FCC REPORT

Applicant:	KATUMFEL INDUSTRY LIMITED(HK)
Address of Applicant:	FuCheng Industrial Town, Hong Tian, ShaJing, ShenZhen
Equipment Under Test (EUT)	
Product Name:	2.4G Transmitter
Model No.:	KTH-92100G
FCC ID:	XNZKTH-92100G
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249:2010
Date of sample receipt:	Aug. 09, 2012
Date of Test:	Aug. 10-13, 2012
Date of report issued:	Aug. 13, 2012
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	*Aug. 13, 2012*	*Original*

Prepared By: Oscar Li ***Date:*** *Aug. 13, 2012*

Project Engineer

Check By: Hans.Hu ***Date:*** *Aug. 13, 2012*

Reviewer

3 Contents

Page

4 Test Summary

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

Remark:

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

5 General Information

5.1 Client Information

Applicant:	KATUMFEL INDUSTRY LIMITED(HK)
Address of Applicant:	FuCheng Industrial Town, Hong Tian, ShaJing, ShenZhen
Manufacturer/ Factory:	KATUMFELINDUSTRY LIMITED(HK)
Address of Manufacturer/ Factory:	FuCheng Industrial Town, Hong Tian, ShaJing, ShenZhen

5.2 General Description of E.U.T.

Product Name:	2.4G Transmitter
Model No.:	KTH-92100G
Operation Frequency:	2410MHz to 2474.86MHz
Channel numbers:	81
Channel separation:	0.81075MHz
Modulation type:	GFSK
Antenna Type:	Integral
Antenna gain:	2dBi
Power Supply:	4X1.5V (AA)=6.0V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2410.00000	22	2427.02575	43	2444.05150	64	2461.07725
2	2410.81075	23	2427.83650	44	2444.86225	65	2461.88800
3	2411.62150	24	2428.64725	45	2445.67300	66	2462.69875
4	2412.43225	25	2429.45800	46	2446.48375	67	2463.50950
5	2413.24300	26	2430.26875	47	2447.29450	68	2464.32025
6	2414.05375	27	2431.07950	48	2448.10525	69	2465.13100
7	2414.86450	28	2431.89025	49	2448.91600	70	2465.94175
8	2415.67525	29	2432.70100	50	2449.72675	71	2466.75250
9	2416.48600	30	2433.51175	51	2450.53750	72	2467.56325
10	2417.29675	31	2434.32250	52	2451.34825	73	2468.37400
11	2418.10750	32	2435.13325	53	2452.15900	74	2469.18475
12	2418.91825	33	2435.94400	54	2452.96975	75	2469.99550
13	2419.72900	34	2436.75475	55	2453.78050	76	2470.80625
14	2420.53975	35	2437.56550	56	2454.59125	77	2471.61700
15	2421.35050	36	2438.37625	57	2455.40200	78	2472.42775
16	2422.16125	37	2439.18700	58	2456.21275	79	2473.23850
17	2422.97200	38	2439.99775	59	2457.02350	80	2474.04925
18	2423.78275	39	2440.80850	60	2457.83425	81	2474.86000
19	2424.59350	40	2441.61925	61	2458.64500		
20	2425.40425	41	2442.43000	62	2459.45575		
21	2426.21500	42	2443.24075	63	2460.26650		

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	2410.00MHz
The middle channel	2442.43MHz
The Highest channel	2474.86MHz

5.3 Test mode

Transmitting mode:	Keep the EUT in transmitting mode with modulation.

Pre-Test Mode: (lowest channel)

GTS has 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)	95.24	103.59	100.25

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 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **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, 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.

5.5 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 Other Information Requested by the Customer

None.

5.7 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	Mar. 10 2012	Mar. 09 2013
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	Mar. 10 2012	Mar. 09 2013
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 10 2012	Mar. 09 2013
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	Jul. 03 2012	Jul. 02 2013
9	Coaxial Cable	GTS	N/A	GTS211	Jul. 03 2012	Jul. 02 2013
10	Coaxial cable	GTS	N/A	GTS210	Jul. 03 2012	Jul. 02 2013
11	Coaxial Cable	GTS	N/A	GTS212	Jul. 03 2012	Jul. 02 2013
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 03 2012	Jul. 02 2013
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 03 2012	Jul. 02 2013
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 29 2012	June 28 2013
15	Band filter	Amindeon	82346	GTS219	Mar. 31 2012	Mar. 30 2013
16	D.C. Power Supply	Instek	PS-3030	GTS232	Mar. 31 2012	Mar. 30 2013
17	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

