Report No.: GTSE15120237901

FCC Report

Applicant:	Ambient, LLC dba Ambient Weather
Address of Applicant:	6845 W. Frye Road Chandler, AZ 85226, Chandler Arizona United States

Equipment Under Test (EUT)

Product Name:	Wireless Thermo-Hygrometer
Model No.:	WS23, WS23C
FCC ID:	S2SWS23
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B:2014
Date of sample receipt:	January 07, 2016
Date of Test:	January 08-11 2016
Date of report issue:	January 12, 2016
Test Result :	PASS *

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

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*January 12, 2016*	*Original*

Prepared By:	Edward.Pan	***Date:***	*January 12, 2016*
	Project Engineer		
Check By:	hank.yan	***Date:***	*January 12, 2016*
	Reviewer		

3 Contents

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.

Remark: Test according to ANSI C63.4:2014

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)
Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.			

5 General Information

5.1 Client Information

Applicant:	Ambient, LLC dba Ambient Weather
Address of Applicant:	6845 W. Frye Road Chandler, AZ 85226, Chandler Arizona United States
Manufacturer/Factory:	Unit Connection Technology Co., Ltd
Address of Manufacturer/ Factory:	5/F., Block J, Shifeng Technology Park, Loucun, Guangming New District, Shenzhen ,China

5.2 General Description of EUT

Product Name:	Wireless Thermo-Hygrometer
Model No.:	WS23, WS23C
Power supply:	DC 6.0V(*1.5V "AAA" Battery)

5.3 Test mode

Test mode:	
Operation mode	Keep the EUT in Receiver mode .

Receiver Frequency: 433.92 MHz

5.4 Test Facility

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

● **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly 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: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

5.6 Description of Support Units

None.

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	July. 03 2015	July. 02 2020
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	July. 03 2015	July. 02 2016
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	July. 06 2015	July. 05 2016
5	RF Amplifier	HP	8347A	GTS204	July. 03 2015	July. 02 2016
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Coaxial cable	GTS	N/A	GTS210	Jul. 05 2015	Jul. 04 2016
8	Thermo meter	N/A	N/A	GTS256	July. 07 2015	July. 06 2016
9	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2015	Mar. 26 2016

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	ChangChun	DYM3	GTS257	July 07 2015	July 06 2016

7 Test Results and Measurement Data

7.1 Radiated Emission

Test Requirement:	FCC Part15 B Section 15.109
Test Method:	ANSI C63.4:2014
Test Frequency Range:	30MHz to 2GHz
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Receiver setup:	

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

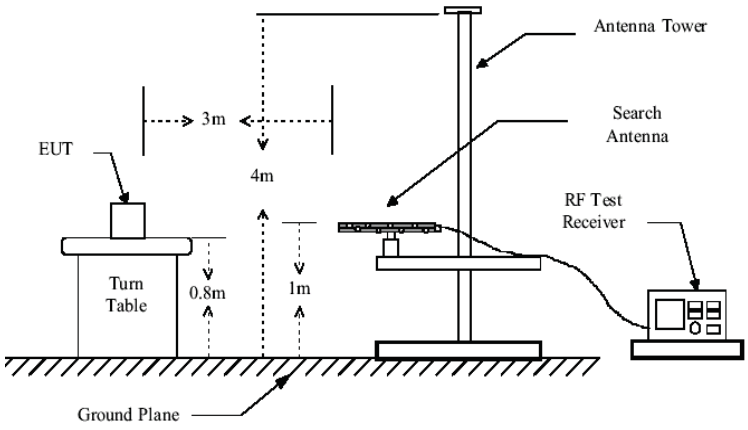
Limit:

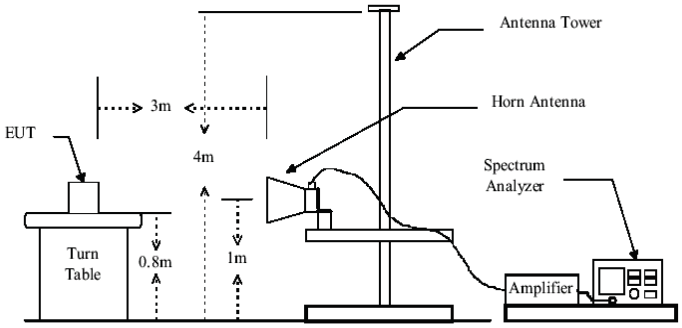
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.00	Quasi-peak Value
88MHz-216MHz	43.50	Quasi-peak Value
216MHz-960MHz	46.00	Quasi-peak Value
960MHz-1GHz	54.00	Quasi-peak Value
Above 1GHz	54.00	Average Value
	74.00	Peak Value

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

<table>
<tr><td></td><td>


Above 1GHz


</td></tr>
<tr><td>Test environment:</td><td>Temp.: 25 °C Humid.: 52% Press.: 1 012mbar</td></tr>
<tr><td>Measurement Record:</td><td>Uncertainty: ± 4.5dB</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6 for details</td></tr>
<tr><td>Test mode:</td><td>Keep the EUT in Operation status</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

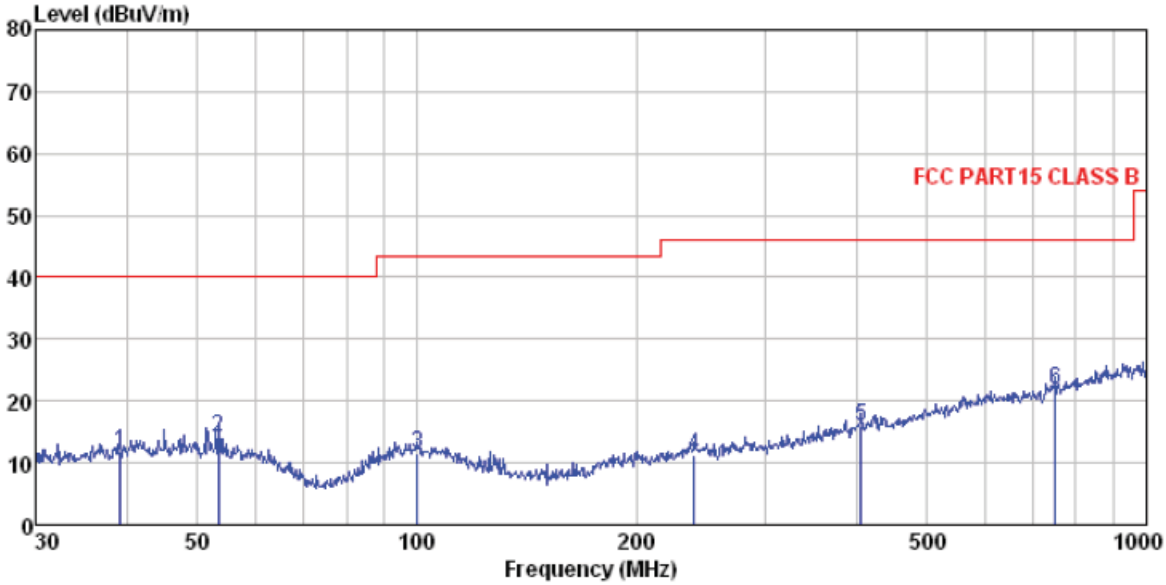
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

