

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.: RB

FCC ID: DI2RB

Applicable standards: FCC CFR Title 47 Part 15 Subpart B:2010

Date of sample receipt: May 07, 2012

Date of Test: August 28, 2012

Date of report issued: August 29, 2012

Test Result : PASS *

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

Authorized Signature:

A circular blue stamp with the text "GTS GLOBAL TESTING" in the center and "GLOBAL UNITED TECHNOLOGY SERVICES CO., LTD." around the perimeter. A handwritten signature in black ink is written across the stamp.

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.

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. Any mention of GTS International Electrical Approvals or testing done by GTS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by GTS International Electrical Approvals in writing.

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	August 29, 2012	Original

Prepared by:

Oscar Li

Date:

August 29, 2012

Project Engineer

Reviewed by:

Hans Hu

Date:

August 29, 2012

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.

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:	Computime Technology Park, DanZhuTou Cun, Buji, Longgang Region, Shenzhen, China

5.2 General Description of E.U.T.

Product Name:	Receiver
Model No.:	RB
Power supply:	DC 6.0V(4*1.5V for "AA" Size)

5.3 Test mode and voltage

Test mode:	
Receiving mode	Keep the receiver working in continuous receiving mode
Test voltage:	DC 6.0V

5.4 Test Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none">● 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, July 20, 2010.● Industry Canada (IC) 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-1.
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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

Biconical, log.per. antenna and horn antenna were used instead of dipole antenna. Semi-anechoic Chamber was used as alternation of open air test sites, and all test suites were performed with radiated method in it.

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. 30 2011	Mar. 29 2013
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 03 2012	Jul. 02 2013
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 26 2012	Feb. 25 2013
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	Mar. 10 2012	Mar. 09 2013
6	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 03 2012	Jul. 02 2013
7	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 03 2012	Jul. 02 2013
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	Jul. 03 2012	Jul. 02 2013
10	Coaxial Cable	GTS	N/A	GTS211	Jul. 03 2012	Jul. 02 2013
11	Thermo meter	KTJ	TA328	GTS256	Jul. 06 2012	Jul. 05 2013

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 10 2012	July 09 2013

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 2000MHz																							
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>10Hz</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	10Hz	Average Value	
Frequency	Detector	RBW	VBW	Remark																				
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value																				
Above 1GHz	Peak	1MHz	3MHz	Peak Value																				
	AV	1MHz	10Hz	Average Value																				
Limit:	<table border="1"> <thead> <tr> <th>Frequency</th> <th>Limit (dBuV/m @3m)</th> <th>Remark</th> </tr> </thead> <tbody> <tr> <td>30MHz-88MHz</td> <td>40.0</td> <td>Quasi-peak Value</td> </tr> <tr> <td>88MHz-216MHz</td> <td>43.5</td> <td>Quasi-peak Value</td> </tr> <tr> <td>216MHz-960MHz</td> <td>46.0</td> <td>Quasi-peak Value</td> </tr> <tr> <td>960MHz-1GHz</td> <td>54.0</td> <td>Quasi-peak Value</td> </tr> <tr> <td rowspan="2">Above 1GHz</td> <td>54.0</td> <td>Average Value</td> </tr> <tr> <td>74.0</td> <td>Peak Value</td> </tr> </tbody> </table>				Frequency	Limit (dBuV/m @3m)	Remark	30MHz-88MHz	40.0	Quasi-peak Value	88MHz-216MHz	43.5	Quasi-peak Value	216MHz-960MHz	46.0	Quasi-peak Value	960MHz-1GHz	54.0	Quasi-peak Value	Above 1GHz	54.0	Average Value	74.0	Peak Value
Frequency	Limit (dBuV/m @3m)	Remark																						
30MHz-88MHz	40.0	Quasi-peak Value																						
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960MHz-1GHz	54.0	Quasi-peak Value																						
Above 1GHz	54.0	Average Value																						
	74.0	Peak Value																						
Test Procedure:	<ol style="list-style-type: none"> 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. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 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. 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. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 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:

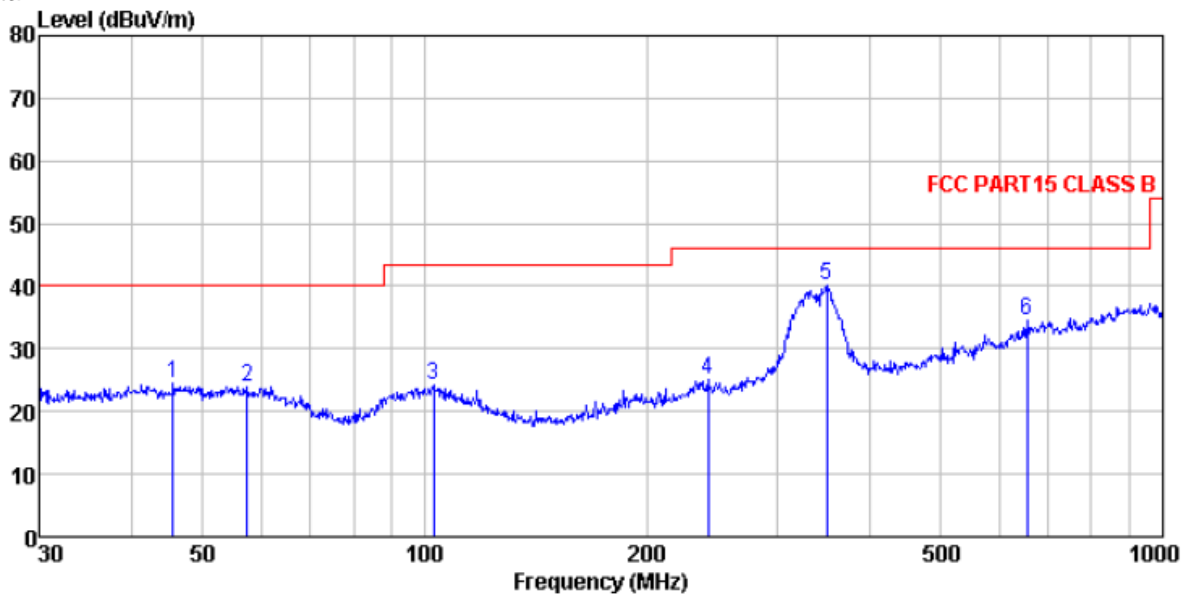
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

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

Measurement Data

Below 1GHz

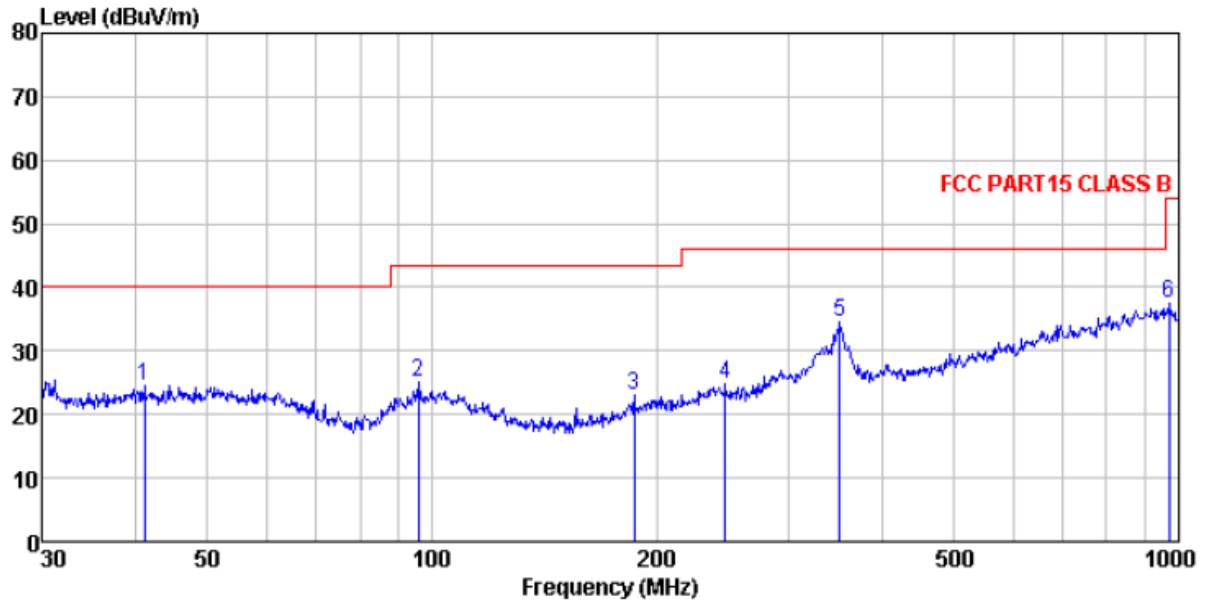
Horizontal:



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163 -2012-05 HORIZONTAL
 Job No. : 407RF
 Test Mode : Receiving mode
 Test Engineer: Oscscar

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	45.535	39.23	16.56	0.72	32.00	24.51	40.00	-15.49 QP
2	57.392	39.20	15.96	0.84	31.94	24.06	40.00	-15.94 QP
3	102.719	38.87	15.98	1.22	31.77	24.30	43.50	-19.20 QP
4	241.676	40.04	15.09	2.08	32.16	25.05	46.00	-20.95 QP
5	350.477	53.19	16.30	2.62	32.02	40.09	46.00	-5.91 QP
6	654.232	40.53	21.20	3.93	31.12	34.54	46.00	-11.46 QP

