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Report No.: GZEM160800555102

Page: 1 of 13

FCC ID: 2AJDV20160849T

FCC Test Report

The following sample(s) was/were submitted and identified on behalf of the client as:

Application No.: GZEM1608005551CR
Applicant: XIONG FA HANG Toy Craft Factory
Manufacturer: The same as applicant
Factory: The same as applicant
FCC ID: 2AJDV20160849T

Product Information:

Product Description: Remote control car series

Model: 88602, 88000, 88001, 88002, 88003, 88004, 88005, 88006, 88007, 88008, 88009,
88010, 88012, 88013, 88014, 88015, 88016, 22400, 22401, 22402, 22403, 22404,
22405, 22406, 22407, 22408, 22409, 22500, 22501, 22502, 22503, 22504, 22505,
88600, 88601, 88603, 88604, 88605, 88606, 88607, 88608, 88609, 88700, 88701,
88702, 88703, 88704, 88705, 88706, 88707, 88708, 88709, 88200, 88201, 88202,
88203, 88204, 88205, 88206, 88207, 88208, 88209, 88210, 88211, 88212, 88213,
88214, 88215, 88216, 88217, 88218, 88219, SA-22400, SA-88000, CC-32400 ♣

♣

Please refer to section 4.10 of this report for further details.

Serial No.: --

Requirement: CFR 47 FCC PART 15 SUBPART B, 2015

Date of Receipt: 2016-08-09

Date of Test: 2016-08-19

Date of Issue: 2016-09-07

Test Result :	PASS*
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* In the configuration tested, the EUT detailed in this report complied with the standards specified above



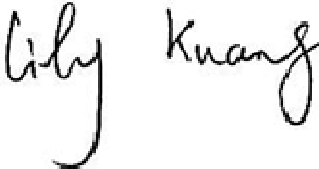
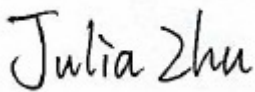
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Version Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2016-09-07		Original Report

Authorized for issue by:			
Tested By			
	(Lily Kuang) / Project Engineer	2016-08-16	Date
Prepared By			
	(Julia Zhu) / Clerk	2016-08-30	Date
Checked By			
	(Ricky Liu) / Reviewer	2016-09-07	Date



2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2015	ANSI C63.4:2014	Class B	PASS
Radiated Emission above 1 GHz	FCC PART 15, SUBPART B: 2015	ANSI C63.4:2014	Class B	N/A ¹⁾
Remark : 1) Please refer to section 5.2 of this report for explanation				



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4 General Information

4.1 Client Information

Applicant: XIONG FA HANG Toy Craft Factory
Address of Applicant: FENGXIN NO.1 ROAD, CHENGHAI DISTRICT, SHANTOU CITY,
GUANGDONG PROVINCE, CHINA

4.2 General Description of EUT

EUT Name: Remote control car series
Model: 88602
Serial No.: --
EUT Description: Radio toys with 49.86 MHz as a carrier -- Rx part

4.3 Details of EUT

Power Supply: DC 6V = 1.5V X 4 Size 'AAA' batteries
Power Cord: --
Operating frequency: 49.86 MHz

4.4 Description of Support Units

None

4.5 Standards Applicable for Testing

CFR 47, FCC Part 15, Oct 2015
ANSI C63.4:2014

4.6 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



4.7 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 accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

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.

- **ACMA**

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.

- **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.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

- **FCC (Registration No.: 282399)**

SGS-CSTC Standards Technical Services Co., Ltd., 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 282399, May 31, 2002.

- **Industry Canada (Registration No.: 4620B-1)**

The 3m/10m Alternate Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Certification and Engineering of Industry Canada for radio equipment testing with Registration No. 4620B-1.

- **VCCI (Registration No.: R-2460, C-2584, G-449 and T-1179)**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co. Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2460, C-2584, G-449 and T-1179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2005, the Basic Rules, IEC60335-1 and Rules of procedure IEC60335-2, and the relevant IEC60335-2 Scheme Operational documents.



4.8 Deviation from Standards

None.

4.9 Abnormalities from Standard Conditions

None.

4.10 Declaration of Family Grouping

♣ Model No.: 88602, 88000, 88001, 88002, 88003, 88004, 88005, 88006, 88007, 88008, 88009, 88010, 88012, 88013, 88014, 88015, 88016, 22400, 22401, 22402, 22403, 22404, 22405, 22406, 22407, 22408, 22409, 22500, 22501, 22502, 22503, 22504, 22505, 88600, 88601, 88603, 88604, 88605, 88606, 88607, 88608, 88609, 88700, 88701, 88702, 88703, 88704, 88705, 88706, 88707, 88708, 88709, 88200, 88201, 88202, 88203, 88204, 88205, 88206, 88207, 88208, 88209, 88210, 88211, 88212, 88213, 88214, 88215, 88216, 88217, 88218, 88219, SA-22400, SA-88000, CC-32400

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference being the colour, outer appearance, packaging.

