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Report No.: FCC13-RTE062701  
Page: 1 of 28

## FCC REPORT

**Applicant:** SANLIANHUAN TOYS FACTORY  
**Address of Applicant:** Fengxin industrial Zone, Laimei Rd, Chenghai Shantou City, Guangdong Province, China  
**Equipment Under Test (EUT)**  
**Product Name:** UFO  
**Model No.:** 6046, 6048, 6050, 6030, 6031, 6032, 6033, 6035, 6036, 6038, 6039, 6041, 6041B, 6042, 6042B, 6043, 6043I, 6044, 6044I, 6045, 6046C, 6047A, 6047B, 6047, 6047I, 6047C, 6048I, 6020, 6020-1, 6020I, 6021-1, 6022-1, 6023-1, 6025, 6025I, 6026, 6026I, 6048I, 8827, 8827-1, 8828, 8828-1, 8829, 8830, 8831, 8832, 8833, 6049, 6051, 6052, 6053, 6054, 6055, 6056, 6057, 6058, 6059, 6060, 6061, 6062, 6063, 6064, 6065, 6066, 6067, 6068, 6046P  
**FCC ID:** QCACHSLH889  
**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249:2012  
**Date of sample receipt:** June 7, 2013  
**Date of Test:** June 13- June 27, 2013  
**Date of report issued:** June 27, 2013  
**Test Result :** PASS \*

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

Authorized Signature:



Kavin Yu

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 EBO 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	June 6, 2013	Original

**Prepared By:****Date:** June 27, 2013

Project Engineer

**Check By:****Date:** June 27, 2013

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	N/A
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.*

*N/A: not applicable.*

## 5 General Information

### 5.1 Client Information

Applicant:	SANLIANHUAN TOYS FACTORY
Address of Applicant:	Fengxin industrial Zone, Laimei Rd, Chenghai Shantou City, Guangdong Province, China
Manufacturer:	SANLIANHUAN TOYS FACTORY
Address of Manufacturer:	Fengxin industrial Zone, Laimei Rd, Chenghai Shantou City, Guangdong Province, China

### 5.2 General Description of EUT

Product Name:	UFO
Model No.:	6046, 6048, 6050, 6030, 6031, 6032, 6033, 6035, 6036, 6038, 6039, 6041, 6041B, 6042, 6042B, 6043, 6043I, 6044, 6044I, 6045, 6046C, 6047A, 6047B, 6047, 6047I, 6047C, 6048I, 6020, 6020-1, 6020I, 6021-1, 6022-1, 6023-1, 6025, 6025I, 6026, 6026I, 6048I, 8827, 8827-1, 8828, 8828-1, 8829, 8830, 8831, 8832, 8833, 6049, 6051, 6052, 6053, 6054, 6055, 6056, 6057, 6058, 6059, 6060, 6061, 6062, 6063, 6064, 6065, 6066, 6067, 6068, 6046P
Test Model No.:	6048
Operation Frequency:	2402MHz~2475MHz
Channel numbers:	74
Channel separation:	1MHz
Modulation type:	FSK
Antenna Type:	Integral Antenna
Antenna gain:	2.54dBi
Power supply:	DC 9.0V size "AA" batteries x6
Remark:	According to the confirmation from the applicant, since the electrical circuit design, layout, components used and internal wiring were identical for the above items, only difference being the color and outer decoration. Therefore only one item 6048 was tested in this report.

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	20	2421MHz	39	2440MHz	58	2459MHz
2	2403MHz	21	2422MHz	40	2441MHz	59	2460MHz
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
17	2418MHz	36	2437MHz	55	2456MHz	74	2475MHz
18	2419MHz	37	2438MHz	56	2457MHz		
19	2420MHz	38	2439MHz	57	2458MHz		

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	2402MHz
The middle channel	2438MHz
The Highest channel	2475MHz

### 5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode with FSK modulation.
<i>Remark: new battery were used during all test</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)	91.65	95.71	92.33

#### 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, 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.

### 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: 0755-29451282

Fax: 0755-22639141

### 5.7 Other Information Requested by the Customer

None.

