



TEST REPORT

Report No. : AL012226-001 Date : 2009-04-08

Application No. : LL200713(2)

Applicant : Jada Toys Co., Ltd.
Unit 305-308, 3/F, Tower B, New Mandarin Plaza,
No. 14 Science Museum Road, TST East,
Kowloon, Hong Kong

Sample Description : One (1) submitted sample(s) stated to be 1:16 Battle Machine
of Model No. 83196, 83197
Radio Frequency : 49.860MHz Receiver
Rating : 4 x 1.5V AA size batteries
No. of submitted sample : Two (2) piece(s)

Date Received : 2009-03-24.

Test Period : 2009-03-30 to 2009-04-02.

Test Requested : FCC Part 15 Certification.

Test Method : 47 CFR Part 15 (10-1-08 Edition)
ANSI C63.4 – 2003

Test Result : See attached sheet(s) from page 2 to 11.


Conclusion : The submitted sample was found to comply with requirement of FCC Part 15
Subpart B.

Remark : All two models are the same in circuitry, components and construction.
Therefore, model 83196 was chosen to be the representative of the test samples.

There are three channels. The difference of three channels is the pattern of
coding. The channel B was tested.

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____


Mr Wong Lap-Pong, Andrew
Assistant Manager
Electrical Division

FCC ID: PWYJT49RX96000

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1 General Information

1.1 General Description

The equipment under test (EUT) is a receiver for 1:16 Battle Machine. It operates at 49.860MHz and the oscillation of radio control is generated by a LRC circuit. The EUT is powered by 4 x 1.5V AA size batteries. When it received a forward, backward, turn right, turn left or being shot signal, it will take the corresponding action.

The brief circuit description is listed as follows:

- Q1 and associated circuit act as a super-regenerative receiver.
- Q2, IC1, IC2, IC3 and associated circuit act as a decoder.
- Q3 and associated circuit act as an audio amplifier.
- Q4, Q17 and associated circuit act as a voltage regulator.
- IC4 and associated circuit act as an IR module.
- Q5 ~ Q10 and associated circuit act as a motor driver for M1.
- Q11 ~ Q16 and associated circuit act as a motor driver for M2.



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1.2 Location of the test site

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003. A Semi-Anechoic Chamber Testing Site is set up for investigation and located at:

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2003. A shielded room is located at :

Ground Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
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New Territories,
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1.3 List of measuring equipment

| Equipment | Manufacturer | Model No. | Serial No. | Calibration Due Date |
|-------------------|--------------|-----------|------------|----------------------|
| EMI Test Receiver | R&S | ESCI | 100152 | 2009 December 02 |
| Bilog Antenna | Schaffner | CBL6112B | 2718 | 2010 August 04 |



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2 Description of the radiated emission test

2.1 Test Procedure

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

For below 30MHz, a loop antenna with its vertical plane is placed 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1 m above the ground.

A signal generator was used to radiate an unmodulated continuous wave (CW) signal to the EUT (superregenerative receiver) at its operating frequency in order to “cohere” the characteristic broadband emissions from the receiver.

2.2 Test Result

The emissions meeting the requirement of section 15.109 are based on measurements employing the CISPR quasi-peak detector below 1000MHz and average detector for frequencies above 1000MHz.

The frequencies from 30MHz to 1000MHz were investigated, and emissions more 20dB below limit were not reported. Thus, those highest emissions were presented in next page.

It was found that the EUT meet the FCC requirement.



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2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

| Frequency (MHz) | Polarity (H/V) | Reading at 3m (dB μ V/m) | Antenna and Cable factor (dB) | Field Strength (dB μ V/m) | Limit at 3m (dB μ V/m) | Margin (dB) |
|-----------------|----------------|------------------------------|-------------------------------|-------------------------------|----------------------------|-------------|
| 49.421 | V | 26.4 | 10.9 | 37.3 | 40.0 | -2.7 |
| 50.300 | V | 29.3 | 8.6 | 37.9 | 40.0 | -2.1 |
| 50.513 | V | 27.3 | 8.6 | 35.9 | 40.0 | -4.1 |
| 51.604 | V | 27.8 | 8.6 | 36.4 | 40.0 | -3.6 |
| 53.324 | V | 19.5 | 8.6 | 28.1 | 40.0 | -11.9 |
| 97.840 | V | 18.5 | 9.8 | 28.3 | 43.5 | -15.2 |
| 101.456 | V | 17.4 | 11.2 | 28.6 | 43.5 | -14.9 |
| 102.946 | V | 17.0 | 11.2 | 28.2 | 43.5 | -15.3 |
| 145.648 | V | 12.7 | 12.3 | 25.0 | 43.5 | -18.5 |
| 150.454 | V | 7.9 | 12.3 | 20.2 | 43.5 | -23.3 |



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3 Description of the Line-conducted Test

3.1 Test Procedure

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2003. The EUT was setup as described in the procedures, and both lines were measured.

3.2 Test Result

No measurement is required as the EUT is a battery-operated product.

3.3 Graph and Table of Conducted Emission Measurement Data

Not Applicable



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4 Photograph

4.1 Photographs of the Test Setup for Radiated Emission and Conduction Emission

For electronic filing, the photos are saved with filename TSup1.jpg to TSup2.jpg.

4.2 Photographs of the External and Internal Configurations of the EUT

For electronic filing, the photos are saved with filename ExPho1.jpg to ExPho2.jpg and InPho1.jpg to InPho2.jpg.



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5 Supplementary document

The following document were submitted by applicant, and for electronic filing, the document are saved with the following filenames:

| Document | Filename |
|-------------------------|--------------|
| ID Label/Location | LabelSmp.jpg |
| Block Diagram | BlkDia.pdf |
| Schematic Diagram | Schem.pdf |
| Users Manual | UserMan.pdf |
| Operational Description | OpDes.pdf |

5.1 Bandwidth

Not Applicable

5.2 Duty cycle

Not Applicable

5.3 Transmission time

Not Applicable



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6 Appendices

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| A2. | Photos of External Configurations | 1 | page |
| A3. | Photos of Internal Configurations | 1 | page |
| A4. | ID Label/Location | 1 | page |
| A5. | Block Diagram | 1 | page |
| A6. | Schematics Diagram | 1 | page |
| A7. | User Manual | 1 | page |
| A8. | Operation Description | 2 | pages |

***** End of Report *****