



TEST REPORT

Applicant: Bushnell Performance Optics

Address of Applicant: 9200 Cody, Overland Park, KS 66214, United States

Equipment Under Test (EUT)

Product Name: Dogg Catcher

Model No.: 3759

FCC ID: 2ABQG3759R

Applicable standards: FCC CFR Title 47 Part 15 Subpart B:2012

Date of sample receipt: December 19, 2013

Date of Test: December 19, 2013-January 07, 2014

Date of report issue: January 07, 2014

Test Result : PASS *

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

Authorized Signature:

Robinson Lo

Laboratory Manager

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 and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

Version No.	Date	Description
00	January 07, 2014	Original

Prepared By:



Date:

January 07, 2014

Project Engineer

Check By:



Date:

January 07, 2014

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part15.107	N/A
Radiated Emissions	Part15.109	PASS

PASS: The EUT complies with the essential requirements in the standard.

N/A: not applicable.

5 General Information

5.1 Client Information

Applicant:	Bushnell Performance Optics
Address of Applicant:	9200 Cody, Overland Park, KS 66214, United States
Manufacturer:	TAT MAN INVESTEMENT LIMITED
Address of Manufacturer	Room 910, 9/F, Hang Bong Commercial Centre, 28 ShangHai Street, TsimShaTsui, HK
Factory:	YaoBiao Manufactory
Address of Factory:	C Tower, YaoBiao Factory, AoDing Village, GuangDong Community GuanLan Street, BaoAn County, SZ City, GuangDong, China

5.2 General Description of EUT

Product Name:	Dogg Catcher
Model No.:	3759
Operation Frequency:	433.93MHz (Receiver)
Power supply:	DC 6.0V(4*1.5V for "AA" Size Battery)

5.3 Test mode

Receiving mode	Keep the EUT in Receiving mode.
During the test, the new battery was used.	

5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS —Registration No.: CNAS L5775**

CNAS has accredited Global United Technology Services Co., Ltd. to ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 28, 2013.

- **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

Tel: 0755-27798480

Fax: 0755-27798960

5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC approval
TAT MAN INVESTEMENT LIMITED	Dogg Catcher	3759	N/A	FCC ID: 2ABQG3759T

5.7 Deviation from Standards

None.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.

6 Test Instruments list

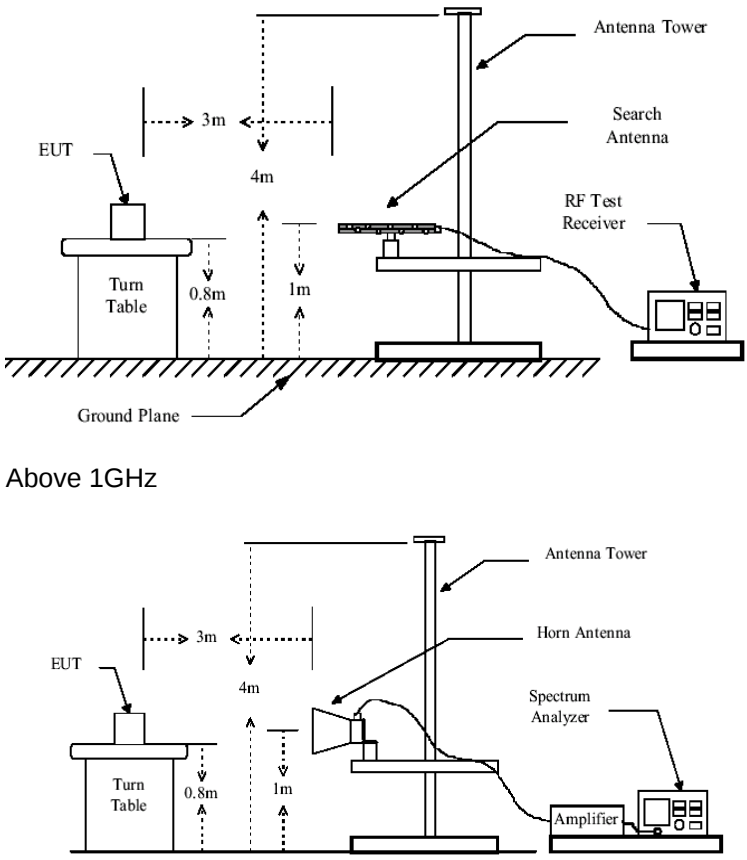
Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 29 2013	Mar. 28 2014
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	Jun. 29 2013	Jun. 29 2014
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	Jun. 29 2013	Jun. 29 2014
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	Jun. 29 2013	Jun. 29 2014
6	RF Amplifier	HP	8347A	GTS204	Jun. 29 2013	Jun. 29 2014
7	Preamplifier	HP	8349B	GTS206	Jun. 29 2013	Jun. 29 2014
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	Jul. 07 2013	Jul. 06 2014
10	Coaxial Cable	GTS	N/A	GTS211	Jul. 07 2013	Jul. 06 2014
11	Thermo meter	N/A	N/A	GTS256	Jul. 01 2013	Jul. 01 2014