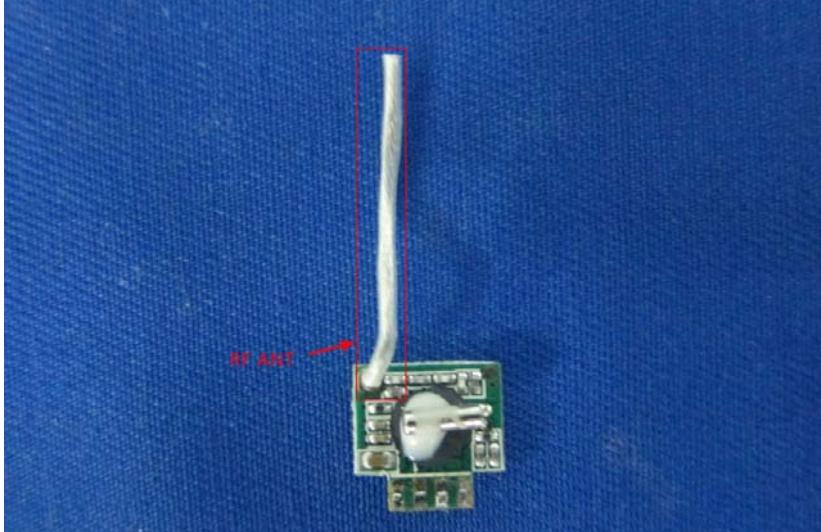
## 6 Test Instruments list

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. 29 2013	Mar. 28 2014
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. 6, 2012	Dec. 5 2013
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 03 2012	Jul. 02 2013
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 24 2013	Feb. 23 2014
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June 29 2012	June 28 2013
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 29 2013	Mar. 28 2014
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 30 2013	Mar. 29 2014
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 30 2013	Mar. 29 2014
11	Coaxial cable	GTS	N/A	GTS210	Mar. 30 2013	Mar. 29 2014
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 30 2013	Mar. 29 2014
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 03 2012	Jul. 02 2013
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 03 2012	Jul. 02 2013
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 29 2012	June 28 2013
16	Band filter	Amindeon	82346	GTS219	Mar. 30 2013	Mar. 29 2014

## 7 Test results and Measurement Data

### 7.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
<b>15.203 requirement:</b> 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.	
E.U.T Antenna:	
<i>The antenna is Integral Antenna, the best case gain of the antenna is 2.54dBi</i>	



## 7.2 Radiated Emission Method

<b>Test Requirement:</b>	FCC Part15 C Section 15.209								
<b>Test Method:</b>	ANSI C63.4:2003								
<b>Test Frequency Range:</b>	30MHz to 25GHz								
<b>Test site:</b>	Measurement Distance: 3m								
<b>Receiver setup:</b>	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				
Remark: For the field strength of fundamental test, the RBW and VBW were set to 3MHz and 10MHz, due to the max 20dB bandwidth is 1.034MHz									
<b>Limit:</b> <b>(Field strength of the fundamental signal)</b>	Frequency	Limit (dBuV/m @3m)		Remark					
	2400MHz-2483.5MHz	94.00		Average Value					
		114.00		Peak Value					
<b>Limit:</b> <b>(Spurious Emissions)</b>	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					
<b>Limit:</b> <b>(band edge)</b>	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.								
<b>Test setup:</b>	Below 1GHz								

	<p>Above 1GHz</p>
<b>Test Procedure:</b>	<ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> <li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>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.</li> </ol>
<b>Test Instruments:</b>	Refer to section 6.0 for details
<b>Test mode:</b>	Refer to section 5.3 for details
<b>Test results:</b>	Pass

**Measurement data:**

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### 7.2.1 Field Strength of The Fundamental Signal

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
2402.00	92.24	27.58	5.39	30.18	95.03	114.00	-18.97	Horizontal
2402.00	90.18	27.58	5.39	30.18	92.97	114.00	-21.03	Vertical
2438.00	92.79	27.56	5.42	30.06	95.71	114.00	-18.29	Horizontal
2438.00	90.33	27.56	5.42	30.06	93.25	114.00	-20.75	Vertical
2475.00	91.52	27.50	5.45	29.93	94.54	114.00	-19.46	Horizontal
2475.00	89.78	27.50	5.45	29.93	92.80	114.00	-21.20	Vertical

