ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION

Product Name	:	RIG00-12636
Model Number	:	Max Dog Computer Collar
IC	:	2721A-3001055
FCC ID	:	KE3-3001055
Trade Name	:	Invisible Fence
Report Number	:	SZEE100126119717
Date	:	Mar. 02, 2010

Standards	Results
☒ RSS 210 Issue 7: 2007	Pass
☒ RSS-Gen Issue 2: 2007	Pass
☒ FCC Part 15C: 2009	Pass

Prepared for:

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Prepared by:

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N/A means not applicable

1. GENERAL INFORMATION

Applicant & Address:	Radio Systems Corporation Shenzhen Representative Office of: Radio Systems Corporation 10427 Electric Ave. Knoxville, TN 37932 USA
Manufacturer & Address:	Dongguan Staci Industrial company limited Plainvim Industrial Park, Zhongxing Avenue, Dongkeng Town, Dongguan City, Guangdong, China
Equipment Under Test:	RIG00-12636
Model Name:	Max Dog Computer Collar
IC:	2721A-3001055
FCC ID:	KE3-3001055
TX Frequency:	433.92MHz
RX Frequency:	10.7kHz & 7.25kHz
Product Design Information:	The EUT is a low power transmitter, and it complies in the complete frequency band including fundamental emission with FCC part15.209 and General Field Strength Limits in Section 2.2 of RSS-210.
Trade Name:	Invisible Fence
Serial Number:	N/A
Technical Data:	DC 3V
Date of test:	Jan. 26, 2010 to Mar. 02, 2010

The above equipment was tested by Centre Testing International Corporation for compliance with the requirements set forth in the RSS 210, RSS-Gen, FCC Part15 Section 15.209 and the measurement procedure according to IC requirements and ANSI C63.4.

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

Prepared by : Christy Chen

Reviewed by : Louisa Lu

Approved by : Jim Zhang
Manager

Date : Mar. 02, 2010

2. TEST SUMMARY

Clause	Test Item	Rule	Result
6	99% bandwidth	RSS-Gen 4.6.1	**PASS**
7	Radiated Emission	RSS-210 Table 2, Table 3 & FCC Part15.209 (a)	**PASS**

Note: The power supply of EUT is by battery.

3. MEASUREMENT UNCERTAINTY

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement items	Uncertainty
Radiated Emissions	4.6 dB

4. PRODUCT INFORMATION

Items	Description
Rating	DC 3V
Equipments Class	Low Power Transmitter
Modulation	OOK
Frequency Range	433.92MHz
Channel Number	1
Antenna	Integral PCB Antenna

5. TEST EQUIPMENT

Equipment	Manufacturer	Model Number	Serial Number	Due Date
Receiver	R&S	ESCI	100435	08/25/2010
Spectrum Analyzer	Agilent	E4443A	MY45300910	01/19/2011
Biconilog Antenna	ETS-LINGREN	3142C	920250	01/19/2011
Horn Antenna	ETS-LINDGREN	3117	00057407	06/07/2010
Loop Antenna	ETS-LINDGREN	6502	00071730	09/22/2010
Multi device Controller	ETS-LINGREN	2090	00057230	01/19/2011
3M Chamber & Accessories	ETS-LINDGREN	FACT-3	N/A	01/19/2011
Preamplifier(9kHz-1GHz)	Agilent	11909A	186871	08/25/2010

6. 99% BANDWIDTH MEASUREMENT

6.1 LIMITS

No limits.

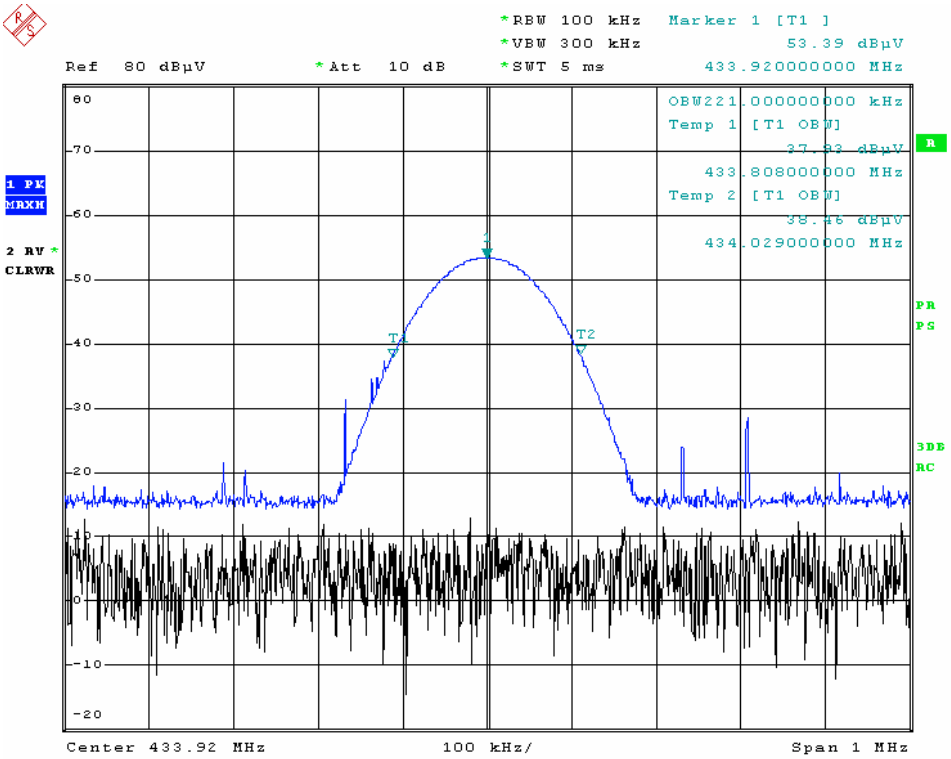
6.2 BLOCK DIAGRAM OF TEST SETUP

6.3 TEST PROCEDURE

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Set spectrum analyzer's RBW and VBW to applicable value with Peak in Max Hold.
3. A PEAK output reading and 99% OBW function in spectrum analyzer were taken.