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Barometer	ChangChun	DYM3	GTS257	July 09 2013	July 08 2014

7 Test Results and Measurement Data

7.1 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109																								
Test Method:	ANSI C63.4:2003																								
Test Frequency Range:	30MHz to 2GHz																								
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)																								
Receiver setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr><tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120kHz</td><td>300kHz</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr><tr><td>AV</td><td>1MHz</td><td>3MHz</td><td>Average Value</td></tr></table>					Frequency	Detector	RBW	VBW	Remark	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value	Above 1GHz	Peak	1MHz	3MHz	Peak Value	AV	1MHz	3MHz	Average Value	
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Above 1GHz	Peak	1MHz	3MHz	Peak Value																					
	AV	1MHz	3MHz	Average Value																					
Limit:	<table><tr><td>Frequency</td><td>Limit (dBuV/m @3m)</td><td>Remark</td></tr><tr><td>30MHz-88MHz</td><td>40.00</td><td>Quasi-peak Value</td></tr><tr><td>88MHz-216MHz</td><td>43.50</td><td>Quasi-peak Value</td></tr><tr><td>216MHz-960MHz</td><td>46.00</td><td>Quasi-peak Value</td></tr><tr><td>960MHz-1GHz</td><td>54.00</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>54.00</td><td>Average Value</td></tr><tr><td>74.00</td><td>Peak Value</td></tr></table>					Frequency	Limit (dBuV/m @3m)	Remark	30MHz-88MHz	40.00	Quasi-peak Value	88MHz-216MHz	43.50	Quasi-peak Value	216MHz-960MHz	46.00	Quasi-peak Value	960MHz-1GHz	54.00	Quasi-peak Value	Above 1GHz	54.00	Average Value	74.00	Peak Value
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Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.																								
Test setup:	Below 1GHz																								

	 Above 1GHz
Test environment:	Temp.: 25 °C Humid.: 52% Press.: 1 012mbar
Measurement Record:	Uncertainty: ± 4.5dB
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Note:

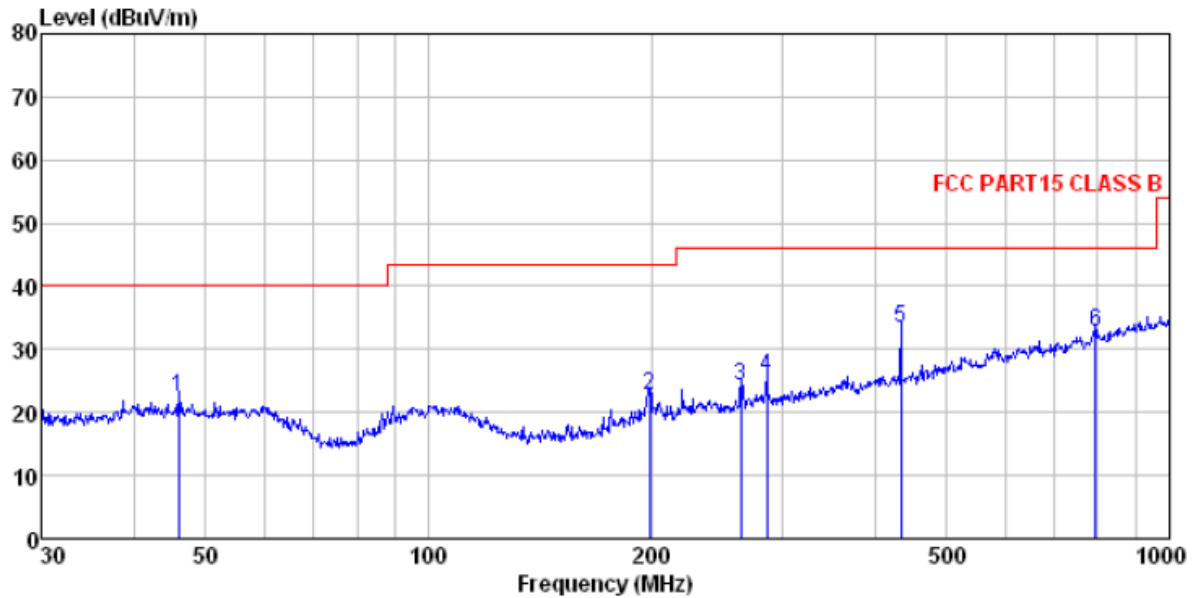
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

$$\text{Final Test Level} = \text{Receiver Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Preamplifier Factor}$$

Measurement Data

Below 1GHz

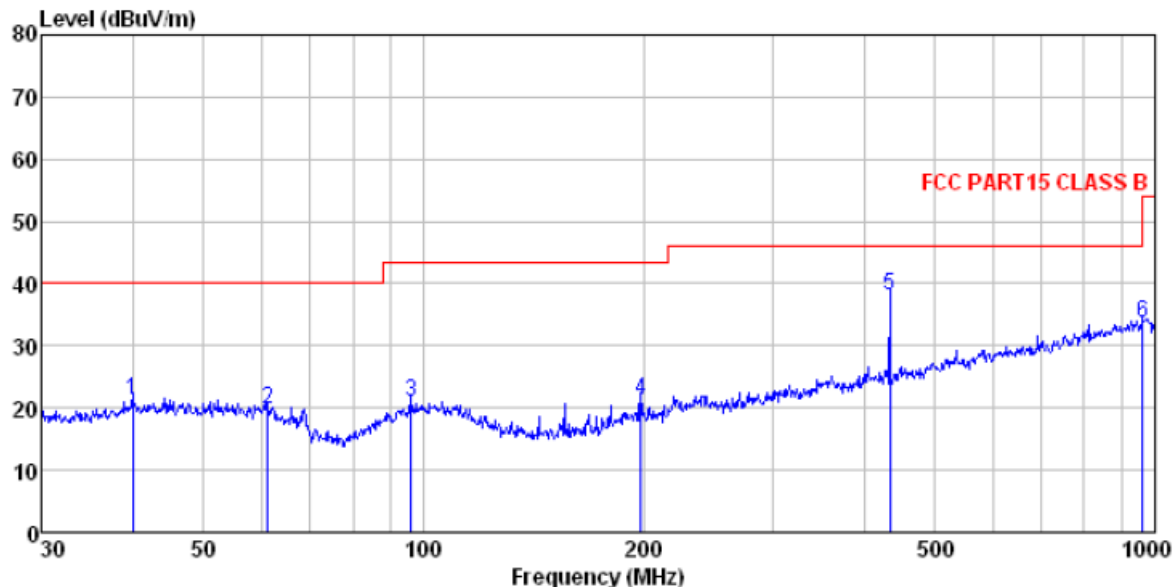
Horizontal:



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163-2013M HORIZONTAL
 Job No. : 1989RF
 Test Mode : Receiving mode
 Test Engineer: Yang

	Freq	ReadAntenna	Cable Preamp		Limit	Over	
		Level Factor	Loss Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB
1	46.016	38.22	15.49	0.73	32.00	22.44	40.00 -17.56 QP
2	198.588	40.42	12.57	1.83	32.14	22.68	43.50 -20.82 QP
3	263.819	40.15	14.17	2.19	32.17	24.34	46.00 -21.66 QP
4	285.978	40.78	14.78	2.29	32.18	25.67	46.00 -20.33 QP
5	434.065	44.59	17.53	3.02	31.77	33.37	46.00 -12.63 QP
6	793.396	37.66	21.96	4.43	31.31	32.74	46.00 -13.26 QP

