



TEST REPORT

Report No. : AJ021980-001 Date : 2007 August 14

Application No. : LJ217764(5)

Applicant : Lung Cheong Toys Ltd.
Lung Cheong Building,
1 Lok Yip Road,
Fanling, Hong Kong

Sample Description : One(1) submitted sample(s) stated to be Spidermen Monster Truck
of Model No. 60-260
Radio Frequency : 49.860MHz Receiver
Rating : 1 x 9.6V rechargeable battery
No. of submitted sample : Two (2) piece(s) ***

Date Received : 2007 July 16

Test Period : 2007 July 20 – 2007 July 23

Test Requested : FCC Part 15 Certification.

Test Method : 47 CFR Part 15 (10-1-05 Edition)
ANSI C63.4 – 2003

Test Result : See attached sheet(s) from page 2 to 13.

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

Remark : The receiver contains three control bands and all bands were measured.

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____

Danny Chui
Deputy Manager - EL. Division

FCC ID: P73SPIDERMEN9R

Page 1 of 13



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

Table of Contents

| | | |
|-----|---|----|
| 1 | General Information | 3 |
| 1.1 | General Description | 3 |
| 1.2 | Location of the test site | 4 |
| 1.3 | List of measuring equipment..... | 5 |
| 2 | Description of the radiated emission test | 6 |
| 2.1 | Test Procedure..... | 6 |
| 2.2 | Test Result..... | 6 |
| 2.3 | Radiated Emission Measurement Data (Con't)..... | 8 |
| 2.3 | Radiated Emission Measurement Data (Con't)..... | 9 |
| 3 | Description of the Line-conducted Test..... | 10 |
| 3.1 | Test Procedure..... | 10 |
| 3.2 | Test Result..... | 10 |
| 3.3 | Graph and Table of Conducted Emission Measurement Data | 10 |
| 4 | Photograph | 11 |
| 4.1 | Photographs of the Test Setup for Radiated Emission and Conduction Emission | 11 |
| 4.2 | Photographs of the External and Internal Configurations of the EUT | 11 |
| 5 | Supplementary document | 12 |
| 5.1 | Bandwidth | 12 |
| 5.2 | Duty cycle | 12 |
| 5.3 | Transmission time | 12 |
| 5.4 | Power Spectral Density | 12 |
| 6 | Appendices..... | 13 |



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

1 General Information

1.1 General Description

The equipment under test (EUT) is a receiver for Spidermen Monster Truck. It operates at 49.860MHz and the oscillation of radio control is generated by a LRC circuit. The EUT is powered by 1 x 9.6V rechargeable battery. When it received a forward, backward, turn right or turn left signal, it will move to the corresponding direction.

The brief circuit description is listed as follows:

- Q7, Q9 and associated circuit act as a RF amplifier.
- U1, X1 and associated circuit act as a decoder.
- Q22, Z1 and associated circuit act as a voltage regulator.
- Q2, Q17, Q19, Q20, Q23, Q24 and associated circuit act as a motor driver for M3.
- Q5, Q6, Q11 ~ Q15 and associated circuit act as a motor driver for M2.



**CMA Testing
and Certification
Laboratories**
廠商會檢定中心

TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

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,
Fo Tan, Shatin,
New Territories,
Hong Kong.



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

1.3 List of measuring equipment

| Equipment | Manufacturer | Model No. | Serial No. | Calibration Due Date |
|-------------------|--------------|-----------|------------|----------------------|
| EMI Test Receiver | R&S | ESCI | 100152 | 2007 September 20 |
| Broadband Antenna | Schaffner | CBL6112B | 2718 | 2008 May 23 |
| Signal Generator | IFR | 2023B | 202302/938 | 2008 January 04 |



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

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

All other measurements are below the limit. Thus, those highest emissions were presented in next pages.

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.

It was found that the EUT meet the FCC requirement.



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Band A

| 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) |
|--------------------|-------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------|----------------|
| 48.304 | V | 5.8 | 10.6 | 16.4 | 40.0 | -23.6 |
| 51.302 | V | 16.2 | 8.4 | 24.6 | 40.0 | -15.4 |
| 53.748 | V | 10.9 | 8.4 | 19.3 | 40.0 | -20.7 |
| 56.020 | V | 7.3 | 8.4 | 15.7 | 40.0 | -24.3 |
| 57.580 | V | 6.6 | 8.4 | 15.0 | 40.0 | -25.0 |
| 101.743 | V | 7.9 | 11.1 | 19.0 | 43.5 | -24.5 |
| 104.380 | V | 7.8 | 11.1 | 18.9 | 43.5 | -24.6 |
| 151.040 | V | 9.0 | 12.0 | 21.0 | 43.5 | -22.5 |
| 154.403 | V | 6.7 | 12.0 | 18.7 | 43.5 | -24.8 |
| 205.140 | H | 8.6 | 9.8 | 18.4 | 43.5 | -25.1 |



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

2.3 Radiated Emission Measurement Data (Con't)

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Band 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) |
|--------------------|-------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------|----------------|
| 48.286 | V | 5.9 | 10.6 | 16.5 | 40.0 | -23.5 |
| 51.311 | V | 16.4 | 8.4 | 24.8 | 40.0 | -15.2 |
| 53.761 | V | 10.8 | 8.4 | 19.2 | 40.0 | -20.8 |
| 56.019 | V | 7.5 | 8.4 | 15.9 | 40.0 | -24.1 |
| 57.588 | V | 6.5 | 8.4 | 14.9 | 40.0 | -25.1 |
| 101.749 | V | 8.2 | 11.1 | 19.3 | 43.5 | -24.2 |
| 104.389 | V | 8.1 | 11.1 | 19.2 | 43.5 | -24.3 |
| 151.028 | V | 8.7 | 12.0 | 20.7 | 43.5 | -22.8 |
| 154.406 | V | 6.9 | 12.0 | 18.9 | 43.5 | -24.6 |
| 205.146 | H | 8.8 | 9.8 | 18.6 | 43.5 | -24.9 |



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

2.3 Radiated Emission Measurement Data (Con't)

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Band C

| 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) |
|--------------------|-------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------|----------------|
| 48.312 | V | 6.1 | 10.6 | 16.7 | 40.0 | -23.3 |
| 51.307 | V | 16.5 | 8.4 | 24.9 | 40.0 | -15.1 |
| 53.759 | V | 11.2 | 8.4 | 19.6 | 40.0 | -20.4 |
| 56.024 | V | 7.4 | 8.4 | 15.8 | 40.0 | -24.2 |
| 57.566 | V | 6.8 | 8.4 | 15.2 | 40.0 | -24.8 |
| 101.749 | V | 8.3 | 11.1 | 19.4 | 43.5 | -24.1 |
| 104.387 | V | 7.9 | 11.1 | 19.0 | 43.5 | -24.5 |
| 151.026 | V | 9.2 | 12.0 | 21.2 | 43.5 | -22.3 |
| 154.419 | V | 7.0 | 12.0 | 19.0 | 43.5 | -24.5 |
| 205.145 | H | 8.7 | 9.8 | 18.5 | 43.5 | -25.0 |



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

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



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

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.



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

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

5.4 Power Spectral Density

Not Applicable



TEST REPORT

Report No. : AJ021980-001

Date : 2007 August 14

6 Appendices

| | | | |
|-----|--|---|-------|
| A1. | Photos of the set-up of Radiated Emissions | 1 | page |
| 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 | 4 | pages |
| A8. | Operation Description | 1 | page |

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