

# FCC Test Report

**Application No.:** T31620220029EM  
**Applicant:** KIDZTECH TOYS MANUFACTURING LTD.  
**Product Information:**  
**Product Description:** R/C YAMAHA 2014 RAPTOR 700R  
**Item No.:** 84011 / 84331 / 84052 / 5F633E3 / 267336 / 228311 / 897143 / 1160483 / 107686...♣  
♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.  
**FCC ID number:** OTM-8405216-49MRX  
**Product class:** Digital Devices and Receivers - super regenerative receiver (15.101)  
**Requirement:** CFR 47 FCC PART 15 SUBPART B, 2015  
**Date of Receipt:** 2016-06-08  
**Date of Test:** 2016-06-16  
**Date of Issue:** 2016-07-09

<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:



**CHEN Jian-feng, Jeffrey**

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.

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.

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## 2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Conducted Emission (150KHz to 30MHz)	FCC PART 15, SUBPART B: 2015	ANSI C63.10:2013	Class B	N/A1 <sup>1)</sup>
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2015	ANSI C63.10:2013	Class B	PASS
Radiated Emission above 1 GHz	FCC PART 15, SUBPART B: 2015	ANSI C63.10:2013	Class B	N/A1 <sup>1)</sup>
<p><b>Remark :</b></p> <p>1) Please refer to section 6.3 of this report for explanation.</p> <p>♣ Item no.: 84011 / 84331 / 84052 / 5F633E3 / 267336 / 228311 / 897143 / 1160483 / 107686</p> <p>According to the confirmation from the applicant, the above models are identical in all electrical aspects in relating to the circuit design, PCB layout, electrical components used, internal wiring and function. The differences are only the model no., color and decorations</p> <p>Therefore only the model as shown on 7.2 was tested in this report.</p>				

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## 4 General Information

### 4.1 Client Information

Applicant: KIDZTECH TOYS MANUFACTURING LTD.  
Address of Applicant: Rm 1201, Inter-Continental Plaza,  
94 Granville Road, TST, Hong Kong.

### 4.2 General Description of EUT

EUT Name: R/C YAMAHA 2014 RAPTOR 700R  
Item No.: 84052  
Serial No.: --

### 4.3 Details of EUT

Power Supply: DC 7.5V (AA battery x 5) for RX  
Cable: --  
Function: RC control car (super regenerative receiver, 49.86MHz)

### 4.4 Description of Support Units

The EUT has been tested as an independent unit.

### 4.5 Standards Applicable for Testing

CFR 47, FCC Part 15, 2015  
ANSI C63.4.2014

### 4.6 Test Location

All tests were performed at: -

SGS IECC Limited (Member of the SGS Group (SGS SA))

Units 303-305, 3/F., 31 Lok Yip Road, On Lok Tsuen, Fanling, N.T., Hong Kong

Tel: +852 2305 2570 Fax: +852 2756 4480.

No tests were sub-contracted.

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#### 4.7 Test Facility

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

**FCC – CAB Registration No.: 446297**

Measurement facility located at Fanling (Hong Kong), accredited as a Conformity Assessment Body (CAB) and was designated by FCC to perform compliance testing on equipment subject to Declaration Of Conformity (DOC) and Certification under Part 15 and 18 of the Commission's Rules.

#### 4.8 Deviation from Standards

None.

#### 4.9 Abnormalities from Standard Conditions

None.

#### 4.10 Declaration of Family Grouping

None.

#### 4.11 Abbreviations

N/A: Not Applicable

EUT: Equipment Under Test

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## 5 Equipments Used during Test

Radiated Emission				
Equipment	Manufacturer	Model / Serial No.	Cal. Date	Cal. Due Date
3m Semi-Anechoic Chamber (pre-test)	--	--	--	--
3m / 10m Open Area Test Site	--	--	2015-03-11	2018/03/10
Test Receiver	Rohde & Schwarz	ESCS 30 / 100388	2015/09/29	2018/09/28
Spectrum Analyzer	Rohde & Schwarz	FSP30 / 101474	2016/05/30	2017/05/29
Antenna (30-1000 MHz)	Schaffner	CBL6111C / 2791	2014/10/19	2016/10/18
Loop Antenna	Rohde & Schwarz	HFH2-Z2 / 871336/48	2016/01/23	2019/01/22
Coaxial Cable	--	E167	2016-06-25	2017/06/24
Antenna Mast System	Schwarzbeck	AM9104 / -	--	--
Turntable with Controller	Drehtisch	DT312 / -	--	--

