

# SGS-CSTC Standards Technical Services Ltd.

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**FEDERAL COMMUNICATIONS COMMISSION**  
Registration number: 556682

Report No.: SZEMO070300373RFF  
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FCC ID: U7UHS-P1127

## TEST REPORT

**Application No. :** SZEMO070300373RF(SGS HK NO.:2015537EL)  
**Applicant:** Heng Sheng Toys Factory(H.K.) Co., Ltd.  
**Buyer:** Threesixty Sourcing Hong Kong Ltd.  
**FCC ID:** U7UHS-P1127

**Fundamental Frequency :** 27.145MHz

**Equipment Under Test (EUT):**

EUT Name: Toy - R/C Helicopter  
Model No.: 1610268  
Country of Origin: CHINA  
Country of Destination: USA  
Labelled Age Grading: 8+

**Standards:** FCC PART 15, SUBPART C : 2006  
Section 15.227

**Date of Receipt:** 09 March 2007

**Date of Test:** 13 March to 03 April 2007

**Date of Issue:** 05 April 2007

<b>Test Result :</b>	<b>PASS *</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Lo  
Laboratory Manager

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf

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. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

All test results in this report can be traceable to National or International Standards.

## 2 Test Summary

Test	Test Requirement	Standard Paragraph	Result
Radiated Emission (30MHz to 1000MHz)	FCC PART 15 :2006	Section 15.227	PASS*
Occupied Bandwidth	FCC PART 15 :2006	Section 15.215	PASS

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

\* The EUT passed the RE test after modification:

1. Changed the C19 from 15pF to 10pF.
2. Changed the C18 from 150pF to 220pF.
3. Added one 1000pF capacitance between Q8 and earth as below:



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## **4 General Information**

### **4.1 Client Information**

Applicant Name: Heng Sheng Toys Factory(H.K.) Co., Ltd.  
Applicant Address: Rm 6, 3/F., Lladro Centre, 72 Hoi Yuen Road, Kwun Tong, Kowloon, Hong Kong.

### **4.2 Details of E.U.T.**

EUT Name: Toy - R/C Helicopter  
Item No.: 1610268  
Power Supply: 12.0V DC (8\*1.5V 'AA' Size Battery) for Tx.  
Power Cord: N/A-

### **4.3 Description of Support Units**

The EUT was tested as an independent unit: 27MHz radio transmitter.

### **4.4 Test Location**

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory, No.198 Kezhu Road, Science Town Economic & Technology Development District Guangzhou, China 510663

Tel: +86 20 8215 5555 Fax: +86 20 8207 5059

### **4.5 Other Information Requested by the Customer**

None.

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## 5 Test Results

### 5.1 Test Instruments

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	28-04-2005	27-04-2007
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	22-09-2006	21-09-2007
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	20-05-2006	19-05-2007
5	Coaxial cable	SGS	N/A	SEL0027	20-05-2006	19-05-2007
6	BiConiLog Antenna	ETS-LINDGREN	3142C	00042673	03-03-2007	02-03-2008
7	EMI Test Receiver	Rohde & Schwarz	ESCI	100119	12-03-2007	11-03-2008
8	Loop Antenna	Emco	6502	00042963	30-05-2006	29-05-2007

### 5.2 E.U.T. Operation

Input voltage: 12.0V DC (8\*1.5V 'AA' Size Battery) for Tx.  
Operating Environment:  
Temperature: 26.0 °C  
Humidity: 51% RH  
Atmospheric Pressure: 1015mbar  
EUT Operation: Test the EUT in transmitting mode.

### 5.3 Test Procedure & Measurement Data

#### 5.3.1 Radiated Emissions

**Test Requirement:** FCC Part15 C Section 15.227  
**Test Method:** ANSI C63.4  
**Test Date:** 29 March 2007(Initial Test)  
03 April 2007(Test after modification)  
**Measurement Distance:** 3m (Semi-Anechoic Chamber)  
**Requirements:** Carrier frequency will not exceed 80dBuV/m AT 3m.  
Out of band emissions shall not exceed:  
40.0 dBuV/m between 30MHz & 88MHz  
43.5 dBuV/m between 88MHz & 216MHz  
46.0 dBuV/m between 216MHz & 960MHz  
54.0 dBuV/m above 960MHz  
**Detector:** Peak Scan (9kHz resolution bandwidth for 9kHz to 30MHz;  
120kHz resolution bandwidth for 30MHz to 1000MHz)

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## 27.145MHz Mode.