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
2402.00	81.43	27.58	5.39	30.18	84.22	94.00	-9.78	Horizontal
2402.00	79.65	27.58	5.39	30.18	82.44	94.00	-11.56	Vertical
2438.00	82.04	27.56	5.42	30.06	84.96	94.00	-9.04	Horizontal
2438.00	79.86	27.56	5.42	30.06	82.78	94.00	-11.22	Vertical
2475.00	80.72	27.50	5.45	29.93	83.74	94.00	-10.26	Horizontal
2475.00	79.10	27.50	5.45	29.93	82.12	94.00	-11.88	Vertical

According to the follow transmitter output power ( $P_t$ ) formula:

$$P_t = (E \times d)^2 / (30 \times g_t)$$

$P_t$  = transmitter output power in watts

$g_t$  = numeric gain of the transmitting antenna (unitless)

$E$  = electric field strength in V/m

$d$  = measurement distance in meters (m).

According to the above test data,  $E_{max} = 95.71 \text{ dBuV/m} = 0.06102 \text{ V/m}$ ,  $d = 3 \text{ m}$ ,  $g_t = 1.79$

$$P_t = (E \times d)^2 / (30 \times g_t) = (0.06102 \times 3)^2 / (30 \times 1.79) = 0.000622 \text{ W} = 0.622 \text{ mW}$$

### 7.2.2 Spurious emissions

#### ■ Below 1GHz

*Remark: The test were performed at lowest, middle, highest channel and the lowest is the worst mode. The data exhibited in the report is the worst mode's.*

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
148.44	49.98	11.29	1.56	31.98	30.85	43.50	-12.65	Vertical
222.95	48.86	14.36	1.98	32.15	33.05	46.00	-12.95	Vertical
239.99	55.36	15.07	2.07	32.16	40.34	46.00	-5.66	Vertical
649.66	43.57	21.15	3.91	31.12	37.51	46.00	-8.49	Vertical
744.87	47.27	22.39	4.26	31.25	42.67	46.00	-3.33	Vertical
975.75	40.63	23.82	5.14	31.23	38.36	54.00	-15.64	Vertical
151.07	49.27	11.35	1.58	31.99	30.21	43.50	-13.29	Horizontal
239.99	51.79	15.07	2.07	32.16	36.77	46.00	-9.23	Horizontal
297.22	50.24	16.03	2.35	32.18	36.44	46.00	-9.56	Horizontal
372.01	49.06	16.53	2.72	31.96	36.35	46.00	-9.65	Horizontal
649.66	44.85	21.15	3.91	31.12	38.79	46.00	-7.21	Horizontal
744.87	47.47	22.39	4.26	31.25	42.87	46.00	-3.13	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
4804.00	33.60	31.78	8.60	24.17	49.81	74.00	-24.19	Vertical
7206.00	32.46	36.15	11.65	26.39	53.87	74.00	-20.13	Vertical
9608.00	31.27	38.01	14.14	25.45	57.97	74.00	-16.03	Vertical
12010.00	*					74.00		Vertical
14412.00	*					74.00		Vertical
4804.00	29.70	31.78	8.60	24.17	45.91	74.00	-28.09	Horizontal
7206.00	30.35	36.15	11.65	26.39	51.76	74.00	-22.24	Horizontal
9608.00	27.97	38.01	14.14	25.45	54.67	74.00	-19.33	Horizontal
12010.00	*					74.00		Horizontal
14412.00	*					74.00		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
4804.00	22.13	31.78	8.60	24.17	38.34	54.00	-15.66	Vertical
7206.00	21.41	36.15	11.65	26.39	42.82	54.00	-11.18	Vertical
9608.00	16.62	38.01	14.14	25.45	43.32	54.00	-10.68	Vertical
12010.00	*					54.00		Vertical
14412.00	*					54.00		Vertical
4804.00	18.05	31.78	8.60	24.17	34.26	54.00	-19.74	Horizontal
7206.00	18.40	36.15	11.65	26.39	39.81	54.00	-14.19	Horizontal
9608.00	14.12	38.01	14.14	25.45	40.82	54.00	-13.18	Horizontal
12010.00	*					54.00		Horizontal
14412.00	*					54.00		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.
3. “\*”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Middle channel
---------------	----------------

