



# Test Report

**Applicant:** Sabine, Inc.

**Address of Applicant:** 13301 Hwy 441, Alachua, FL 32615, USA

**Equipment Under Test (EUT):**

EUT Name: Bodypack Transmitter

Model No.: SW45-T

Trade Mark: NA

Serial No.: Not supplied by client

**Standards:** FCC PART15 SUBPART C: 2008

**Date of Receipt:** Jul. 5, 2011

**Date of Test:** Jul. 5 to 28, 2011

**Date of Issue:** Jul. 31, 2011

**Test Result :** **PASS\***

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

  
Henly Xie / Manager

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

All test results in this report can be traceable to National or International Standards.

The test report prepare by:

Guangzhou Huesent Testing Service Co.,Ltd.

Self-ordained 68# courtyard, No.91, Dongguanzhuang Road,Guangzhou,China.

Tel: 86-20-28263298 Fax: 86-20-28263237

<http://www.hst.org.cn> E-mail:hst@hst.org.cn



## 1 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission	FCC PART 15.249	ANSI C63.4:2003	Class B	PASS
Occupied Bandwidth	FCC PART 15.215	ANSI C63.4:2003	Class B	PASS

Remark:

♦

Channel	Frequency/ MHz
Lowest	902.1
Mid	906.0
Highest	927.9

The tests were carried out on the 3 samples with the typical frequency listed above. The lowest and highest frequency were within 0.1MHz margin to “ 902.0MHz to 928MHz ” of the frequency range applied.

Fresh battery was used during testing.



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### 3 General Information

#### 4.1. Client Information

Applicant: Sabine, Inc.  
Address of Applicant: 13301 Hwy 441, Alachua, FL 32615, USA

#### 4.2. General Description of E.U.T.

EUT Name: Bodypack Transmitter  
Item No.: SW45-T  
Serial No.: Not supplied by client

#### 4.3. Details of E.U.T.

Power Supply: 3Vdc, 2 x AA size Battery  
Main Function: Wireless microphone system with an associated receiver for transmitting voice.  
Frequency Range: 902.000 MHz to 928.000 MHz

#### 4.4. Description of Support Units

Connect the EUT to mains power, and then test the EUT with signal generator.

#### 4.5. Standards Applicable for Testing

The standard used was FCC PART 15, SUBPART C, PART 15.249.

The EUT belongs to unlicensed low power auxiliary devices.



#### 4.6. Test Location

GuangZhou Huesent Testing Service Co., Ltd.

No.91, Dongguanzhuang Road, Guangzhou, China.

Tel: 86-20-87221905, Fax: 86-20-87223892

CNAS- Accreditation No.: L2885.

CMA- Authorisation Certificate No.: 2008191614Z

ERP & Spurious Emission tests were subcontracted to the laboratory following-

GRG Metrology and Test Technology (Guangzhou) Co., Ltd.

ADDRESS: No.163, Pingyun Rd., West Huangpu Ave, Guangzhou, Guangdong, China.

CNAS No. L0446, FCC Registration No. 688188

Tel: 86-20- 38699960, Fax: 86-20- 38695185

#### 4.7. Deviation from Standards

None.

#### 4.8. Abnormalities from Standard Conditions

None.