Vertical:

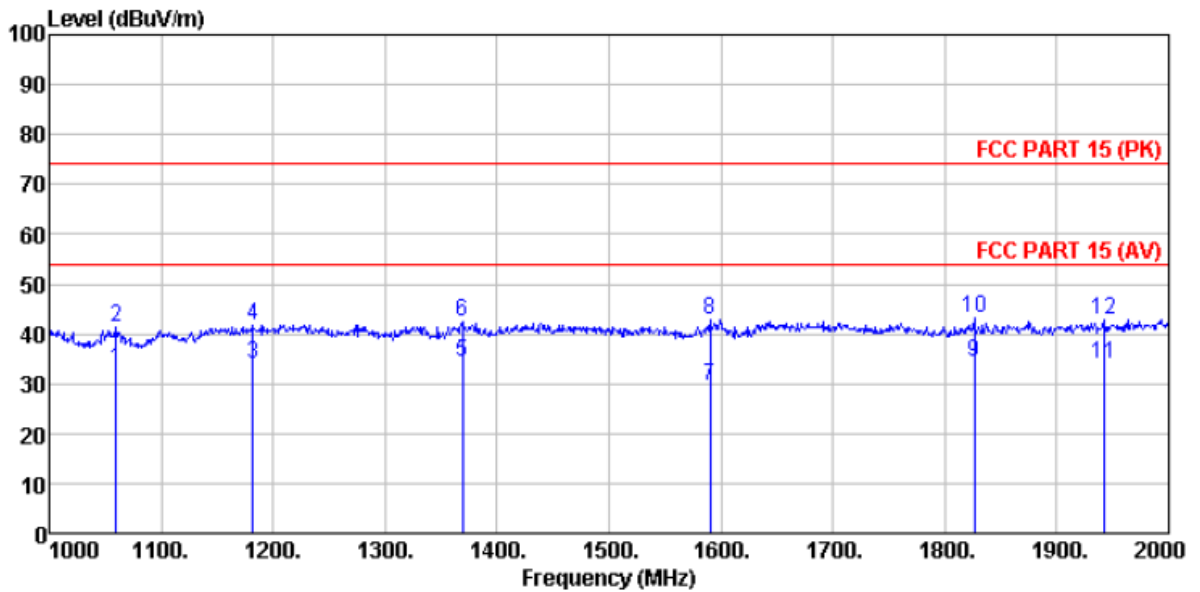


Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163 -2012-05 VERTICAL
 Job No. : 407RF
 Test Mode : Receiving mode
 Test Engineer: Osccar

	Read	Antenna	Cable	Preamp	Limit	Over			
Freq	Level	Factor	Loss	Factor	Level	Line	Limit		
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	41.132	39.22	16.58	0.67	32.05	24.42	40.00	-15.58	QP
2	95.762	39.54	15.99	1.16	31.74	24.95	43.50	-18.55	QP
3	186.441	40.01	13.40	1.77	32.10	23.08	43.50	-20.42	QP
4	246.815	39.75	15.08	2.11	32.16	24.78	46.00	-21.22	QP
5	351.708	47.63	16.33	2.63	32.02	34.57	46.00	-11.43	QP
6	968.934	39.65	23.84	5.11	31.22	37.38	54.00	-16.62	QP

