Report No.: GTSE14070120901

TEST REPORT

Applicant:	FLYSKY RC MODEL TECHNOLOGY CO., LTD
Address of Applicant:	West building3, Huangjianyuan Ind, Park QIAOLI North Gate Changping Town Dongguan CN.

Equipment Under Test (EUT)

Product Name:	Simulator
Model No.:	TM612
FCC ID:	N4ZFSM612
Applicable standards:	FCC CFR Title 47 Part 15 Subpart B:2013
Date of sample receipt:	July 15, 2014
Date of Test:	July15 -18, 2014
Date of report issue:	July 21, 2014
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	*July 21, 2014*	*Original*

Prepared By:	Edward.Pan	***Date:***	*July 21, 2014*
	Project Engineer		
Check By:	Hank.yan	***Date:***	*July 21, 2014*
	Reviewer		

3 Contents

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4 Test Summary

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

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

The highest frequency generated or used in the EUT	*Test frequency range of Radiated emission*
<108MHz	*30MHz ~ 1GHz*
108MHz ~ 500MHz	*30MHz ~ 2GHz*
500MHz ~ 1GHz	*30MHz ~ 5GHz*
>1GHz	*30MHz ~ 5times the highest frequency*
The highest frequency generated in this product is 72MHz, so the test frequency range of radiated emission is 30MHz ~ 1GHz.	

5 General Information

5.1 Client Information

Applicant:	FLYSKY RC MODEL TECHNOLOGY CO., LTD
Address of Applicant:	West building3, Huangjianyuan Ind, Park QIAOLI North Gate Changping Town Dongguan CN.
Manufacturer:	FLYSKY RC MODEL TECHNOLOGY CO., LTD
Address of Manufacturer:	West building3, Huangjianyuan Ind, Park QIAOLI North Gate Changping Town Dongguan CN.
Factory:	FLYSKY RC MODEL TECHNOLOGY CO., LTD
Address of Factory:	West building3, Huangjianyuan Ind, Park QIAOLI North Gate Changping Town Dongguan CN.

5.2 General Description of EUT

Product Name:	Simulator
Model No.:	TM612
Power supply:	DC 5V via PC usb port

5.3 Test mode

Test mode:	
Operation mode	Keep the EUT in Operation mode .
Test voltage:	
AC 120V/60Hz	

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 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)

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
HP	Printer	CB495A	05257893	DoC
AOC	LCD TV	TFT24660AG	T49A5JA0006600 B9	DoC
DELL	PC Host	OPTIPLEX745	GTS312	DoC
DELL	MONITOR	E178FPC	N/A	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC

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

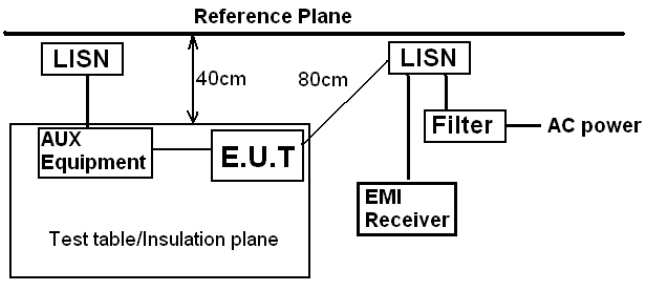
Radiated Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 28 2014	Mar. 27 2015
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	Jul. 05 2014	Jul. 04 2015
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	Feb. 23 2014	Feb. 22 2015
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	Jul. 05 2014	Jul. 04 2015
6	RF Amplifier	HP	8347A	GTS204	Jul. 05 2014	Jul. 04 2015
7	Preamplifier	HP	8349B	GTS206	Jul. 05 2014	Jul. 04 2015
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial cable	GTS	N/A	GTS210	Jul. 05 2014	Jul. 04 2015
10	Coaxial Cable	GTS	N/A	GTS211	Jul. 05 2014	Jul. 04 2015
11	Thermo meter	N/A	N/A	GTS256	Jul. 05 2014	Jul. 04 2015