**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
4876.00	34.05	31.85	8.66	24.10	50.46	74.00	-23.54	Vertical
7314.00	33.64	36.37	11.72	26.71	55.02	74.00	-18.98	Vertical
9752.00	30.69	38.35	14.25	25.36	57.93	74.00	-16.07	Vertical
12190.00	*					74.00		Vertical
14628.00	*					74.00		Vertical
4876.00	30.34	31.85	8.66	24.10	46.75	74.00	-27.25	Horizontal
7314.00	29.45	36.37	11.72	26.71	50.83	74.00	-23.17	Horizontal
9752.00	26.99	38.35	14.25	25.36	54.23	74.00	-19.77	Horizontal
12190.00	*					74.00		Horizontal
14628.00	*					74.00		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
4876.00	22.58	31.85	8.66	24.10	38.99	54.00	-15.01	Vertical
7314.00	21.48	36.37	11.72	26.71	42.86	54.00	-11.14	Vertical
9752.00	15.70	38.35	14.25	25.36	42.94	54.00	-11.06	Vertical
12190.00	*					54.00		Vertical
14628.00	*					54.00		Vertical
4876.00	18.69	31.85	8.66	24.10	35.10	54.00	-18.90	Horizontal
7314.00	18.47	36.37	11.72	26.71	39.85	54.00	-14.15	Horizontal
9752.00	13.91	38.35	14.25	25.36	41.15	54.00	-12.85	Horizontal
12190.00	*					54.00		Horizontal
14628.00	*					54.00		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.
3. “\*”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Highest 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
4950.00	32.86	31.93	8.73	24.03	49.49	74.00	-24.51	Vertical
7425.00	32.66	36.59	11.79	27.03	54.01	74.00	-19.99	Vertical
9900.00	28.22	38.81	14.38	25.26	56.15	74.00	-17.85	Vertical
12375.00	*					74.00		Vertical
14850.00	*					74.00		Vertical
4950.00	29.94	31.93	8.73	24.03	46.57	74.00	-27.43	Horizontal
7425.00	29.66	36.59	11.79	27.03	51.01	74.00	-22.99	Horizontal
9900.00	25.53	38.81	14.38	25.26	53.46	74.00	-20.54	Horizontal
12375.00	*					74.00		Horizontal
14850.00	*					74.00		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
4950.00	21.39	31.93	8.73	24.03	38.02	54.00	-15.98	Vertical
7425.00	22.03	36.59	11.79	27.03	43.38	54.00	-10.62	Vertical
9900.00	13.55	38.81	14.38	25.26	41.48	54.00	-12.52	Vertical
12375.00	*					54.00		Vertical
14850.00	*					54.00		Vertical
4950.00	18.29	31.93	8.73	24.03	34.92	54.00	-19.08	Horizontal
7425.00	19.08	36.59	11.79	27.03	40.43	54.00	-13.57	Horizontal
9900.00	13.23	38.81	14.38	25.26	41.16	54.00	-12.84	Horizontal
12375.00	*					54.00		Horizontal
14850.00	*					54.00		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.
3. “\*”, means this data is the too weak instrument of signal is unable to test.