Above 1GHz

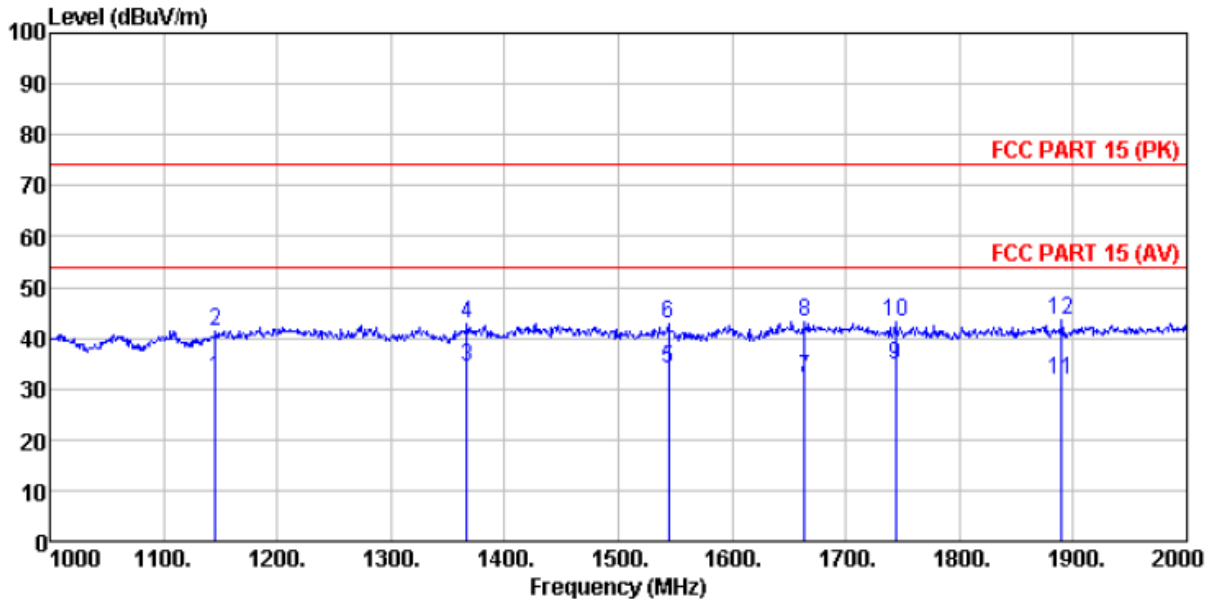
Horizontal:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL
 Job No. : 407RF
 Test Mode : Receiving mode
 Test Engineer: Oscscar

	Freq	Read	Antenna	Cable	Preamp	Level	Limit	Over	Remark
	MHz	dBuV	dB/m	Loss	Factor	Level	Line	Limit	dB
				dB	dB	dBuV/m	dBuV/m		
1	1060.000	35.20	24.65	4.35	31.32	32.88	54.00	-21.12	Average
2	1060.000	43.48	24.65	4.35	31.32	41.16	74.00	-32.84	Peak
3	1182.000	35.67	25.25	4.45	31.46	33.91	54.00	-20.09	Average
4	1182.000	43.60	25.25	4.45	31.46	41.84	74.00	-32.16	Peak
5	1369.000	35.68	25.66	4.59	31.64	34.29	54.00	-19.71	Average
6	1369.000	43.68	25.66	4.59	31.64	42.29	74.00	-31.71	Peak
7	1590.000	31.36	25.00	4.74	31.61	29.49	54.00	-24.51	Average
8	1590.000	44.83	25.00	4.74	31.61	42.96	74.00	-31.04	Peak
9	1826.000	35.18	25.40	4.87	31.30	34.15	54.00	-19.85	Average
10	1826.000	44.12	25.40	4.87	31.30	43.09	74.00	-30.91	Peak
11	1943.000	34.21	25.91	4.93	31.16	33.89	54.00	-20.11	Average
12	1943.000	43.20	25.91	4.93	31.16	42.88	74.00	-31.12	Peak

Vertical:

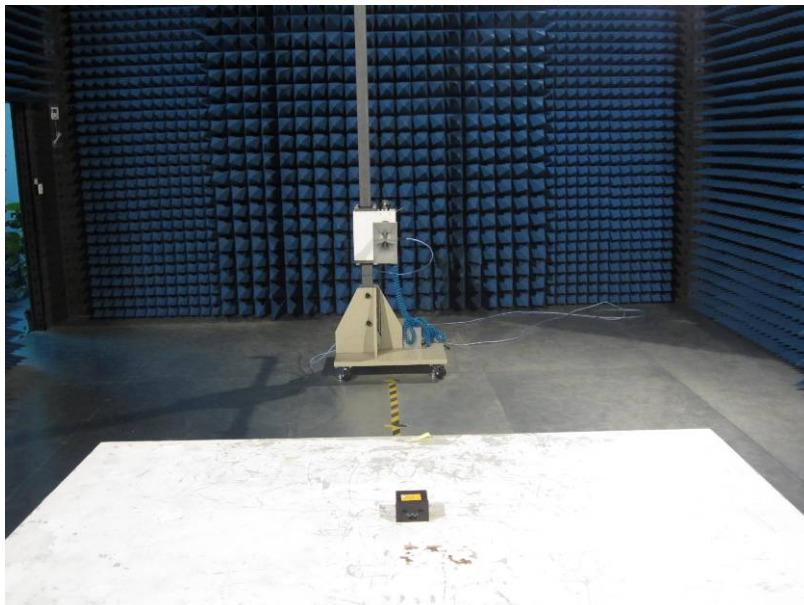
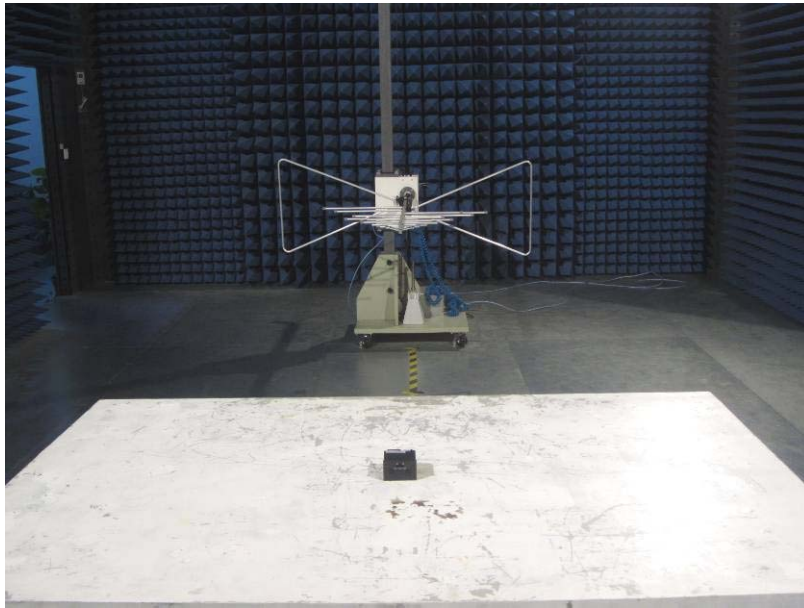


Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL
 Job No. : 407RF
 Test Mode : Receiving mode
 Test Engineer: Oscar

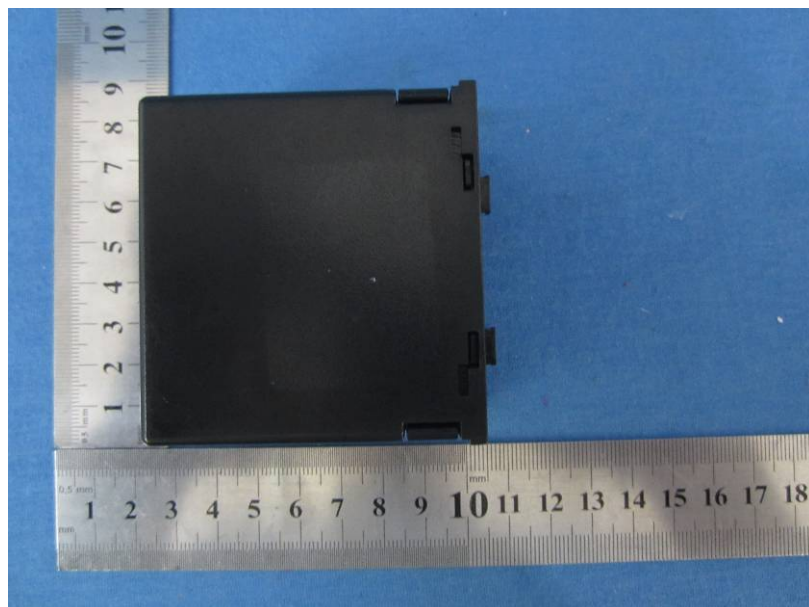
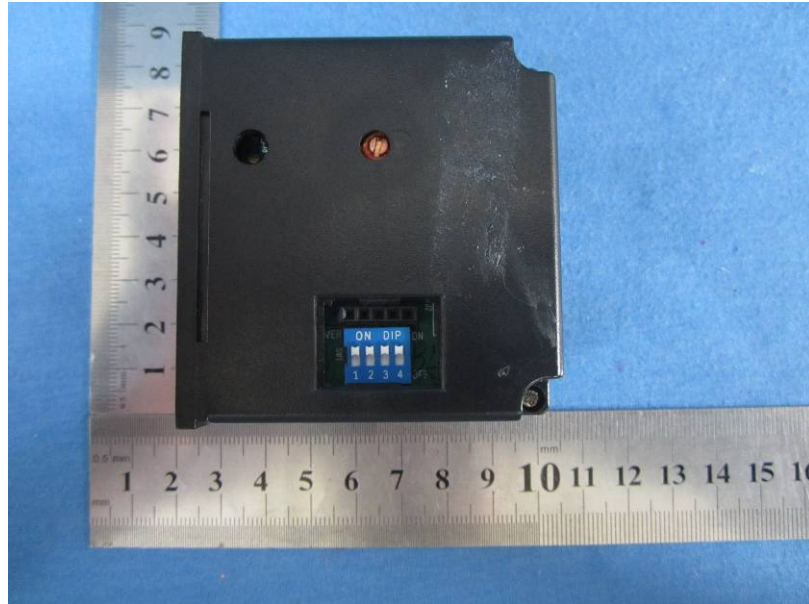
	Read	Antenna	Cable	Preamp	Limit	Over			
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark	
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1146.000	34.21	24.98	4.42	31.41	32.20	54.00	-21.80 Average	
2	1146.000	43.45	24.98	4.42	31.41	41.44	74.00	-32.56 Peak	
3	1367.000	35.65	25.67	4.59	31.64	34.27	54.00	-19.73 Average	
4	1367.000	44.12	25.67	4.59	31.64	42.74	74.00	-31.26 Peak	
5	1544.000	35.63	25.12	4.71	31.67	33.79	54.00	-20.21 Average	
6	1544.000	44.78	25.12	4.71	31.67	42.94	74.00	-31.06 Peak	
7	1664.000	34.01	24.89	4.78	31.51	32.17	54.00	-21.83 Average	
8	1664.000	45.07	24.89	4.78	31.51	43.23	74.00	-30.77 Peak	
9	1744.000	36.14	25.06	4.83	31.41	34.62	54.00	-19.38 Average	
10	1744.000	44.52	25.06	4.83	31.41	43.00	74.00	-31.00 Peak	
11	1890.000	32.49	25.70	4.90	31.23	31.86	54.00	-22.14 Average	
12	1890.000	44.07	25.70	4.90	31.23	43.44	74.00	-30.56 Peak	