Conducted Emission:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Sep. 07 2013	Sep. 06 2014
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 05 2014	Jul. 04 2015
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 05 2014	Jul. 04 2015
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 05 2014	Jul. 04 2015
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 05 2014	Jul. 04 2015
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 05 2014	Jul. 04 2015
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

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	Jul. 05 2014	Jul. 04 2015

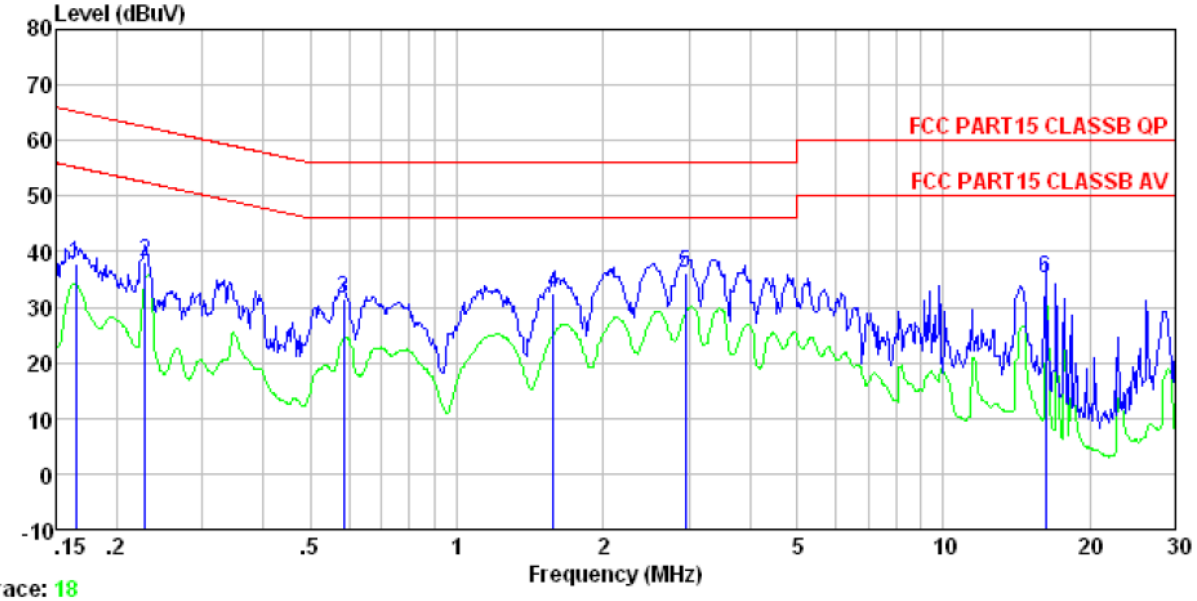
7 Test Results and Measurement Data

7.1 Conducted Emissions

Test Requirement:	FCC Part15 B Section 15.107
Test Method:	ANSI C63.4:2003
Test Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto
Limit:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 * Decreases with the logarithm of the frequency.
Test setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

Line:

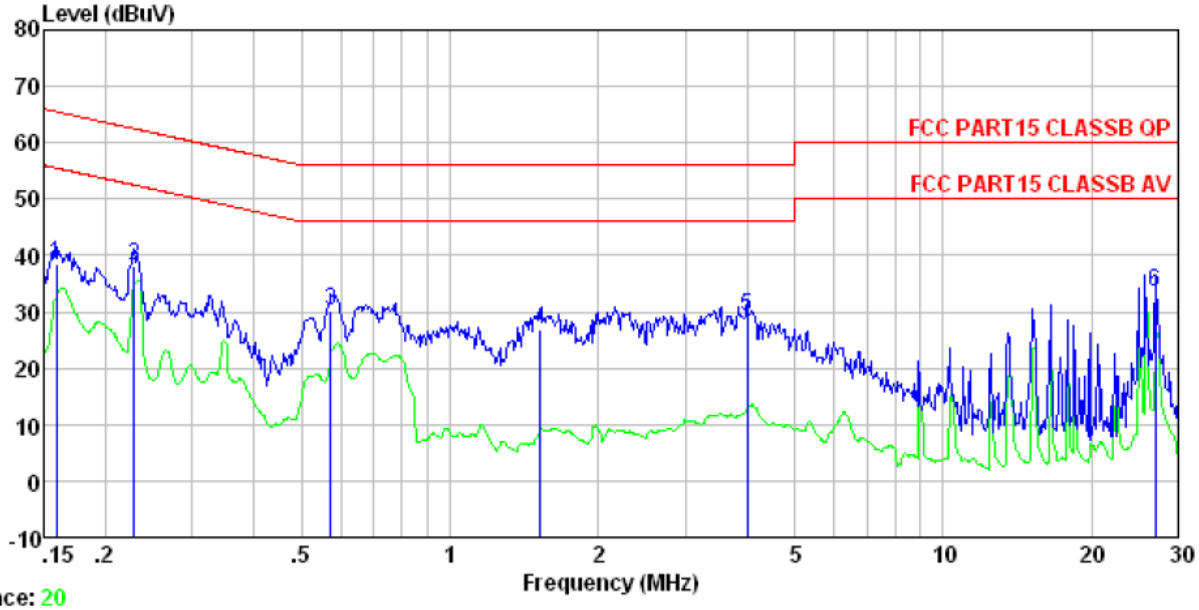


Trace: 18

Condition : FCC PART15 CLASSB QP LISN-2013 LINE
Job No. : 1209RF
Test mode : Operation mode
Test Engineer: Qing

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.165	37.47	0.15	0.12	37.74	65.21	-27.47	QP
2	0.229	37.75	0.12	0.12	37.99	62.48	-24.49	QP
3	0.585	31.39	0.13	0.12	31.64	56.00	-24.36	QP
4	1.577	32.17	0.12	0.14	32.43	56.00	-23.57	QP
5	2.946	35.81	0.15	0.15	36.11	56.00	-19.89	QP
6	16.226	34.65	0.36	0.22	35.23	60.00	-24.77	QP

Neutral:



Trace: 20

Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL
Job No. : 1209RF
Test mode : Operation mode
Test Engineer: Qing

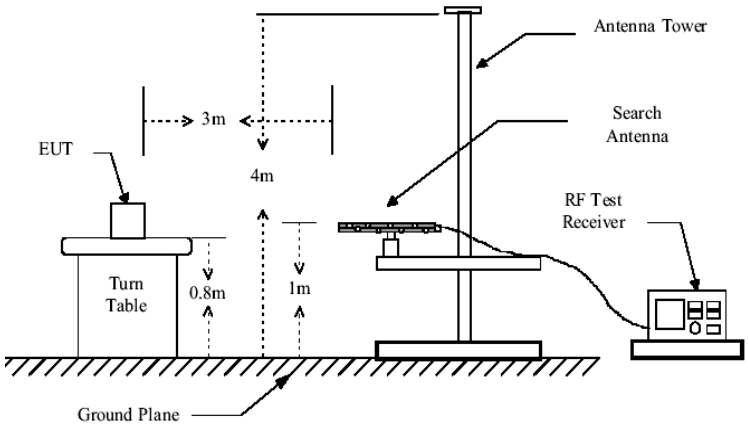
	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.159	38.21	0.07	0.12	38.40	65.52	-27.12	QP
2	0.229	37.96	0.06	0.12	38.14	62.48	-24.34	QP
3	0.573	30.02	0.07	0.12	30.21	56.00	-25.79	QP
4	1.527	26.68	0.09	0.14	26.91	56.00	-29.09	QP
5	4.006	28.93	0.14	0.15	29.22	56.00	-26.78	QP
6	26.984	32.44	0.91	0.23	33.58	60.00	-26.42	QP