Vertical:

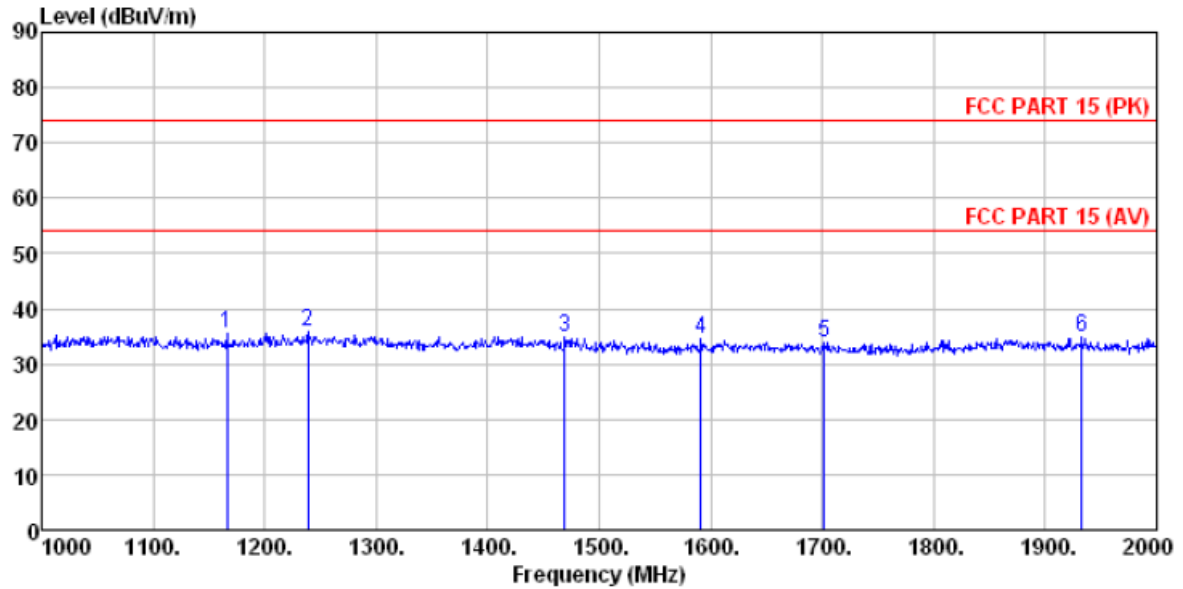


Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL
 Job No. : 1989RF
 Test Mode : Receiving mode
 Test Engineer: Yang

	Freq	ReadAntenna	Cable Preamp		Limit	Over	
	Level Factor	Loss Factor	Level	Line	Limit	Remark	
-----	-----	-----	-----	-----	-----	-----	-----
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m
1	39.994	37.15	15.58	0.66	32.06	21.33	40.00
2	61.132	36.58	14.29	0.87	31.93	19.81	40.00
3	96.099	36.68	14.90	1.16	31.75	20.99	43.50
4	197.893	39.04	12.57	1.83	32.13	21.31	43.50
5	434.065	49.19	17.53	3.02	31.77	37.97	46.00
6	962.162	36.27	23.49	5.09	31.22	33.63	54.00

