

FCC REPORT

Applicant: Salus Limited.

Address of Applicant: 9/F, Tower One, Lippo Centre, 89 Queensway, Hong Kong

Equipment Under Test (EUT)

Product Name: Optima 900MHz USA

Model No.: SAU1AT1, 105.20001410

FCC ID: 2AAP7SAU1AT1

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249:2013

Date of sample receipt: April 18, 2014

Date of Test: April 21-23, 2014

Date of report issued: April 23, 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.

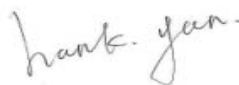
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2 Version

Version No.	Date	Description
00	April 23, 2014	Original

Prepared By:



Date:

April 23, 2014

Project Engineer

Check By:



Date:

April 23, 2014

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

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

5 General Information

5.1 Client Information

Applicant:	Salus Limited.
Address of Applicant:	9/F, Tower One, Lippo Centre, 89 Queensway, Hong Kong
Manufacturer:	Salus Limited.
Address of Manufacturer:	9/F, Tower One, Lippo Centre, 89 Queensway, Hong Kong
Factory:	Computime Electronics (shenzhen) Company Limited
Address of Factory:	YueKenguanyu Industrial Park, Kangqiao Road 88#, Danzhutou Community, Nanwan Street Office Longgang District, Shenzhen, China

5.2 General Description of EUT

Product Name:	Optima 900MHz USA
Model No.:	SAU1AT1, 105.20001410
Operation Frequency:	908.50MHz~919.74MHz
Channel numbers:	31
Channel separation:	374.51kHz
Modulation type:	2-FSK
Antenna Type:	PCB Antenna
Antenna gain:	0dBi
Power supply:	DC 3.0V (2*1.5V "AA" SIZE BATTERY)

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	908.50MHz	10	911.87MHz	19	915.24MHz	28	918.61MHz
2	908.87MHz	11	912.25MHz	20	915.62MHz	29	918.99MHz
3	909.25MHz	12	912.62MHz	21	915.99MHz	30	919.36MHz
4	909.62MHz	13	912.99MHz	22	916.36MHz	31	919.74MHz
5	910.00MHz	14	913.37MHz	23	916.74MHz		
6	910.37MHz	15	913.74MHz	24	917.11MHz		
7	910.75MHz	16	914.12MHz	25	917.49MHz		
8	911.12MHz	17	914.49MHz	26	917.86MHz		
9	911.50MHz	18	914.87MHz	27	918.24MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	908.50MHz
The middle channel	913.74MHz
The Highest channel	919.74MHz

5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting with 2-FSK modulation mode
<i>Remark: During the test, the new battery was used.</i>	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	102.39	105.25	103.64

Final Test Mode:

According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup”:
Y axis (see the test setup photo)

5.4 Description of Support Units

N/A

5.5 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.

5.6 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

5.7 Other Information Requested by the Customer

None.

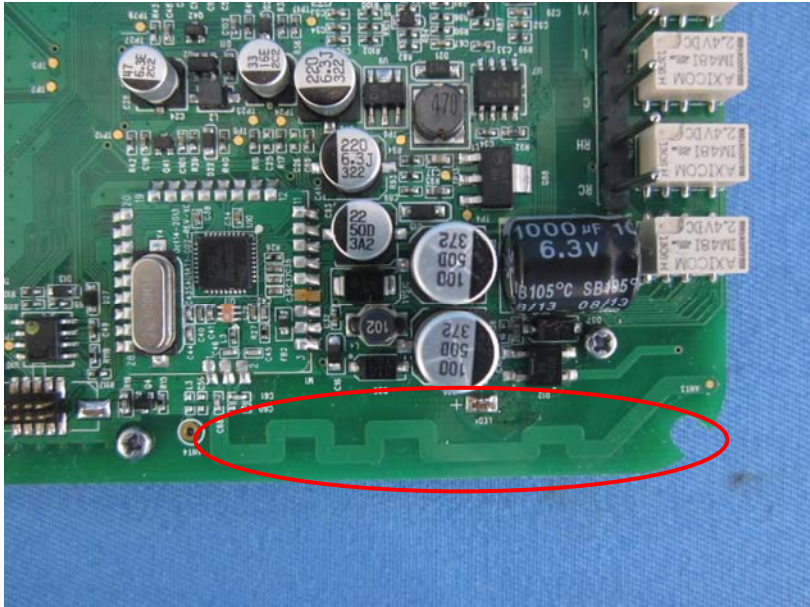
6 Test Instruments list

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. 4 2013	Dec. 3 2014
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 02 2013	Jul. 01 2014
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Jul. 02 2013	Jul. 01 2014
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 28 2013	June 27 2014
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. 02 2013	Jul. 01 2014
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 02 2013	Jul. 01 2014
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 28 2013	June 27 2014
16	Band filter	Amindeon	82346	GTS219	Mar. 29 2014	Mar. 28 2015