6.4 TEST RESULT

Channel	Frequency	99% BW
1	433.92MHz	221kHz



7. RADIATED EMISSIONS MEASUREMENT FOR TX

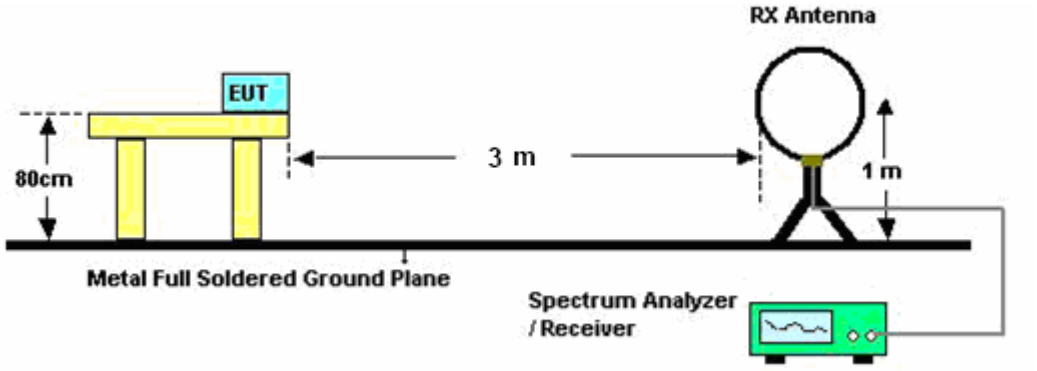
7.1 LIMITS

FCC Part15.209(a) & RSS-210 Table 2 and Table 3:

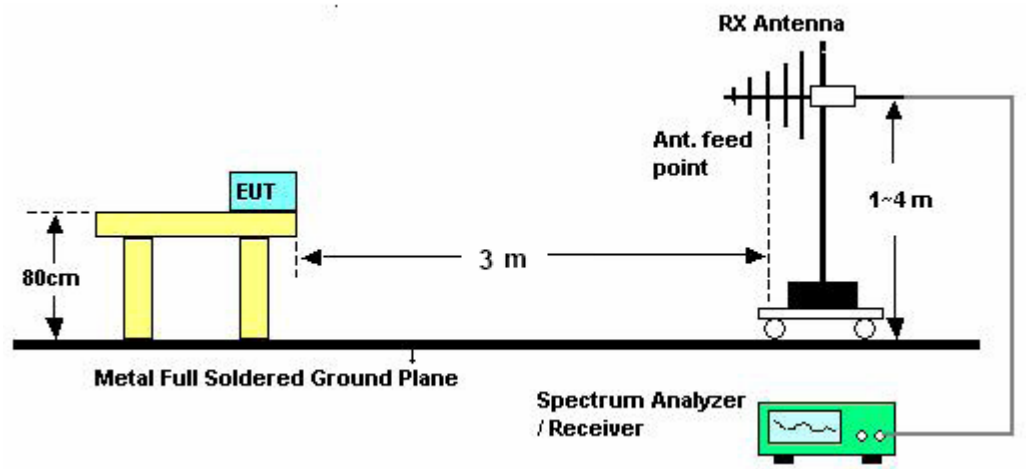
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

7.2 BLOCK DIAGRAM OF TEST SETUP

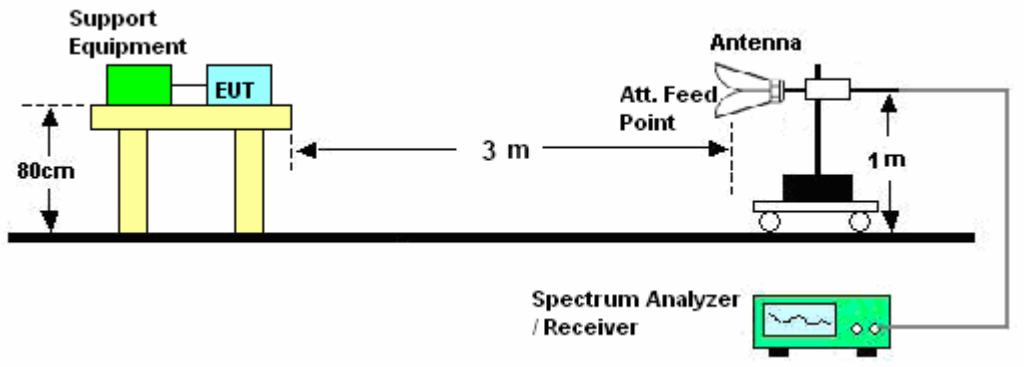
For radiated emissions from 9 kHz to 30MHz



For radiated emissions from 30 - 1000MHz



For radiated emissions above 1GHz



7.3 TEST PROCEDURE

A. 30 - 1000MHz

a. The EUT was placed on the top of a turntable 0.8 meters above the ground in the chamber, 3 meters away from the antenna (wideband antenna), which was mounted on the top of a variable-height antenna tower. The maximum values of the field strength are recorded by adjusting the polarizations of the test antenna and rotating the turntable.

b. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the turn table was turned from 0 degrees to 360 degrees to find the maximum reading.

c. The test frequency analyzer system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

B. Below 30MHz and Above 1GHz

a. The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 1 meter away from the antenna (loop antenna). The maximum values of the field strength are recorded by adjusting the polarizations of the test antenna and rotating the turntable.

b. For each suspected emission, the EUT was arranged to its worst case and then turn table was turned from 0 degrees to 360 degrees to find the maximum reading.

c. The test frequency analyzer system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

7.4 TEST RESULT

Pass

Note:

Limit dBμV/m @3m = Limit dBμV/m @300m+ 80

Limit dBμV/m @3m = Limit dBμV/m @30m + 40

Table 1: Test data of Radiated Emissions, 9kHz ~ 30MHz

Frequency	Measurement _peak	Limit _AV _3m	Limit _QP _3m	Result	Polarization	Measurement Distance
(kHz)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(P/F)	(H/V)	
36.7	24.47	116.31	---	P	H	3m
150.0	27.55	104.08	---	P	H	3m
36.7	25.61	116.31	---	P	V	3m
150.0	28.20	104.08	---	P	V	3m

Figure 1: Test figure of radiated emission, 9kHz ~ 150kHz, 3m distance

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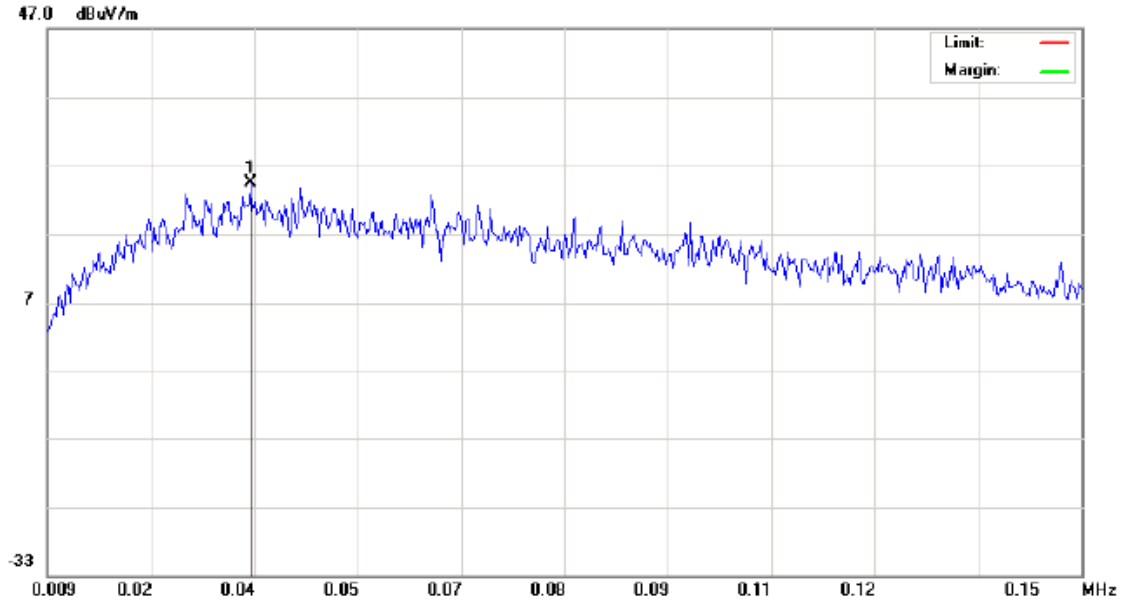

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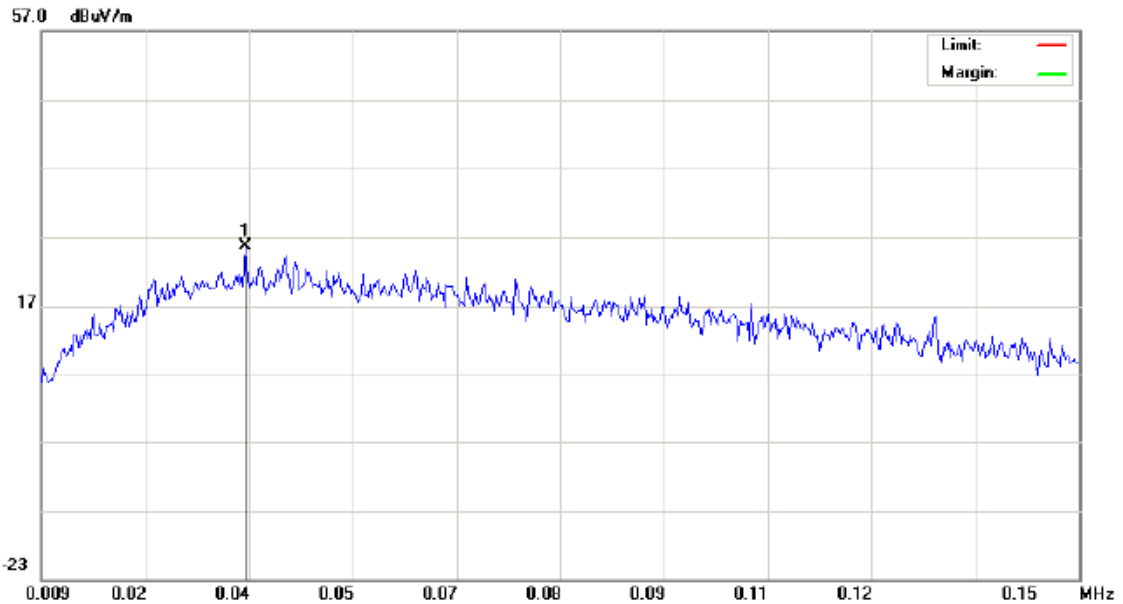