## 5. Equipments Used during Test

Test Equipment	Manufactory	Model No,	Serial o.	Cal Date
Horn Ant	SCHWARZBECK	BBHA9120D	752	2010-8-8
EMI Receiver	SCHWARZBECK	ESU	100106	2010-12-26
Signal Generator	R&S	SML03	103002	2011-6-6
Antenna	SCHWARZBECK	STLP 9128 E	9.13E-26	2010-8-2
Power Amplifier	PRANA R&D	AP32 DT214	0611-768	2011-7-1
Power Meter	BOOTON	4232A	10543	2010-9-2
Spectrum Analyzer	R&S	FSP30	1166.5950.03	2010-10-30
Temperature Chamber	Gongwen	GDS-250	1150	2011-7-22
D.C. Power Supply	WELLSTAR	PS-205A	NA	2010-10-21
3m Semi-Anechoic Chamber	ETS-LINDGREN	6m X6m x 9m	NA	2011-6-15
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	NA	2010-8-9
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	NA	2010-8-9
18G RF Pre-amplifier	MITEQ	AFS44	1381096	2011-6-8
Power Meter	Rohde & Schwarz	URV35	EMC1506	2011-6-8
Audio Analyzer	Rohde & Schwarz	UPL	EMC1508	2011-6-8
Power Sensor	Rohde & Schwarz	URV5-Z7	EMC1507	2011-6-8
Temperature Chamber	Gongwen	GDS-250	1150	2011-6-8
D.C. Power Supply	WELLSTAR	PS-205A	SEL0045	2011-6-8
Humidity/ Temperature Meter	Shanghai	ZJ1-2B	SEL0101 to SEL0103	2011-6-8
Barometer	ChangChun	DYM3	SEL0088	2011-6-8
Multimeter	Victor	VC9805A+	3000125	2011-6-8
DC Power Supply	DG HuaYang	PS-3030	9862036	2011-6-8
Low Loss Coaxial Cable	HST	2 m	EMC1008	2011-6-8
Monopole Antenna	HST	N/A	N/A	2011-6-8



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Noise Generaror	Ningbo Zhongce	DF1681	EMC0009	2011-6-8
Spectrum Analyzer	R&S	FSP30	EMC0001	2011-1-11
Multifunction Counter	Electonix	HC-F1000L	EMC0013	2010-11-14

## 6. Test Results

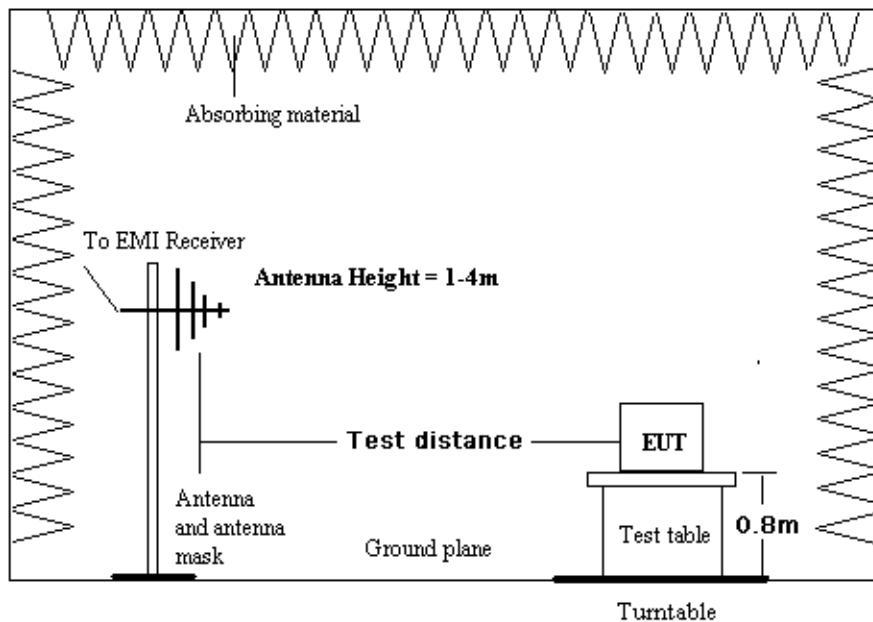
### 6.1. RADIATION INTERFERENCE

Test Requirement: FCC Part15.249, a)  
Test Method: ANSI C63.4  
Detector: Peak for pre-scan (The resolution bandwidth was 100KHz and the video bandwidth was 300KHz up to 1.0GHz and 1.0MHz with a video BW of 3.0MHz above 1.0GHz.)  
Average detector if maximised peak within 6dB of limit  
Test Date: Jul. 15, 2011

#### 6.1.1 E.U.T. Operation

Operating Environment:  
Temperature: 25°C      Humidity:55% RH      Atmospheric Pressure: 1020mBar  
EUT Operation:  
Test the EUT work normally in on mode during the whole test.

#### 6.1.2 Test Setup



#### 6.1.3 Test Procedure

##### ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES:

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical polarities.