General Use Equipment				
Equipment	Manufacturer	Model / Serial No.	Cal. Date	Cal. Due Date
Digital Multimeter	Fluke	189 / 83640020	2016/04/20	2017/04/19
Temperature / Humidity meter	-	E159	2015-10-07	2016/10/06

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## 6 Test Results

### 6.1 Conducted Emissions Mains Terminals, 150kHz to 30MHz

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

**Remark:**

The test sample has no characteristic to connect to AC mains and this test is not applicable.

### 6.2 Radiated Emissions, 30MHz to 1GHz

Test Requirement: FCC Part15 B  
Test Method: ANSI C63.4  
Power Supply: DC 7.5V  
Test Date: 2016-06-16  
Frequency Range: 30MHz to 1GHz  
Measurement Distance: 3m  
Detector: Peak for pre-scan (120kHz resolution bandwidth)  
Quasi-Peak if maximised peak within 6dB 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.

#### 6.2.1 EUT Operation

Operating Environment:

Temperature: 26 °C Humidity: 56 % RH

EUT Operation: Pre-test with Peak detector with the following mode(s):

1: Receiving at 49.86MHz

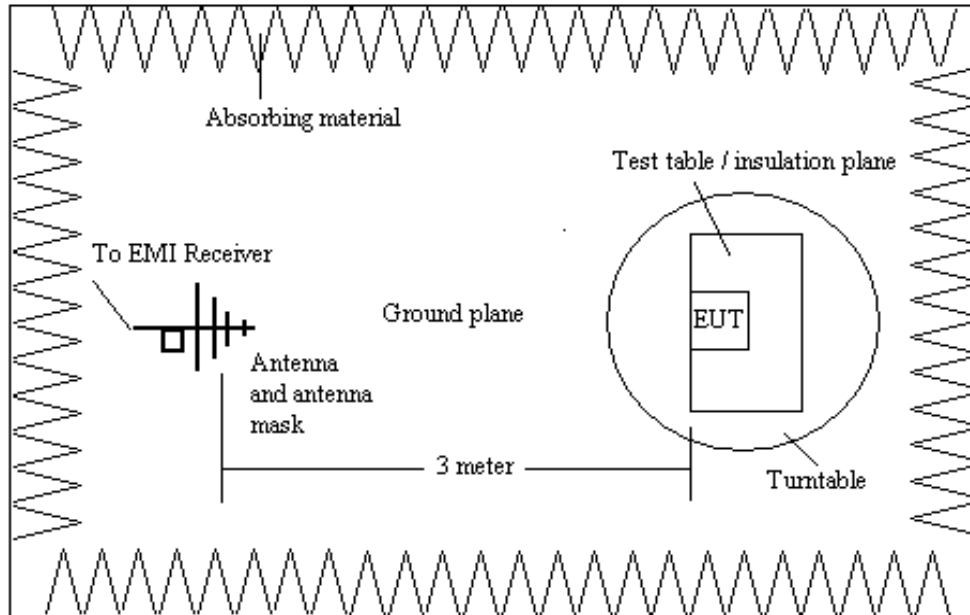
Final test with Quasi-Peak detector with the following mode(s):

1. Receiving at 49.86MHz

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## 6.2.2 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.

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### 6.2.3 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 6dB of the class B limit line. Final measurement was conducted in the open area test site with data as follows:

#### Test results on data transfer mode :

Frequency (MHz)	Antenna Polarization	Trans. (dB/m)	Reciever QP Reading (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Over Limit (dB)
50.200	V	12.0	4.9	16.9	40.0	-23.1
99.720	V	9.9	10.4	20.3	43.5	-23.2
149.580	H	11.4	10.9	22.3	43.5	-21.2
199.440	V	9.5	6.2	15.7	43.5	-27.8
249.300	H	12.1	7.9	20.0	46.0	-26.0
299.160	V	14.1	5.3	19.4	46.0	-26.6

**Note:**

- 1) All readings are Quasi-Peak values.
- 2) Transducer = Antenna Factor + Cable Loss.