Figure 2: Test figure of radiated emission, 150kHz ~ 30MHz, 3m distance

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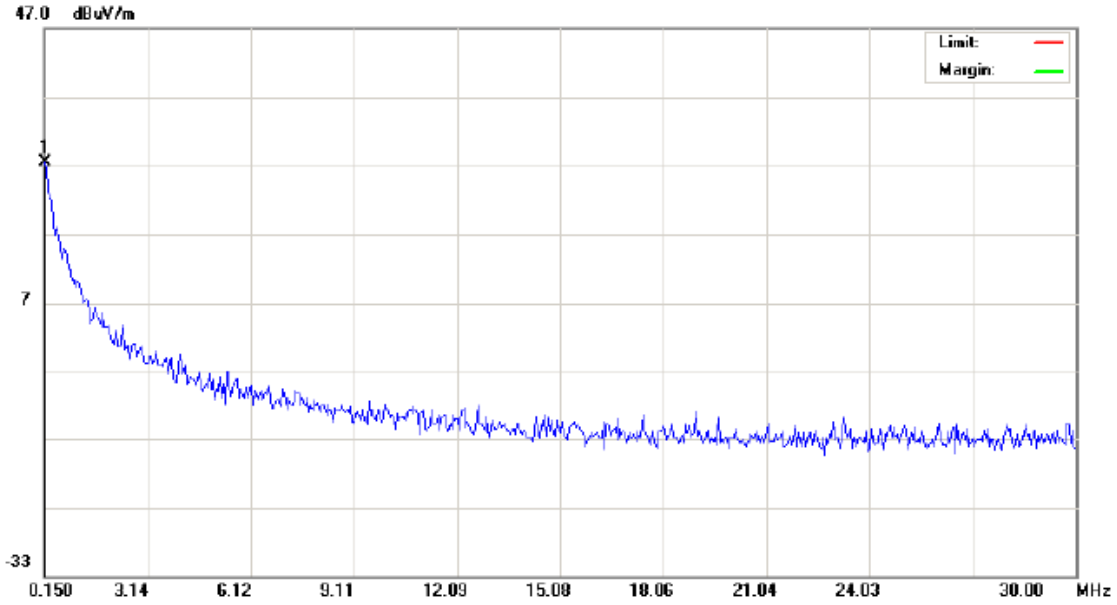

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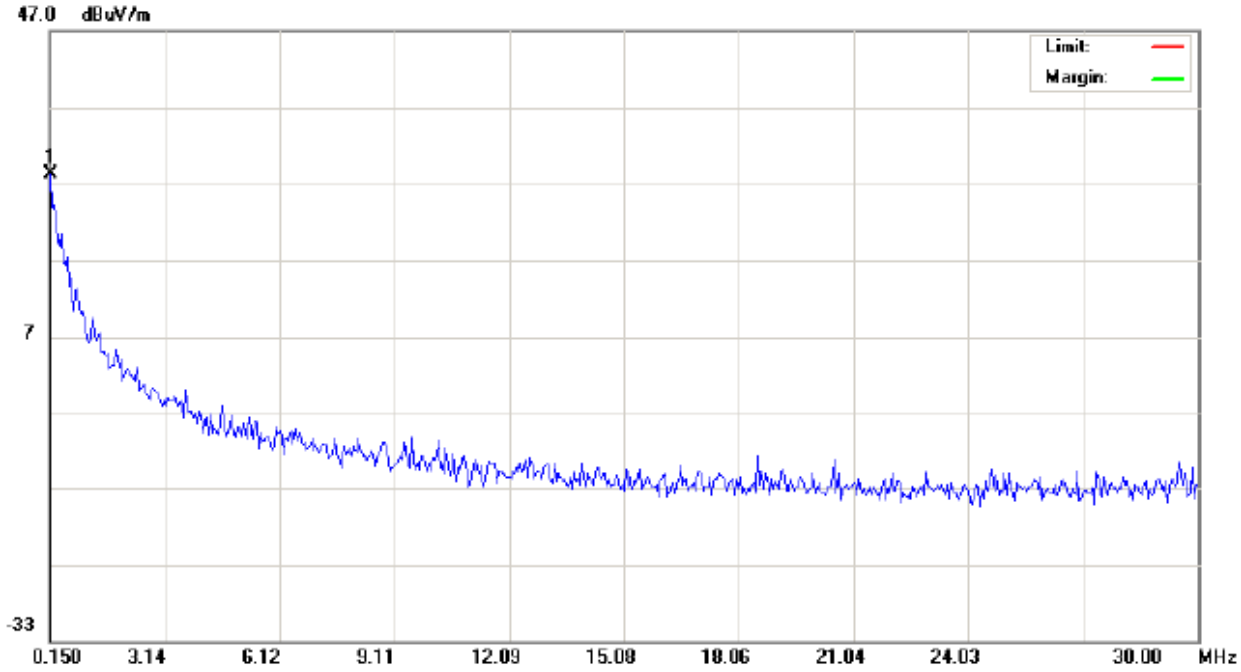

Table 2: Test data of Radiated Emissions, above 30MHz

Frequency (MHz)	Emission _PK (dBμV/m)	Emission _QP (dBμV/m)	Emission _AV (dBμV/m)	Limit (dBμV/m)			Margin (dB)			Result (P/F)	Remark (H/V)
				PK	QP	AV	PK	QP	AV		
433.9200*	45.71	44.17	---	---	46	---	---	1.83	---	P	H
867.8400	45.04	44.02	---	---	46	---	---	1.28	---	P	H
1301.7600	38.96	---	---	74	---	54	35.04	---	>15.04	P	H
2169.6000	42.38	---	---	74	---	54	31.62	---	>11.62	P	H
3037.4400	43.57	---	---	74	---	54	30.43	---	>10.43	P	H
433.9200*	40.14	39.74	---	---	46	---	---	6.26	---	P	V
867.8400	38.33	37.92	---	---	46	---	---	8.08	---	P	V
1301.7600	34.18	---	---	74	---	54	39.82	---	>19.82	P	V
1735.6800	38.72	---	---	74	---	54	35.28	---	>15.28	P	V
2169.6000	42.71	---	---	74	---	54	31.29	---	>11.29	P	V