6 Test results and Measurement Data

6.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

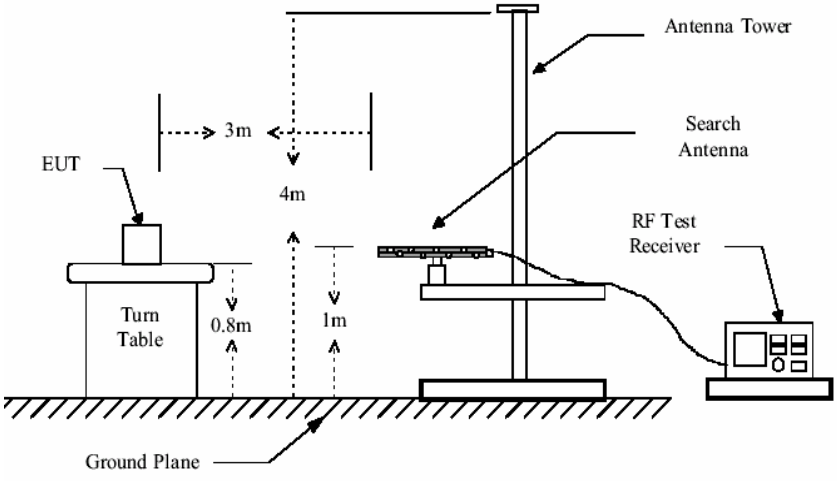
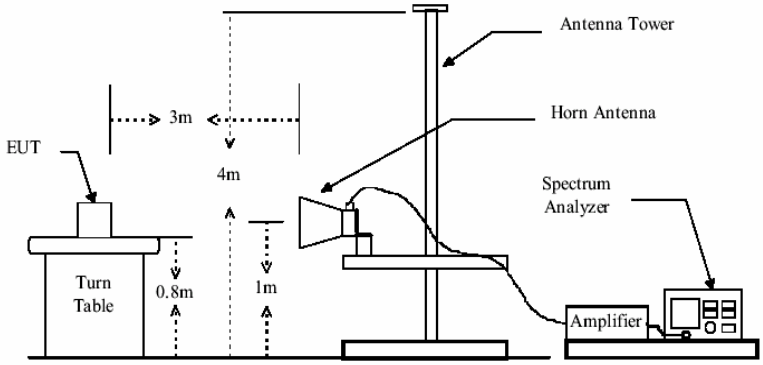
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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:	

The antenna is no consideration of replacement. The best case gain of the antenna is 2dBi.

6.2 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.249 and 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4:2003</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 25000MHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100kHz</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:
(Field strength of the fundamental signal)</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBµV/m @3m)</td><td>Remark</td></tr>
<tr><td rowspan="2">2400MHz-2483.5MHz</td><td>94.0</td><td>Average Value</td></tr>
<tr><td>114.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:
(Spurious Emissions)</td><td>
<table>
<tr><td>Frequency</td><td>Limit (dBµV/m @3m)</td><td>Remark</td></tr>
<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>
</table>
</td></tr>
<tr><td>Limit:
(band edge)</td><td>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.</td></tr>
<tr><td>Test Procedure:</td><td>a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. 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.
d. 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 rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. 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 Instruments:	Refer to section 5.7
Test mode:	Refer to section 5.3
Test results:	Passed

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

6.2.1 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
2410.00	102.71	27.57	3.37	30.06	103.59	114.00	-10.41	Horizontal
2410.00	98.43	27.57	3.37	30.06	99.31	114.00	-14.69	Vertical
2442.43	101.81	27.48	3.43	29.99	102.73	114.00	-11.27	Horizontal
2442.43	98.23	27.48	3.43	29.99	99.15	114.00	-14.85	Vertical
2474.86	101.35	27.52	3.49	29.93	102.43	114.00	-11.57	Horizontal
2474.86	98.09	27.52	3.49	29.93	99.17	114.00	-14.83	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
2410.00	85.22	27.57	3.37	30.06	86.10	94.00	-7.90	Horizontal
2410.00	82.07	27.57	3.37	30.06	82.95	94.00	-11.05	Vertical
2442.43	81.26	27.48	3.43	29.99	82.18	94.00	-11.82	Horizontal
2442.43	79.16	27.48	3.43	29.99	80.08	94.00	-13.92	Vertical
2474.86	83.26	27.52	3.49	29.93	84.34	94.00	-9.66	Horizontal
2474.86	80.19	27.52	3.49	29.93	81.27	94.00	-12.73	Vertical

According to the follow transmitter output power (Pt) formula:

Pt=(E x d)2/(30 x gt)

Pt =transmitter output power in watts

gt =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, Emax=103.59dBuV/m=0.151V/m, d=3m, gt=1.58

Pt =(E x d)2/(30 x gt)= (0.151 x 3) 2/(30 x 1.58)=0.0043W

6.2.2 Spurious Emissions

30MHz~1GHz		
Test mode:	Transmitting	

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
60.28	39.19	15.70	0.86	31.94	23.81	40.00	-16.19	Vertical
96.44	37.67	16.02	1.16	31.75	23.10	43.50	-20.40	Vertical
166.07	40.92	11.88	1.66	32.04	22.42	43.50	-21.08	Vertical
350.48	42.83	16.30	2.62	32.02	29.73	46.00	-16.27	Vertical
642.86	38.32	21.06	3.88	31.11	32.15	46.00	-13.85	Vertical
40.85	38.94	16.58	0.67	32.05	24.14	40.00	-15.86	Horizontal
53.69	39.74	16.16	0.81	31.95	24.76	40.00	-15.24	Horizontal
103.81	38.98	15.73	1.22	31.78	24.15	43.50	-19.35	Horizontal
236.65	39.75	14.99	2.05	32.16	24.63	46.00	-21.37	Horizontal
478.85	39.40	18.07	3.22	31.63	29.06	46.00	-16.94	Horizontal

Above 1GHz					
Test mode:	Transmitting	Test channel:	Lowest	Remark:	Peak

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
4820.00	42.57	31.79	5.34	24.07	55.63	74.00	-18.37	Vertical
7230.00	38.74	36.41	6.91	26.62	55.44	74.00	-18.56	Vertical
9640.00	39.15	40.25	7.58	27.85	59.13	74.00	-14.87	Vertical
12050.00	*	*	*	*	*	74.00	*	Vertical
14460.00	*	*	*	*	*	74.00	*	Vertical
4820.00	46.53	31.79	5.34	24.07	59.59	74.00	-14.41	Horizontal
7230.00	42.29	36.41	6.91	26.62	58.99	74.00	-15.01	Horizontal
9640.00	42.29	40.25	7.58	27.85	62.27	74.00	-11.73	Horizontal
12050.00	*	*	*	*	*	74.00	*	Horizontal
14460.00	*	*	*	*	*	74.00	*	Horizontal

