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FEDERAL COMMUNICATIONS COMMISSION
Registration number: 556682

Report No.: SZEMO060400699RFF
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FCC ID: T97-5859859-27M

TEST REPORT

Application No. : SZEMO060400699RF(SGS SZ NO.: SZTYR060400750/EL)
Applicant: SHANTOU CHENGHAI WEIZHIDI PLASTICS TOYS CO., LTD
FCC ID: T97-5859859-27M

Fundamental Frequency : 27.145MHz

Equipment Under Test (EUT):

EUT Name: R/C CAR
Model No.: 4011, 4012, 4013, 4014, 4015, 4016♣
Labelled Age Grading: 3+ YEARS

♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

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

Date of Receipt: 28 June 2006
Date of Test: 03 to 04 June 2006
Date of Issue: 04 June 2006

Test Result :	PASS *
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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.

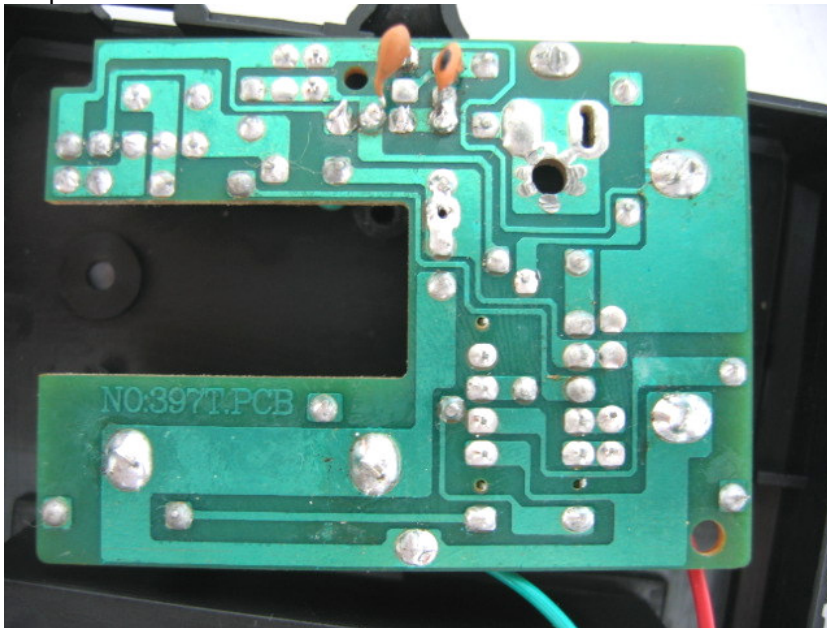
RF: In this whole report RF means Radiated Frequency.

♣ Item No.: 4011, 4012, 4013, 4014, 4015, 4016

Only the item 4011 was tested, since the electrical circuit design, layout, component used and internal wiring were identical for the above items.

The EUT passed the RE test after modification detailed below.

Changed the C1 to 47pF and added a 1000pF capacitance to the base electrode of the Q1 detailed in the picture below.





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4 General Information

4.1 Client Information

Applicant Name: SHANTOU CHENGHAI WEIZHIDI PLASTICS TOYS CO., LTD
Applicant Address: YUTAN ROAD, CHENGHUA DISTRICT, CHENGHAI OF SHANTOU CITY, GUANGDONG, CHINA

4.2 Details of E.U.T.

EUT Name: R/C CAR
Item No.: 4011, 4012, 4013, 4014, 4015, 4016♣
Power Supply: 3.0V DC for Tx and 6.0V DC for Rx.

♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

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.



4.6 Test Facility

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

- **NVLAP – Lab Code: 200611-0**
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0. Effective through December 31, 2005.
- **ACA**
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.
- **VCCI**
The 3m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.
Date of Registration: September 29, 2005. Valid until September 28, 2008.
- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**
Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.
- **CNAL – LAB Code: L0141**
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of Testing Laboratories.
- **FCC – Registration No.: 556682**
SGS-CSTC Standards Technical 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 our files. Registration 556682, Aug. 04, 2005.
- **Industry Canada (IC)**
The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 6002.



5 Test Results

5.1 Test Instruments

RE in Chamber					
Item	Test Equipment	Manufacturer	Serial No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	SEL0017	28-04-2005	27-04-2007
2	EMI Test Receiver	Rohde & Schwarz	100249	20-09-2005	19-09-2006
3	EMI Test software	AUDIX	E3	N/A	N/A
4	Coaxial cable	SGS	SEL0028	30-05-2006	29-05-2007
5	Coaxial cable	SGS	SEL0027	30-05-2006	29-05-2007
6	Loop Antenna	Manufacture Emco	6502	30-05-2006	29-05-2007
7	BiConiLog Antenna	ETS-LINDGREN	00042673	11-01-2006	10-01-2007
8	BiConiLog Antenna	ETS-LINDGREN	00042670	11-01-2006	10-01-2007

5.2 E.U.T. Operation

Input voltage:	3.0V DC
Operating Environment:	
Temperature:	26.0 °C
Humidity:	53% RH
Atmospheric Pressure:	1007mbar
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:	07 June 2006 (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 dB μ V/m between 30MHz & 88MHz 43.5 dB μ V/m between 88MHz & 216MHz 46.0 dB μ V/m between 216MHz & 960MHz 54.0 dB μ V/m above 960MHz
Detector:	Peak Scan (9kHz resolution bandwidth for 9kHz to 30MHz; 120kHz resolution bandwidth for 30MHz to 1000MHz)



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 (dBµV/m)			Limits (dBµV/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	61.3	62.4	57.8	100.0	38.7	37.6	42.2

Test Frequency (MHz)	Average (dBµV/m)			Limits (dBµV/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	55.1	54.9	51.8	80.0	24.9	25.1	28.2

Vertical.