*: Fundament frequency

Figure 3: Test figure of radiated emission, 30MHz ~ 1GHz, 3m distance

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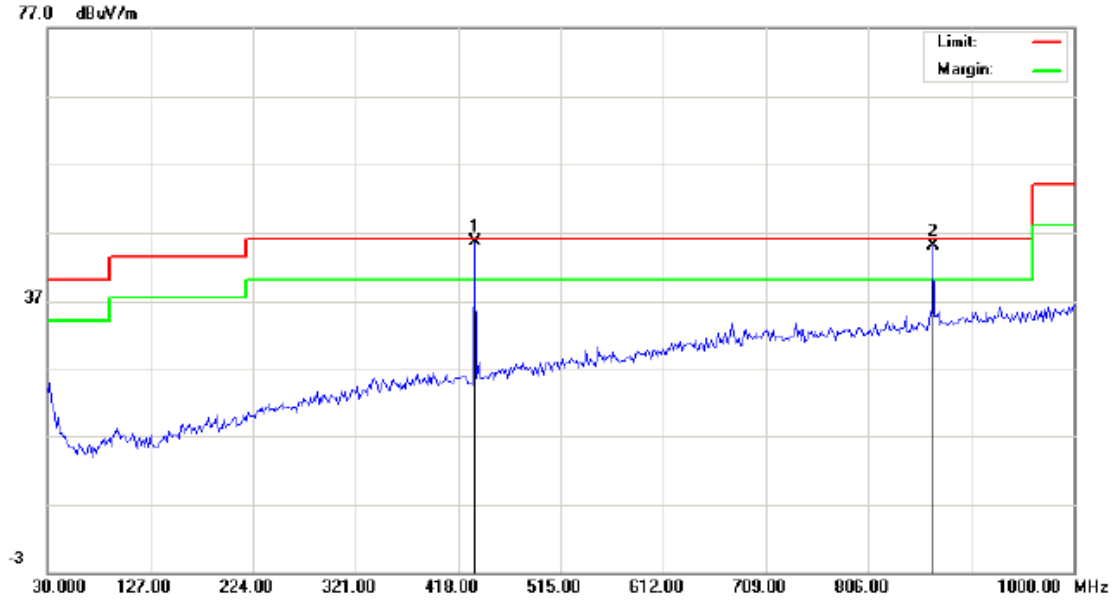

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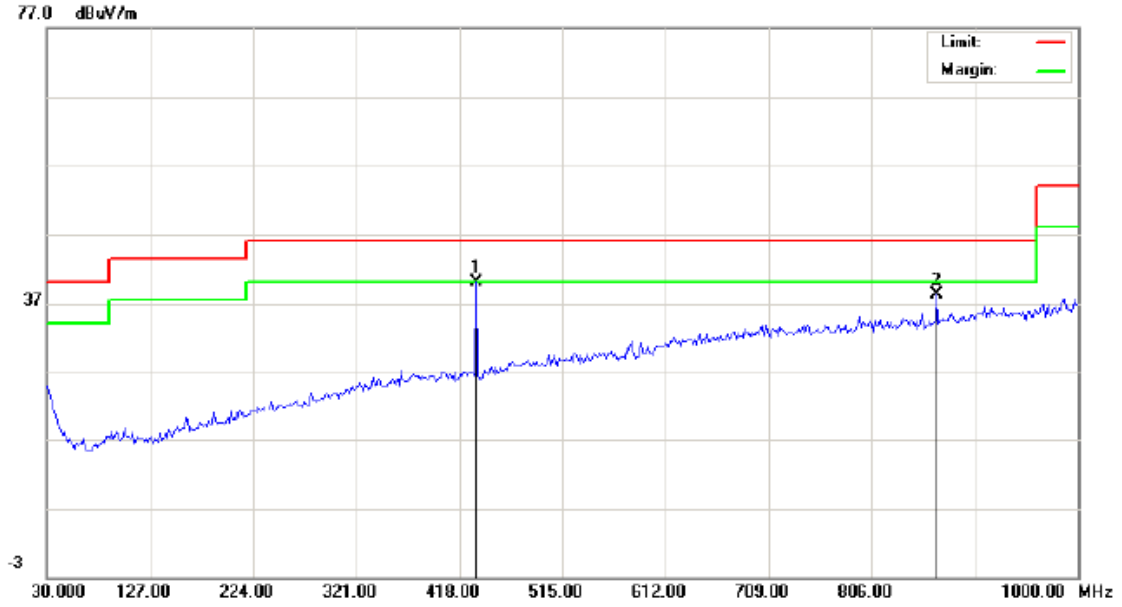

Figure 4: Test figure of radiated emission, above1GHz, 3m distance

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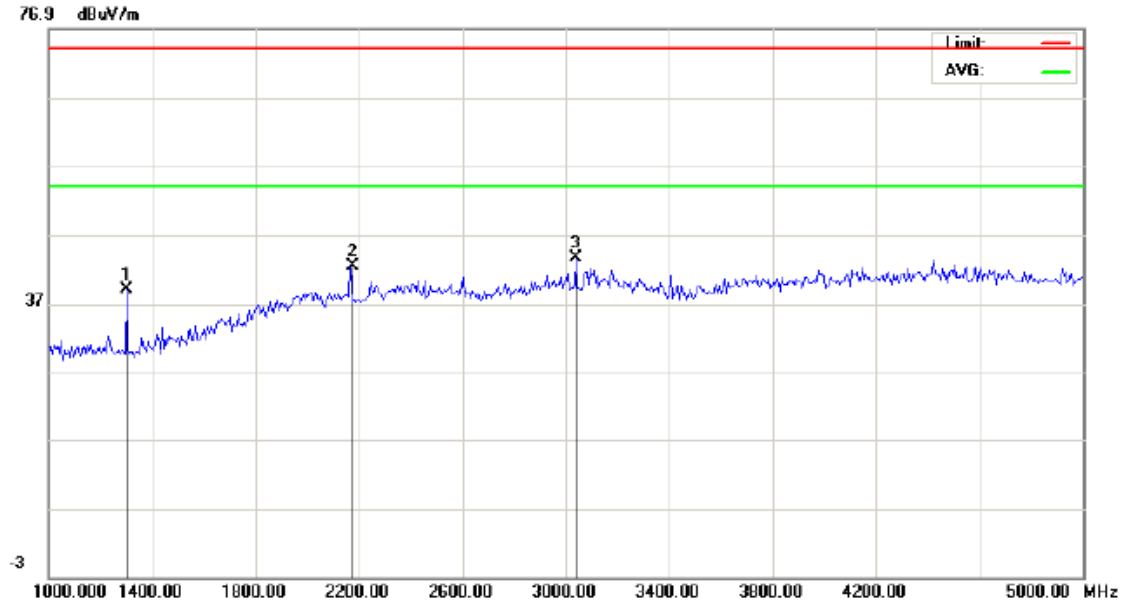