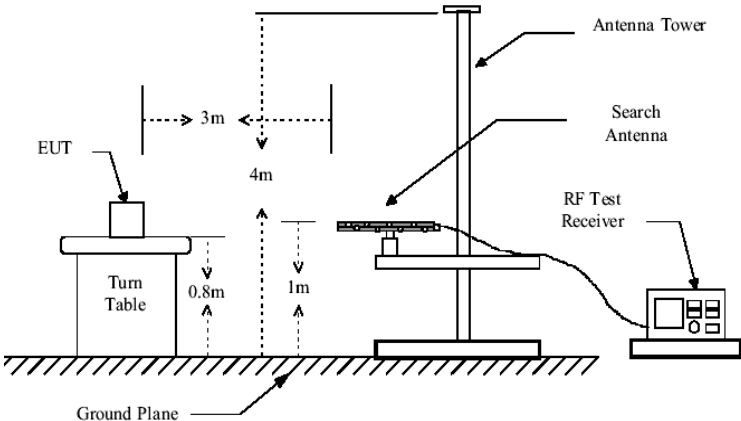
General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	July 09 2013	July 08 2014

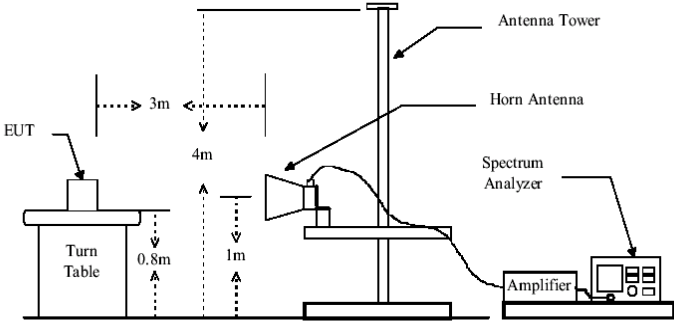
7 Test results and Measurement Data

7.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</p>	
E.U.T Antenna: <p><i>The antenna is PCB antenna, the best case gain of the antenna is 0dBi</i></p>	
<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>RF ANT</p> </div> </div>	

7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.4:2003				
Test Frequency Range:	30MHz to 10GHz				
Test site:	Measurement Distance: 3m				
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: (Field strength of the fundamental signal)	Frequency		Limit (dBuV/m @3m)		Remark
	902MHz-928MHz		94.00		Average Value
			114.00		Peak Value
Limit: (Spurious Emissions)	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
Limit: (band edge)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.				
Test setup:	Below 1GHz				
	<div></div>				
	Above 1GHz				

	 <p>The diagram illustrates the test setup. An EUT (Equipment Under Test) is placed on a Turn Table at a height of 0.8m. The Turn Table is 3m away from an Antenna Tower. The Antenna Tower has a Horn Antenna at a height of 4m. A Spectrum Analyzer is connected to the Antenna Tower via an Amplifier. The Spectrum Analyzer is also connected to the Antenna Tower. The diagram shows the EUT, Turn Table, Antenna Tower, Horn Antenna, Spectrum Analyzer, and Amplifier. Dimensions are indicated: 3m horizontal distance, 0.8m turn table height, and antenna heights of 1m and 4m.</p>
<p>Test Procedure:</p>	<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.
<p>Test Instruments:</p>	<p>Refer to section 6.0 for details</p>
<p>Test mode:</p>	<p>Refer to section 5.3 for details</p>
<p>Test results:</p>	<p>Pass</p>

Measurement data:

7.2.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
908.50	108.41	23.15	4.88	31.19	105.25	114.00	-8.75	Vertical
908.50	103.23	23.15	4.88	31.19	100.07	114.00	-13.93	Horizontal
913.74	107.24	23.18	4.90	31.19	104.13	114.00	-9.87	Vertical
913.74	102.55	23.18	4.90	31.19	99.44	114.00	-14.56	Horizontal
919.74	106.91	23.21	4.93	31.19	103.86	114.00	-10.14	Vertical
919.74	101.07	23.21	4.93	31.19	98.02	114.00	-15.98	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
908.50	96.10	23.15	4.88	31.19	92.94	94.00	-1.06	Vertical
908.50	93.23	23.15	4.88	31.19	90.07	94.00	-3.93	Horizontal
913.74	95.32	23.18	4.90	31.19	92.21	94.00	-1.79	Vertical
913.74	92.25	23.18	4.90	31.19	89.14	94.00	-4.86	Horizontal
919.74	93.38	23.21	4.93	31.19	90.33	94.00	-3.67	Vertical
919.74	89.84	23.21	4.93	31.19	86.79	94.00	-7.21	Horizontal

Remark: for fundamental frequency test RBW=1MHz VBW=3MHz , peak detector for PK Value and RBW=1MHz VBW=3MHz , AV detector for AV Value