### 6.3 Radiated Emissions above 1 GHz

Test Requirement: FCC Part15 B  
 Test Method: ANSI C63.10  
 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

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## 7 Photographs

### 7.1 Radiated Emission Test Setup



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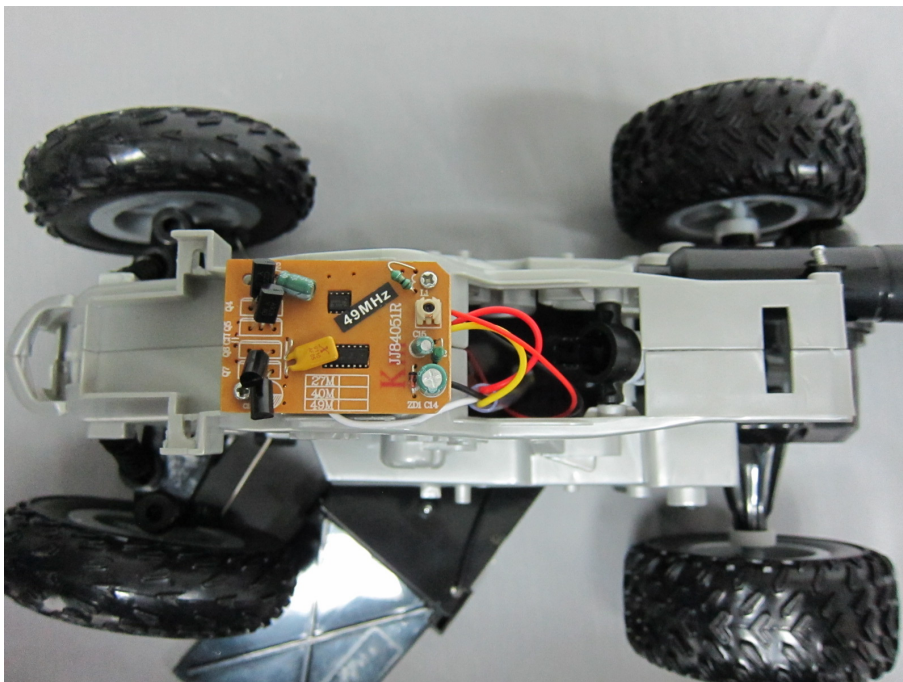
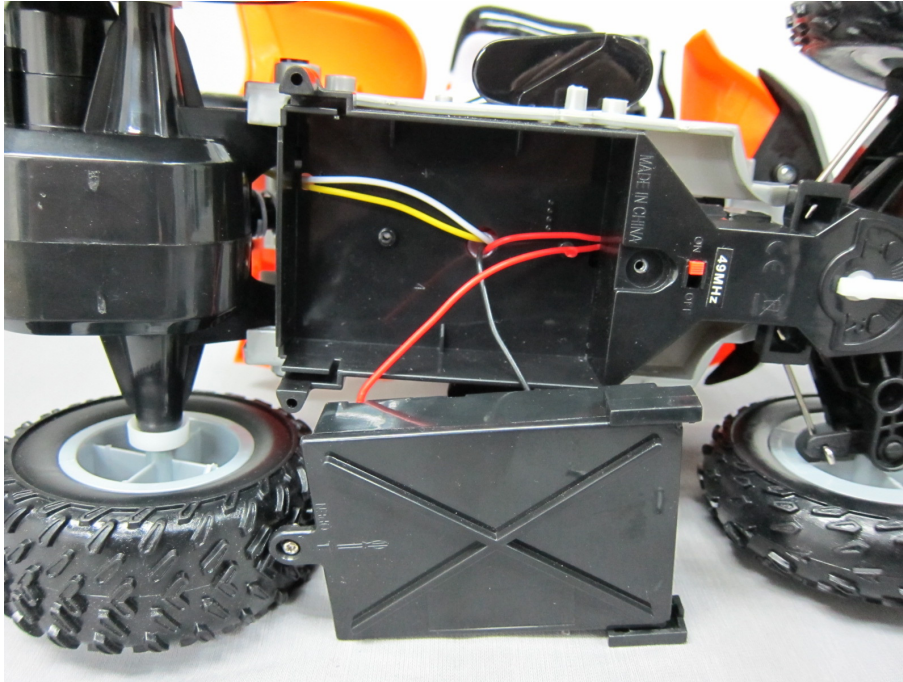
## 7.2 EUT Constructional Details