Measurement Data

Below 1GHz

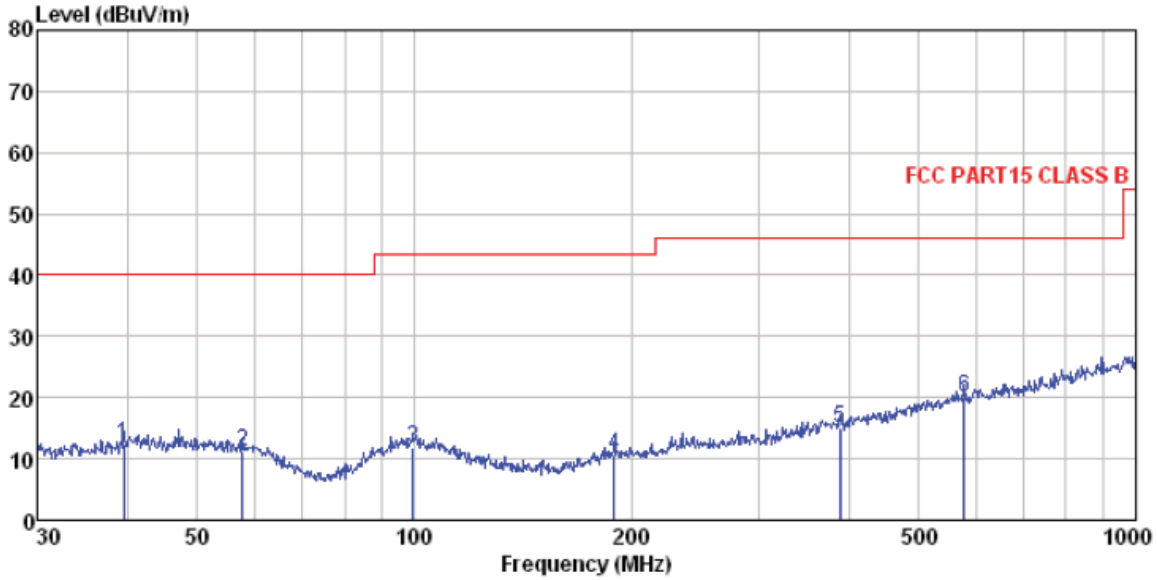
Horizontal:



Condition : FCC PART15 CLASS B VULB9163-2013M Horizontal
Job No. : 2379RF
Test Mode : Operation mode
Test Engineer: Bill

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	39.162	25.74	15.34	0.65	30.05	11.68	40.00	-28.32	QP
2	53.505	28.33	15.08	0.80	29.97	14.24	40.00	-25.76	QP
3	100.229	24.77	15.11	1.19	29.70	11.37	43.50	-32.13	QP
4	239.987	24.66	14.09	2.07	29.56	11.26	46.00	-34.74	QP
5	406.088	25.43	17.18	2.88	29.49	16.00	46.00	-30.00	QP
6	750.108	25.30	21.43	4.28	29.20	21.81	46.00	-24.19	QP

Vertical:

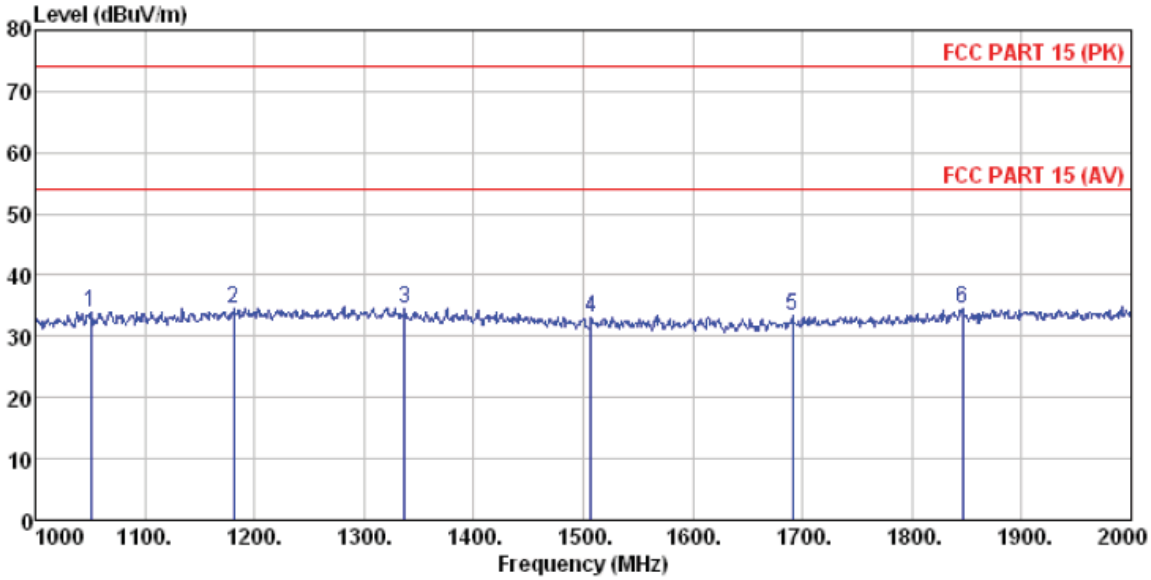


Condition : FCC PART15 CLASS B VULB9163-2013M VERTICAL
Job No. : 2379RF
Test Mode : Operation mode
Test Engineer: Bill