7.2.2 Spurious emissions

■ Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
41.71	43.45	15.57	0.68	32.04	27.66	40.00	-12.34	Vertical
52.21	43.59	15.15	0.79	31.95	27.58	40.00	-12.42	Vertical
104.17	43.47	14.78	1.23	31.78	27.70	43.50	-15.80	Vertical
672.85	44.34	20.72	3.99	31.15	37.90	46.00	-8.10	Vertical
804.60	45.24	22.10	4.48	31.31	40.51	46.00	-5.49	Vertical
857.03	46.30	22.64	4.68	31.24	42.38	46.00	-3.62	Vertical
45.38	43.06	15.54	0.72	32.00	27.32	40.00	-12.68	Horizontal
55.81	43.32	14.97	0.82	31.95	27.16	40.00	-12.84	Horizontal
107.89	43.39	14.44	1.26	31.80	27.29	43.50	-16.21	Horizontal
242.53	44.08	14.08	2.08	32.16	28.08	46.00	-17.92	Horizontal
459.11	44.32	17.59	3.13	31.69	33.35	46.00	-12.65	Horizontal
572.61	44.09	19.98	3.62	31.17	36.52	46.00	-9.48	Horizontal

■ Above 1GHz

Test channel:	Lowest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1817.00	46.53	25.37	4.87	34.14	42.63	74.00	-31.37	Vertical
2725.50	40.65	28.21	5.69	33.63	40.92	74.00	-33.08	Vertical
3634.00	36.72	29.18	7.23	32.60	40.53	74.00	-33.47	Vertical
4542.50	33.55	31.42	8.38	31.96	41.39	74.00	-32.61	Vertical
5451.00	31.72	31.89	9.45	32.41	40.65	74.00	-33.35	Vertical
6359.50	31.64	33.39	10.70	32.09	43.64	74.00	-30.36	Vertical
7268.00	31.12	36.28	11.69	31.96	47.13	74.00	-26.87	Vertical
8176.50	28.82	36.99	12.39	31.59	46.61	74.00	-27.39	Vertical
9085.00	29.50	37.23	13.71	32.23	48.21	74.00	-25.79	Vertical
1817.00	42.21	25.37	4.87	34.14	38.31	74.00	-35.69	Horizontal
2725.50	39.10	28.21	5.69	33.63	39.37	74.00	-34.63	Horizontal
3634.00	35.54	29.18	7.23	32.60	39.35	74.00	-34.65	Horizontal
4542.50	32.18	31.42	8.38	31.96	40.02	74.00	-33.98	Horizontal
5451.00	31.26	31.89	9.45	32.41	40.19	74.00	-33.81	Horizontal
6359.50	31.73	33.39	10.70	32.09	43.73	74.00	-30.27	Horizontal
7268.00	31.44	36.28	11.69	31.96	47.45	74.00	-26.55	Horizontal
8176.50	28.93	36.99	12.39	31.59	46.72	74.00	-27.28	Horizontal
9085.00	29.27	37.23	13.71	32.23	47.98	74.00	-26.02	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1817.00	36.60	25.37	4.87	34.14	32.70	54.00	-21.30	Vertical
2725.50	31.11	28.21	5.69	33.63	31.38	54.00	-22.62	Vertical
3634.00	26.98	29.18	7.23	32.60	30.79	54.00	-23.21	Vertical
4542.50	23.72	31.42	8.38	31.96	31.56	54.00	-22.44	Vertical
5451.00	22.08	31.89	9.45	32.41	31.01	54.00	-22.99	Vertical
6359.50	22.38	33.39	10.70	32.09	34.38	54.00	-19.62	Vertical
7268.00	21.67	36.28	11.69	31.96	37.68	54.00	-16.32	Vertical
8176.50	18.79	36.99	12.39	31.59	36.58	54.00	-17.42	Vertical
9085.00	20.24	37.23	13.71	32.23	38.95	54.00	-15.05	Vertical
1817.00	31.89	25.37	4.87	34.14	27.99	54.00	-26.01	Horizontal
2725.50	29.17	28.21	5.69	33.63	29.44	54.00	-24.56	Horizontal
3634.00	25.42	29.18	7.23	32.60	29.23	54.00	-24.77	Horizontal
4542.50	22.44	31.42	8.38	31.96	30.28	54.00	-23.72	Horizontal
5451.00	21.33	31.89	9.45	32.41	30.26	54.00	-23.74	Horizontal
6359.50	22.19	33.39	10.70	32.09	34.19	54.00	-19.81	Horizontal
7268.00	21.70	36.28	11.69	31.96	37.71	54.00	-16.29	Horizontal
8176.50	19.48	36.99	12.39	31.59	37.27	54.00	-16.73	Horizontal
9085.00	19.63	37.23	13.71	32.23	38.34	54.00	-15.66	Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test channel:	Middle channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1828.00	45.23	25.42	4.87	34.17	41.35	74.00	-32.65	Vertical
2742.00	39.40	28.24	5.71	33.61	39.74	74.00	-34.26	Vertical
3656.00	35.44	29.19	7.25	32.58	39.30	74.00	-34.70	Vertical
4570.00	32.26	31.47	8.40	31.97	40.16	74.00	-33.84	Vertical
5484.00	30.45	31.95	9.49	32.42	39.47	74.00	-34.53	Vertical
6398.00	30.42	33.46	10.75	32.11	42.52	74.00	-31.48	Vertical
7312.00	29.88	36.37	11.71	31.91	46.05	74.00	-27.95	Vertical
8226.00	27.50	36.84	12.47	31.70	45.11	74.00	-28.89	Vertical
9140.00	28.28	37.28	13.76	32.15	47.17	74.00	-26.83	Vertical
1828.00	40.86	25.42	4.87	34.17	36.98	74.00	-37.02	Horizontal
2742.00	37.80	28.24	5.71	33.61	38.14	74.00	-35.86	Horizontal