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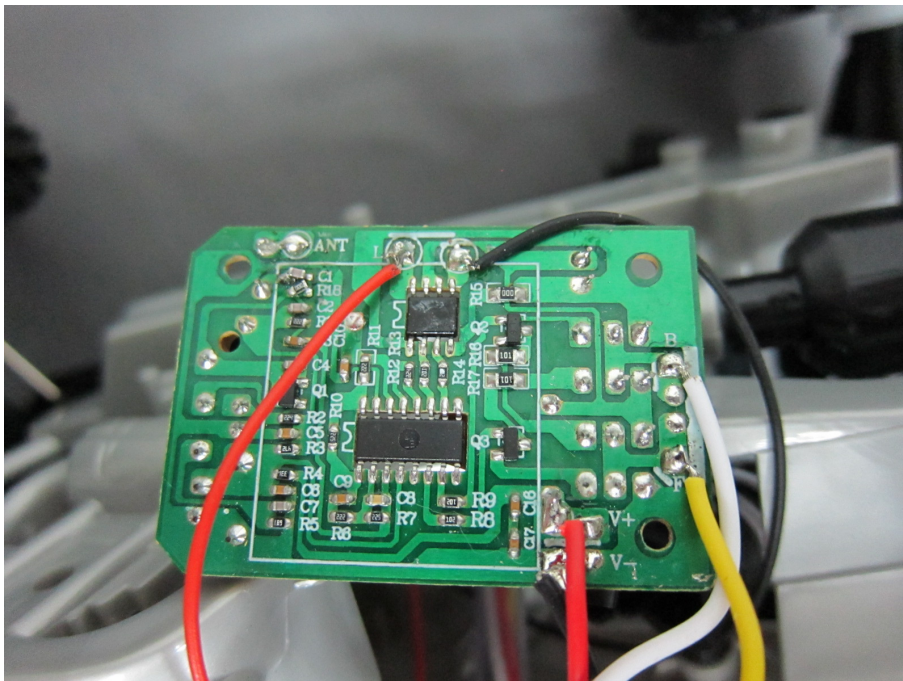
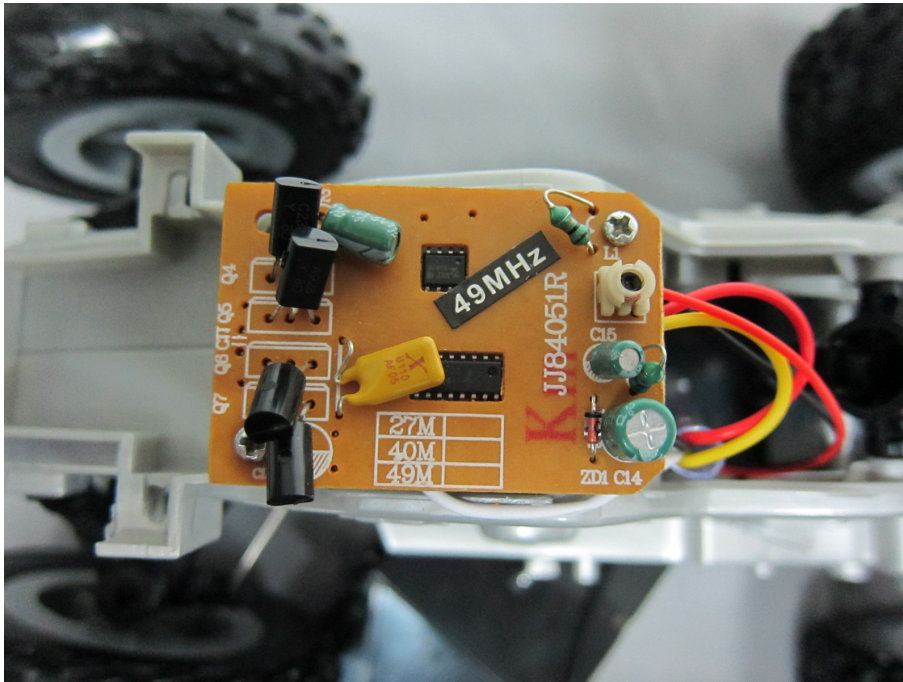
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## 7.3 Internal photo



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