	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	39.576	26.26	15.49	0.66	30.05	12.36	40.00	-27.64	QP
2	57.796	25.43	14.84	0.84	29.94	11.17	40.00	-28.83	QP
3	99.528	25.13	15.13	1.19	29.70	11.75	43.50	-31.75	QP
4	189.074	25.75	12.48	1.78	29.24	10.77	43.50	-32.73	QP
5	389.355	25.06	16.83	2.80	29.55	15.14	46.00	-30.86	QP
6	578.670	25.76	20.09	3.64	29.30	20.19	46.00	-25.81	QP

Above 1GHz

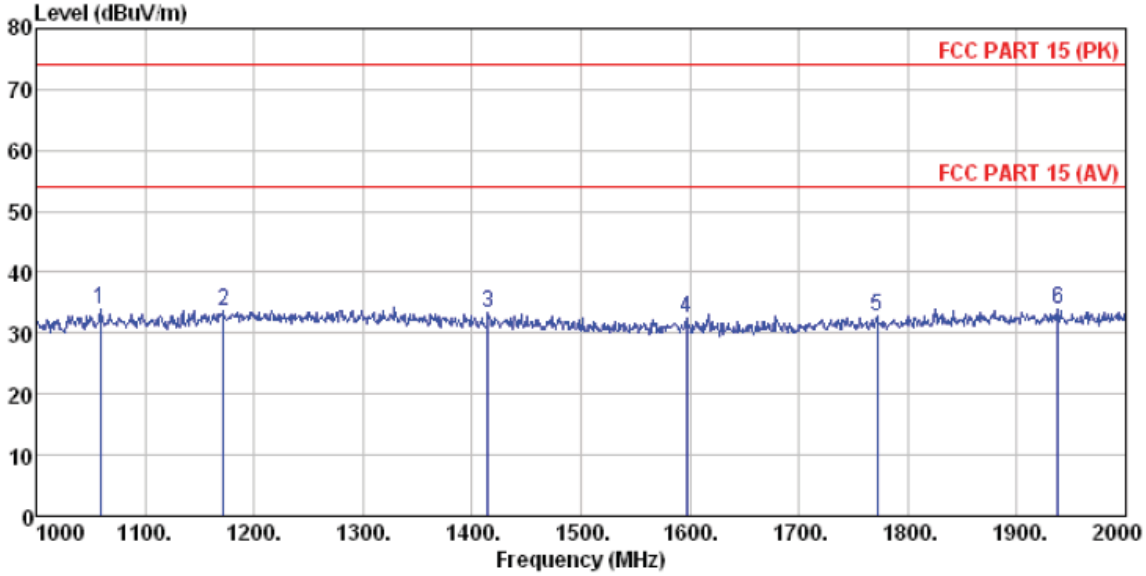
Horizontal:



Condition : FCC PART 15 (PK) BBHA9120D ANT(>1GHZ) HORIZONTAL
Job No. : 2379RF
Test Mode : Operation mode
Test Engineer: Bill

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1051.000	37.84	24.62	4.34	32.84	33.96	74.00	-40.04	Peak
2	1181.000	38.06	25.25	4.45	33.07	34.69	74.00	-39.31	Peak
3	1337.000	37.51	25.69	4.57	33.33	34.44	74.00	-39.56	Peak
4	1507.000	36.91	25.20	4.69	33.62	33.18	74.00	-40.82	Peak
5	1691.000	37.51	24.96	4.80	33.94	33.33	74.00	-40.67	Peak
6	1846.000	38.26	25.50	4.88	34.20	34.44	74.00	-39.56	Peak

Vertical:

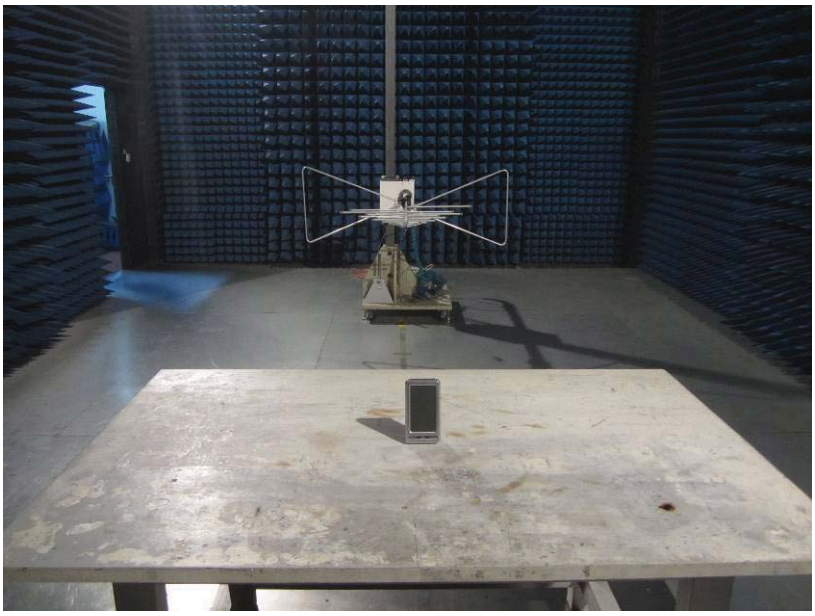


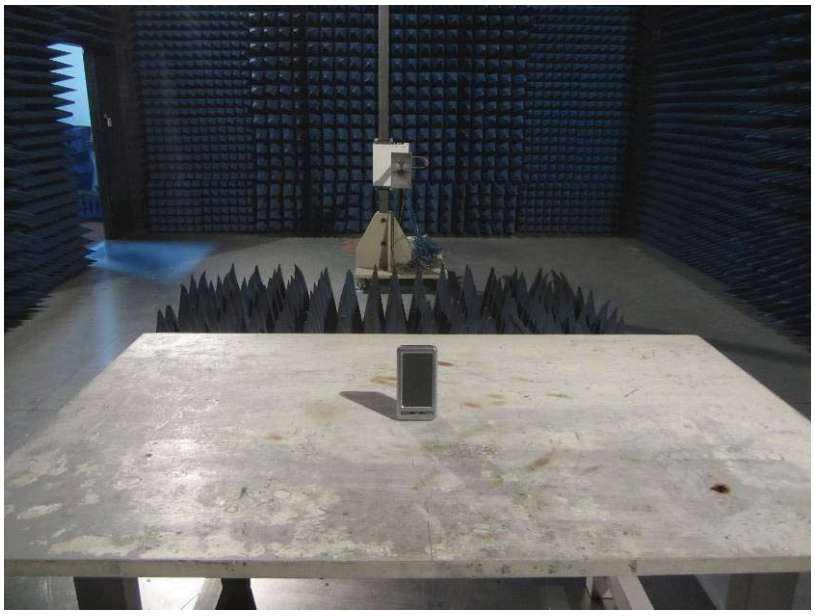
Condition : FCC PART 15 (PK) BBHA9120D ANT(>1GHZ) VERTICAL
Job No. : 2379RF
Test Mode : Operation mode
Test Engineer: Bill

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1059.000	37.90	24.65	4.35	32.84	34.06	74.00	-39.94	Peak
2	1172.000	37.06	25.17	4.44	33.04	33.63	74.00	-40.37	Peak
3	1415.000	36.67	25.51	4.62	33.45	33.35	74.00	-40.65	Peak
4	1597.000	36.56	24.99	4.74	33.76	32.53	74.00	-41.47	Peak
5	1772.000	36.78	25.17	4.84	34.05	32.74	74.00	-41.26	Peak
6	1938.000	37.38	25.90	4.93	34.34	33.87	74.00	-40.13	Peak