## 7.2.3 Bandedge emissions

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
2390.00	42.07	27.59	5.38	30.18	44.86	74.00	-29.14	Horizontal
2400.00	58.80	27.58	5.39	30.18	61.59	74.00	-12.41	Horizontal
2390.00	42.57	27.59	5.38	30.18	45.36	74.00	-28.64	Vertical
2400.00	60.75	27.58	5.39	30.18	63.54	74.00	-10.46	Vertical

## 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
2390.00	32.76	27.59	5.38	30.18	35.55	54.00	-18.45	Horizontal
2400.00	43.93	27.58	5.39	30.18	46.72	54.00	-7.28	Horizontal
2390.00	32.65	27.59	5.38	30.18	35.44	54.00	-18.56	Vertical
2400.00	45.48	27.58	5.39	30.18	48.27	54.00	-5.73	Vertical

Test channel:	Highest 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
2483.50	44.99	27.53	5.47	29.93	48.06	74.00	-25.94	Horizontal
2500.00	44.35	27.55	5.49	29.93	47.46	74.00	-26.54	Horizontal
2483.50	44.00	27.53	5.47	29.93	47.07	74.00	-26.93	Vertical
2500.00	43.26	27.55	5.49	29.93	46.37	74.00	-27.63	Vertical

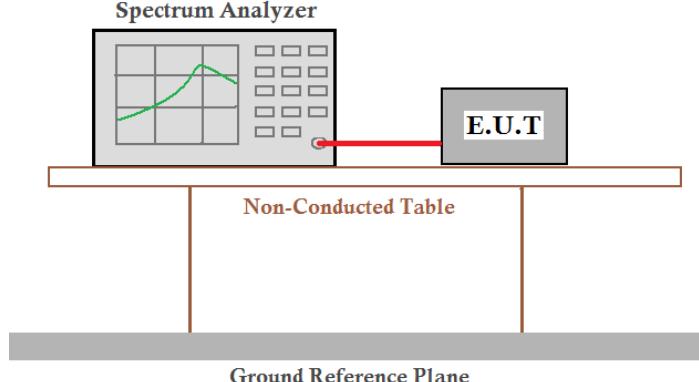
**Average value:**

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
2483.50	36.74	27.53	5.47	29.93	39.81	54.00	-14.19	Horizontal
2500.00	33.50	27.55	5.49	29.93	36.61	54.00	-17.39	Horizontal
2483.50	35.39	27.53	5.47	29.93	38.46	54.00	-15.54	Vertical
2500.00	33.49	27.55	5.49	29.93	36.60	54.00	-17.40	Vertical

**Remark:**

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

## 7.3 20dB Occupy Bandwidth

<b>Test Requirement:</b>	FCC Part15 C Section 15.249/15.215
<b>Test Method:</b>	ANSI C63.4:2003
<b>Limit:</b>	Operation Frequency range 2400MHz~2483.5MHz
<b>Test setup:</b>	<p style="text-align: center;"><b>Spectrum Analyzer</b></p>  <p style="text-align: center;">Non-Conducted Table</p> <p style="text-align: center;">Ground Reference Plane</p>
<b>Test Instruments:</b>	Refer to section 6.0 for details
<b>Test mode:</b>	Refer to section 5.3 for details
<b>Test results:</b>	<b>Pass</b>

## Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	1.034	Pass
Middle	1.032	Pass
Highest	1.034	Pass

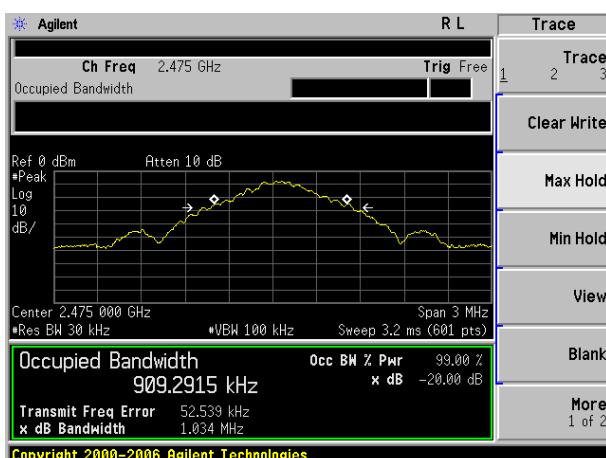
## Test plot as follows:



Lowest channel

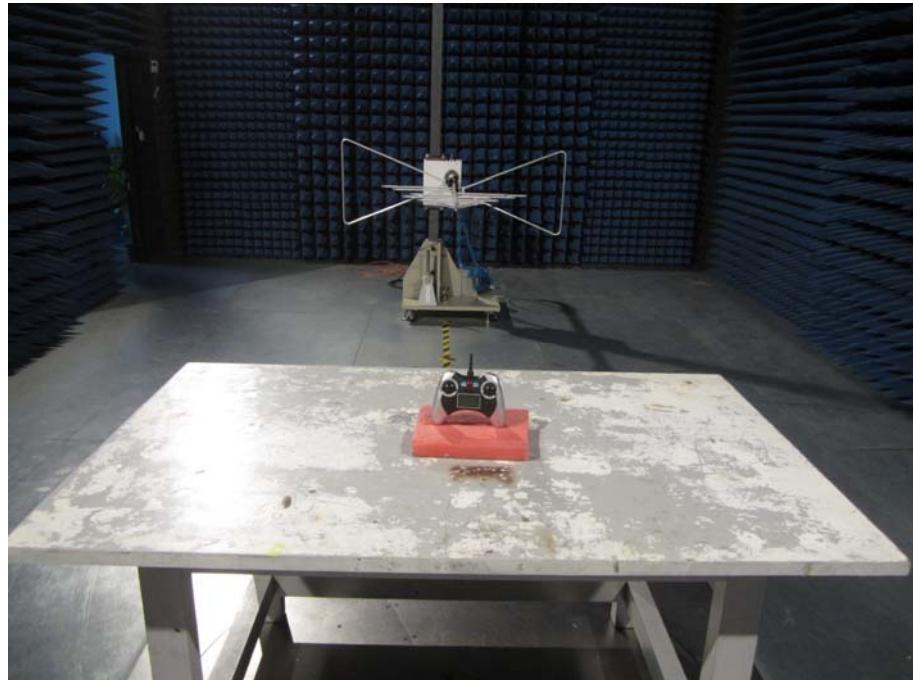


Middle channel



Highest channel

## 8 Test setup photo



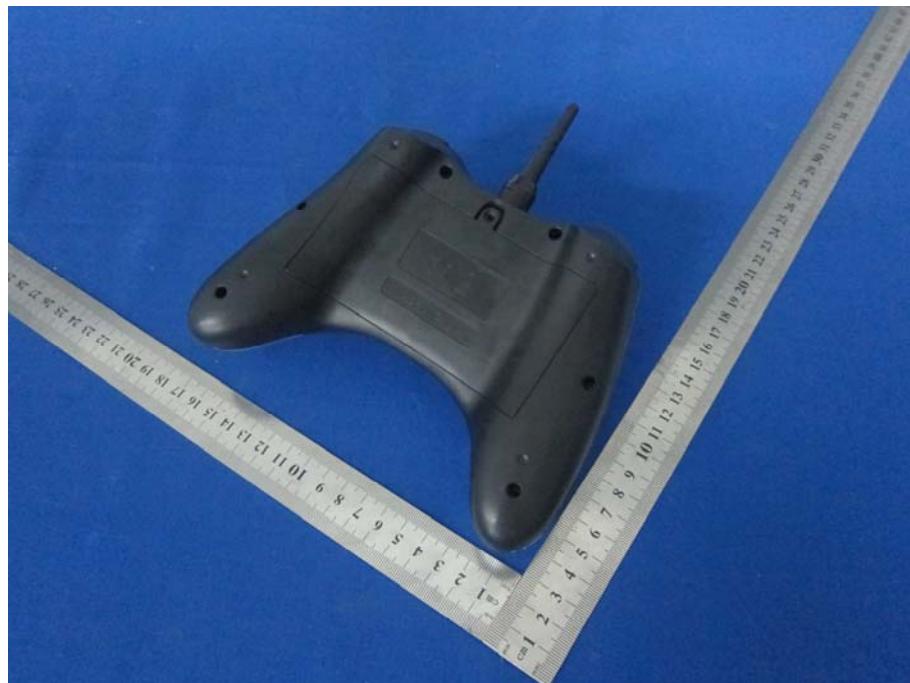
## 9 EUT Constructional Details