### 6.1.4 Measurement Data

Quasi-Peak measurement of carrier

Frequency	Level		Transducer	Limit	Min. Margin
	MHz	dBuV/m			
		V	H	94 dBuV/m (50mV/m)  Other: listed as FCC Part 15 sub B:216M-960M: QP limit 46 dBuV/m	12.7 5.2 12.7 4.9 11.7 4.8
902.1 (L)	81.3	77.9	26.0		
451.1(L)	40.8	36.2	19.0		
906.0 (M)	81.3	78.1	26.1		
453.0(M)	41.1	36.8	19.0		
927.9 (H)	82.3	79.4	26.3		
464.0(H)	41.2	37.0	19.0		



Average & Peak measurement of harmonics and spurious emission at lowest channel 902.1MHz						
Frequency	Level			Transducer	Limit	Min. Margin
MHz	dBuV/m			dB	dBuV/m	dB AVG
	V	H				
	Peak	Avg.	Peak	Avg.	AVG: 54dB 500µV/m	20.8 20.9 18.5 17.3 16.1 16.1 NA
2 <sup>nd</sup> 1804.2	33.4	32.0	34.6	33.2		
3 <sup>rd</sup> 2706.3	34.2	33.1	34.8	32.9		
4 <sup>th</sup> 3608.4	35.4	35.3	36.5	35.5		
5 <sup>th</sup> 4510.5	36.8	36.2	37.5	36.7		
6 <sup>th</sup> 5412.6	38.2	37.3	39.8	37.9		
7 <sup>th</sup> 6314.7	39.4	37.9	39.4	37.8		
above	<45	<40	<45	<40		
Average and Peak measurement at middle channel 906.0MHz						
2 <sup>nd</sup> 1812.0	33.8	32.3	34.2	33.1	AVG: 54dB 500µV/m	20.9
3 <sup>rd</sup> 2718.0	33.9	32.1	33.8	32.7		21.3
4 <sup>th</sup> 3624.0	35.7	35.3	36.2	35.5		18.5
5 <sup>th</sup> 4530.0	36.7	36.2	37.1	36.7		17.3
6 <sup>th</sup> 5436.0	38.0	37.2	39.5	37.9		16.1
7 <sup>th</sup> 6342.0	39.0	37.9	39.2	37.8		16.1
above	<45	<40	<45	<40		NA
Average and Peak measurement at highest channel 927.9MHz						
2 <sup>nd</sup> 1855.8	34.2	33.1	34.6	33.4	AVG: 54dB 500µV/m	20.6
3 <sup>rd</sup> 2783.7	34.9	33.1	34.8	32.9		20.9
4 <sup>th</sup> 3711.6	36.2	35.3	36.3	35.7		18.3
5 <sup>th</sup> 4639.5	37.1	36.2	37.1	36.4		17.6
6 <sup>th</sup> 5567.4	38.2	37.3	39.7	37.9		16.1
7 <sup>th</sup> 6495.3	39.2	37.9	39.5	37.9		16.1
above	<45	<40	<45	<40		NA

Note: The transducer factor = antenna factor + cable loss - preamplifier.

The Level = Read level + transducer factor.

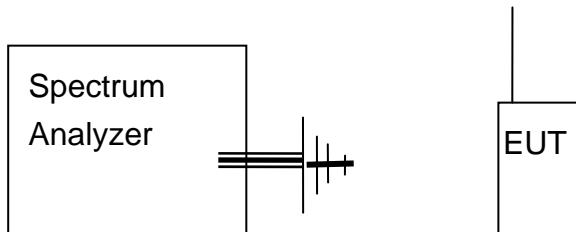
## 6.2. Occupied Bandwidth

Test Requirement: FCC Part15.215  
Test Method: ANSI C63.4  
Detector: Peak for scan (The resolution bandwidth was 1kHz and the video bandwidth was 1kHz, span was 500kHz)  
maximised peak hold  
Test Date: Jul. 18, 2011

### 6.2.1 E.U.T. Operation

Operating Environment:  
Temperature: 25°C      Humidity:55% RH      Atmospheric Pressure: 1020mBar  
EUT Operation:  
Test the EUT work normally in on mode during the whole test.