Notes:

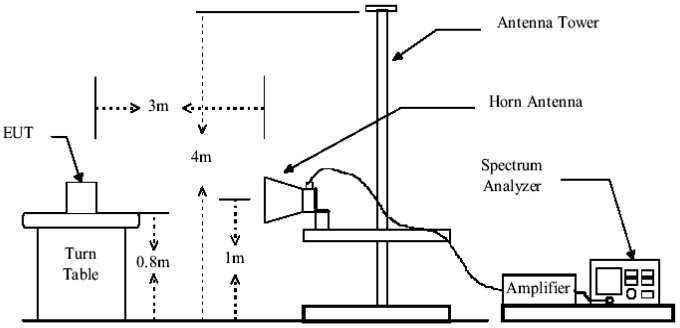
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss

7.2 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 B Section 15.109</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2003</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 1GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></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>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></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>
</td></tr>
<tr><td>Test Procedure:</td><td>
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.
</td></tr>
<tr><td>Test setup:</td><td>Below 1GHz</td></tr>
</table>



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

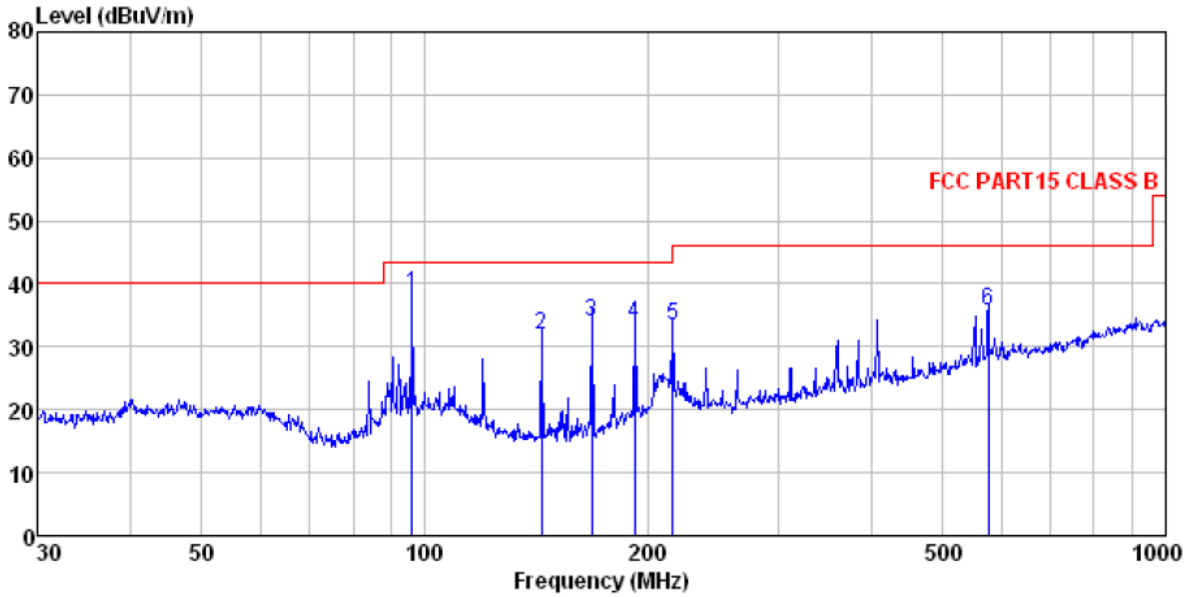
Note:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