3656.00	34.21	29.19	7.25	32.58	38.07	74.00	-35.93	Horizontal
4570.00	30.90	31.47	8.40	31.97	38.80	74.00	-35.20	Horizontal
5484.00	29.96	31.95	9.49	32.42	38.98	74.00	-35.02	Horizontal
6398.00	30.48	33.46	10.75	32.11	42.58	74.00	-31.42	Horizontal
7312.00	30.16	36.37	11.71	31.91	46.33	74.00	-27.67	Horizontal
8226.00	27.69	36.84	12.47	31.70	45.30	74.00	-28.70	Horizontal
9140.00	28.00	37.28	13.76	32.15	46.89	74.00	-27.11	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1828.00	35.82	25.42	4.87	34.17	31.94	54.00	-22.06	Vertical
2742.00	30.35	28.24	5.71	33.61	30.69	54.00	-23.31	Vertical
3656.00	26.21	29.19	7.25	32.58	30.07	54.00	-23.93	Vertical
4570.00	22.94	31.47	8.40	31.97	30.84	54.00	-23.16	Vertical
5484.00	21.32	31.95	9.49	32.42	30.34	54.00	-23.66	Vertical
6398.00	21.65	33.46	10.75	32.11	33.75	54.00	-20.25	Vertical
7312.00	20.93	36.37	11.71	31.91	37.10	54.00	-16.90	Vertical
8226.00	18.00	36.84	12.47	31.70	35.61	54.00	-18.39	Vertical
9140.00	19.51	37.28	13.76	32.15	38.40	54.00	-15.60	Vertical
1828.00	31.08	25.42	4.87	34.17	27.20	54.00	-26.80	Horizontal
2742.00	28.39	28.24	5.71	33.61	28.73	54.00	-25.27	Horizontal
3656.00	24.62	29.19	7.25	32.58	28.48	54.00	-25.52	Horizontal
4570.00	21.67	31.47	8.40	31.97	29.57	54.00	-24.43	Horizontal
5484.00	20.55	31.95	9.49	32.42	29.57	54.00	-24.43	Horizontal
6398.00	21.43	33.46	10.75	32.11	33.53	54.00	-20.47	Horizontal
7312.00	20.93	36.37	11.71	31.91	37.10	54.00	-16.90	Horizontal
8226.00	18.74	36.84	12.47	31.70	36.35	54.00	-17.65	Horizontal
9140.00	18.87	37.28	13.76	32.15	37.76	54.00	-16.24	Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test channel:	Highest channel
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1840.00	44.79	25.45	4.88	34.17	40.95	74.00	-33.05	Vertical
2760.00	38.98	28.28	5.73	33.59	39.40	74.00	-34.60	Vertical
3680.00	35.02	29.22	7.30	32.54	39.00	74.00	-35.00	Vertical
4600.00	31.83	31.51	8.42	31.99	39.77	74.00	-34.23	Vertical
5520.00	30.04	32.01	9.54	32.42	39.17	74.00	-34.83	Vertical
6440.00	30.02	33.53	10.80	32.13	42.22	74.00	-31.78	Vertical
7360.00	29.47	36.45	11.75	31.86	45.81	74.00	-28.19	Vertical
8280.00	27.07	36.62	12.55	31.80	44.44	74.00	-29.56	Vertical
9200.00	27.88	37.37	13.82	32.09	46.98	74.00	-27.02	Vertical
1840.00	40.41	25.45	4.88	34.17	36.57	74.00	-37.43	Horizontal
2760.00	37.36	28.28	5.73	33.59	37.78	74.00	-36.22	Horizontal
3680.00	33.77	29.22	7.30	32.54	37.75	74.00	-36.25	Horizontal
4600.00	30.48	31.51	8.42	31.99	38.42	74.00	-35.58	Horizontal
5520.00	29.52	32.01	9.54	32.42	38.65	74.00	-35.35	Horizontal
6440.00	30.06	33.53	10.80	32.13	42.26	74.00	-31.74	Horizontal
7360.00	29.74	36.45	11.75	31.86	46.08	74.00	-27.92	Horizontal
8280.00	27.28	36.62	12.55	31.80	44.65	74.00	-29.35	Horizontal
9200.00	27.59	37.37	13.82	32.09	46.69	74.00	-27.31	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
1840.00	34.46	25.45	4.88	34.17	30.62	54.00	-23.38	Vertical
2760.00	29.05	28.28	5.73	33.59	29.47	54.00	-24.53	Vertical
3680.00	24.89	29.22	7.30	32.54	28.87	54.00	-25.13	Vertical
4600.00	21.60	31.51	8.42	31.99	29.54	54.00	-24.46	Vertical
5520.00	20.00	32.01	9.54	32.42	29.13	54.00	-24.87	Vertical
6440.00	20.39	33.53	10.80	32.13	32.59	54.00	-21.41	Vertical
7360.00	19.64	36.45	11.75	31.86	35.98	54.00	-18.02	Vertical
8280.00	16.63	36.62	12.55	31.80	34.00	54.00	-20.00	Vertical
9200.00	18.25	37.37	13.82	32.09	37.35	54.00	-16.65	Vertical
1840.00	29.67	25.45	4.88	34.17	25.83	54.00	-28.17	Horizontal
2760.00	27.03	28.28	5.73	33.59	27.45	54.00	-26.55	Horizontal
3680.00	23.24	29.22	7.30	32.54	27.22	54.00	-26.78	Horizontal
4600.00	20.35	31.51	8.42	31.99	28.29	54.00	-25.71	Horizontal
5520.00	19.19	32.01	9.54	32.42	28.32	54.00	-25.68	Horizontal
6440.00	20.13	33.53	10.80	32.13	32.33	54.00	-21.67	Horizontal
7360.00	19.61	36.45	11.75	31.86	35.95	54.00	-18.05	Horizontal
8280.00	17.45	36.62	12.55	31.80	34.82	54.00	-19.18	Horizontal
9200.00	17.55	37.37	13.82	32.09	36.65	54.00	-17.35	Horizontal