### 6.2.2 Test Setup



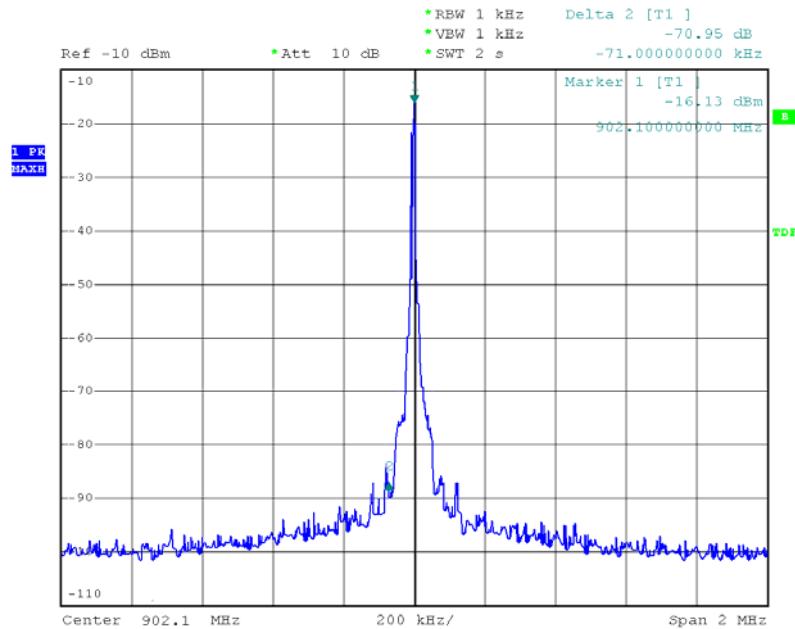
### 6.2.3 Test Procedure

#### ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES:

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical polarities.