Above 1GHz

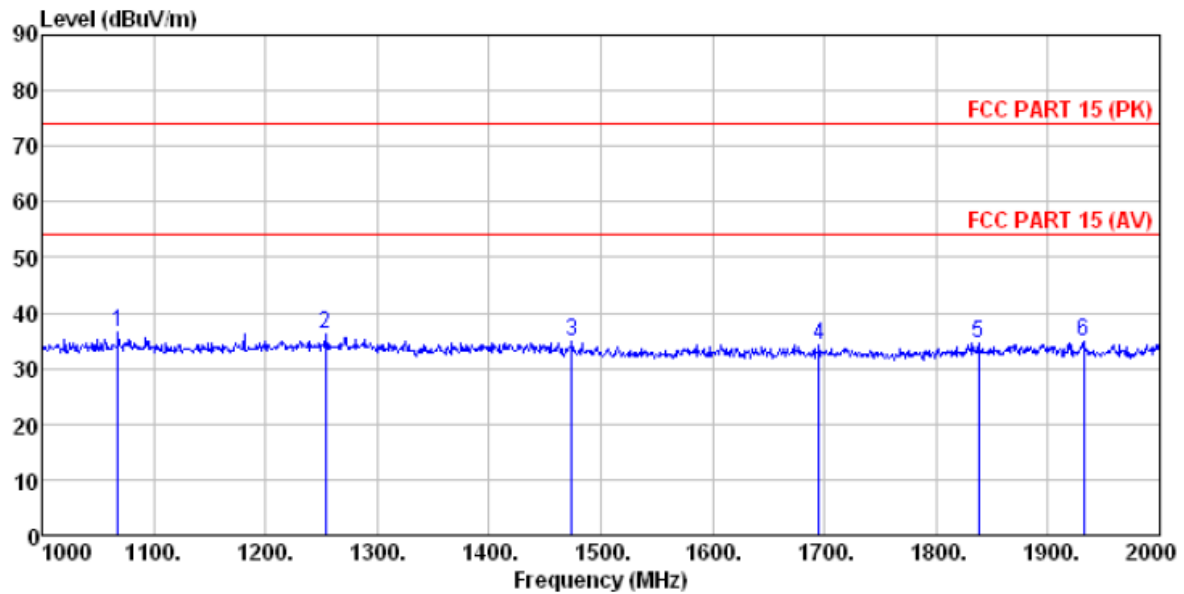
Horizontal:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL
 Job No. : 1989RF
 Test Mode : Receiving mode
 Test Engineer: Yang

	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	1166.000	39.02	25.15	4.44	33.04	35.57	74.00 -38.43 Peak
2	1239.000	39.16	25.49	4.50	33.16	35.99	74.00 -38.01 Peak
3	1469.000	38.63	25.29	4.66	33.56	35.02	74.00 -38.98 Peak
4	1591.000	38.46	25.00	4.74	33.76	34.44	74.00 -39.56 Peak
5	1702.000	38.19	24.98	4.80	33.94	34.03	74.00 -39.97 Peak
6	1933.000	38.47	25.88	4.93	34.34	34.94	74.00 -39.06 Peak

Vertical:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL
 Job No. : 1989RF
 Test Mode : Receiving mode
 Test Engineer: Yang