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

Measurement Data

Below 1GHz

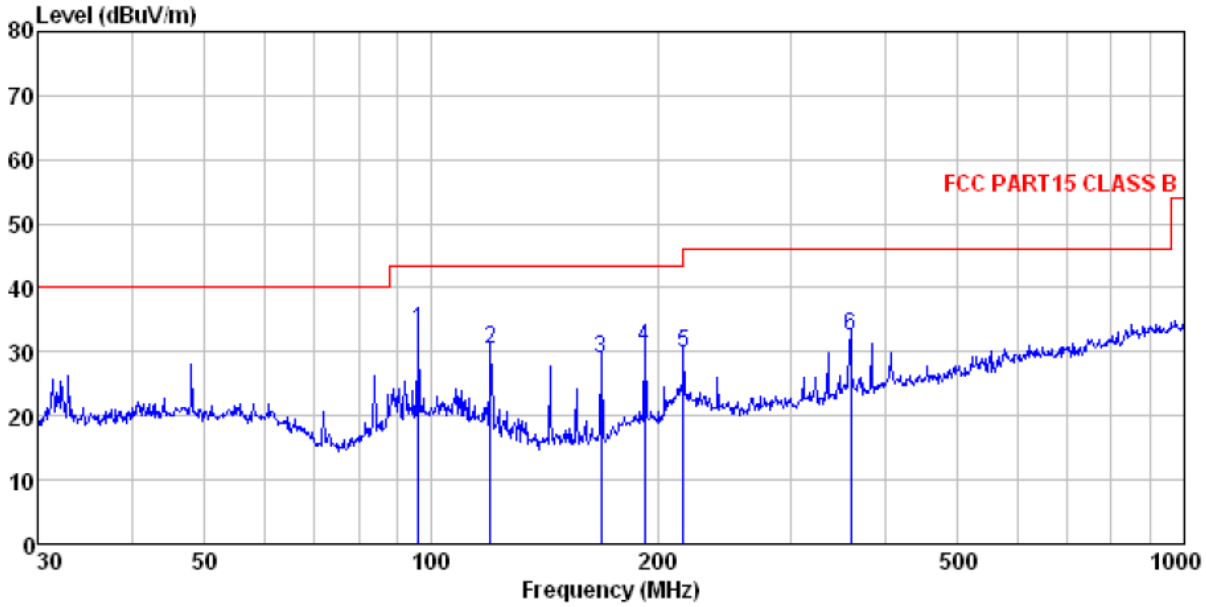
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163-2013M HORIZONTAL
Job No. : 1209RF
Test Mode : Operation mode
Test Engineer: Bing

	Freq	ReadAntenna 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	96.099	54.00	14.90	1.16	31.75	38.31	43.50	-5.19	QP
2	143.830	51.99	10.22	1.53	31.96	31.78	43.50	-11.72	QP
3	167.824	53.47	10.90	1.67	32.04	34.00	43.50	-9.50	QP
4	191.745	51.48	12.56	1.80	32.12	33.72	43.50	-9.78	QP
5	216.024	50.64	13.07	1.93	32.15	33.49	46.00	-12.51	QP
6	576.644	43.15	20.03	3.63	31.15	35.66	46.00	-10.34	QP

Vertical:

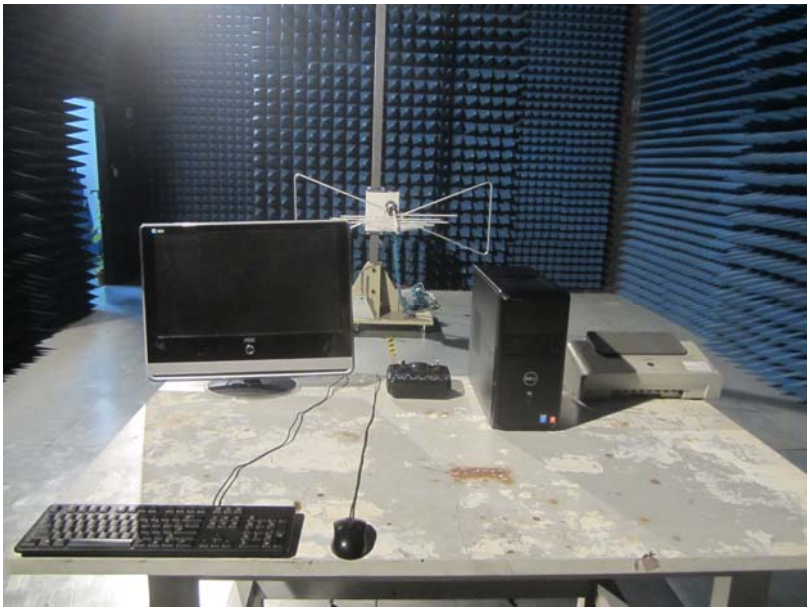


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL
Job No. : 1209RF
Test Mode : Operation mode
Test Engineer: Bing

	Freq	ReadAntenna 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	96.099	48.99	14.90	1.16	31.75	33.30	43.50	-10.20	QP
2	119.856	48.40	12.48	1.36	31.86	30.38	43.50	-13.12	QP
3	167.824	48.31	10.90	1.67	32.04	28.84	43.50	-14.66	QP
4	191.745	48.45	12.56	1.80	32.12	30.69	43.50	-12.81	QP
5	216.024	46.86	13.07	1.93	32.15	29.71	46.00	-16.29	QP
6	360.448	45.23	16.43	2.67	32.00	32.33	46.00	-13.67	QP

