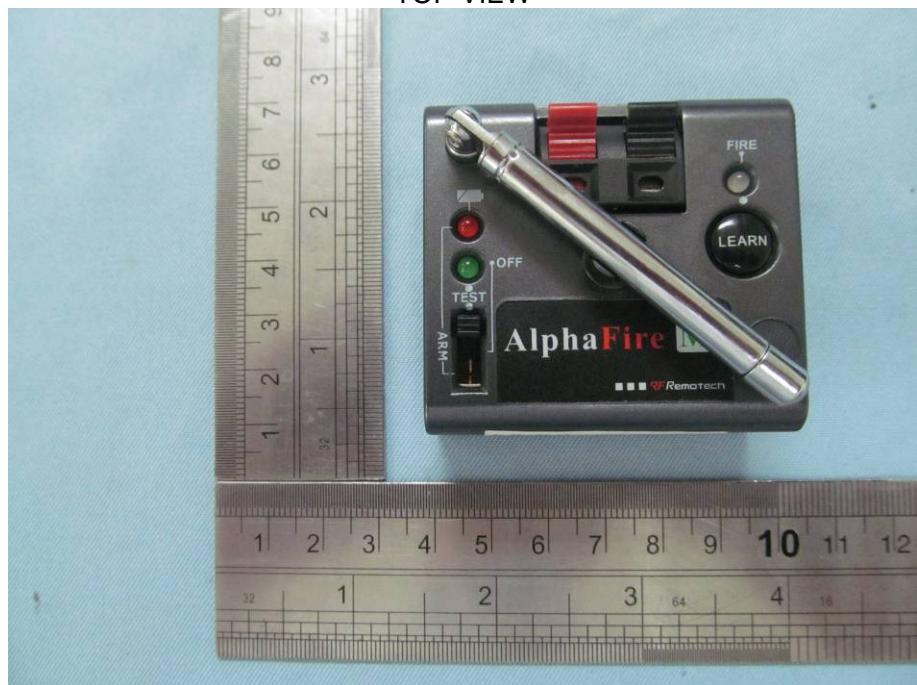
APPENDIX 1
PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP



APPENDIX 2 PHOTOGRAPHS OF EUT

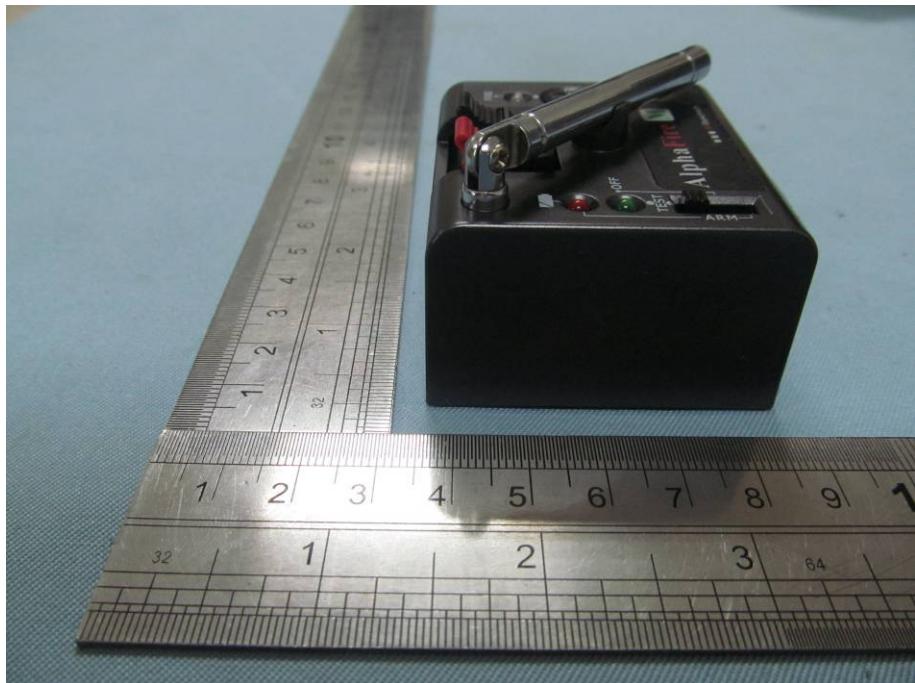
TOP VIEW



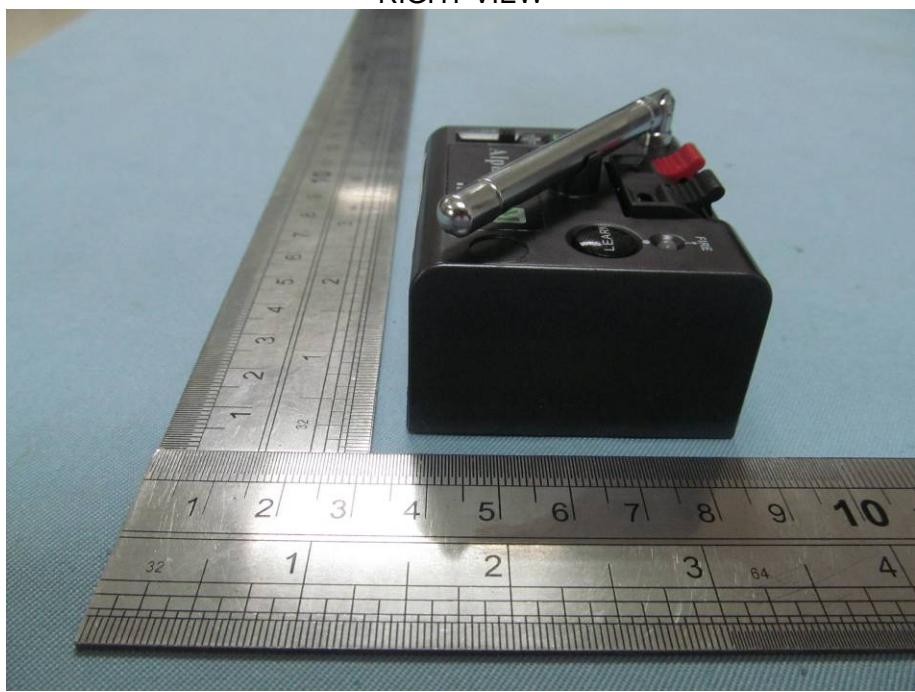
BOTTOM VIEW



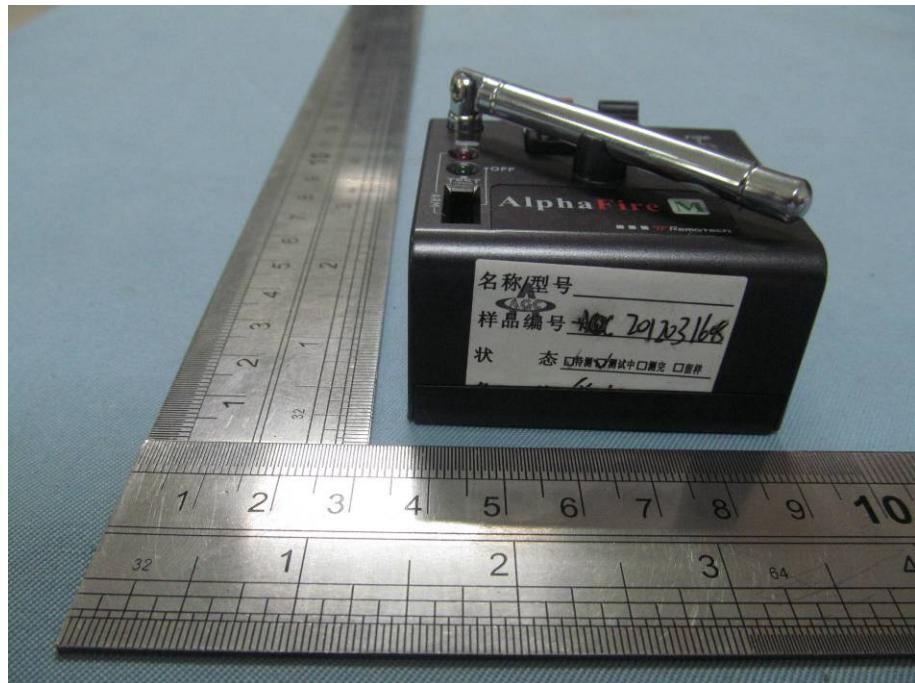