Test mode:	Transmitting	Test channel:	Lowest	Remark:	average

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
4820	20.51	31.79	5.34	24.07	33.57	54.00	-20.43	Vertical
7230	17.73	36.41	6.91	26.62	34.43	54.00	-19.57	Vertical
9640	19.19	40.25	7.58	27.85	39.17	54.00	-14.83	Vertical
12050	*	*	*	*	*	54.00	*	Vertical
14460	*	*	*	*	*	54.00	*	Vertical
4820	23.72	31.79	5.34	24.07	36.78	54.00	-17.22	Horizontal
7230	21.09	36.41	6.91	26.62	37.79	54.00	-16.21	Horizontal
9640	20.7	40.25	7.58	27.85	40.68	54.00	-13.32	Horizontal
12050	*	*	*	*	*	54.00	*	Horizontal
14460	*	*	*	*	*	54.00	*	Horizontal

Remark:

1. *"*", means this data is the too weak instrument of signal is unable to test.*
2. *Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor*
3. *The emission levels of 6th harmonic are very lower than the limit and not show in test report.*

Test mode:	Transmitting	Test channel:	Middle	Remark:	Peak

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
4884.86	41.37	31.85	5.40	24.01	54.61	74.00	-19.39	Vertical
7327.29	39.19	36.41	6.91	26.65	55.86	74.00	-18.14	Vertical
9769.72	38.63	41.55	7.94	27.22	60.90	74.00	-13.10	Vertical
12212.15	*	*	*	*	*	74.00	*	Vertical
14654.58	*	*	*	*	*	74.00	*	Vertical
4884.86	44.83	31.85	5.40	24.01	58.07	74.00	-15.93	Horizontal
7327.29	42.13	36.41	6.91	26.65	58.80	74.00	-15.20	Horizontal
9769.72	42.30	41.55	7.94	27.22	64.57	74.00	-9.43	Horizontal
12212.15	*	*	*	*	*	74.00	*	Horizontal
14654.58	*	*	*	*	*	74.00	*	Horizontal

Test mode:	Transmitting	Test channel:	Middle	Remark:	average

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
4884.86	23.76	31.85	5.40	24.01	37.00	54.00	-17.00	Vertical
7327.29	21.69	36.41	6.91	26.65	38.36	54.00	-15.64	Vertical
9769.72	20.42	41.55	7.94	27.22	42.69	54.00	-11.31	Vertical
12212.15	*	*	*	*	*	54.00	*	Vertical
14654.58	*	*	*	*	*	54.00	*	Vertical
4884.86	26.74	31.85	5.40	24.01	39.98	54.00	-14.02	Horizontal
7327.29	24.30	36.41	6.91	26.65	40.97	54.00	-13.03	Horizontal
9769.72	22.71	41.55	7.94	27.22	44.98	54.00	-9.02	Horizontal
12212.15	*	*	*	*	*	54.00	*	Horizontal
14654.58	*	*	*	*	*	54.00	*	Horizontal

Remark:

1. *"*", means this data is the too weak instrument of signal is unable to test.*
2. *Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor*
3. *The emission levels of 6th harmonic are very lower than the limit and not show in test report.*

Test mode:	Transmitting	Test channel:	Highest	Remark:	Peak

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
4949.72	41.65	31.97	5.52	23.90	55.24	74.00	-18.76	Vertical
7424.58	39.16	36.66	6.96	27.08	55.70	74.00	-18.30	Vertical
9899.44	40.79	42.66	8.20	27.36	64.29	74.00	-9.71	Vertical
12374.3	*	*	*	*	*	74.00	*	Vertical
14849.16	*	*	*	*	*	74.00	*	Vertical
4949.72	45.01	31.97	5.52	23.90	58.60	74.00	-15.40	Horizontal
7424.58	41.76	36.66	6.96	27.08	58.30	74.00	-15.70	Horizontal
9899.44	41.90	42.66	8.20	27.36	65.40	74.00	-8.60	Horizontal
12374.3	*	*	*	*	*	74.00	*	Horizontal
14849.16	*	*	*	*	*	74.00	*	Horizontal

Test mode:	Transmitting	Test channel:	Highest	Remark:	average

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
4960.00	23.80	31.97	5.52	23.90	37.39	54.00	-16.61	Vertical
7440.00	23.97	36.66	6.96	27.08	40.51	54.00	-13.49	Vertical
9920.00	21.38	42.66	8.20	27.36	44.88	54.00	-9.12	Vertical
12400.00	*	*	*	*	*	54.00	*	Vertical
14646.00	*	*	*	*	*	54.00	*	Vertical
4960.00	23.79	31.97	5.52	23.90	37.38	54.00	-16.62	Horizontal
7440.00	21.99	36.66	6.96	27.08	38.53	54.00	-15.47	Horizontal
9920.00	20.91	42.66	8.20	27.36	44.41	54.00	-9.59	Horizontal
12400.00	*	*	*	*	*	54.00	*	Horizontal
14646.00	*	*	*	*	*	54.00	*	Horizontal

Remark:

1. *"*", means this data is the too weak instrument of signal is unable to test.*
2. *Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor*
3. *The emission levels of 6th harmonic are very lower than the limit and not show in test report.*

6.2.3 Band edge (Radiated Emission)

Test mode:	Transmitting	Test channel:	Lowest	Remark:	Peak

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	61.89	27.59	3.33	30.10	62.71	74.00	-11.29	Horizontal
2400.00	67.99	27.58	3.37	30.10	68.84	74.00	-5.16	Horizontal
2390.00	58.72	27.59	3.33	30.10	59.54	74.00	-14.46	Vertical
2400.00	66.04	27.58	3.37	30.10	66.89	74.00	-7.11	Vertical

Test mode:	Transmitting	Test channel:	Lowest	Remark:	Average

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	43.45	27.59	3.33	30.10	44.27	54.00	-9.73	Horizontal
2400.00	48.00	27.58	3.37	30.10	48.85	54.00	-5.15	Horizontal
2390.00	38.96	27.59	3.33	30.10	39.78	54.00	-14.22	Vertical
2400.00	45.43	27.58	3.37	30.10	46.28	54.00	-7.72	Vertical

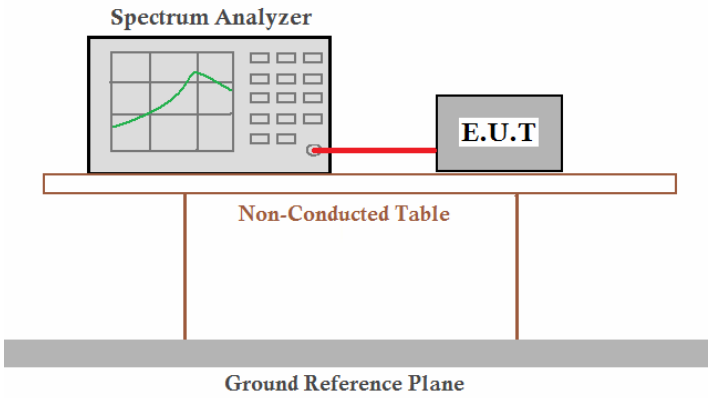
Test mode:	Transmitting	Test channel:	Highest	Remark:	Peak

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	65.57	27.53	3.49	29.93	66.66	74.00	-7.34	Horizontal
2500.00	61.85	27.54	3.49	30.70	62.18	74.00	-11.82	Horizontal
2483.50	61.12	27.53	3.49	29.93	62.21	74.00	-11.79	Vertical
2500.00	57.88	27.54	3.49	30.70	58.21	74.00	-15.79	Vertical

Test mode:	Transmitting	Test channel:	Highest	Remark:	Average

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	43.95	27.53	3.49	29.93	45.04	54.00	-8.96	Horizontal
2500.00	41.26	27.54	3.49	30.70	41.59	54.00	-12.41	Horizontal
2483.50	41.91	27.53	3.49	29.93	43.00	54.00	-11.00	Vertical
2500.00	38.76	27.54	3.49	30.70	39.09	54.00	-14.91	Vertical

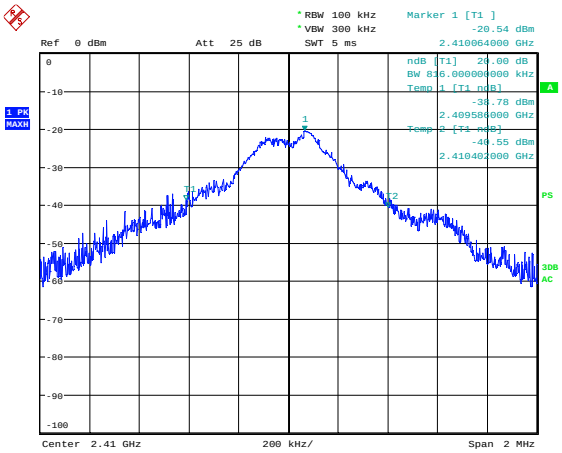
6.3 20dB Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.4:2003
Receiver setup:	RBW=10kHz, VBW=30kHz, detector: Peak
Limit:	Operation Frequency range 2400MHz-2483.5MHz
Test Procedure:	1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set the EUT to proper test channel. 3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points. 4. Read 20dB bandwidth.
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

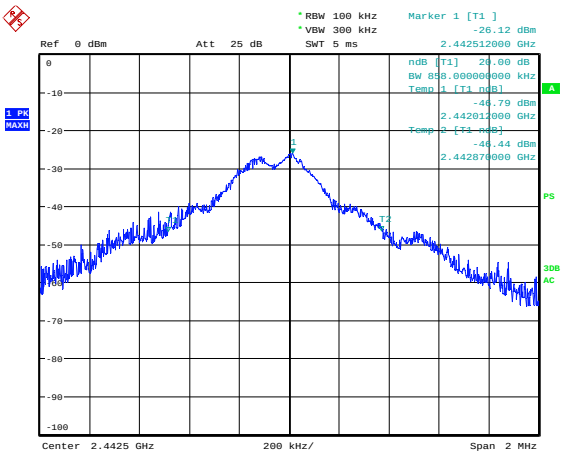
Measurement Data

Test channel	20dB bandwidth (MHz)	Results
Lowest	0.816	Pass
Middle	0.858	Pass
Highest	0.794	Pass

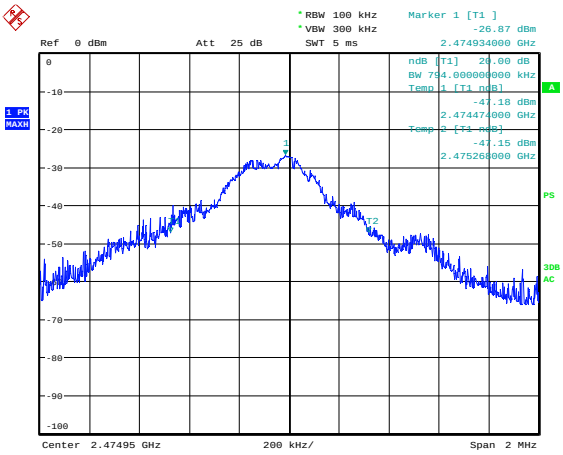
Test plot as follows:



Lowest channel



Middle channel

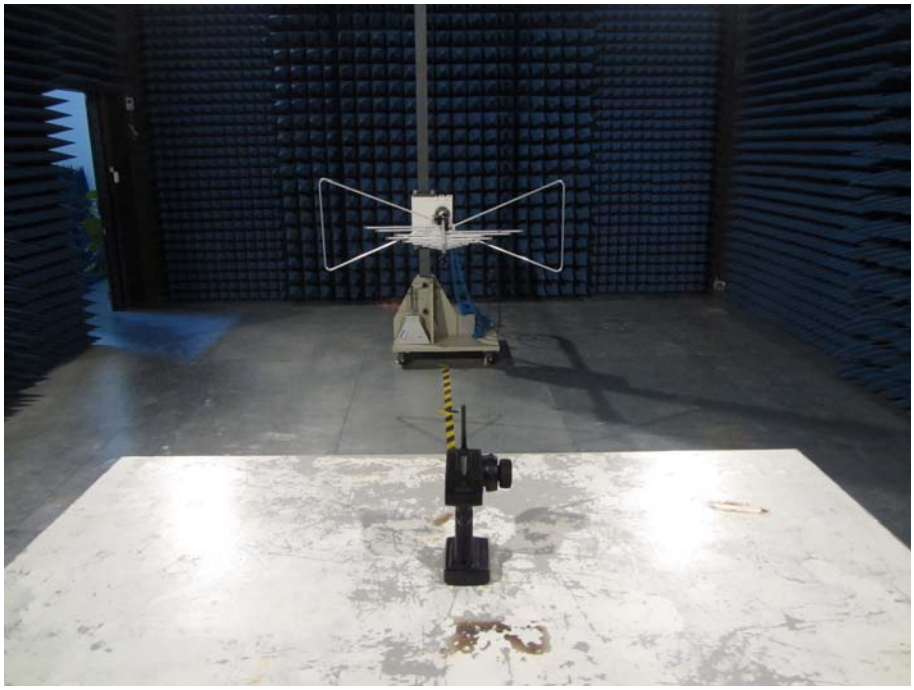


Highest channel

7 Test Setup Photo

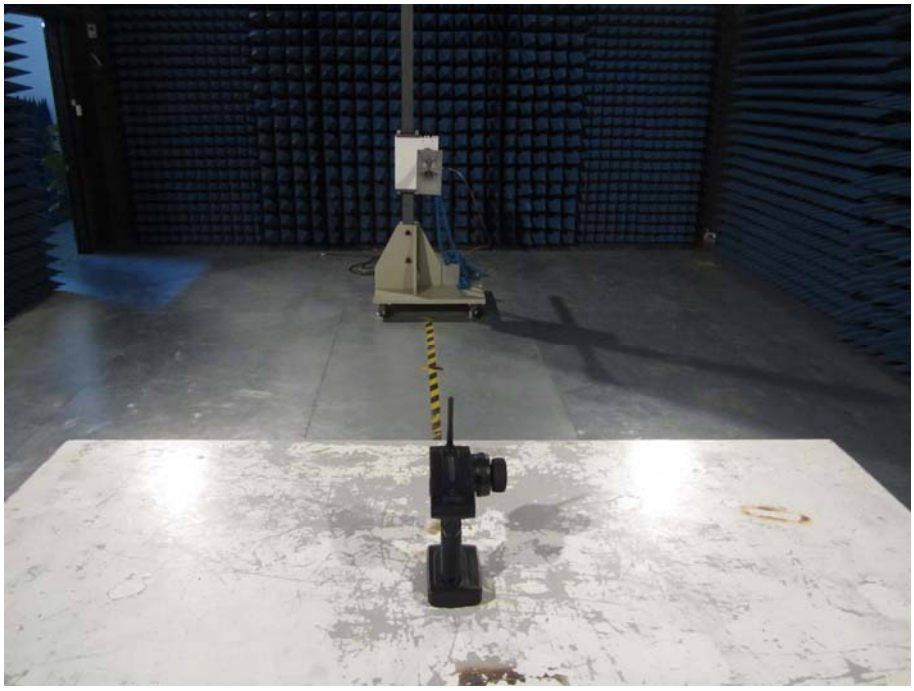
Radiated Emission:

(Below 1GHz)



Radiated Emission:

(Above 1GHz)



8 Sample Photo

8.1 EUT External Photo

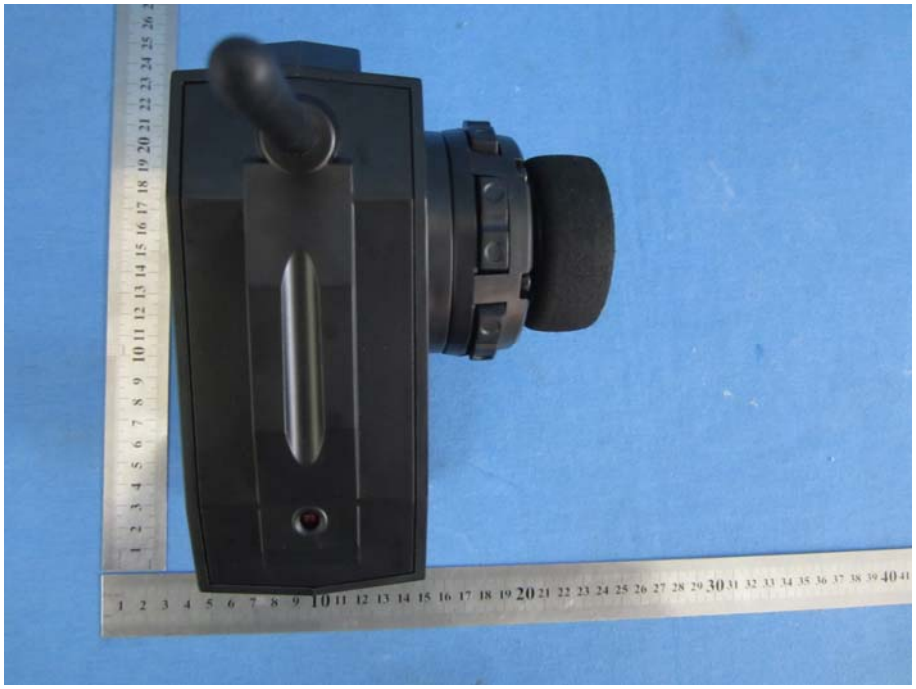
Front Face:

Reverse Face:

Left Face:

Right Face:

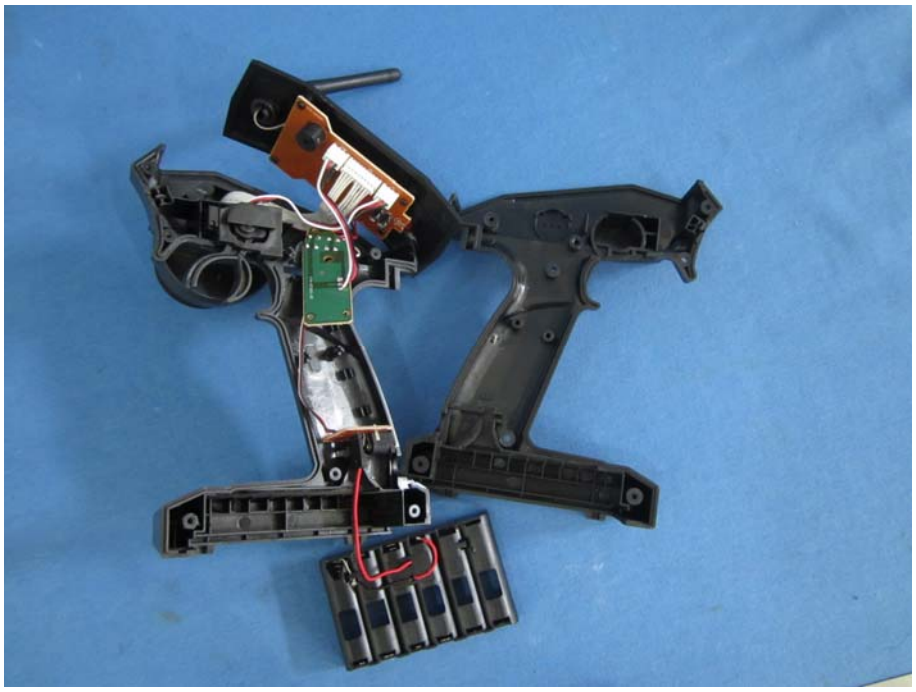
Top Face:



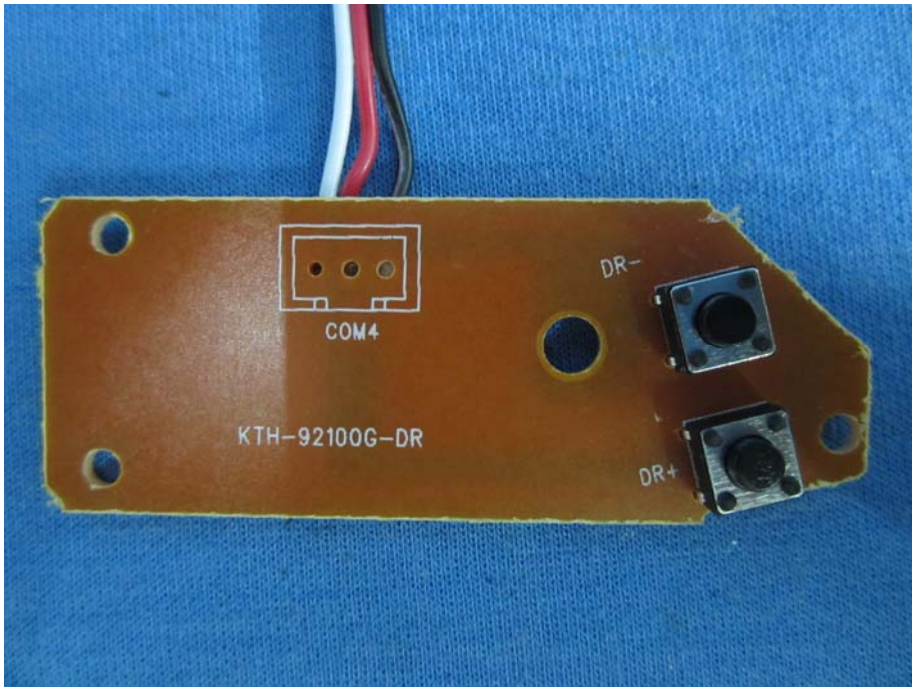
Bottom Face:

8.2 EUT Internal Photo

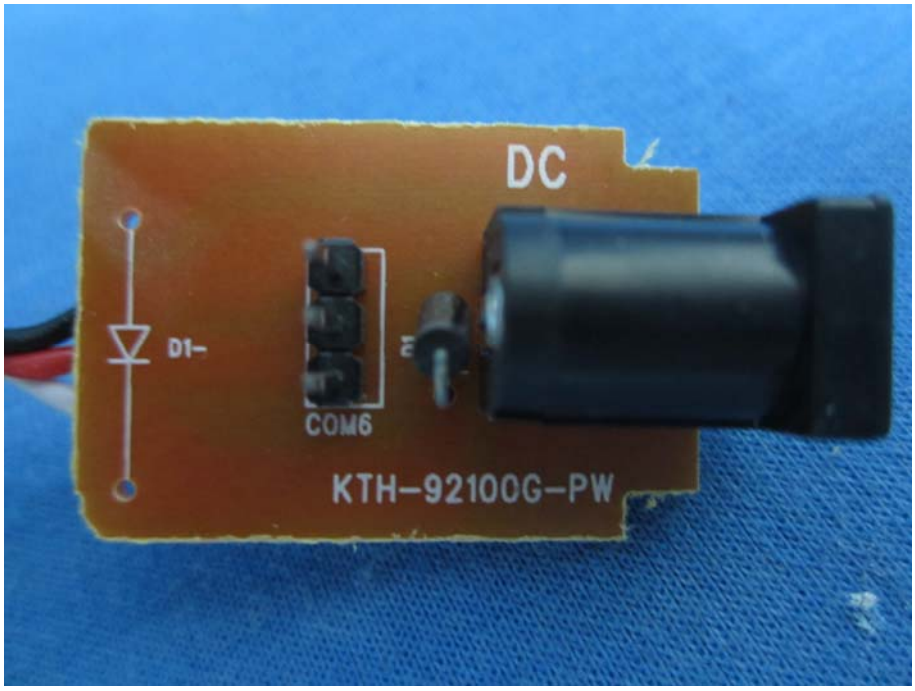
Open:



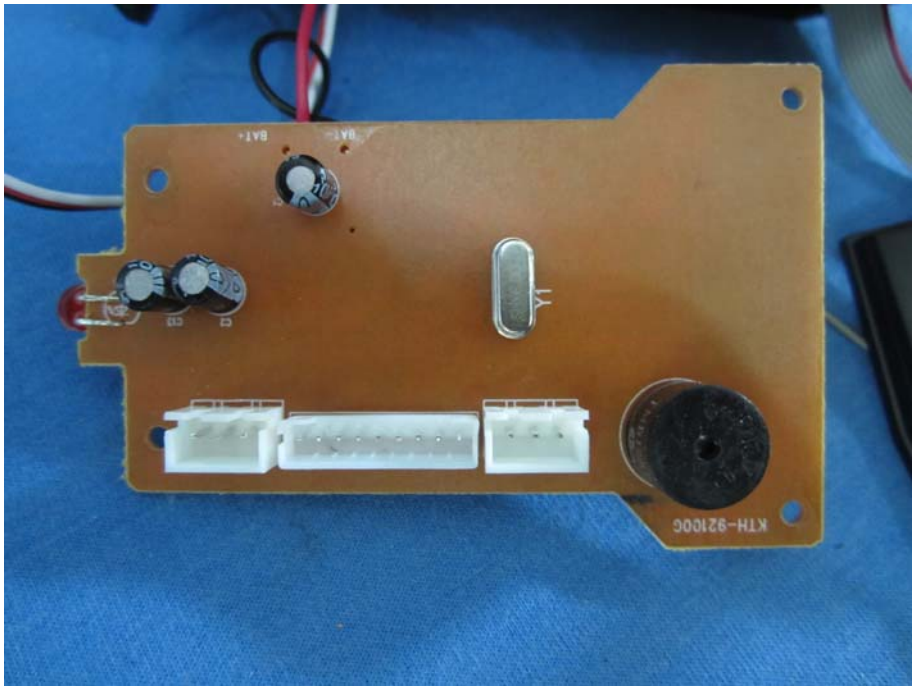
Front Face(1/3):