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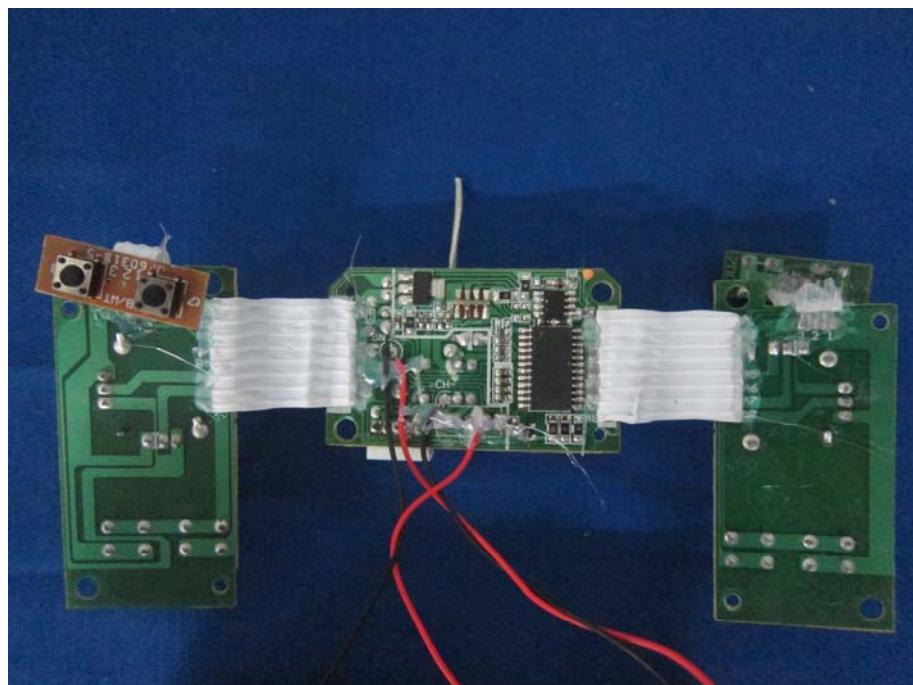
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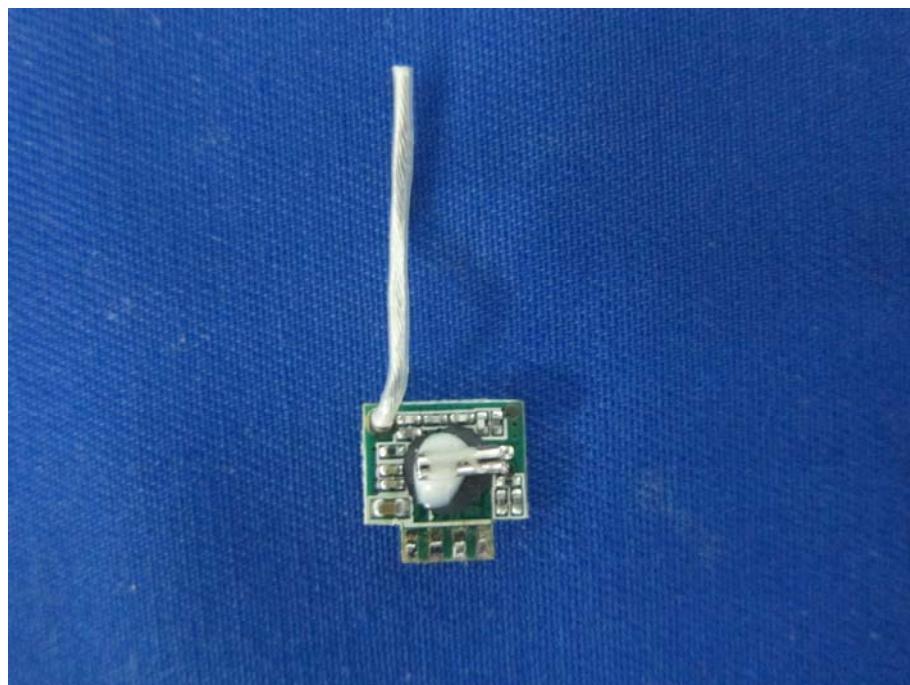