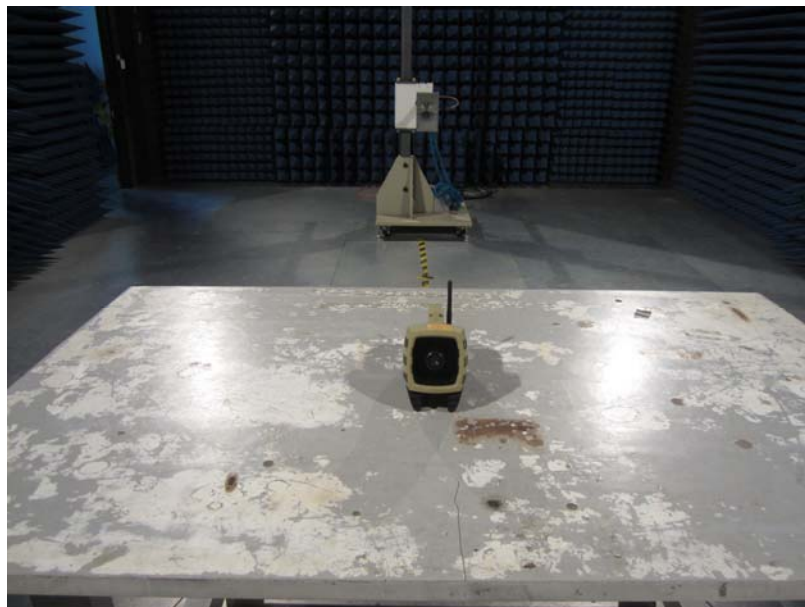
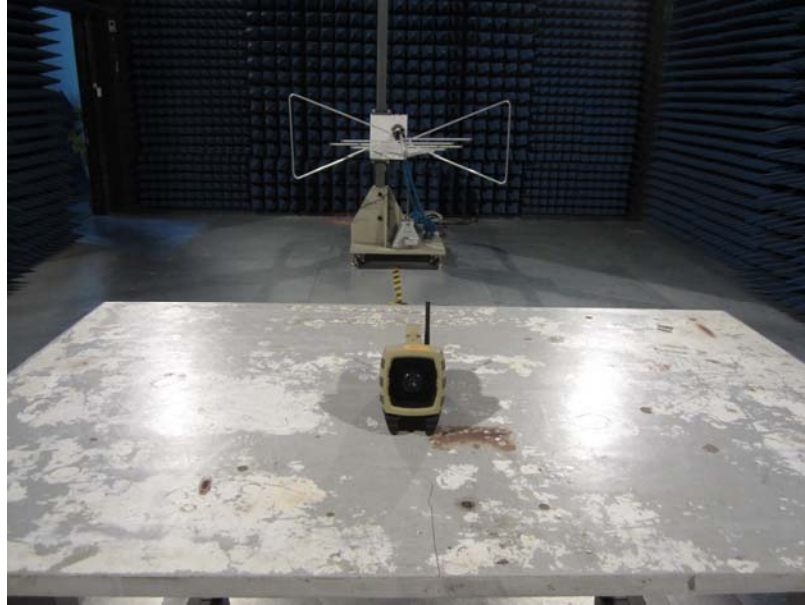
	Freq	ReadAntenna	Cable Preamp		Limit	Over	
	Level Factor	Loss Factor	Level	Line	Limit	Remark	
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m
1	1068.000	40.40	24.67	4.35	32.87	36.55	74.00
2	1254.000	39.30	25.54	4.51	33.18	36.17	74.00
3	1474.000	38.47	25.28	4.66	33.56	34.85	74.00
4	1695.000	38.33	24.97	4.80	33.94	34.16	74.00
5	1838.000	38.43	25.48	4.88	34.17	34.62	74.00
6	1932.000	38.49	25.88	4.93	34.34	34.96	74.00

Remark:

If the average limit is met when using a Peak detector, the EUT shall be deemed to meet both peak and average limits. And measurement with the average detector is unnecessary.