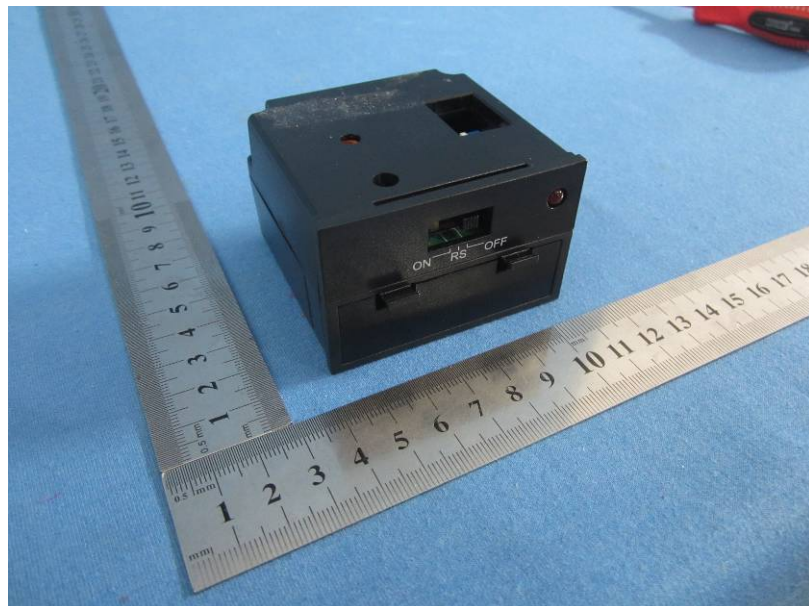
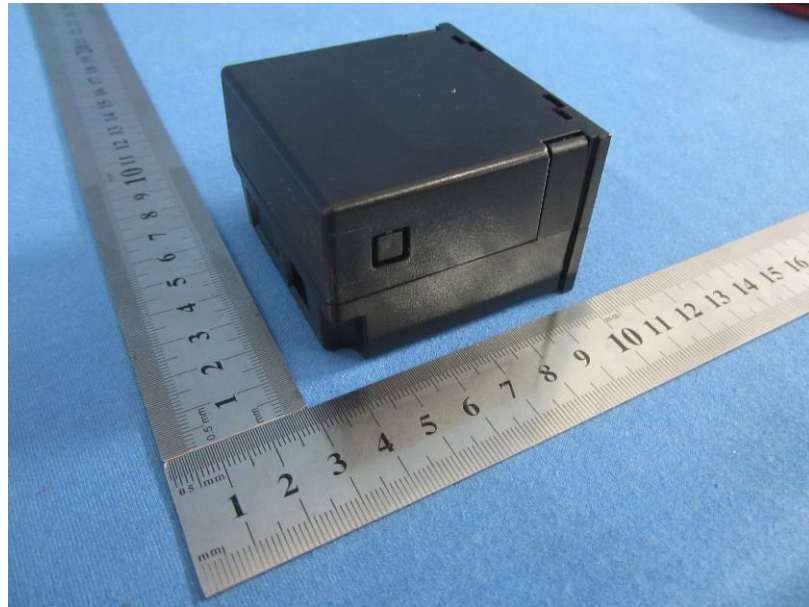
8 Test Setup Photo

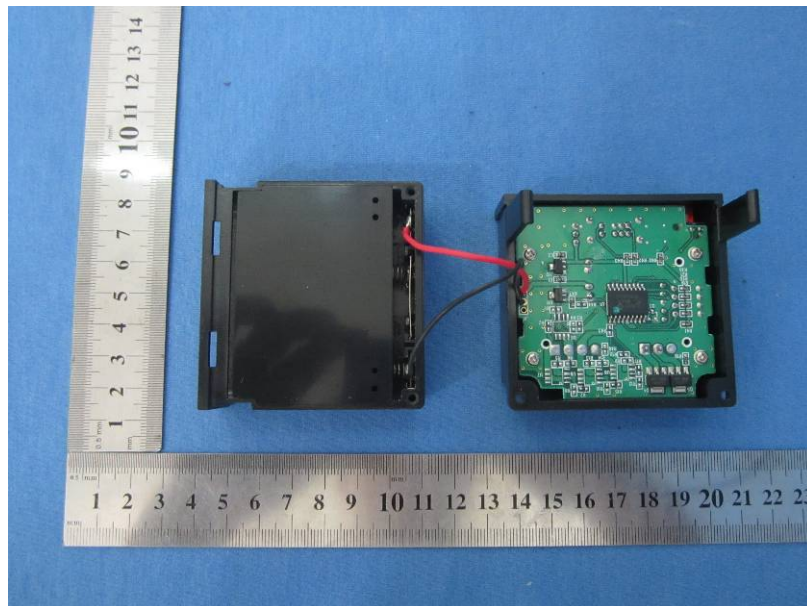
Radiated Emission

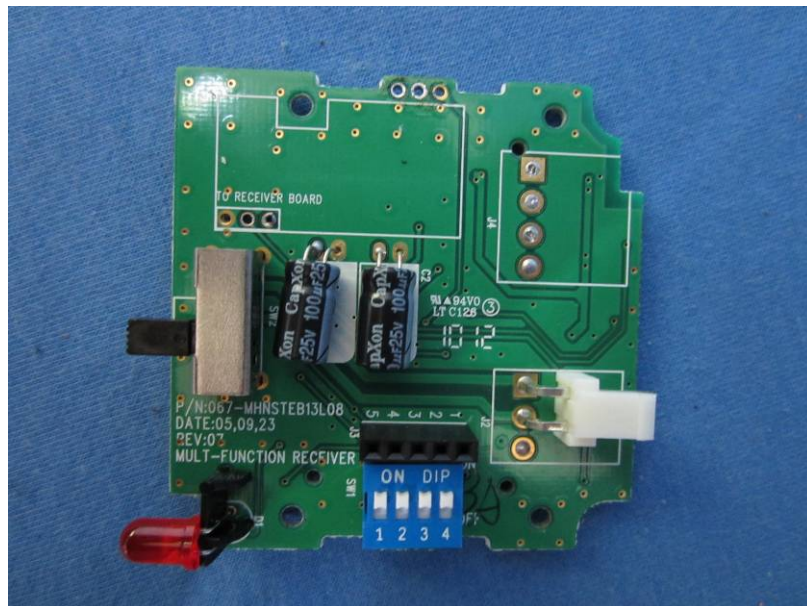
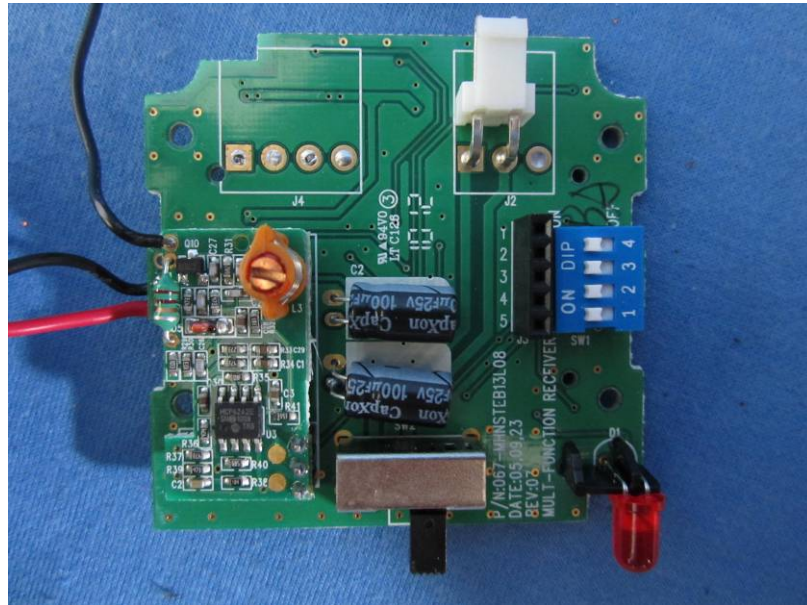


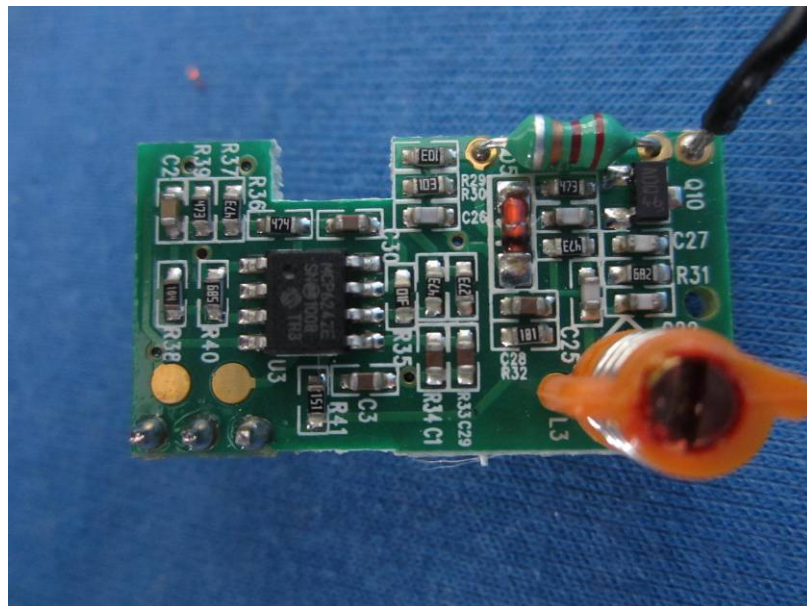
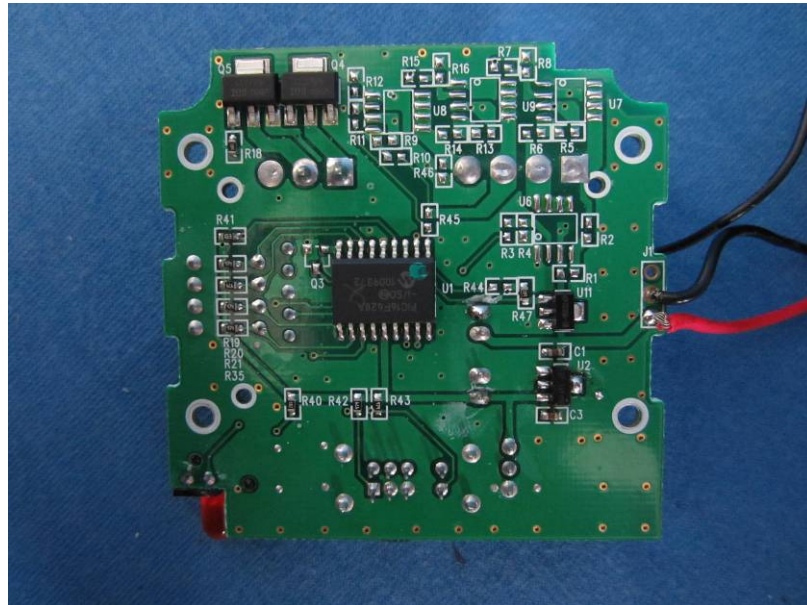
9 EUT Constructional Details

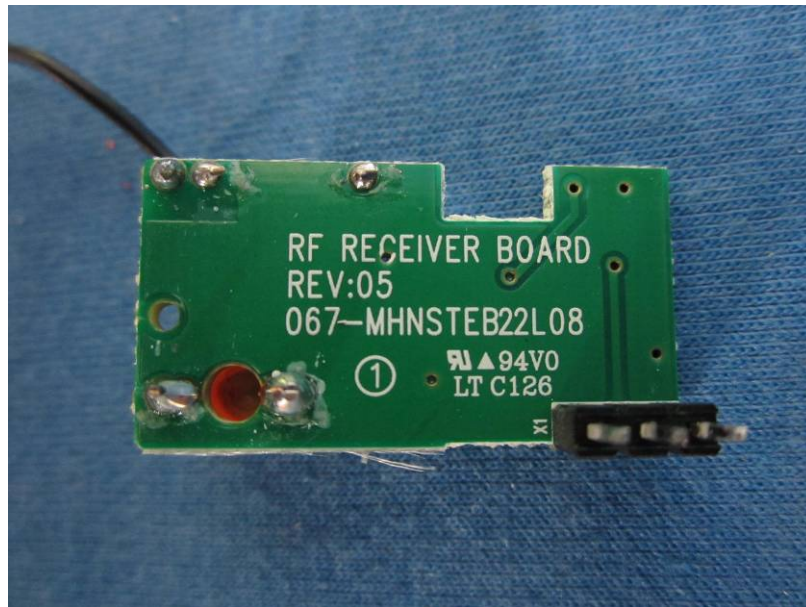












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