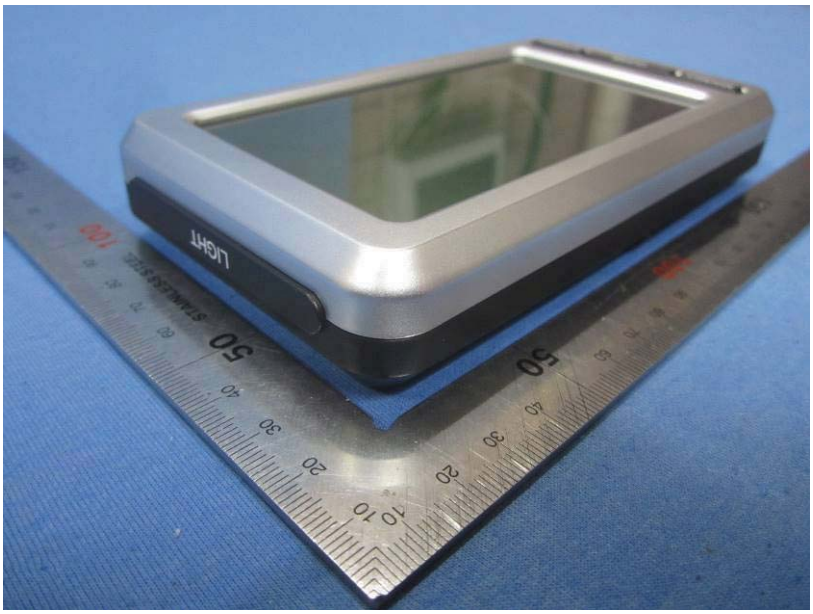
8 Test Setup Photo

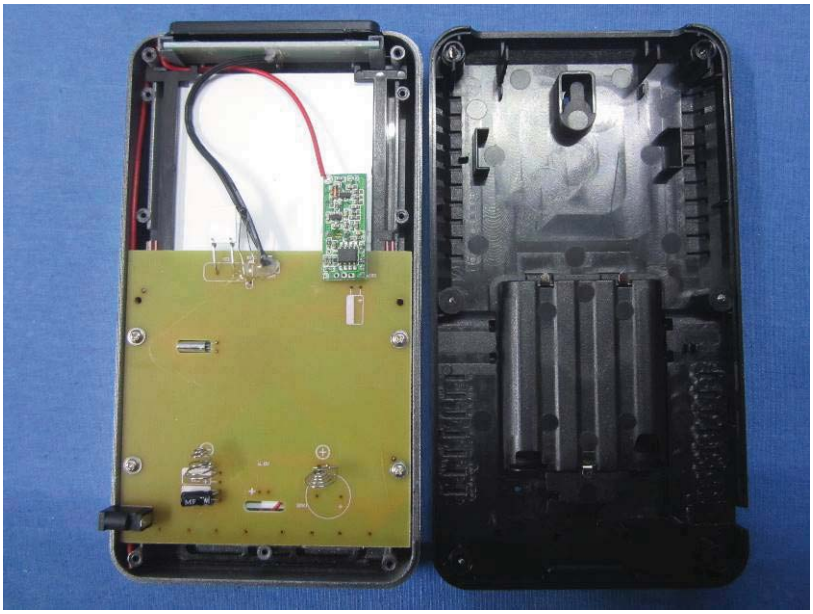
Radiated Emission

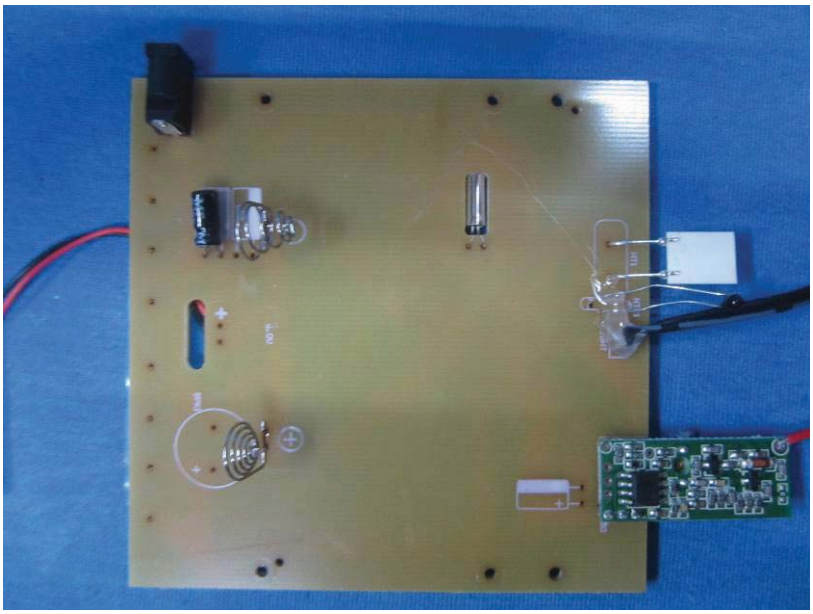