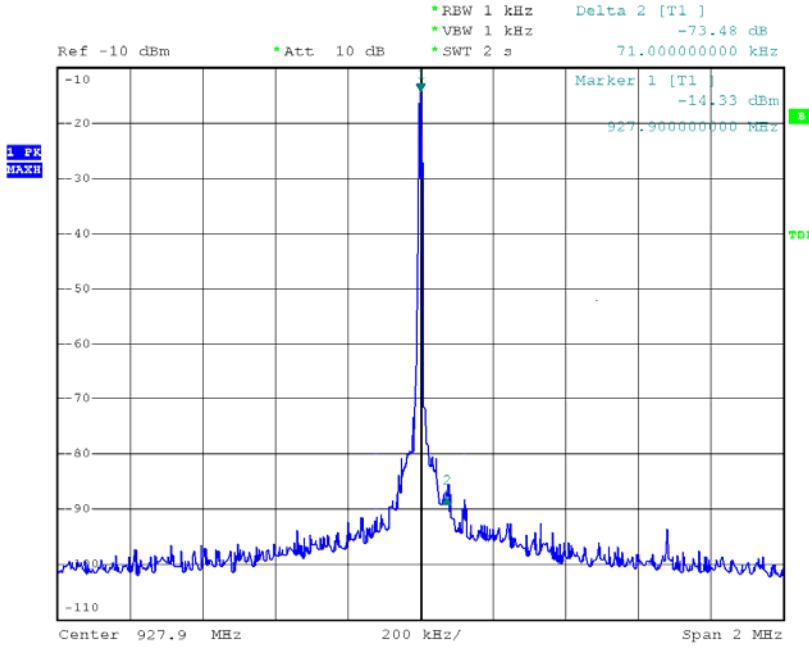
## 6.2.4 Measurement Data

### Maximum Peak hold measurement for lowest channel 902.1M

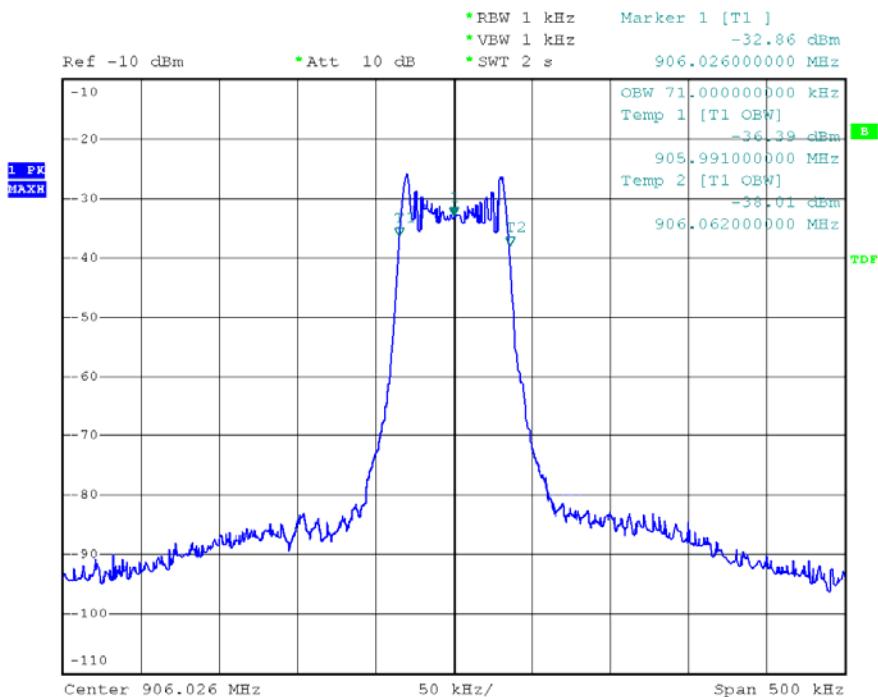


Date: 25.JUL.2011 10:29:50