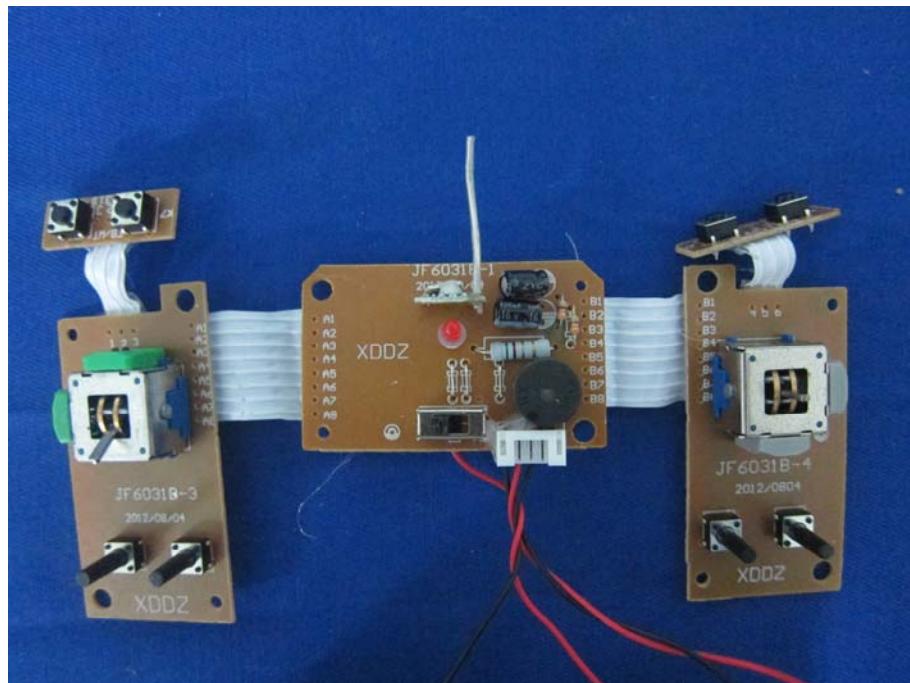
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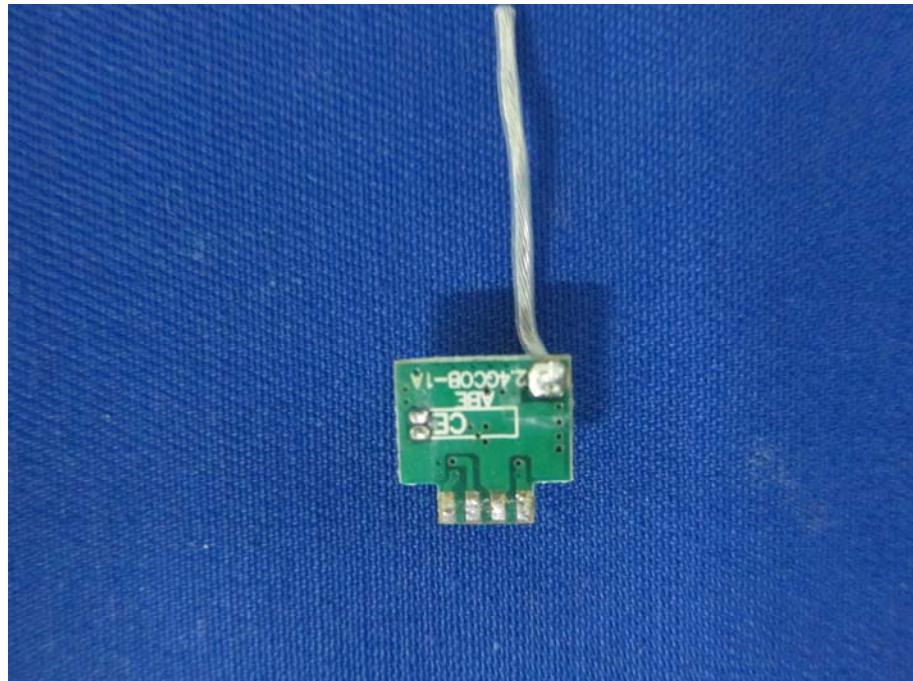
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