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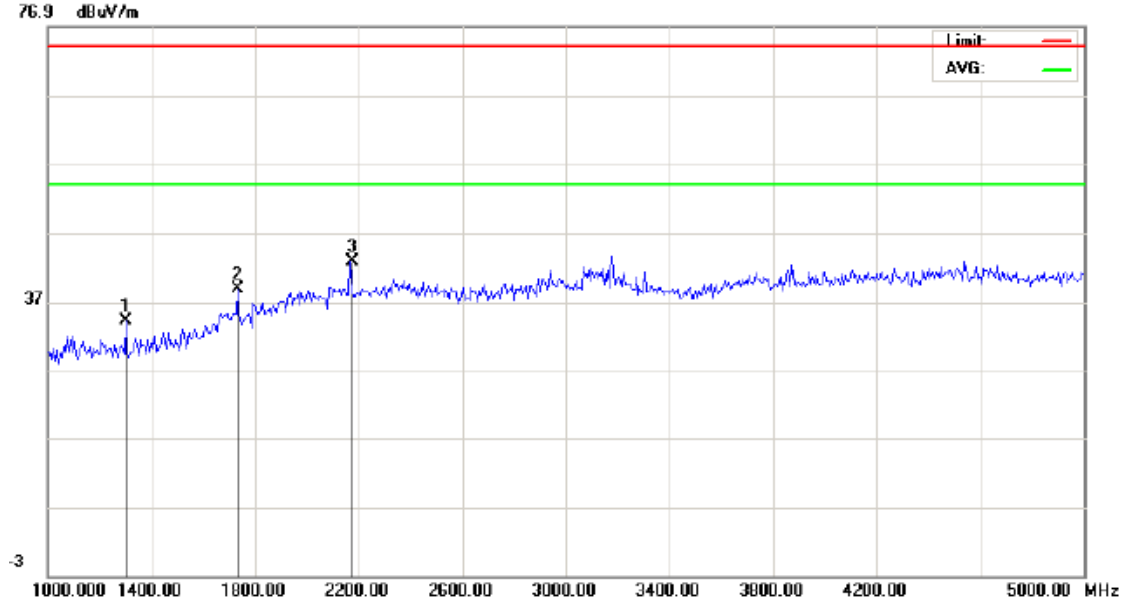

76.9 dBuV/m
Limit:
AVG:
37
-3
1
2
3
1000.000 1400.00 1800.00 2200.00 2600.00 3000.00 3400.00 3800.00 4200.00 5000.00 MHz

8. RADIATED EMISSIONS MEASUREMENT FOR RX

8.1 LIMITS

No limits.

8.2 BLOCK DIAGRAM OF TEST SETUP AND TEST PROCEDURE

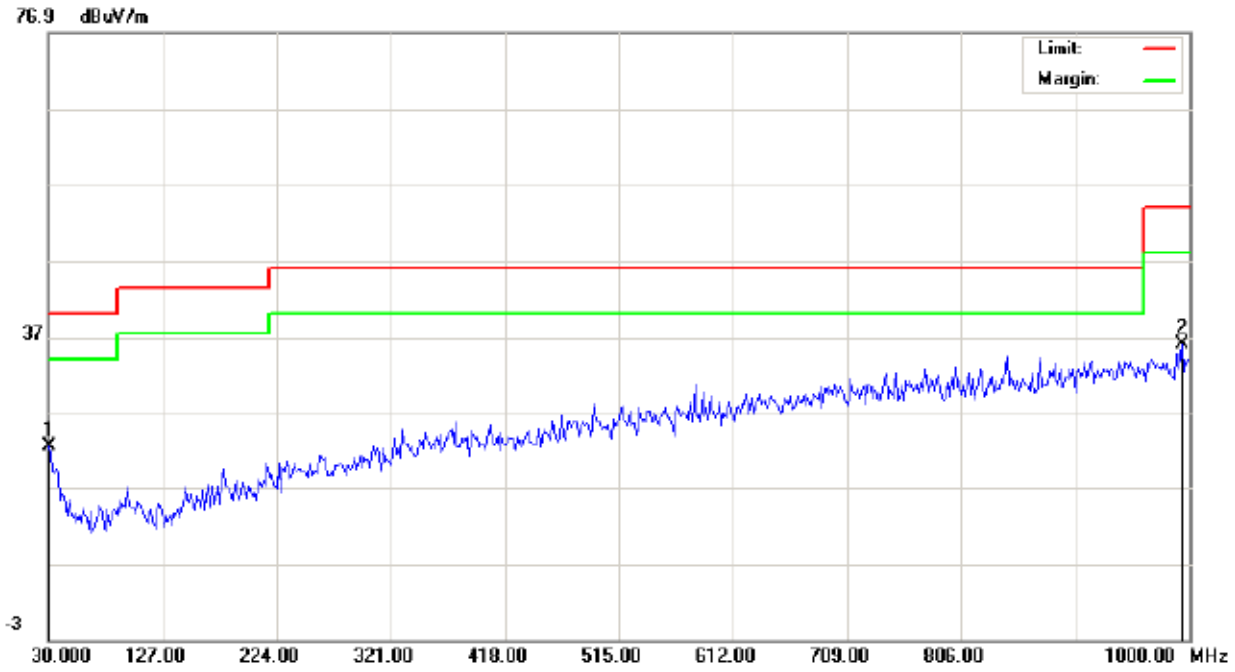
Same as sub-clause 7.2 and 7.3 in this report.