### Maximum Peak hold measurement for highest channel 927.9M



Date: 25.JUL.2011 10:33:20

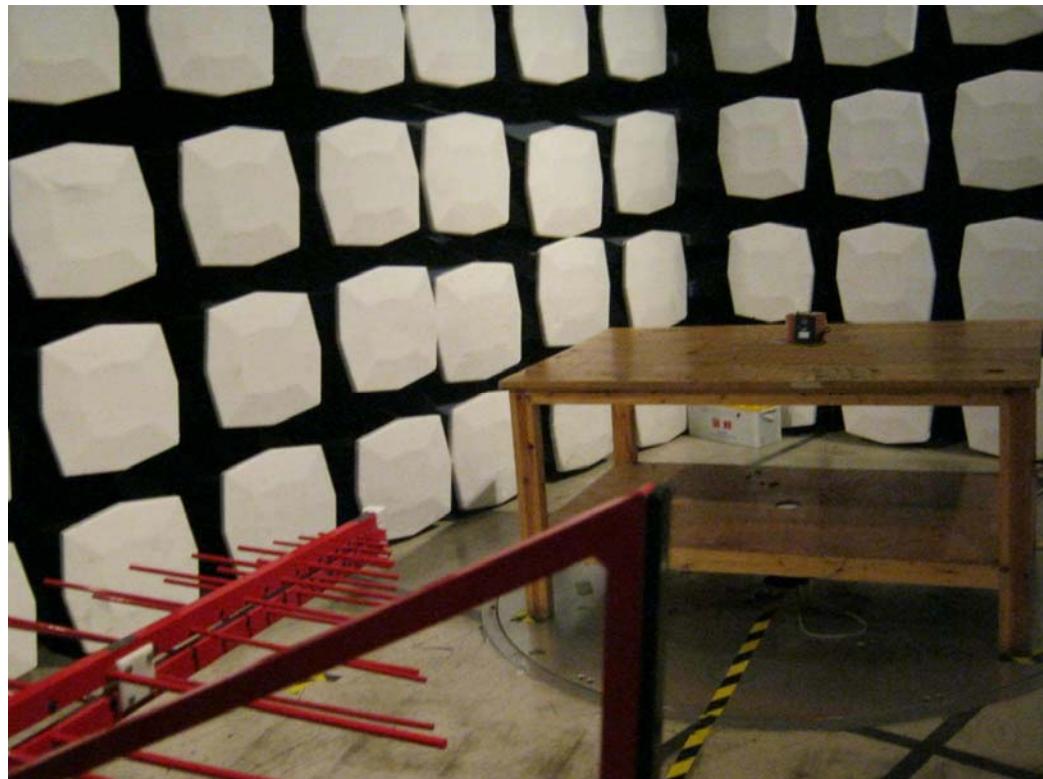


Date: 25.JUL.2011 10:25:50