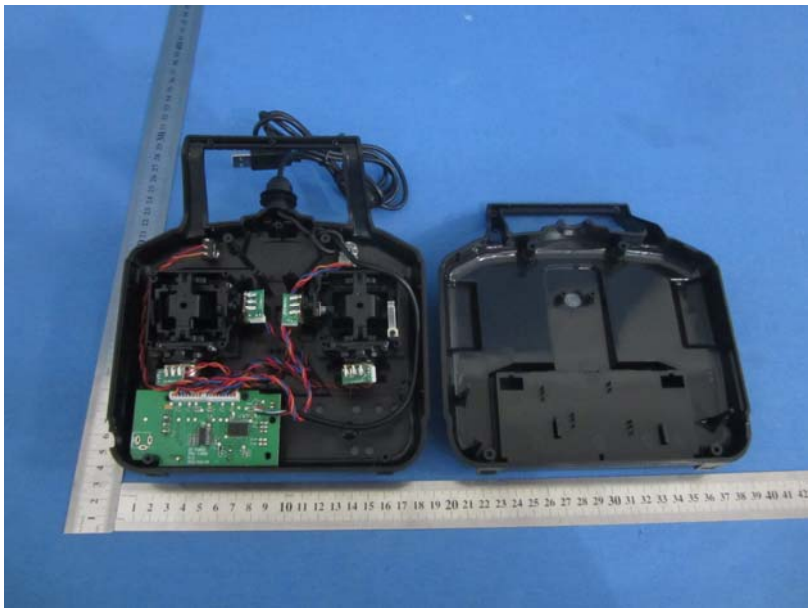
8 Test Setup Photo

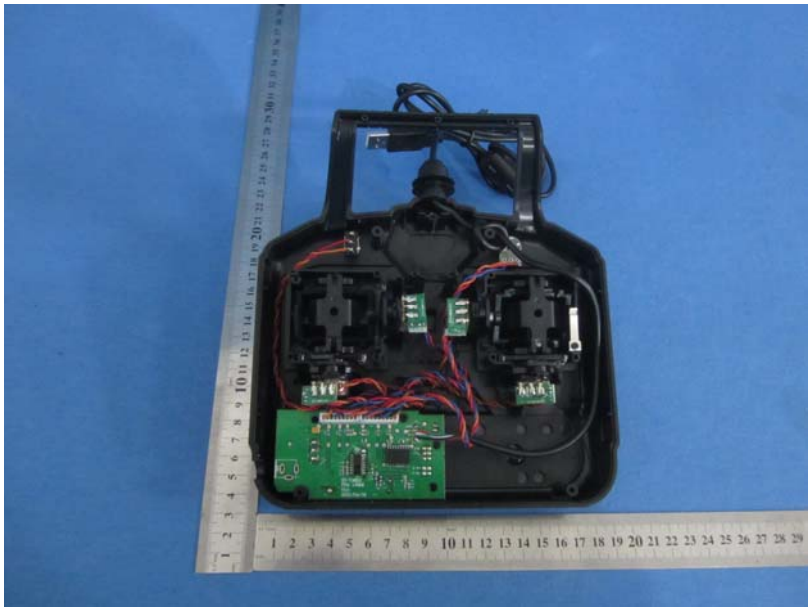
Radiated Emission

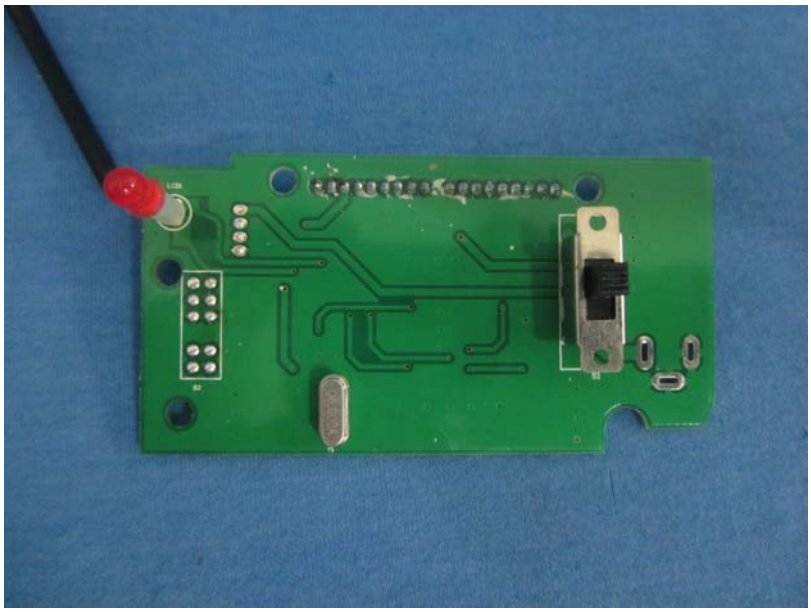


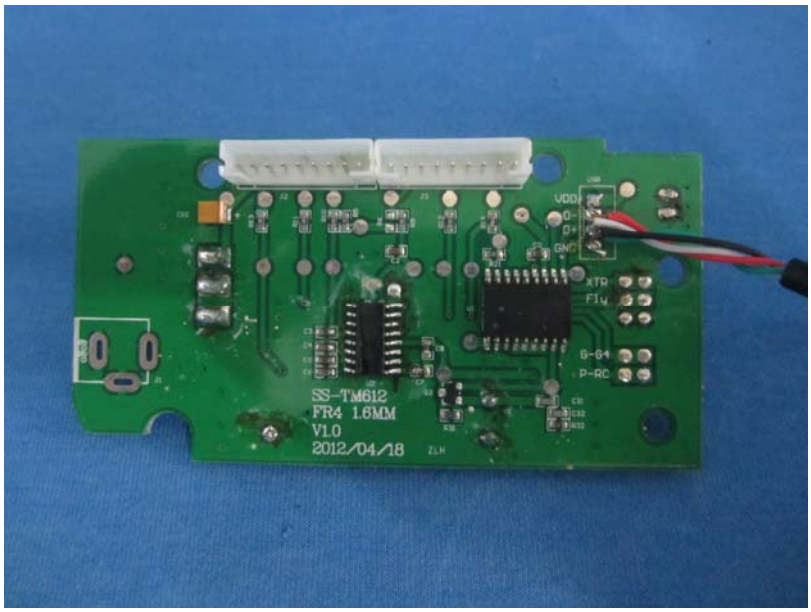
Conducted Emission

9 EUT Constructional Details









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