8.3 TEST RESULT

The worst test data of RX spurious emission are in below:

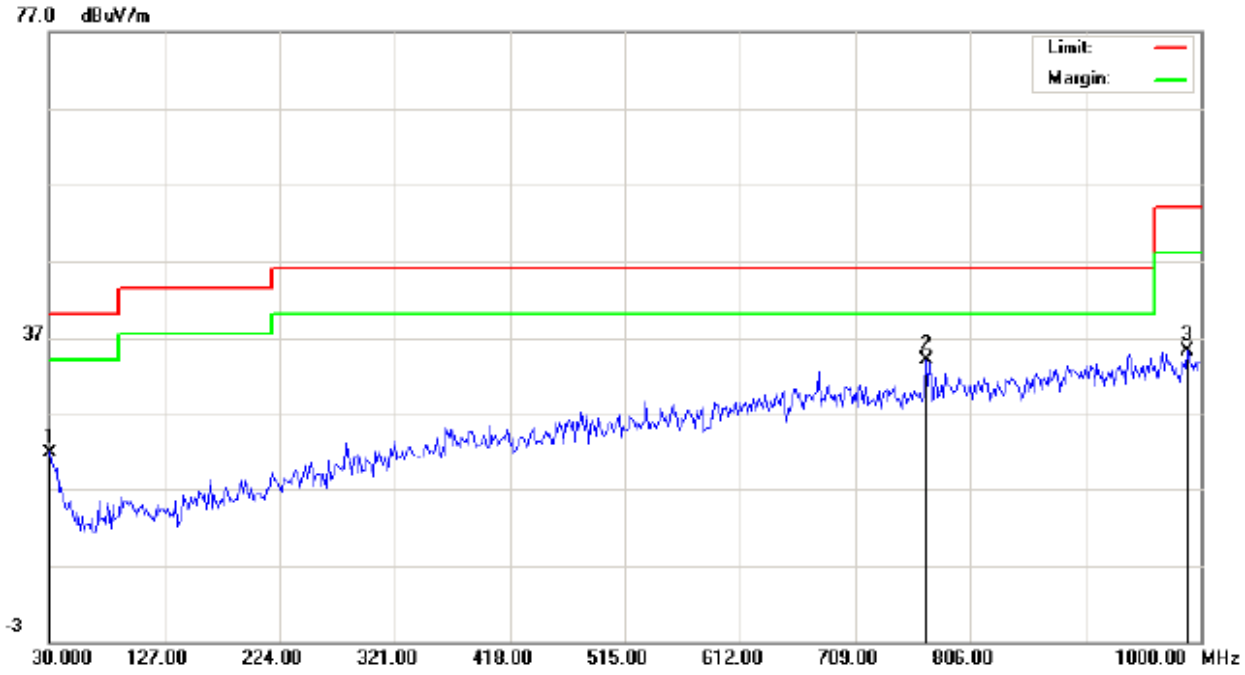
H:

Frequency (MHz)	Emission _PK (dBμV/m)	Emission _QP (dBμV/m)	Emission _AV (dBμV/m)
30.0000	22.65	---	---
993.5333	35.96	35.74	---



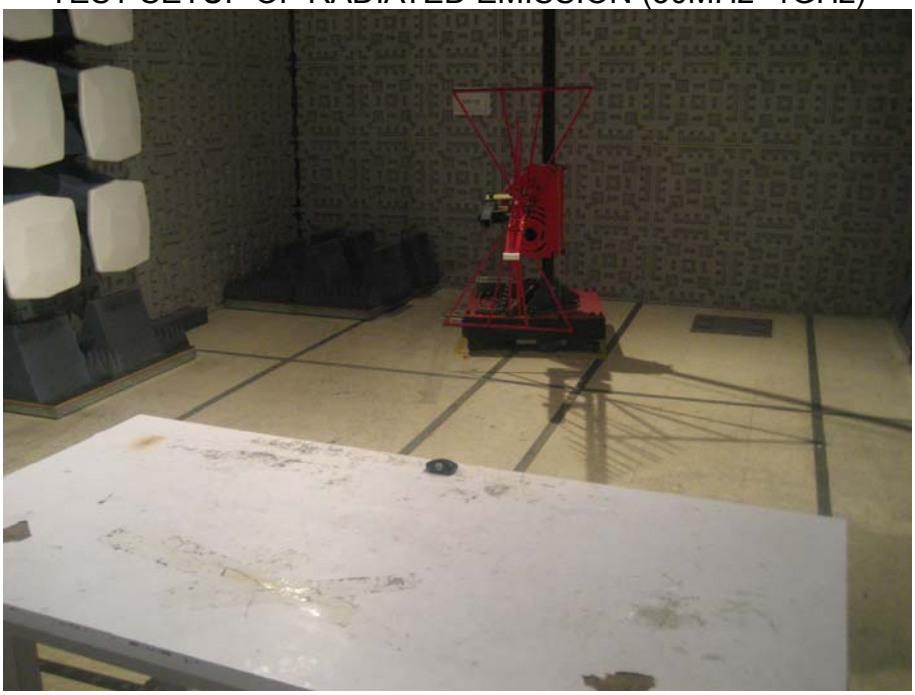
V:

Frequency (MHz)	Emission _PK (dBµV/m)	Emission _QP (dBµV/m)	Emission _AV (dBµV/m)
30.0000	21.99	---	---
768.8167	34.14	---	---
988.6833	35.24	35.20	---



APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

TEST SETUP OF RADIATED EMISSION (30MHz -1GHz)



TEST SETUP OF RADIATED EMISSION (above1GHz)

TEST SETUP OF RADIATED EMISSION (below 30MHz)