**The 20 Bandwidth is 71 kHz.**

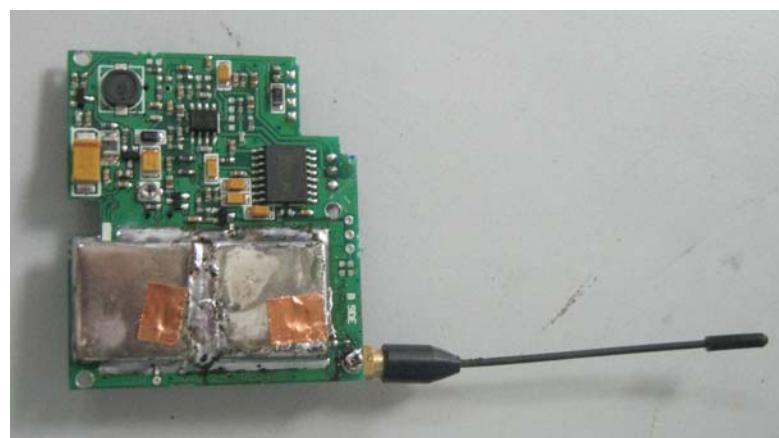
## 7. Photographs

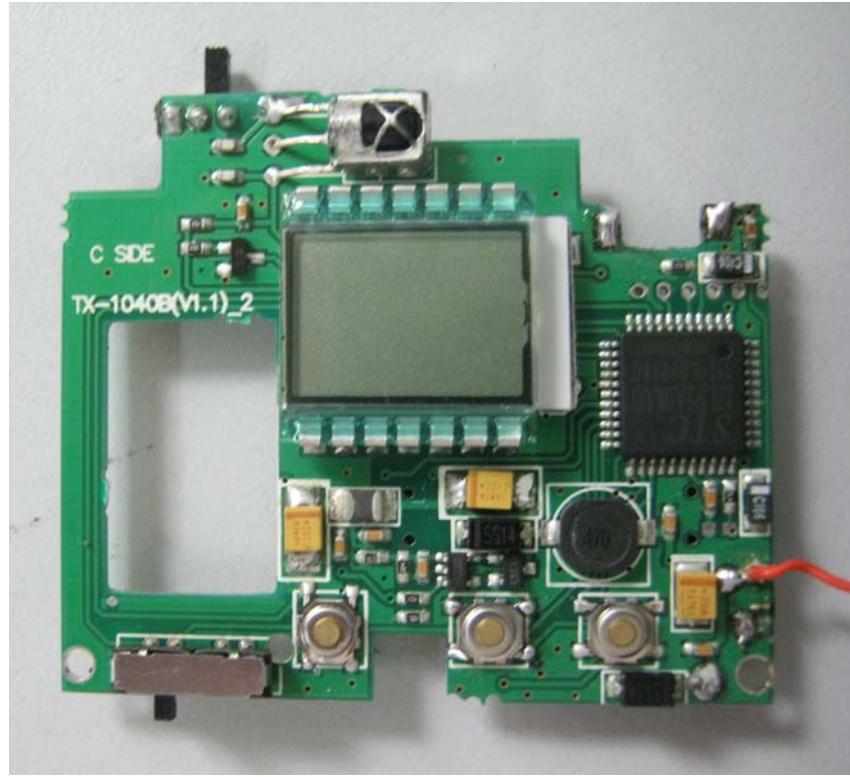
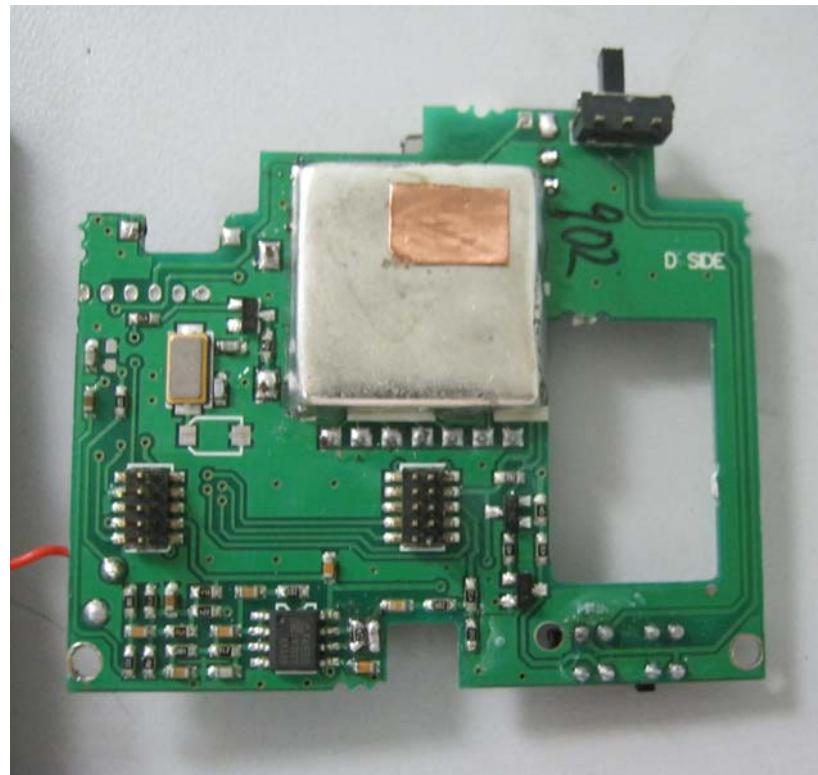
### 7.1. Radiated Emission Test Setup