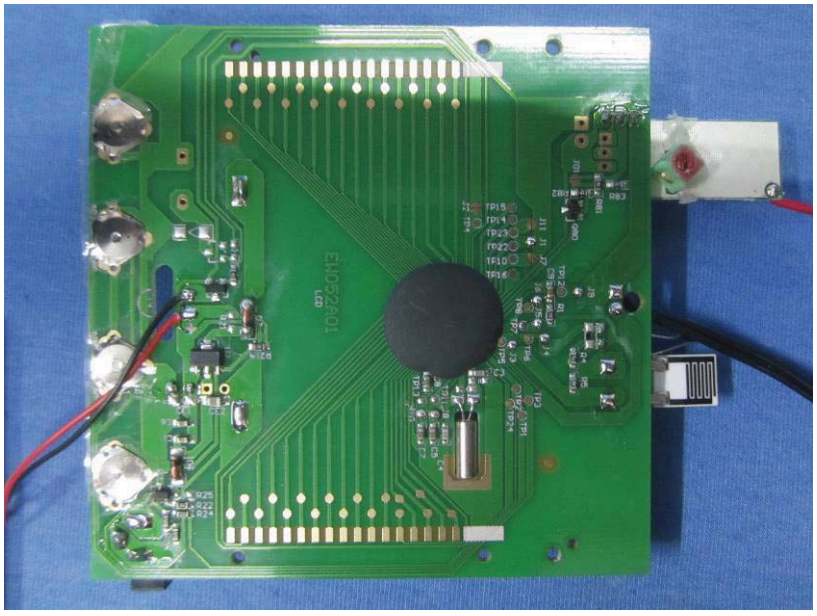


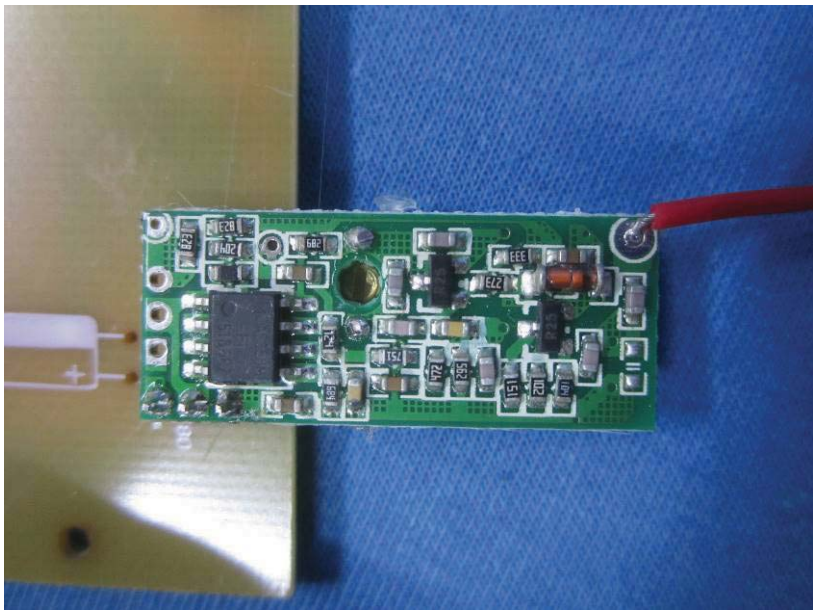
9 EUT Constructional Details


LIGHT









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