Remark:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

7.2.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest channel
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Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
902.00	43.74	23.12	4.87	31.18	40.55	46.00	-5.45	Horizontal
902.00	48.05	23.12	4.87	31.18	44.86	46.00	-1.14	Vertical

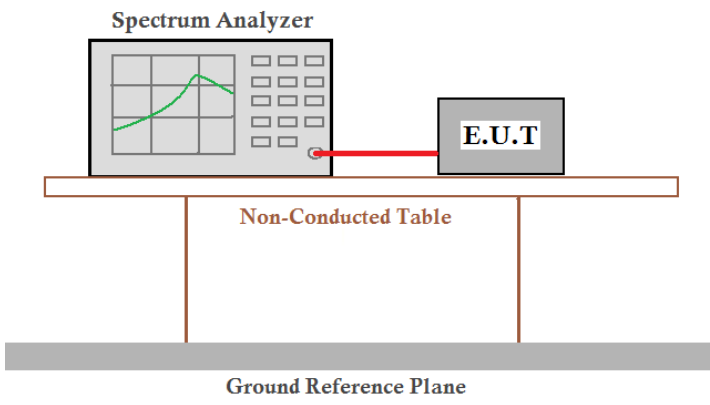
Test channel:	Highest channel
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Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
928.00	38.82	23.28	4.96	31.20	35.86	46.00	-10.14	Horizontal
928.00	43.71	23.28	4.96	31.20	40.75	46.00	-5.25	Vertical

Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*

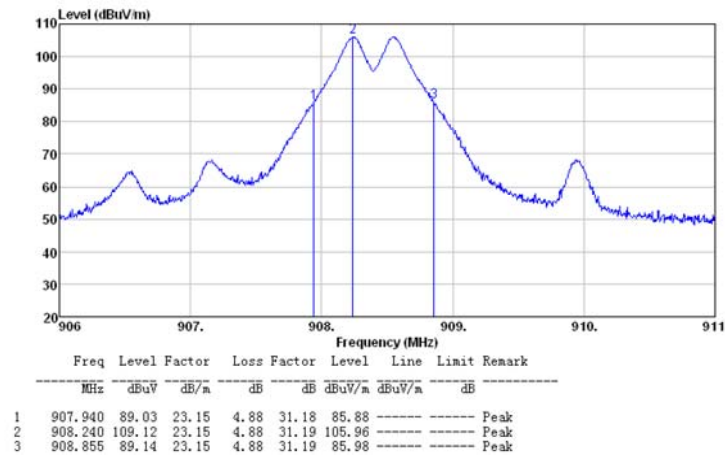
7.3 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215		
Test Method:	ANSI C63.4:2003		
Limit:	Operation Frequency range 902MHz~928 MHz		
Receiver setup:	Detector	RBW	VBW
	Peak	100KHz	300KHz
Test setup:			
Test Instruments:	Refer to section 6.0 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Pass		