8 Test Setup Photo

Radiated Emission

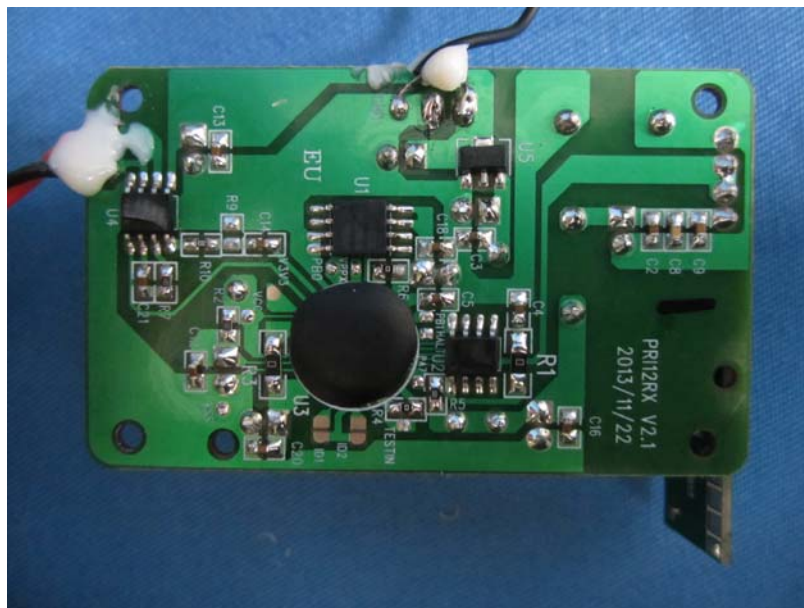
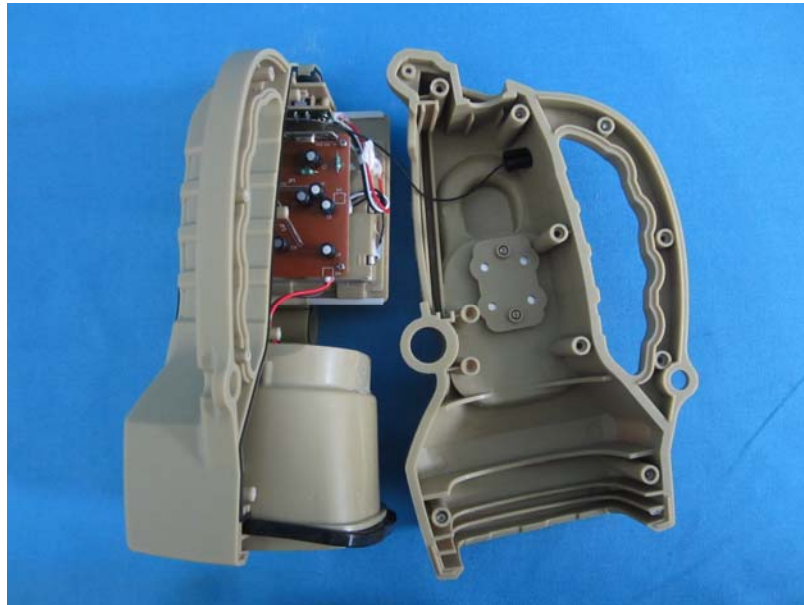