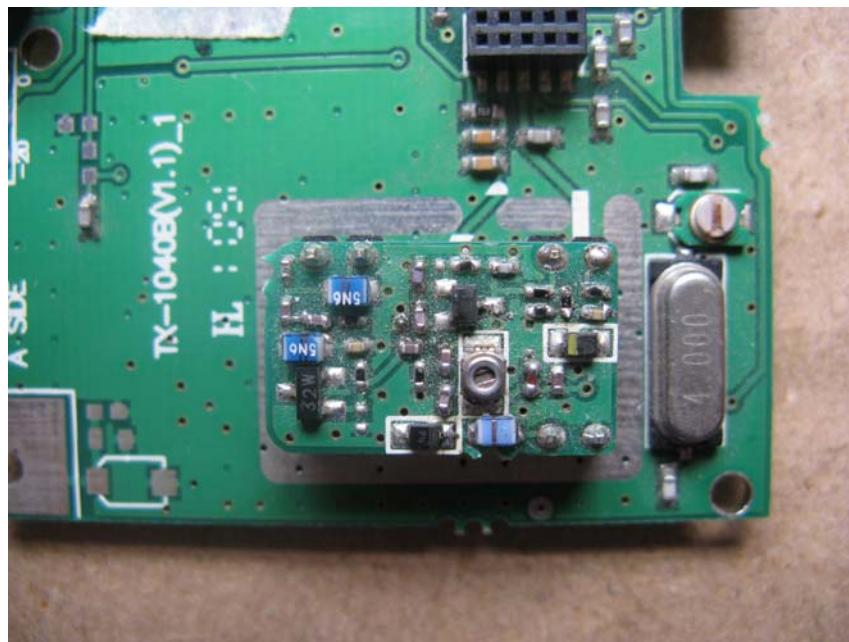


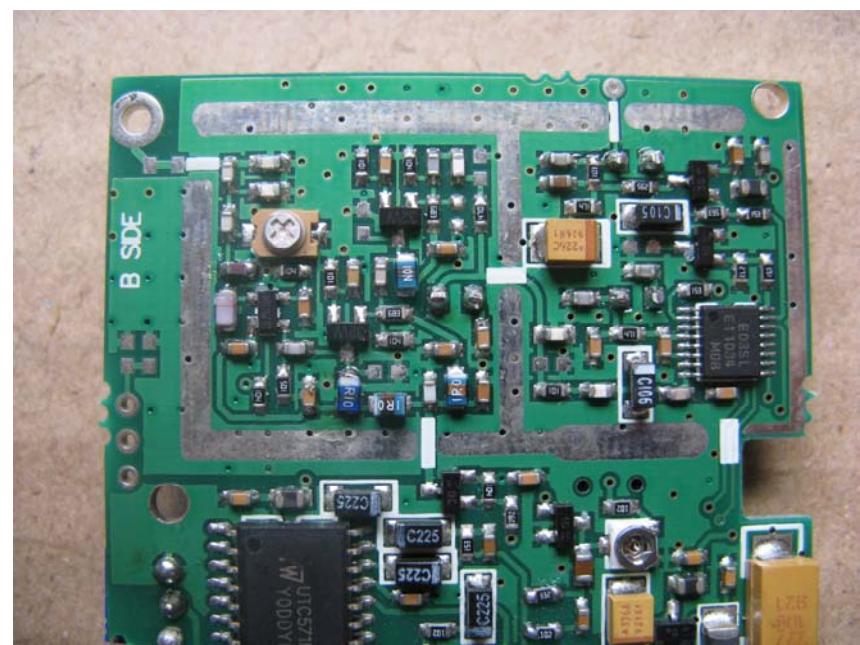
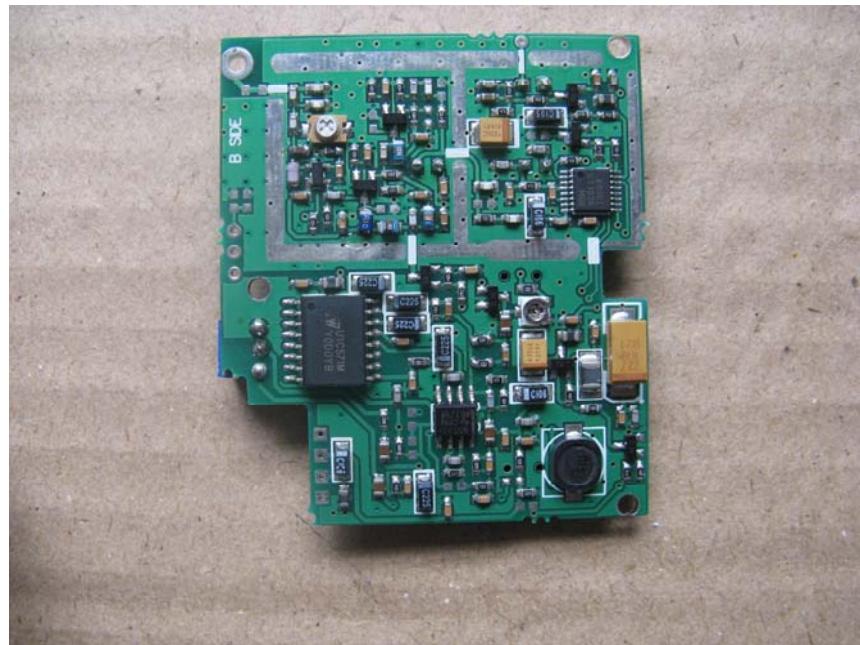
## 7.2. EUT Constructional Details













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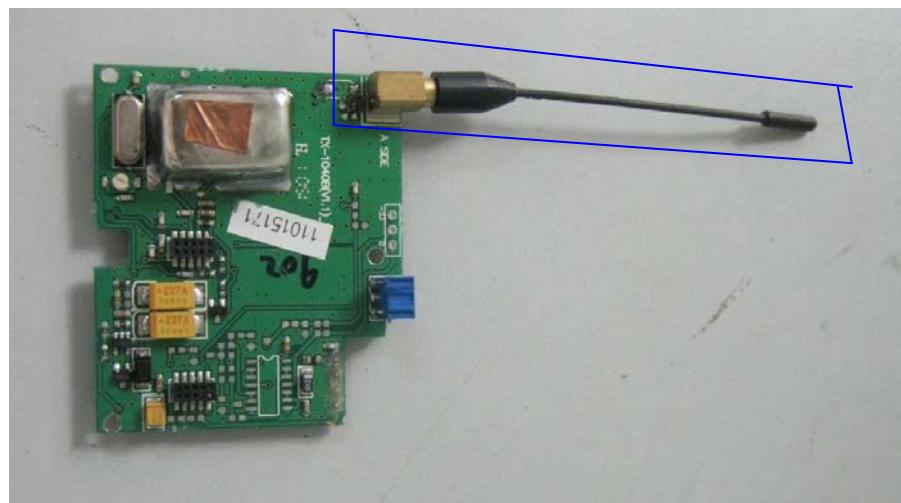


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### 7.3. Antenna Photo



\*\*\*End of Report\*\*\*