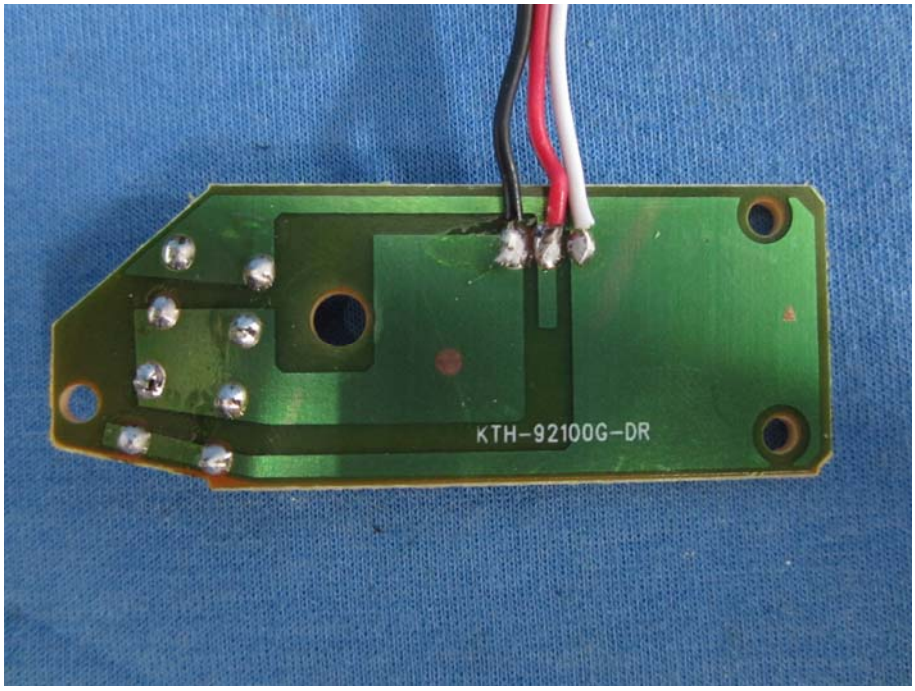
Front Face(2/3):



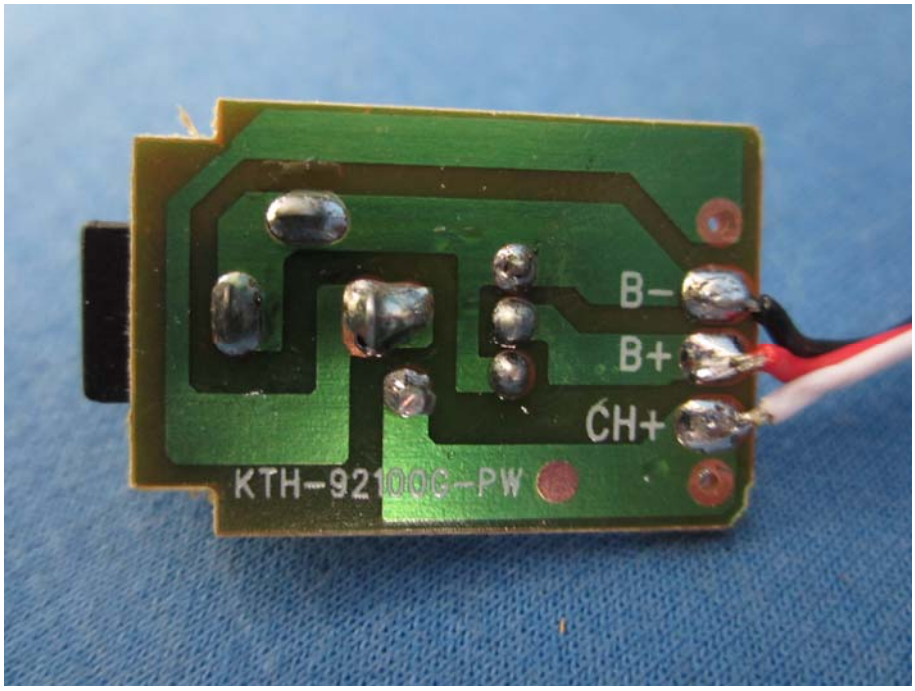
Front Face(3/3):



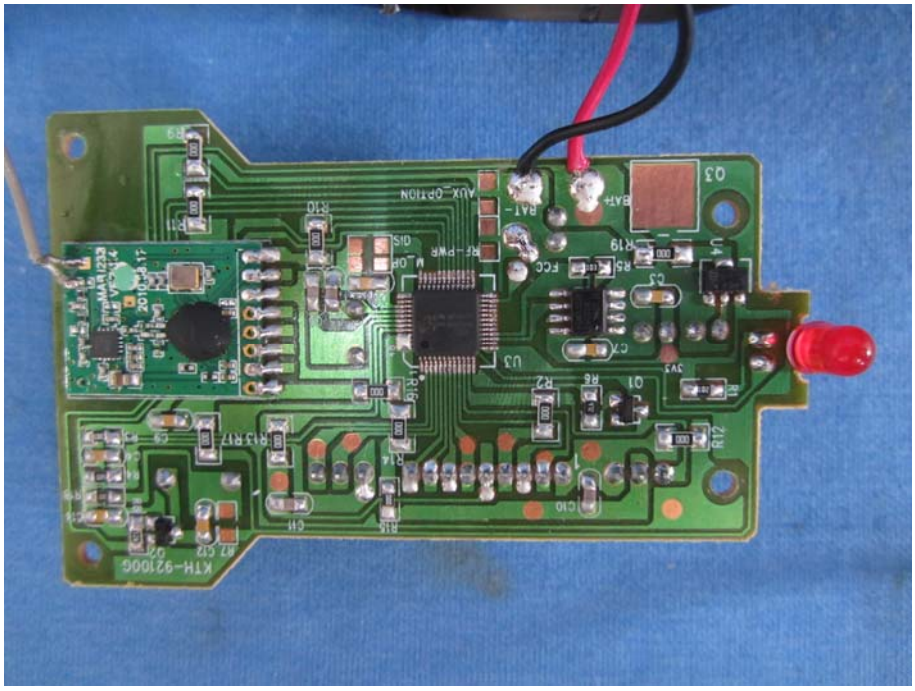
Underside Face(1/3):



Underside Face(2/3):



Underside Face(3/3):



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