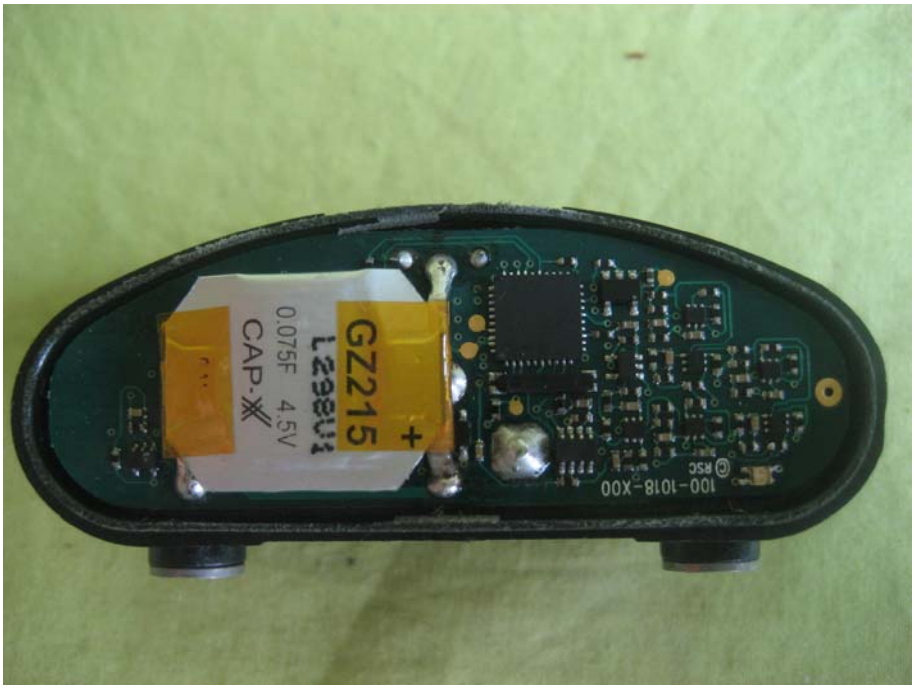
APPENDIX 2 EXTERNAL PHOTOGRAPHS OF EUT

View of external EUT-1

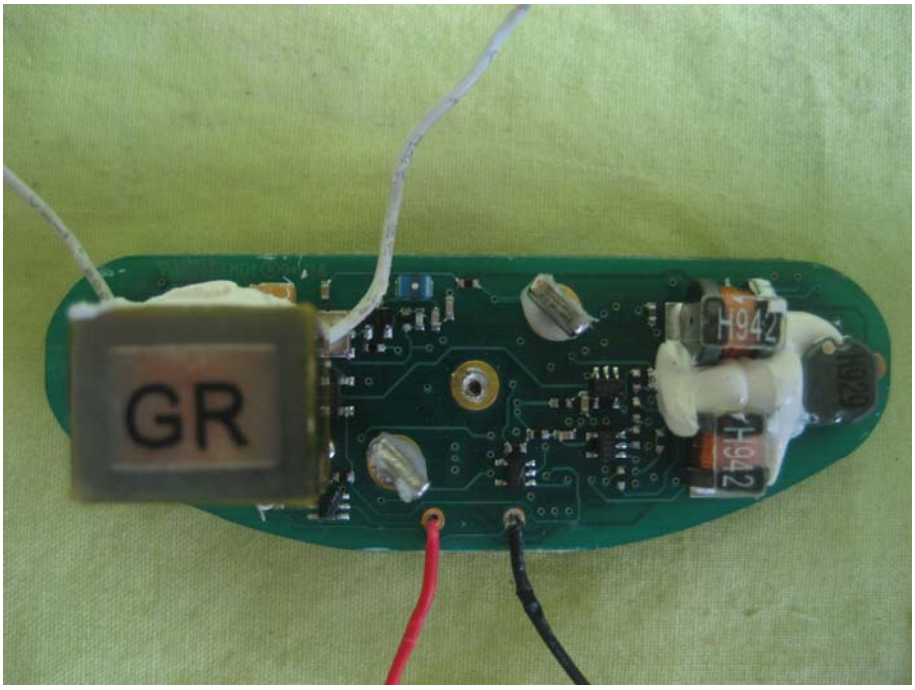
View of external EUT-2

APPENDIX 3 INTERNAL PHOTOGRAPHS OF EUT

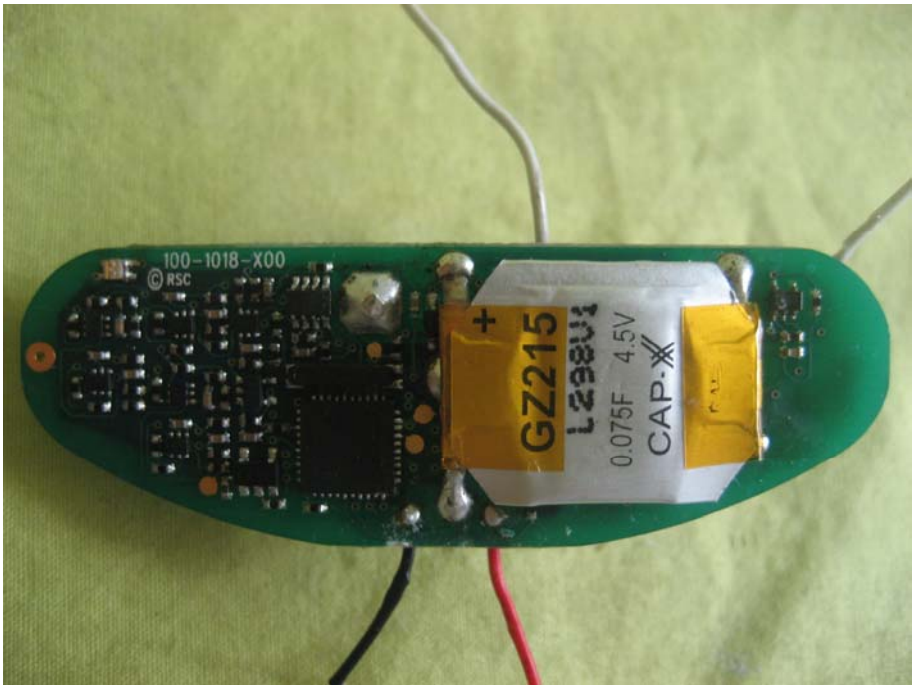
View of internal EUT-1



View of internal EUT-2



View of internal EUT-3



View of internal EUT-4

View of battery

------- End of report -------