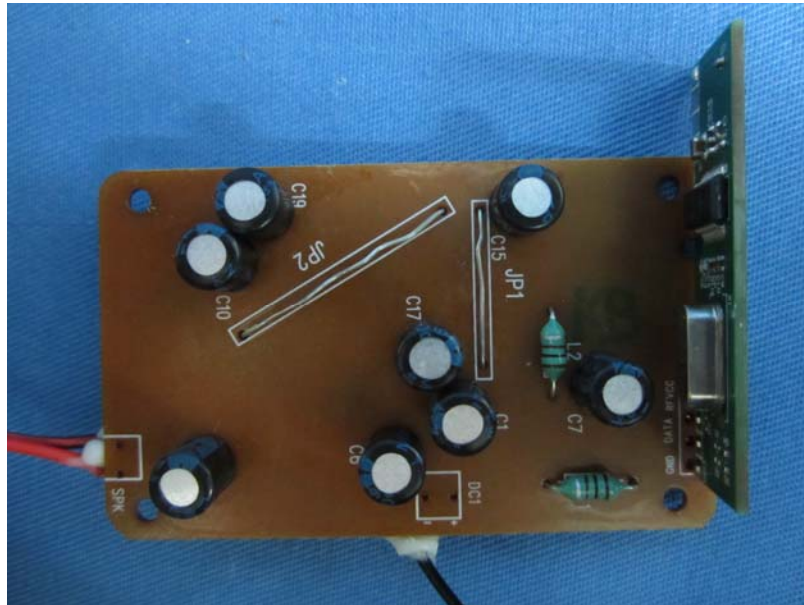
9 EUT Constructional Details

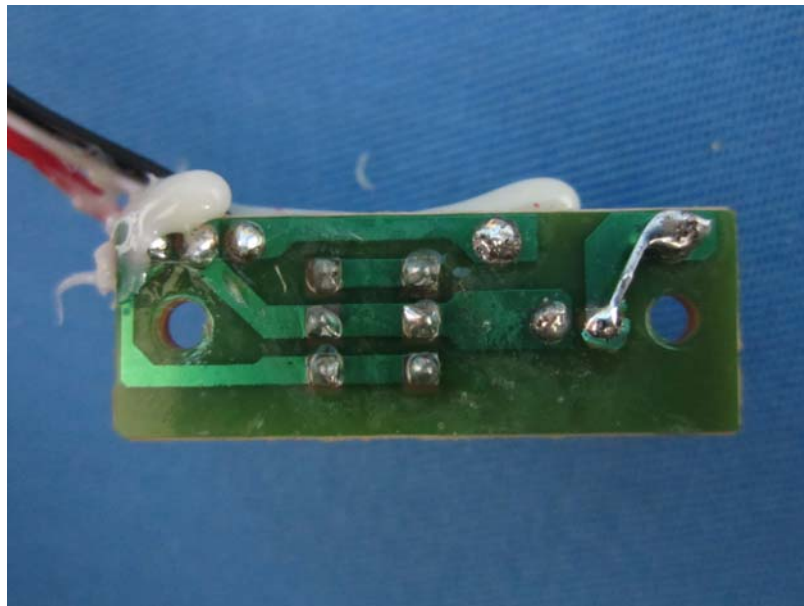
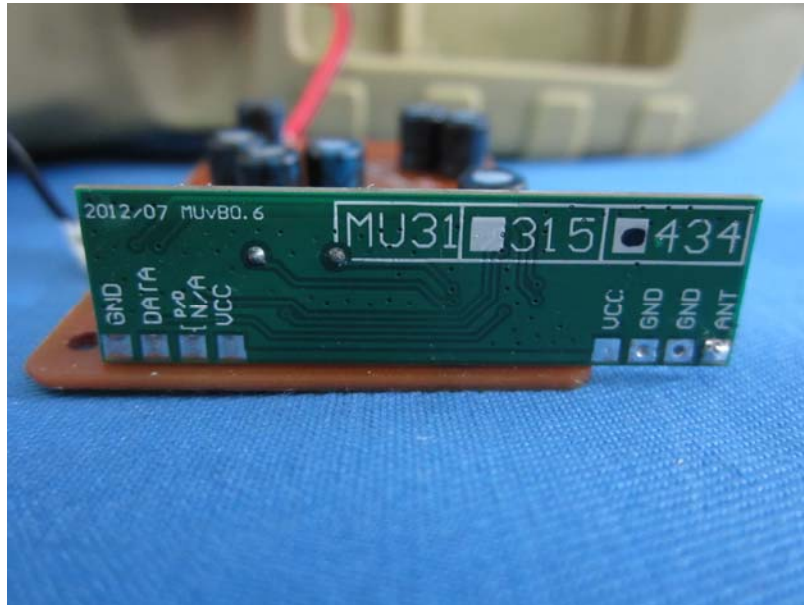


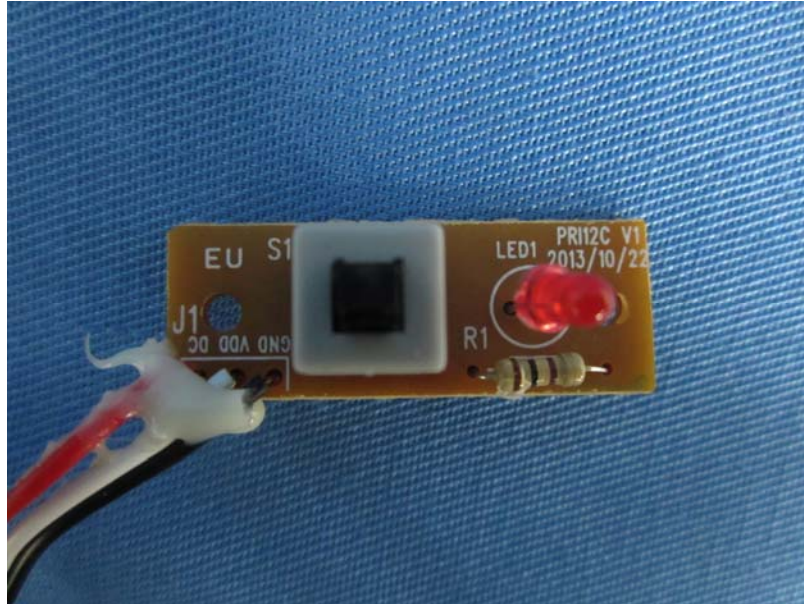












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