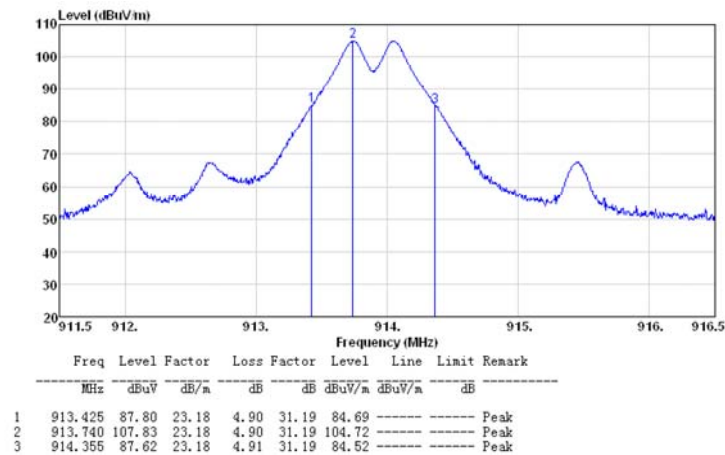
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	0.915	Pass
Middle	0.930	Pass
Highest	0.950	Pass

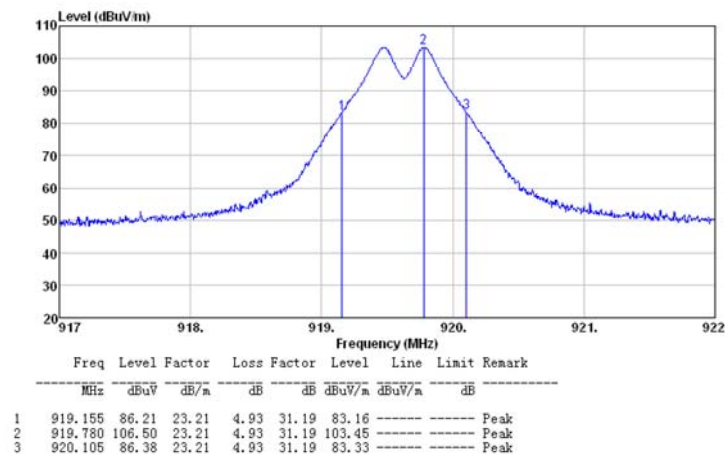
Test plot as follows:



Lowest channel



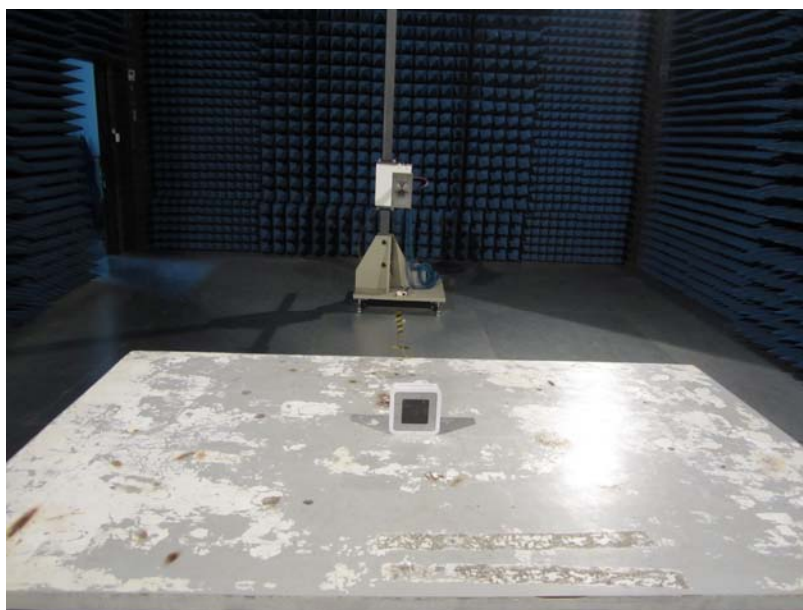
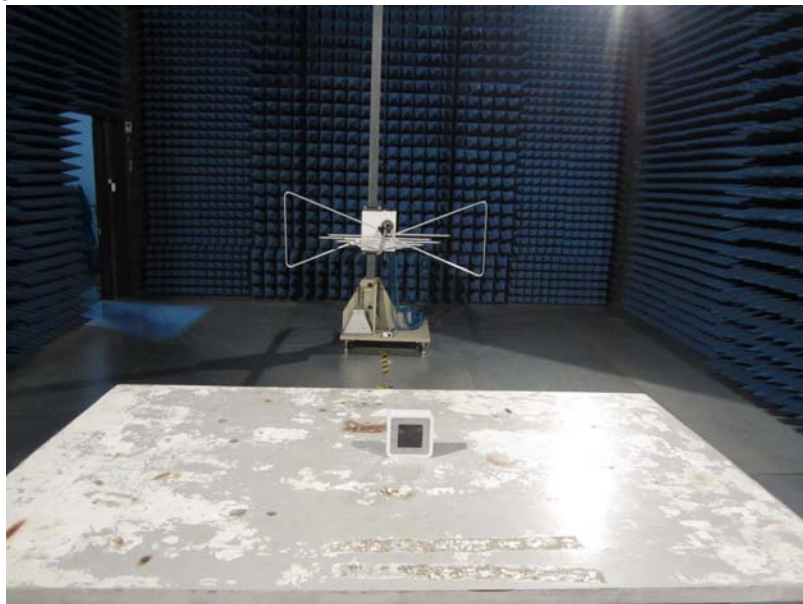
Middle channel