Therefore only one model 88602 was tested in this report.

♣ The controller and the car are sold as one set, the test of this report only cover the car part show on the photo in section 6.3.

4.11 Abbreviations

N/A: Not Applicable

EUT: Equipment Under Test



5 Equipments Used during Test

RE in Chamber						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal.Due date
					(YYYY-MM-DD)	(YYYY-MM-DD)
EMC0525	Compact Semi-Anechoic Chamber	ChangZhou ZhongYu	N/A	N/A	2014-12-05	2016-12-04
EMC0522	EMI Test Receiver	Rohde & Schwarz	ESIB26	100283	2016-02-01	2017-01-31
EMC0056	EMI Test Receiver	Rohde & Schwarz	ESCI	100236	2016-02-01	2017-01-31
EMC0528	RI High frequency Cable	SGS	20 m	N/A	2016-04-19	2018-04-18
EMC2025	Trilog Broadband Antenna 30-1000MHz	SCHWARZBECK MESS-ELEKTRONIK	VULB 9160	9160-3372	2014-07-14	2017-07-13
EMC0524	Bi-log Type Antenna	Schaffner -Chase	CBL6112B	2966	2016-08-31	2019-08-30
EMC0519	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	2014-05-04	2017-05-03
EMC2026	Horn Antenna 1-18GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	9120D-841	2016-08-30	2019-08-29
EMC0521	1-26.5 GHz Pre-Amplifier	Agilent	8449B	3008A01649	2016-01-25	2017-01-24
EMC2065	Amplifier	HP	8447F	N/A	2016-07-04	2017-07-03
EMC2086	PRE AMPLIFIER MH648A	ANRITSU CORP	MH648A	N/A	2015-12-19	2016-12-18
EMC2063	Pre-amplifier 1GHz-26GHz	Compliance Direction Systems Lnc.	PAP-1G26-48	6279.628	2016-01-06	2017-01-05
EMC0523	Active Loop Antenna	EMCO	6502	42963	2016-02-27	2018-02-26
EMC2041	Broad-Band Horn Antenna (14)15-26.5(40)GHz	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9170	9170-375	2014-05-26	2017-05-25
EMC2079	High Pass Filter(915MHz)	FSY MICROWAVE	HM1465-9SS	009	2016-01-25	2017-01-24
EMC2069	2.4GHz Filter	Micro-Tronics	BRM 50702	149	2016-01-25	2017-01-24
EMC0530	10m Semi-Anechoic Chamber	ETS	N/A	N/A	2016-04-30	2018-04-29

General used equipment						
No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal.Due date
					(YYYY-MM-DD)	(YYYY-MM-DD)
EMC0006	DMM	Fluke	73	70681569	2015-09-17	2016-09-16
EMC0007	DMM	Fluke	73	70671122	2015-09-17	2016-09-16

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5.1 Radiated Emissions, 30MHz to 1GHz

Test Requirement: FCC Part15 B
Test Method: ANSI C63.4:2014
Test Voltage & frequency: 120V AC, 60Hz
Test Date: August 19, 2016
Frequency Range: 30MHz to 1GHz
Measurement Distance: 3m
Detector: Peak for pre-scan (120kHz resolution bandwidth)
Quasi-Peak if maximised peak within 20dB of limit
Class: Class B

Frequency range MHz	Quasi-peak limits dB (μV/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54

Note: At transitional frequencies the lower limit applies.

5.1.1 EUT Operation

Operating Environment:

Temperature: 25°C

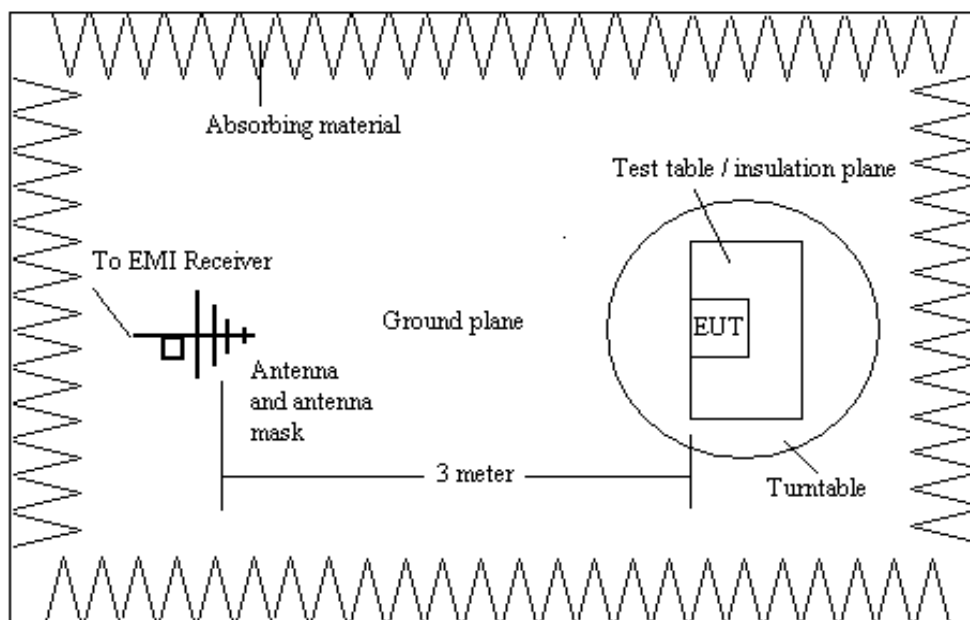
Humidity: 47%

Atmospheric Pressure: 1020mbar

EUT Operation: Pre-test with Peak detector with the following mode(s):
1: motor running mode;
2: cohere mode(with an unmodulated CW signal to the receiver).

Final test with Quasi-Peak with the following mode(s):
1: motor running mode;
2: cohere mode(with an unmodulated CW signal to the receiver).

5.1.2 Test Setup and Procedure



1. The pre-test of the radiated emissions test was conducted in a semi-anechoic chamber and the final measurement was conducted in the open area test site.
2. Bilog antenna was used for the frequency range from 30MHz to 1GHz
3. The EUT was connected to the host PC which was connected to AC power source through a mains power outlet which was bonded to the ground reference plane; The mains cables shall drape to the ground reference plane. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT with located frequencies.
5. The actual frequencies of maximum emission were confirmed in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.



5.1.3 Measurement Data

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. The EUT was measured by Bilog antenna with 2 orthogonal polarities and frequencies of peak emissions from the EUT were detected within 20dB of the class B limit line. Final measurement was conducted in the open area test site with data as follows:

Test results on motor running mode:

Frequency (MHz)	Antenna Polarization	Trans. (dB/m)	Receiver QP Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)
32.18	V	14.04	-2.20	11.84	40.00	-28.16
99.88	V	9.20	14.28	23.48	43.50	-20.02
99.88	H	9.20	17.18	26.38	43.50	-17.12
198.59	H	11.27	20.71	31.98	43.50	-11.52
228.49	V	11.73	11.74	23.47	46.00	-22.53
338.40	H	14.71	14.69	29.40	46.00	-16.60
365.54	V	15.77	11.17	26.94	46.00	-19.06
383.93	H	16.10	15.61	31.71	46.00	-14.29
586.84	V	20.14	21.97	42.11	46.00	-3.89
651.94	H	20.88	22.10	42.98	46.00	-3.02
750.11	V	21.90	18.05	39.95	46.00	-6.05
766.06	H	22.12	19.86	41.98	46.00	-4.02
Note: 1) All readings are Quasi-Peak values. 2) Transducer = Antenna Factor + Cable Loss.						



Test results on cohere mode(with an unmodulated CW signal to the receiver):

Frequency (MHz)	Antenna Polarization	Trans. (dB/m)	Receiver QP Reading (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)
49.86	V	6.34	13.11	19.45	40.00	-20.55
49.86	H	6.34	14.89	21.23	40.00	-18.77
99.72	V	10.80	3.51	14.31	43.50	-29.19
99.72	H	10.80	3.89	14.69	43.50	-28.81
149.58	V	9.57	4.34	13.91	43.50	-29.59
149.58	H	9.57	4.88	14.45	43.50	-29.05
199.44	V	8.86	6.63	15.49	43.50	-28.01
199.44	H	8.86	5.42	14.28	43.50	-29.22
249.30	V	11.55	17.89	29.44	46.00	-16.56
249.30	H	11.55	5.22	16.77	46.00	-29.23
299.16	V	12.60	16.63	29.23	46.00	-16.77
299.16	H	12.60	10.94	23.54	46.00	-22.46
Note: 1) All readings are Quasi-Peak values. 2) Transducer = Antenna Factor + Cable Loss.						



5.2 Radiated Emissions above 1 GHz

Test Requirement: FCC Part15 B
Test Method: ANSI C63.4:2014
Test Date: Not Applicable

Remark:

There is no need for Radiated Emissions (above 1G) test to be performed on this product in accordance with FCC Part 15 because the highest internal source is less than 108 MHz.

For further details, please refer to Subject B section 15.33 (b) (1) of FCC Part 15 which states:

The spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement Range (MHz)
Below 1.705	30
1.705 to 108	1000
108 to 500	2000
500 to 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower