

TEST REPORT

Applicant: Computime Limited

Address of Applicant: 17/F, Great Eagle Centre, 23 Harbour Road, Wanchai Hong Kong

Equipment Under Test (EUT)

Product Name: Receiver

Model No.: RCST-RX, RCMT-RX

Trade Mark: Monessen

FCC ID: DI2RCST-RX

Applicable standards: FCC CFR Title 47 Part 15 Subpart B:2013

Date of sample receipt: October 26, 2014

Date of Test: October 30-31, 2014

Date of report issue: October 31, 2014

Test Result : PASS *

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

Authorized Signature:

A handwritten signature in black ink is written over a circular blue stamp. The stamp contains the text "GTS" in the center, "GLOBAL UNITED TECHNOLOGY SERVICES CO., LTD." around the perimeter, and "EST. 2010" at the bottom.

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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This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

2 Version

Version No.	Date	Description
00	October 31, 2014	Original

Prepared By:

Edward Pan

Date:

October 31, 2014

Project Engineer

Check By:

Hank Yan

Date:

October 31, 2014

Reviewer

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4 Test Summary

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

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

5 General Information

5.1 Client Information

Applicant:	Computime Limited
Address of Applicant:	17/F, Great Eagle Centre, 23 Harbour Road, Wanchai Hong Kong
Manufacturer:	Computime Limited
Address of Manufacturer	17/F, Great Eagle Centre, 23 Harbour Road, Wanchai Hong Kong
Factory:	Computime Electronics (shenzhen) Company Limited
Address of Factory:	Yuekenguangyu Industrial Park, Kangqiao Road 88#, Danzhutou Community, Nanwan Street Office Longgang District, Shenzhen, China

5.2 General Description of EUT

Product Name:	Receiver
Model No.:	RCST-RX,RCMT-RX
Operation Frequency:	350.09MHz (Receiver)
Power supply:	DC 6.0V (4 x 1.5V "AA" battery)

5.3 Test mode

Receiving mode	Keep the EUT in Receiving mode.
<i>Remark: During the test, the New Battery was used.</i>	

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

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	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 28 2014	Mar. 27 2015
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	Spectrum Analyzer	Agilent	E4440A	GTS533	Dec. 05 2013	Dec. 04 2014
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 01 2014	Jun. 30, 2015
5	BiConiLog Antenna	SCHWARZBECK MESS- ELEKTRONIK	VULB9163	GTS214	Feb. 23 2014	Feb. 22 2015
6	Double -ridged waveguide horn	SCHWARZBECK MESS- ELEKTRONIK	9120D-829	GTS208	June 27 2014	June 26 2015
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 28 2014	Mar. 27 2015
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 29 2014	Mar. 28 2015
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 29 2014	Mar. 28 2015
11	Coaxial cable	GTS	N/A	GTS210	Mar. 29 2014	Mar. 28 2015
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 29 2014	Mar. 28 2015
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 01 2014	Jun. 30, 2015
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 01 2014	Jun. 30, 2015
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 27 2014	June 26 2015
16	Signal Generator	ROHDE&SCHWARZ Z	SML03	101526	May. 23 2014	May. 23 2015

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 08 2014	July 07 2015

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 border="1"> <thead> <tr> <th>Frequency</th> <th>Detector</th> <th>RBW</th> <th>VBW</th> <th>Remark</th> </tr> </thead> <tbody> <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> </tbody> </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	54.00	Average Value																						
	74.00	Peak Value																						
Test Procedure:	<ol style="list-style-type: none"> 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																							

	<p>Above 1GHz</p>
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:

1. For Radiated emission test, A 350.9 MHz CW signal was injected (radiated) by signal generator through a artificial antenna
2. 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
 Model : 1766RF
 Test Mode : Receiving mode
 Test Engineer: Qing

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	50.057	37.20	15.25	0.77	31.96	21.26	40.00	-18.74	Peak
2	102.719	36.71	14.92	1.22	31.77	21.08	43.50	-22.42	Peak
3	239.987	38.87	14.09	2.07	32.16	22.87	46.00	-23.13	Peak
4	485.609	38.73	18.26	3.24	31.60	28.63	46.00	-17.37	Peak
5	578.670	37.70	20.09	3.64	31.15	30.28	46.00	-15.72	Peak
6	919.287	37.69	23.21	4.93	31.19	34.64	46.00	-11.36	Peak

Remark : Include 350.09 MHz , Pk scan from 30MHz to 1GHz ,only list 6 worse frequency points result as above .

Vertical:

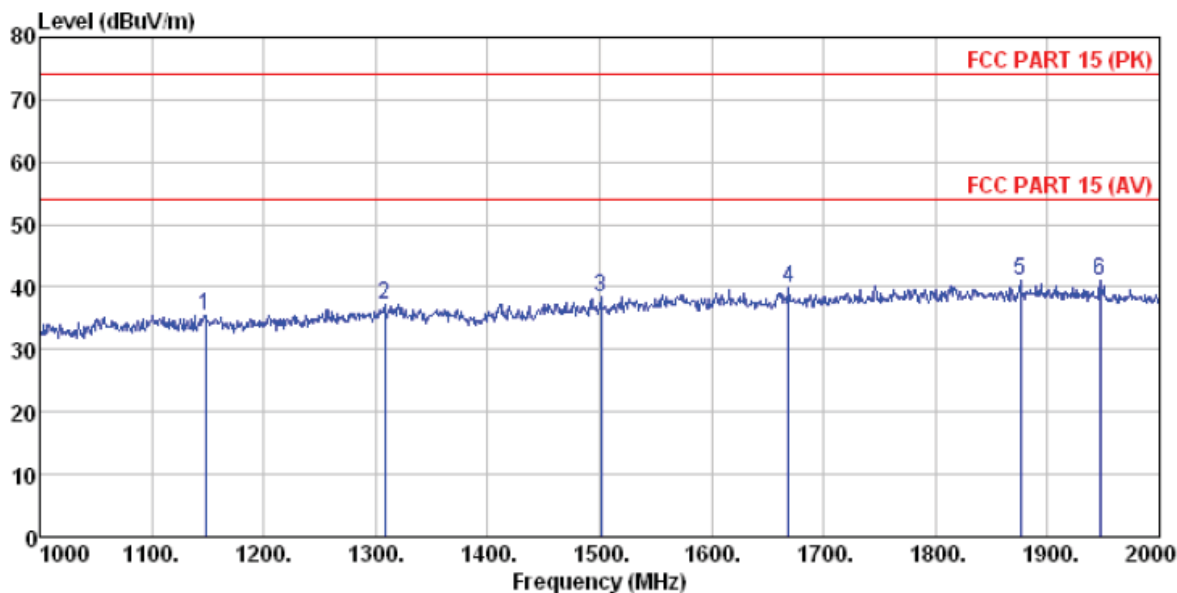
Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL
 Model : 1766RF
 Test Mode : Receiving mode
 Test Engineer: Qing

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	41.132	38.12	15.57	0.67	32.05	22.31	40.00	-17.69	QP
2	96.099	38.68	14.90	1.16	31.75	22.99	43.50	-20.51	QP
3	102.001	38.24	14.97	1.21	31.77	22.65	43.50	-20.85	QP
4	204.238	40.41	12.70	1.86	32.14	22.83	43.50	-20.67	QP
5	490.745	38.10	18.39	3.26	31.59	28.16	46.00	-17.84	QP
6	965.542	37.51	23.52	5.09	31.22	34.90	54.00	-19.10	QP

Remark : Include 350.09 MHz , Pk scan from 30MHz to 1GHz ,only list 6 worse frequency points result as above .