Test Frequency (MHz)	Peak (dBµV/m)			Limits (dBµV/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	59.6	58.1	52.7	100.0	40.4	41.9	47.3

Test Frequency (MHz)	Average (dBµV/m)			Limits (dBµV/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	53.9	54.4	47.6	80.0	26.1	25.6	32.4

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.



Horizontal.

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)
55.23	0.80	7.87	28.08	34.52	15.11	40.00	-24.89
81.55	1.10	7.87	27.99	34.25	15.23	40.00	-24.77
117.63	1.25	8.07	27.71	35.10	16.71	43.50	-26.79
186.85	1.38	10.04	27.22	35.15	19.35	43.50	-24.15
285.33	1.84	13.27	26.77	32.81	21.15	46.00	-24.85
431.58	2.34	16.54	27.51	33.01	24.38	46.00	-21.62

Vertical.

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)
54.25	0.80	8.03	28.08	47.62	28.37	40.00	-11.63
90.33	1.10	8.72	27.95	36.30	18.17	43.50	-25.33
135.18	1.29	7.90	27.56	36.38	18.01	43.50	-25.49
191.73	1.39	10.12	27.20	35.96	20.27	43.50	-23.23
307.75	1.93	14.18	26.79	32.61	21.93	46.00	-24.07
417.93	2.28	16.37	27.47	33.21	24.39	46.00	-21.61

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: 23 May 2006

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 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

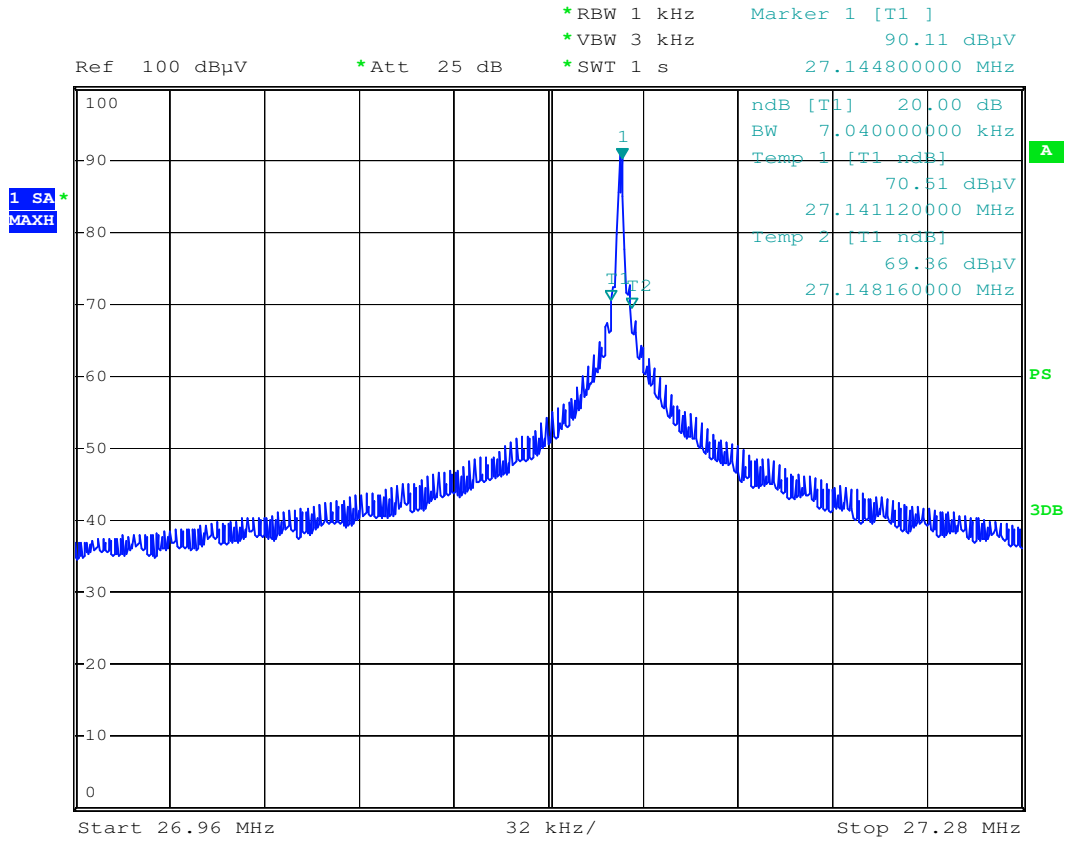


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is set to 10dB per division. The horizontal scale is set to 32KHz per division.



Date: 23.MAY.2006 11:18:46

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