

## Global United Technology Services Co., Ltd.

Report No.: GTSE15060103701

# **FCC 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: 2CH Gun Radio

Model No.: BSD-GT2

FCC ID: N4ZFBSDGT2

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247:2014

Date of sample receipt: June 05, 2015

**Date of Test:** June 05-16, 2015

Date of report issued: June 16, 2015

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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Project No.: GTSE150601037RF

## 2 Version

Version No.	Date	Description
00	June 16, 2015	Original

Prepared By:	Edward.Pan	Date:	June 16, 2015
	Project Engineer		
Check By:	hank. yan	Date:	June 16, 2015
	Reviewer		



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## 4 Test Summary

Test Item	Section	Result	
Antenna Requirement	15.203/15.247 (c)	Pass	
AC Power Line Conducted Emission	15.207	N/A	
Conducted Peak Output Power	15.247 (b)(1)	Pass	
20dB Occupied Bandwidth	15.247 (a)(1)	Pass	
Carrier Frequencies Separation	15.247 (a)(1)	Pass	
Hopping Channel Number	15.247 (a)(1)	Pass	
Dwell Time	15.247 (a)(1)	Pass	
Pseudorandom Frequency Hopping Sequence	15.247(a)(1)	Pass	
Radiated Emission	15.205/15.209	Pass	
Band Edge	15.247(d)	Pass	

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

#### 4.1 Measurement Uncertainty

Test Item	Frequency Range	Frequency Range Measurement Uncertainty			
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)		
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)		
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)		
AC Power Line Conducted Emission 0.15MHz ~ 30MHz ± 3.45dB (1)					
Note (1): The measurement unce	ertainty is for coverage factor of k	=2 and a level of confidence of 9	95%.		

Remark: Test according to ANSI C63.4:2009 and ANSI C63.10:2009

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## 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:	2CH Gun Radio
Model No.:	BSD-GT2
Operation Frequency:	2404MHz~2476.5MHz
Channel numbers:	16
Modulation type:	GFSK
Antenna Type:	Integral
Antenna gain:	2dBi
Power supply:	DC 6.0V (4*1.5V "AA" Size Battery)



Operation Frequency each of channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2404.0	5	2420.5	9	2440.0	13	2460.5
2	2405.5	6	2425.5	10	2445.5	14	2465.5
3	2410.5	7	2430.5	11	2450.5	15	2470.5
4	2415.5	8	2435.5	12	2455.5	16	2476.5

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	2404.0MHz
The middle channel	2440.0MHz
The Highest channel	2476.5MHz



#### 5.3 Test mode

Keep the EUT in transmitting mode. Transmitting mode Remark: During the test, the new battery was used.

#### 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 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.

#### 5.5 Test Location

All other tests were performed at:

Global United Technology Services Co., Ltd.

Address: Room 301-309, 3th Floor, Block A, Huafeng Jinyuan Business Building, No. 300 Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen 518102

Tel: 0755-27798480 Fax: 0755-27798960

#### 5.6 Other Information Requested by the Customer

#### 5.7 **Description of Support Units**

None.

Global United Technology Services Co., Ltd.

2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District,

Shenzhen, China 518102

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Project No.: GTSE150601037RF

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### 5.8 Test Instruments list

Rad	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. 27 2015	Mar. 26 2016		
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 2014	Dec. 3 2015		
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	July 01 2014	June 30 2015		
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	July 01 2014	June 30 2015		
6	Double -ridged waveguide SCHWARZBECK		9120D-829	GTS208	June 27 2014	June 26 2015		
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 27 2015	Mar. 26 2016		
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A		
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 27 2015	Mar. 26 2016		
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 28 2015	Mar. 27 2016		
11	Coaxial cable	GTS	N/A	GTS210	Mar. 28 2015	Mar. 27 2016		
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 28 2015	Mar. 27 2016		
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	July 01 2014	June 30 2015		
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	July 01 2014	June 30 2015		
15	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 27 2014	June 26 2015		
16	Band filter	Amindeon	82346	GTS219	Mar. 28 2015	Mar. 27 2016		

Gen	General used equipment:								
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date			
1	Barometer	ChangChun	DYM3	GTS257	July 08 2014	July 07 2015			



#### 6 Test results and Measurement Data

#### 6.1 Antenna requirement:

**Standard requirement:** FCC Part15 C Section 15.203 /247(c)

#### 15.203 requirement:

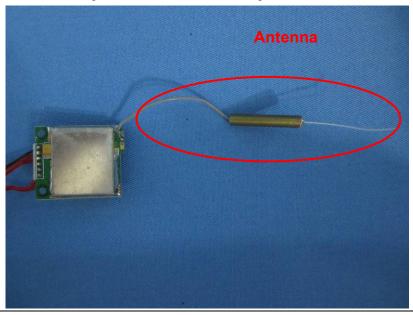
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### 15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

#### E.U.T Antenna:

The antenna is Integral Antenna, the best case gain of the antenna is 2dBi





## 6.2 Spurious Emission

#### 6.2.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section	on 1	5 209				
Test Method:	ANSI C63.10: 2009						
Test Frequency Range:	9kHz to 25GHz						
		200: 1	?m				
Test site:	Measurement Distar	1		D.D.	١٨/	\/D\\	Velice
Receiver setup:			Detector	RB		VBW	Value
	9KHz-150KHz		uasi-peak	200		600Hz	
	150KHz-30MHz		uasi-peak	9KI		30KHz	· ·
	30MHz-1GHz	Qı	uasi-peak	100k		300KH	· ·
	Above 1GHz		Peak	1MI		3MHz	
			Peak	1MI	Hz	10Hz	Average
Limit: (Spurious Emissions)	Frequency		Limit (u\	//m)	٧	/alue	Measurement Distance
	0.009MHz-0.490M	lHz	2400/F(k	(Hz)		QP	300m
	0.490MHz-1.705M	lHz	24000/F(	KHz)		QP	300m
	1.705MHz-30MH	lz	30	30		QP	30m
	30MHz-88MHz		100		QP		
	88MHz-216MHz	<u>z</u>	150		QP		
	216MHz-960MH	Z	200	200		QP	3m
	960MHz-1GHz		500	500		QP	J
	Above 1GHz		500		Average		
	Above Toriz		5000		Peak		
Test setup:	Below 1GHz  FUT  Turn  O,8m  Table  Ground Plane  Above 1GHz	n V Im					
	Above 1GHz						

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	Report No.: GTSE15060103701
	Antenna Tower  Horn Antenna  Spectrum  Analyzer  Turn Table  A  A  A  A  A  A  A  A  A  A  A  A  A
Test Procedure:	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.
	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.
	<ol> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> </ol>
	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.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

#### Remark:

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

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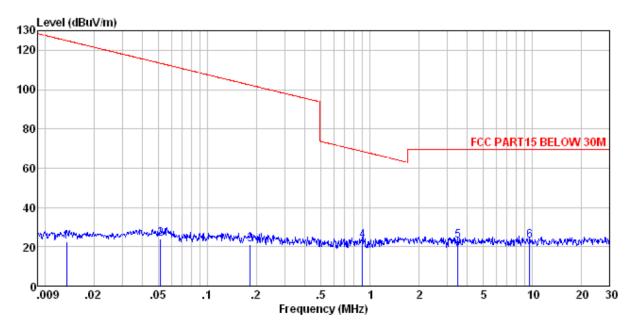


#### Measurement data:

#### ■ 9KHz ~ 30MHz

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)
0.014	11.53	20.63	0.03	9.71	22.48	124.92	-102.44
0.051	11.92	21.73	0.12	9.91	23.86	113.37	-89.51
0.184	8.96	22.40	0.21	10.40	21.17	102.31	-81.14
0.902	11.87	20.99	0.32	10.29	22.89	68.50	-45.61
3.496	11.50	21.56	0.41	10.34	23.13	69.54	-46.41
9.636	9.70	23.45	0.48	10.47	23.16	69.54	-46.38





Site

: 3m chamber : FCC PART15 BELOW 30M 3m LOOP ANTENNA : 1037RF Condition

Job NO.

Test Mode : Operation mode

Te

Engineer:									
_							Over		
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark	
		=			-=	-=			_
MHz	dBu∀	dB/m	dВ	dB	dBuV/m	dBuV/m	dB		
0.014	11.53	20.63	0.03	9.71	22.48	124.92-	-102.44	Average	
0.051	11.92	21.73	0.12	9.91	23.86	113.37	-89.51	Average	
0.184	8.96	22.40	0.21	10.40	21.17	102.31	-81.14	Average	
0.902	11.87	20.99	0.32	10.29	22.89	68.50	-45.61	QP	
3.496	11.50	21.56	0.41	10.34	23.13	69.54	-46.41	QP	
9.636	9.70	23.45	0.48	10.47	23.16	69.54	-46.38	QP	
	Freq MHz 0.014 0.051 0.184 0.902 3.496	MHz dBuV  0.014 11.53 0.051 11.92 0.184 8.96 0.902 11.87 3.496 11.50	ReadAntenna Freq Level Factor  MHz dBuV dB/m  0.014 11.53 20.63 0.051 11.92 21.73 0.184 8.96 22.40 0.902 11.87 20.99 3.496 11.50 21.56	ReadAntenna Cable Freq Level Factor Loss  MHz dBuV dB/m dB  0.014 11.53 20.63 0.03 0.051 11.92 21.73 0.12 0.184 8.96 22.40 0.21 0.902 11.87 20.99 0.32 3.496 11.50 21.56 0.41	ReadAntenna Cable Preamp Freq Level Factor Loss Factor  MHz dBuV dB/m dB dB  0.014 11.53 20.63 0.03 9.71 0.051 11.92 21.73 0.12 9.91 0.184 8.96 22.40 0.21 10.40 0.902 11.87 20.99 0.32 10.29 3.496 11.50 21.56 0.41 10.34	ReadAntenna Cable Preamp Freq Level Factor Loss Factor Level  MHz dBuV dB/m dB dB dBuV/m  0.014 11.53 20.63 0.03 9.71 22.48 0.051 11.92 21.73 0.12 9.91 23.86 0.184 8.96 22.40 0.21 10.40 21.17 0.902 11.87 20.99 0.32 10.29 22.89 3.496 11.50 21.56 0.41 10.34 23.13	ReadAntenna Cable Preamp Limit Freq Level Factor Loss Factor Level Line  MHz dBuV dB/m dB dB dBuV/m dBuV/m  0.014 11.53 20.63 0.03 9.71 22.48 124.92- 0.051 11.92 21.73 0.12 9.91 23.86 113.37 0.184 8.96 22.40 0.21 10.40 21.17 102.31 0.902 11.87 20.99 0.32 10.29 22.89 68.50 3.496 11.50 21.56 0.41 10.34 23.13 69.54	ReadAntenna   Cable   Preamp   Limit   Over   Level   Factor   Loss   Factor   Level   Line   Limit	ReadAntenna Cable Preamp   Limit Over   Freq Level Factor   Loss Factor Level   Line Limit Remark   MHz   dBuV   dB/m   dB   dB   dBuV/m   dBuV/m   dB     dB   dBuV/m   dBuV/m   dB     dB   dBuV/m   dB   dB   dBuV/m   dB   dB   dBuV/m   dB   dB   dB   dB   dB   dB   dB   d



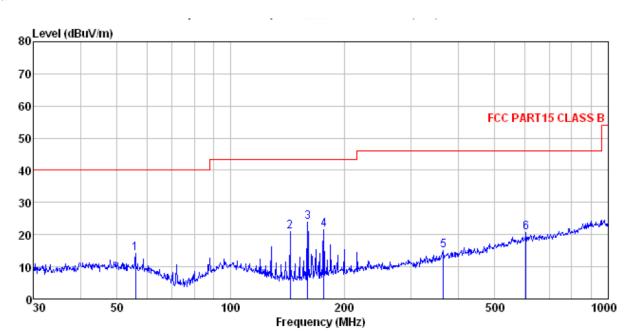
#### ■ 30MHz ~ 1GHz

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
56.00	28.31	14.95	0.83	29.95	14.14	40.00	-25.86	Vertical
143.83	38.79	10.22	1.53	29.44	21.10	43.50	-22.40	Vertical
159.78	40.95	10.64	1.63	29.36	23.86	43.50	-19.64	Vertical
176.27	37.57	11.42	1.72	29.29	21.42	43.50	-22.08	Vertical
365.54	25.59	16.48	2.69	29.66	15.10	46.00	-30.90	Vertical
605.66	25.75	20.47	3.74	29.30	20.66	46.00	-25.34	Vertical
47.16	29.23	15.42	0.74	30.01	15.38	40.00	-24.62	Horizontal
88.03	30.33	13.32	1.09	29.76	14.98	43.50	-28.52	Horizontal
159.78	38.72	10.64	1.63	29.36	21.63	43.50	-21.87	Horizontal
216.02	28.10	13.07	1.93	29.36	13.74	46.00	-32.26	Horizontal
434.07	31.00	17.53	3.02	29.43	22.12	46.00	-23.88	Horizontal
576.64	28.36	20.03	3.63	29.30	22.72	46.00	-23.28	Horizontal

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#### Vertical:



Site

: 3m chamber : FCC PART15 CLASS B 3m VULB9163-2013M VERTICAL Condition

Job No. : 1037RF

Test Mode : Operation mode

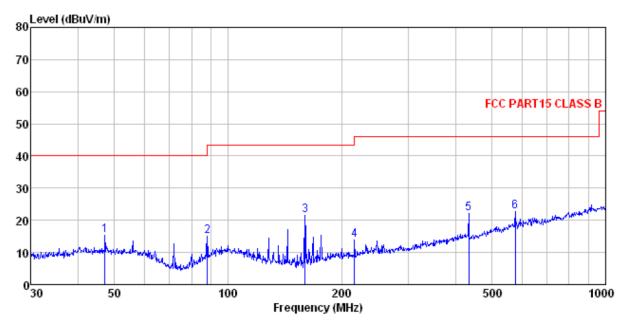
Te:

est	Engineer:									
		Read	Antenna	Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark	
	MHz	dBu∀	dB/π	dВ	d₿	dBuV/m	dBuV/m	d₿		
	==									
1	56.001	28.31	14.95	0.83	29.95	14.14	40.00	-25.86	QP	
2	143.830	38.79	10.22	1.53	29.44	21.10	43.50	-22.40	QP	
3	159.784	40.95	10.64	1.63	29.36	23.86	43.50	-19.64	QP	
4	176.269	37.57	11.42	1.72	29.29	21.42	43.50	-22.08	QP	
5	365.539	25.59	16.48	2.69	29.66	15.10	46.00	-30.90	QP	
6	605.659	25.75	20.47	3.74	29.30	20.66	46.00	-25.34	QP	

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#### Horizontal:



Site

: 3m chamber : FCC PART15 CLASS B 3m VULB9163-2013M HORIZONTAL Condition

: 1037RF Job No.

Test Mode Test Engin : Operation mode

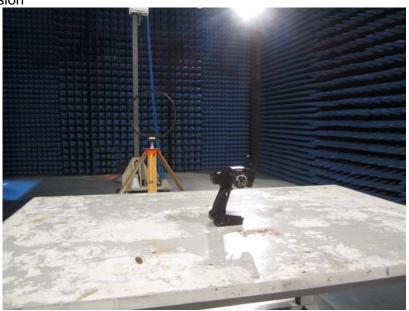
t Over.
ne Limit Remark
m dB
00 -24.62 QP
50 -28.52 QP
0 -21.87 QP
0 -32.26 QP
00 -23.88 QP
00 -23.28 QP

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## 7 Test Setup Photo

Radiated Emission











## 8 EUT Constructional Details





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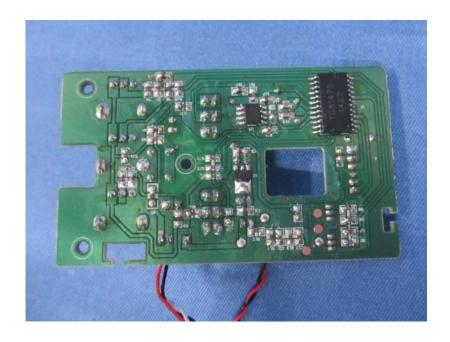






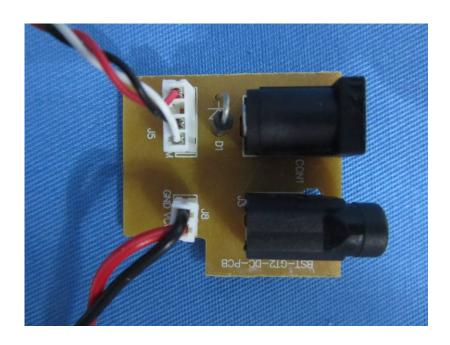




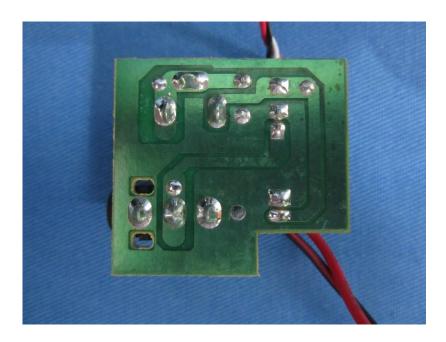


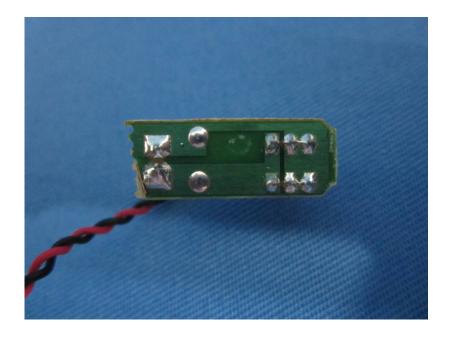




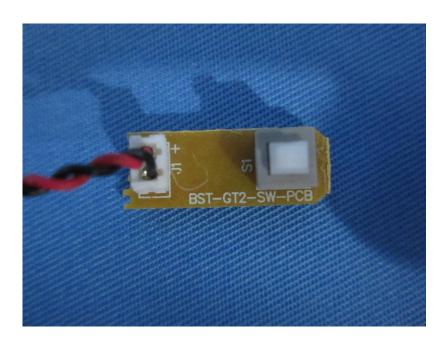


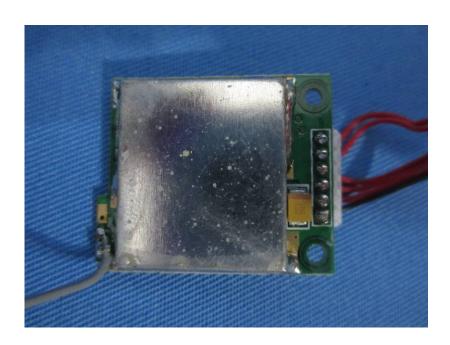








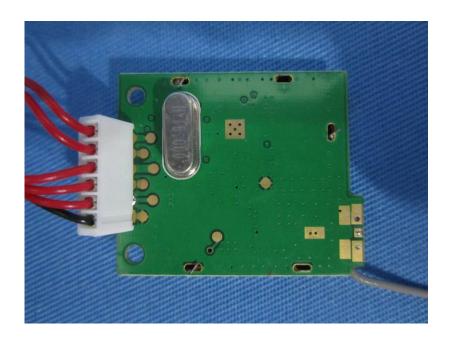




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