Above 1GHz

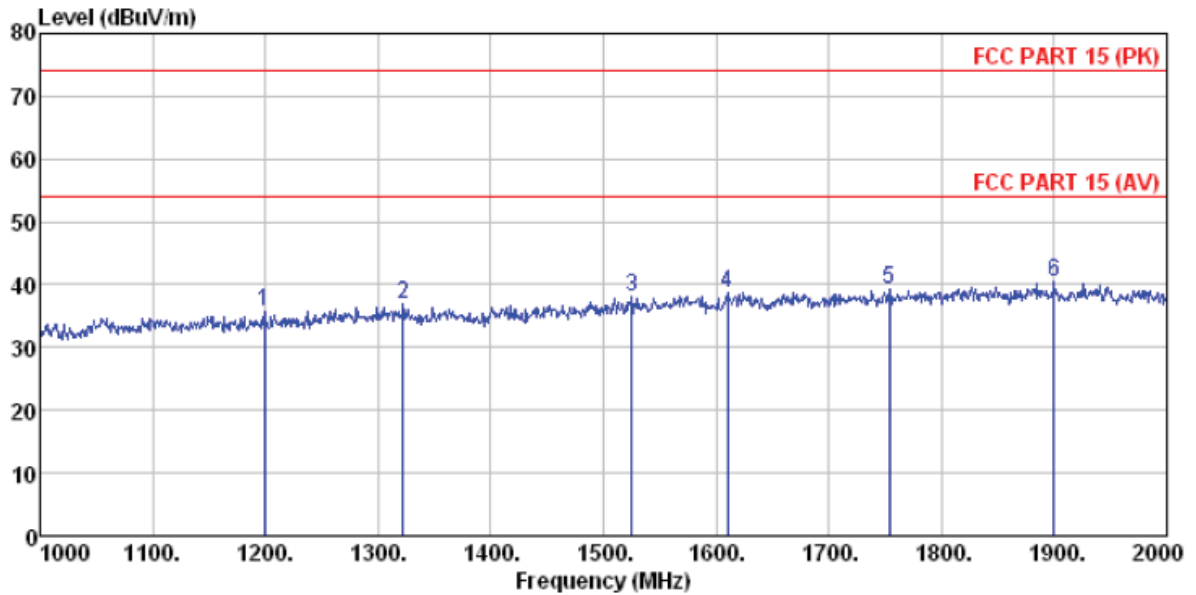
Horizontal:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m VULB9163-2013M HORIZONTAL
 Model : 1766RF
 Test Mode : Receiving mode
 Test Engineer: Qing

	Read	Antenna	Cable	Preamp	Level	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1148.000	37.44	25.11	4.42	31.42	35.55	74.00	-38.45 Peak
2	1308.000	37.69	26.65	4.55	31.58	37.31	74.00	-36.69 Peak
3	1501.000	38.06	27.46	4.68	31.74	38.46	74.00	-35.54 Peak
4	1669.000	38.56	28.04	4.78	31.51	39.87	74.00	-34.13 Peak
5	1876.000	37.33	29.92	4.90	31.24	40.91	74.00	-33.09 Peak
6	1947.000	37.41	29.74	4.93	31.16	40.92	74.00	-33.08 Peak

Vertical:

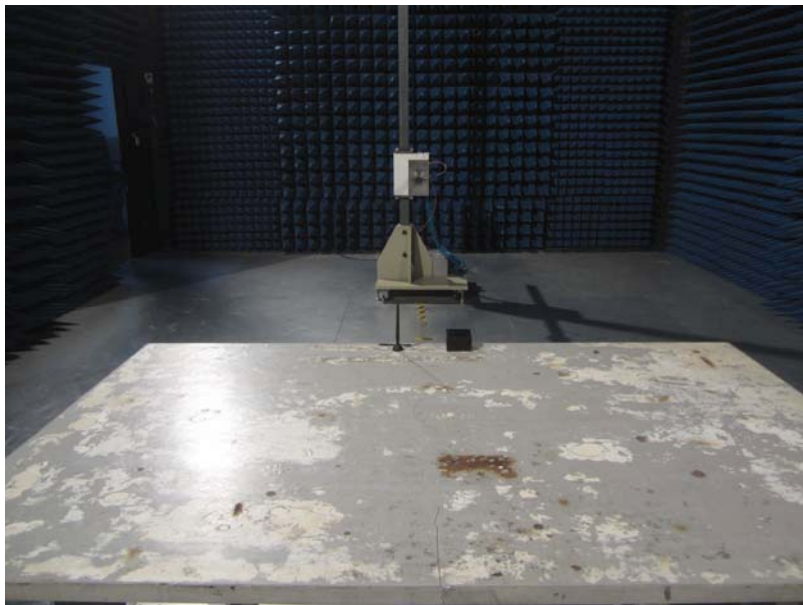


Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m VULB9163-2013M VERTICAL
 Model : 1766RF
 Test Mode : Receiving mode
 Test Engineer: Qing

	Read	Antenna	Cable	Preamp	Level	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1199.000	37.65	25.21	4.47	31.47	35.86	74.00	-38.14 Peak
2	1322.000	37.23	26.60	4.56	31.59	36.80	74.00	-37.20 Peak
3	1525.000	37.61	27.59	4.70	31.71	38.19	74.00	-35.81 Peak
4	1610.000	37.43	27.99	4.75	31.58	38.59	74.00	-35.41 Peak
5	1754.000	36.92	28.91	4.83	31.39	39.27	74.00	-34.73 Peak
6	1900.000	36.80	30.02	4.91	31.21	40.52	74.00	-33.48 Peak