LEFT VIEW



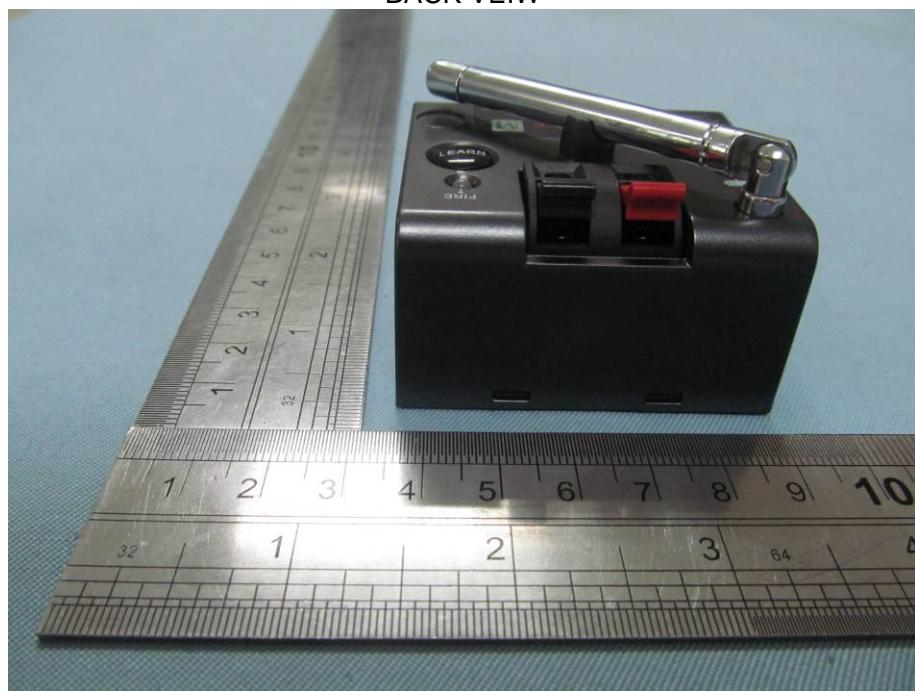
RIGHT VIEW



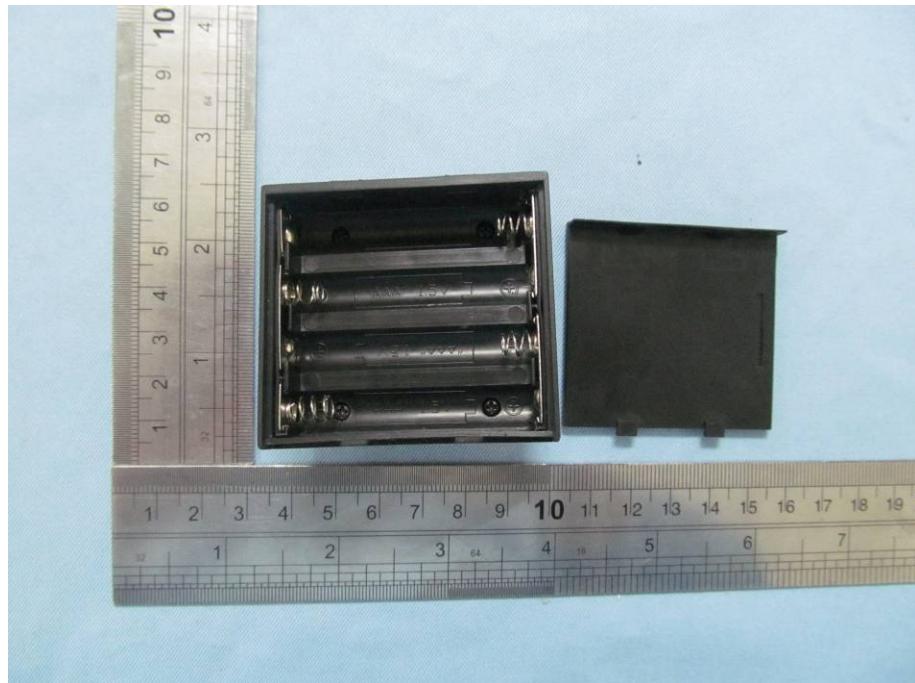
FRONT VIEW



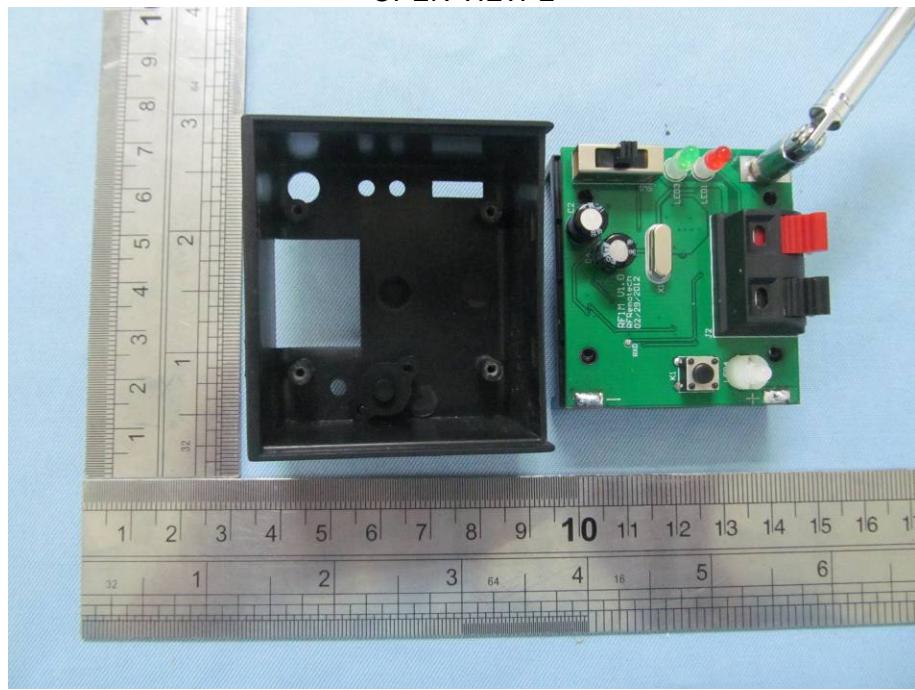
BACK VIEW



