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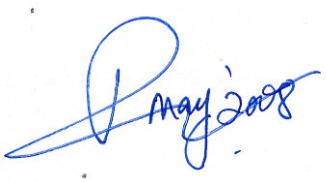
FEDERAL COMMUNICATIONS COMMISSION
Registration number: 556682

TEST REPORT

Application No.:	SZEMO080401421ET(SZ SGS NO.:SZTYR080401278/ EL)
Applicant:	SYMA TOYS FACTORY
FCC ID:	VDY-GC887552
Fundamental Frequency :	27.145MHz
Equipment Under Test (EUT):	
Name:	Radio controlled helicopter
Item No.:	603, 601, 606♣
♣	Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Labelled Age Grading:	8 up
Country of Origin:	China
Country of Destination:	USA
Standards:	FCC PART 15, SUBPART C : 2007
Date of Receipt:	21 April 2008
Date of Test:	21 to 28 April 2008
Date of Issue:	29 April 2008
Test Result :	**PASS ***

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

Authorized Signature:



Robinson Lo
Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. 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	Stanadard Paragraph	Result
Radiated Emission (30MHz to 1000MHz)	FCC PART 15 :2007	Section 15.227	PASS
Occupied Bandwidth	FCC PART 15 :2007	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.

Remark:

New batteries were installed in the EUT during all tests.

Item No.: 603, 601, 606

Only the item in the picture 5.3 was tested, since the electrical circuit design, layout, component used and internal wiring were identical for the above items.

3 Contents

4 General Information

4.1 Client Information

Applicant: SYMA TOYS FACTORY

Address of Applicant: Laimei Industry Areas, Chenghai, Shantou City, Guangdong, China

4.2 Details of E.U.T.

Power Supply: 12 V DC (8* 1.5V 'AA' Size Batteries) 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.

5 Test Results

5.1 Test Instruments

RE LOOP						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
1	Loop Antenna	Laplace Instruments	RF300	EMC0701	13-11-2007	12-11-2008
2	Calibration Dipole for EN55015 RE	SGS-CSTC	N/A	EMC0702	Verify Before Test	
3	Software	Schaffner	CES9985	EMC0409	N/A	N/A
4	Receiver	MEB	SCR3101	EMC0403	22-09-2007	21-09-2008
5	Spectrum Analyzer	Advantest	R3261C+99	EMC0402	20-09-2007	19-09-2008
6	Cable 1m	W.H. Westlake	M17/75	EMC0407	25-08-2007	24-08-2008

5.2 E.U.T. Operation

Operating Environment:

Temperature: 26.0 °C

Humidity: 51% RH

Atmospheric Pressure: 1020mbar

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

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 dBμV/m between 30MHz & 88MHz

43.5 dBμV/m between 88MHz & 216MHz

46.0 dBμV/m between 216MHz & 960MHz

54.0 dBμV/m above 960MHz

Detector: Peak Scan (9kHz resolution bandwidth for 9kHz to 30MHz; 120kHz resolution bandwidth for 30MHz to 1000MHz)

Test Procedure:

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7 The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

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) X	Limits (dBμV/m)	Margin (dB) X
27.145	37.2	100.0	62.8

Test Frequency (MHz)	Aerage (dBμV/m) X	Limits (dBμV/m)	Margin (dB) X
27.145	32.8	80.0	47.2

Vertical.

Test Frequency (MHz)	Peak (dBμV/m) X	Limits (dBμV/m)	Margin (dB) X
27.145	49.3	100.0	50.7

Test Frequency (MHz)	Peak (dBμV/m) X	Limits (dBμV/m)	Margin (dB) X
27.145	45.2	80.0	34.8

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 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)
54.250	0.80	7.92	28.08	34.71	15.35	40.00	-24.65
78.625	1.06	7.61	28.00	34.64	15.31	40.00	-24.69
105.925	1.22	8.81	27.82	31.22	13.43	43.50	-30.07
133.225	1.29	7.84	27.58	32.96	14.51	43.50	-28.99
324.325	1.98	14.80	26.91	33.66	23.53	46.00	-22.47

Vertical.

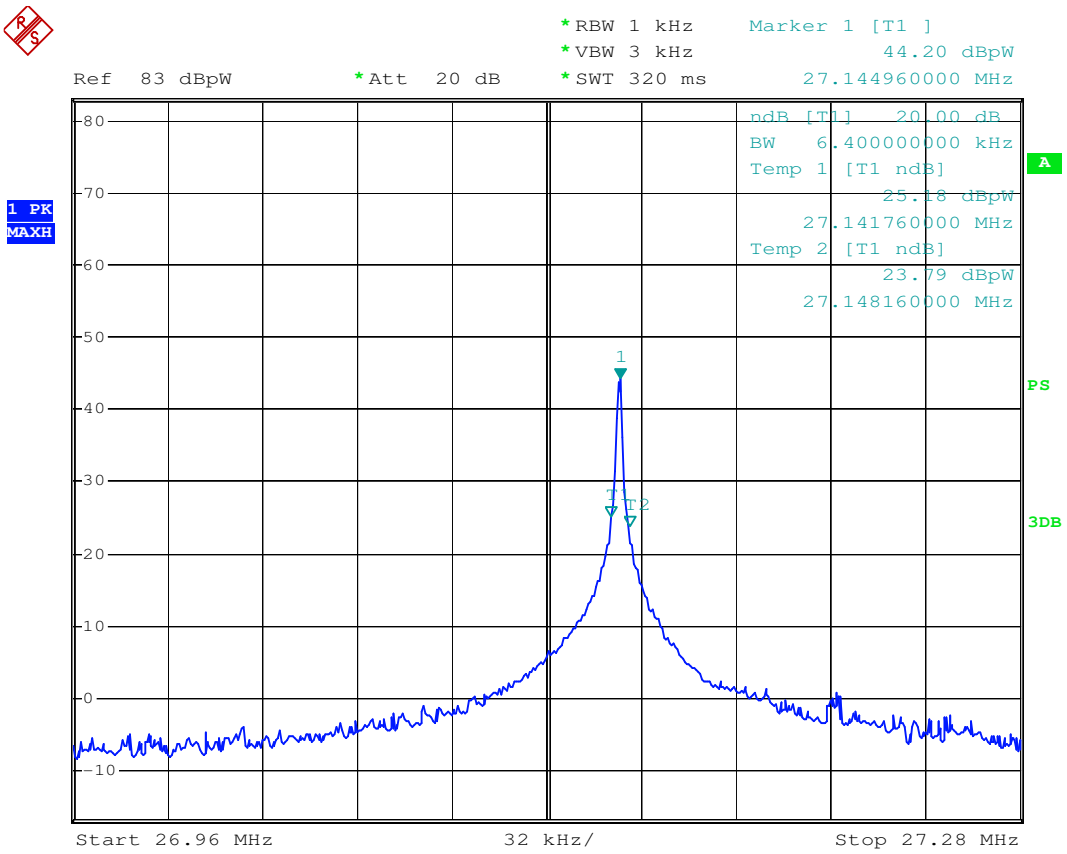
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
54.250	0.80	7.64	28.08	53.15	33.51	40.00	-6.49
78.625	1.06	7.61	28.00	43.18	23.85	40.00	-16.15
105.925	1.22	8.81	27.82	39.44	21.65	43.50	-21.85
133.225	1.29	7.84	27.58	42.88	24.43	43.50	-19.07
187.825	1.38	10.06	27.22	43.42	27.64	43.50	-15.86

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 .
Modulation Signal	AM
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 is set to 10dB per division. The horizontal scale is set to32KHz per division.The EUT tested under modulation signal.



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