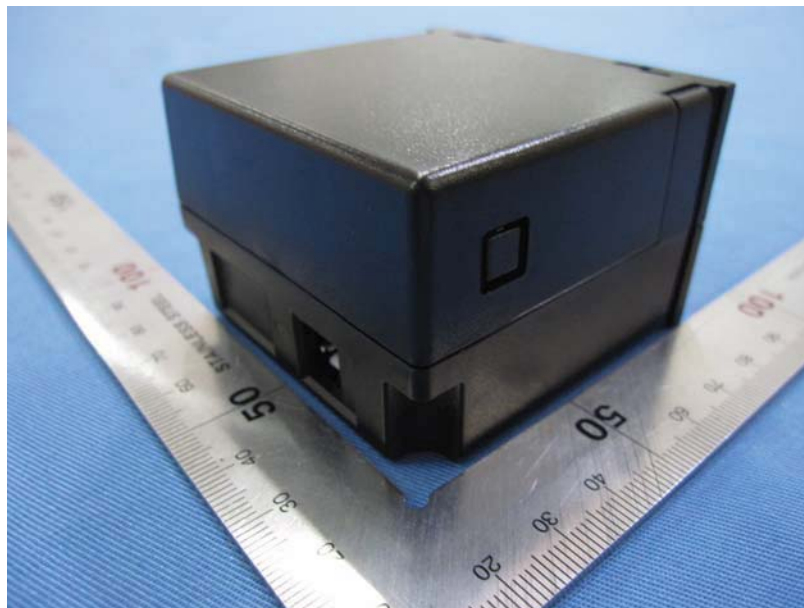
8 Test Setup Photo

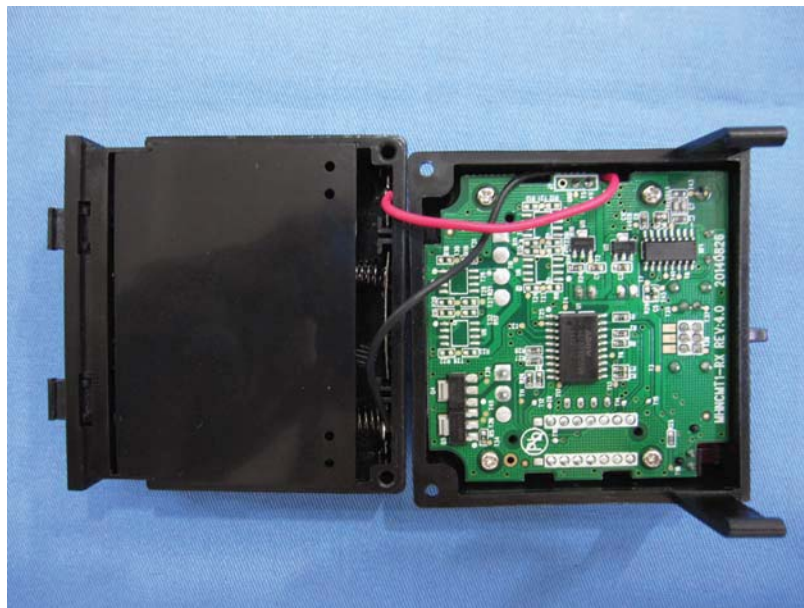
Radiated Emission

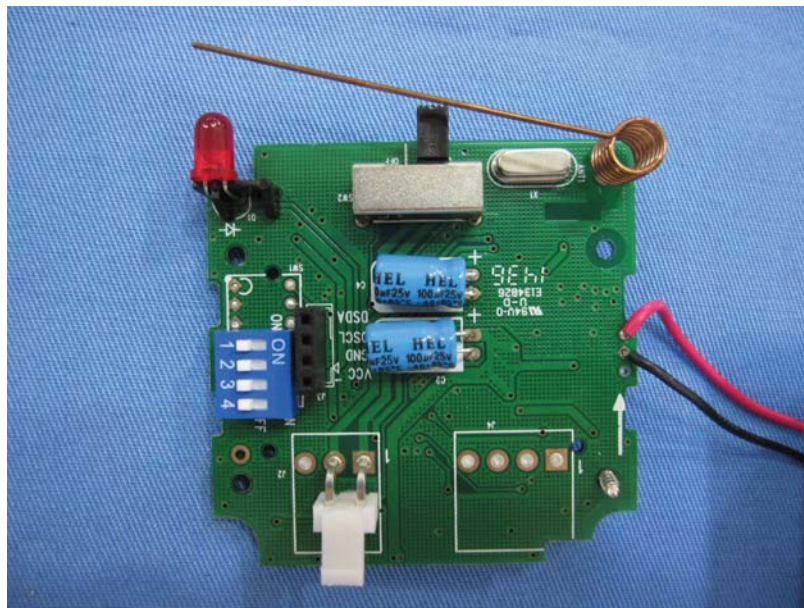
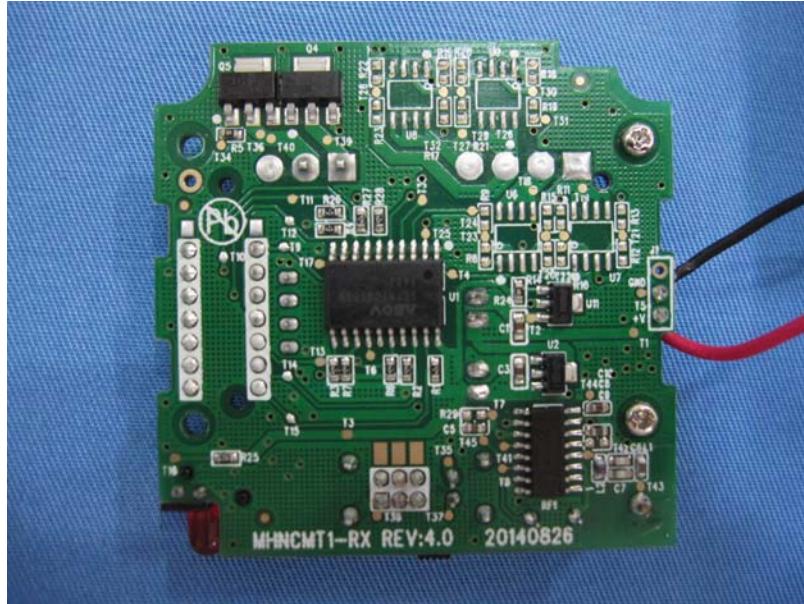


9 EUT Constructional Details









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