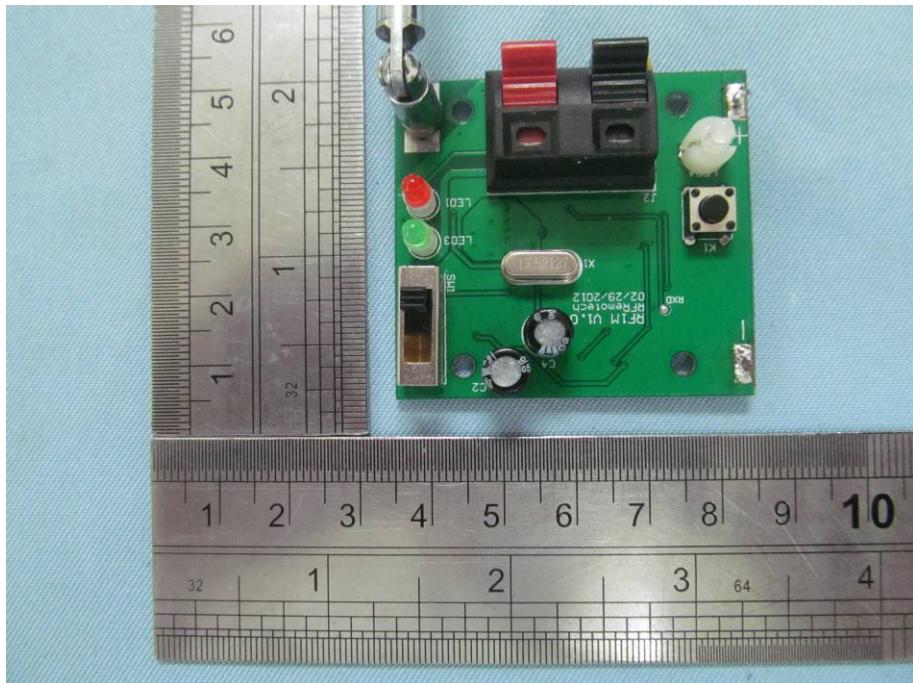
OPEN VIEW-1



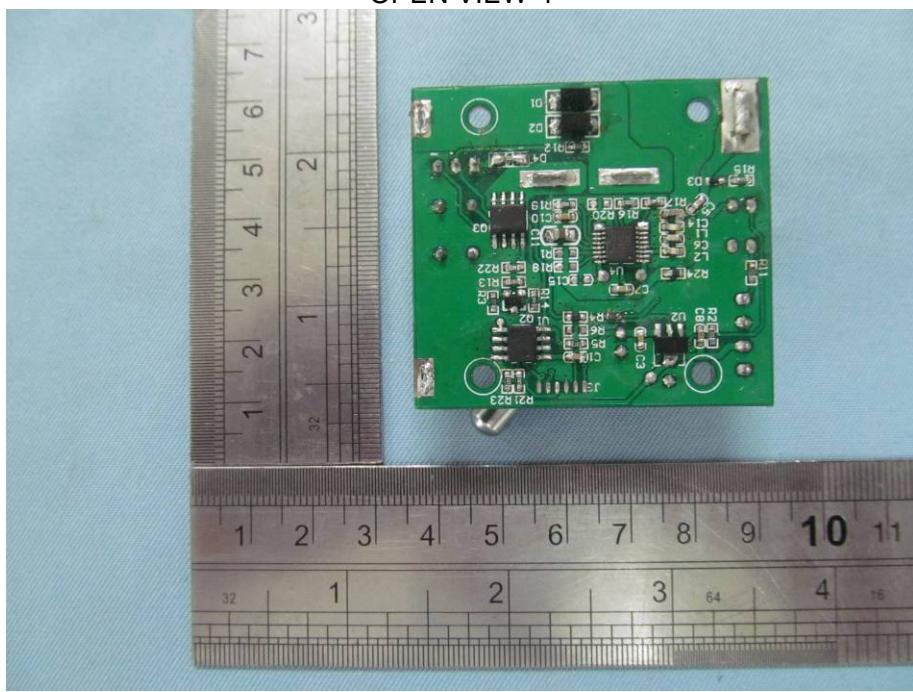
OPEN VIEW-2



OPEN VIEW-3



OPEN VIEW-4



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