Highest channel

8 Test Setup Photo

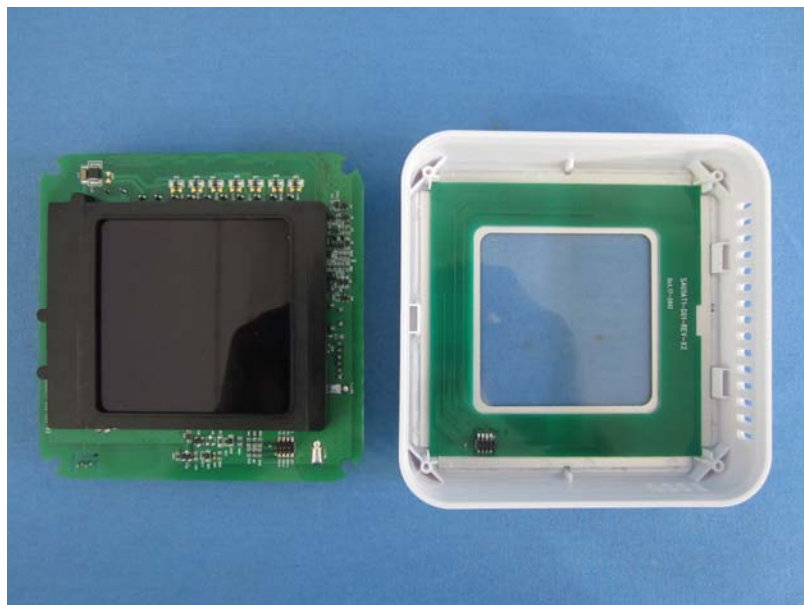
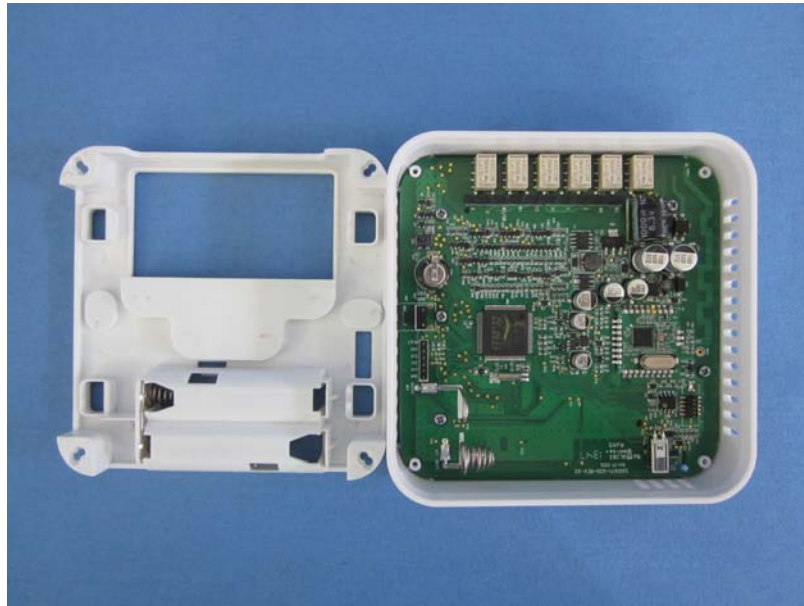
Radiated Emission

