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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* |
|----------------------|--------------|

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



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 IECC Ltd. or testing done by SGS IECC Ltd. in connection with, distribution or use of the product described in this report must be approved by SGS IECC Ltd. in writing.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.



| Version Revision Record | | | | |
|----------------------------|---------|------------|----------|-----------------|
| Version | Chapter | Date | Modifier | Remark |
| 00 | | 2016-09-07 | | Original Report |
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|---------------------------------|---|--|---------------------------------|
| Authorized for issue by: | | | |
| Tested By |  | | 2016-08-16 <hr/> Date |
| | (Lily Kuang) /Project Engineer | | |
| Prepared By |  | | 2016-08-30 <hr/> Date |
| | (Julia Zhu) / Clerk | | |
| Checked By |  | | 2016-09-07 <hr/> Date |
| | (Ricky Liu) / Reviewer | | |

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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, IEC60384-1 and Rules of procedure IEC60384-2, and the relevant IEC60384-2 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

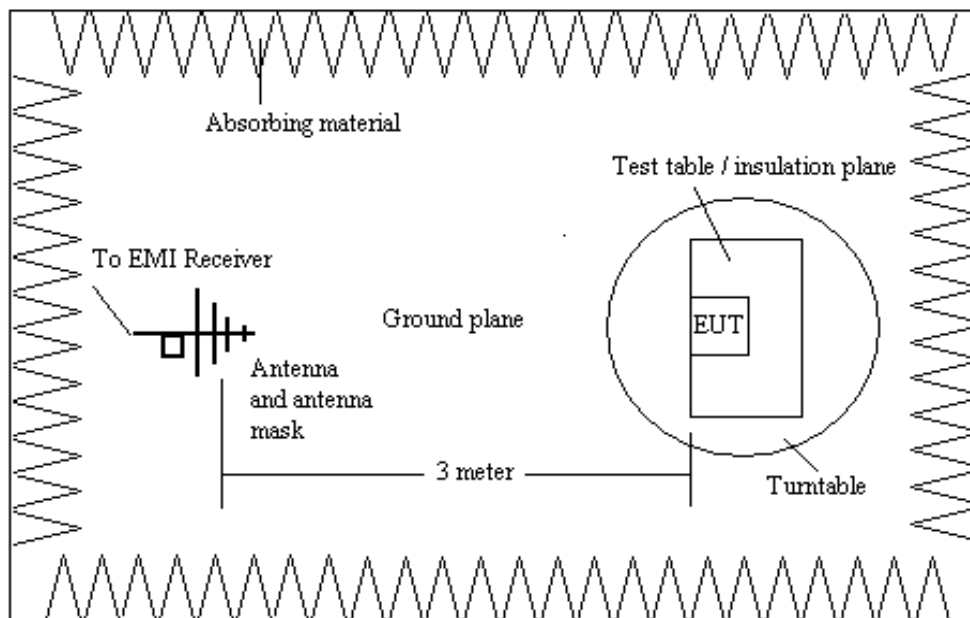
Humidity: 47%

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 (dB μ V) | Emission Level (dB μ V/m) | Limit (dB μ V/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 |