Test Procedure: For testing performed with the loop antenna, testing was performed in accordance to ANSI C63.4 section 8.2.1. The The center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specied distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

### Horizontal.

Test Frequency (MHz)	Peak (dBmV/m)			Limits (dBmV/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	44.7	46.9	45.6	100.0	55.3	53.1	54.4

Test Frequency (MHz)	Average (dBmV/m)			Limits (dBmV/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	39.4	38.2	40.6	80.0	40.6	41.8	39.4

### Vertical.

Test Frequency (MHz)	Peak (dBmV/m)			Limits (dBmV/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	42.4	41.2	43.0	100.0	57.6	58.8	57.0

Test Frequency (MHz)	Average (dBmV/m)			Limits (dBmV/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	34.5	33.1	35.4	80.0	45.5	46.9	44.6

Y: EUT as per photograph in section 5.3.3 of this report.

X: As Y, but rotate EUT by 90° clockwise.

Z: As X, but rotate EUT by 90° vertically.

### Other emissions

Test Procedure: The procedure used was ANSI Standard C63.4-2003. The receive was scanned from 30MHz to 1000MHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. The worst case emissions were reported.

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bilog antenna with 2 orthogonal polarities

Test the EUT in transmitting mode.

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Horizontal.

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamplifier Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
54.250	0.80	7.92	28.08	51.11	31.75	40.00	-8.25
162.475	1.34	9.58	27.37	49.68	33.23	43.50	-10.27
187.825	1.38	10.06	27.22	40.67	24.89	43.50	-18.61
298.975	1.89	13.85	26.72	33.70	22.72	46.00	-23.28
324.325	1.98	14.80	26.91	41.35	31.22	46.00	-14.78
622.675	2.75	20.44	27.53	38.28	33.94	46.00	-12.06

Vertical.

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamplifier Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
53.275	0.80	8.05	28.09	52.05	32.81	40.00	-7.19
81.550	1.10	7.89	27.99	52.33	33.33	40.00	-6.67
108.850	1.23	8.66	27.79	57.45	39.55	43.50	-3.95
136.150	1.29	7.94	27.56	57.18	38.85	43.50	-4.65
161.500	1.34	9.58	27.38	50.44	33.98	43.50	-9.52
513.475	2.61	18.18	27.70	42.05	35.14	46.00	-10.86

Remark:

According to 15.35 (b) When average radiated emission measurements are specified in the regulations, including emission measurements below 1000 MHz, there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules, e.g., see Section 15.255.

**Test Results: The unit does meet the FCC Part 15 C Section 15.227 requirements.**

### 5.3.2 Occupied Bandwidth

Test Requirement: FCC Part 15 C Section 15.215 (C) and Section 15.227.

Test Method: ANSI C63.4

Operation within the band 26.960 – 27.280 MHz .

Test Date: 5 April 2007

**26.960–27.280MHz Mode.**

Requirements:

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the 20 dB bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not

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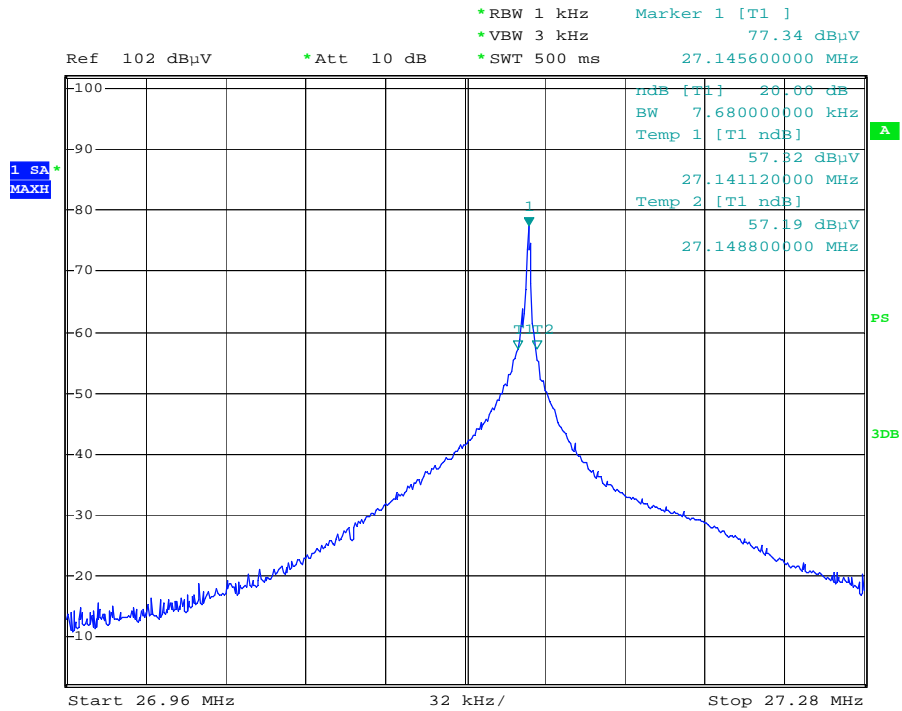
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specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Method of measurement:

The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector. The vertical Scale is set to 10dB per division. The horizontal scale is set to 32KHz per division.



N

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**The results: The unit does meet the FCC Part 15 C Section 15.215 requirements**