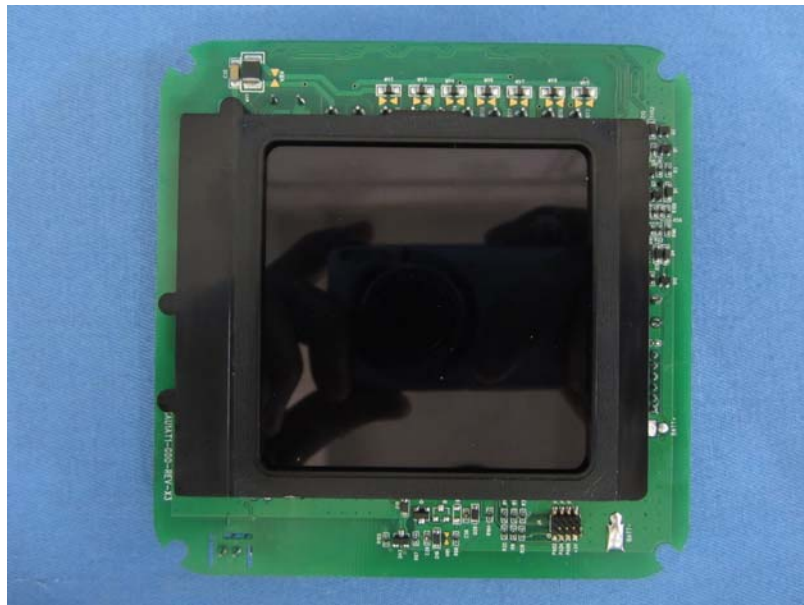
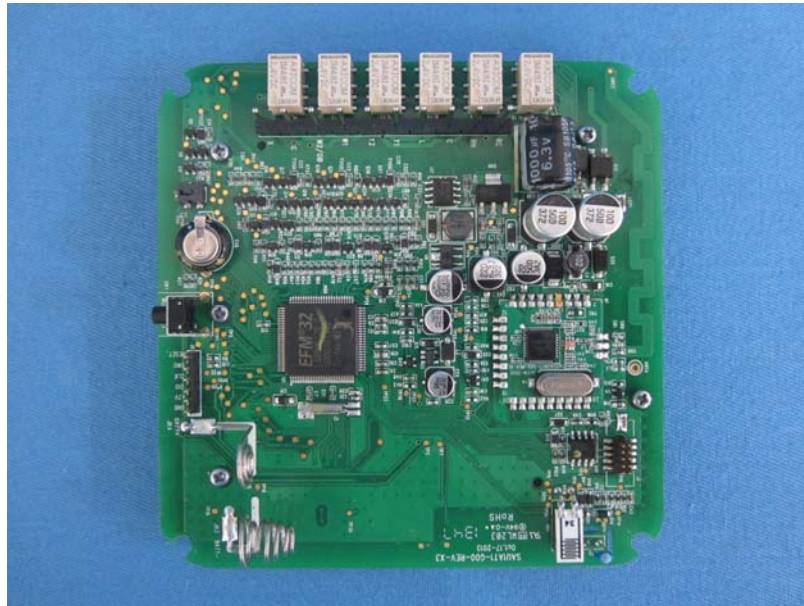


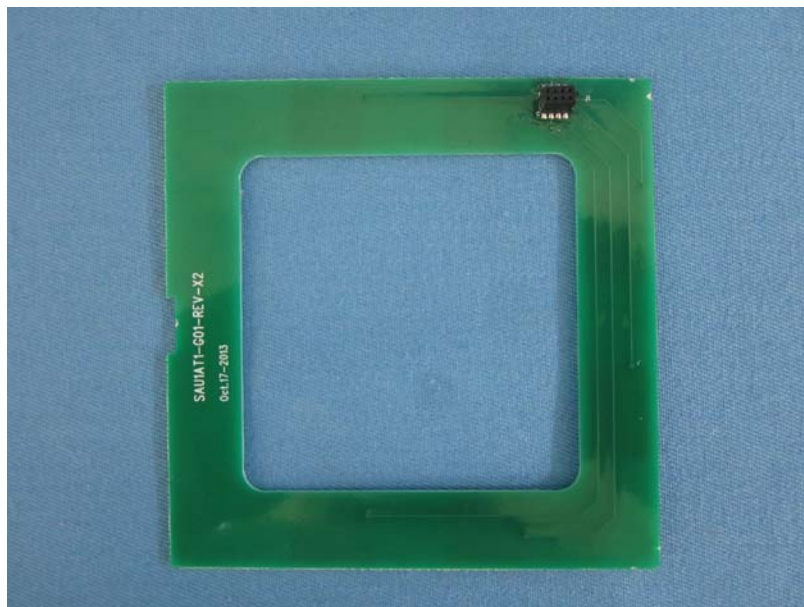
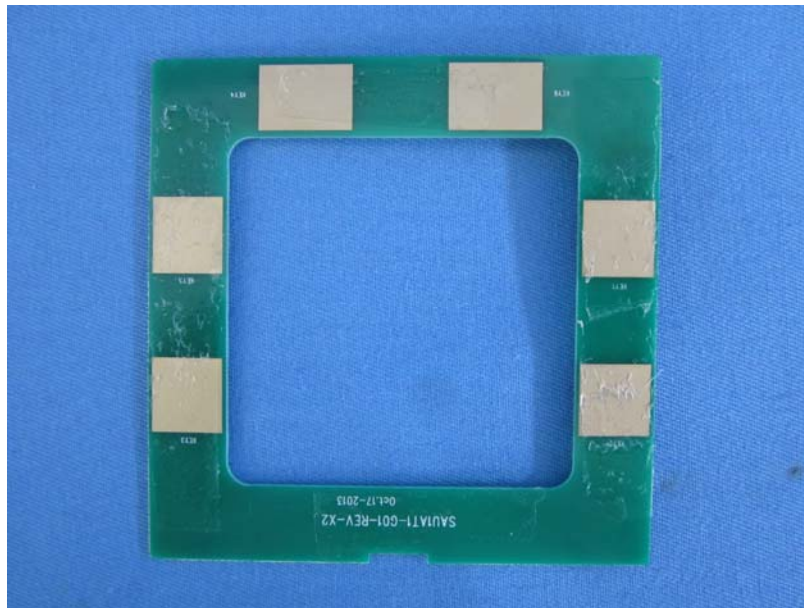
9 EUT Constructional Details











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