



## TEST REPORT

Report No. : AM0062740(8) Date : 2010-12-14

Application No. : LM025297(3)

Applicant : Mattel Asia Pacific Sourcing Ltd.  
13/F., South Tower,  
World Finance Center,  
Harbour City, Tsimshatsui,  
Kowloon, Hong Kong.

Sample Description : One(1) item of submitted sample stated to be :

| Sample Description            | Model No. |
|-------------------------------|-----------|
| RC CARS MINI RIDES-MATER      | T9484     |
| RC CARS MINI RIDES-FARANCESCO | T9486     |

Radio Frequency : 49.860MHz Transmitter  
Rating : 2 x 1.5V AA size batteries  
No. of submitted sample : Three (3) piece (s)

Date Received : 2010-12-06.

Test Period : 2010-12-06 to 2010-12-15.

Test Requested : FCC Part 15 Certification.

Test Method : 47 CFR Part 15 (10-1-09 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 C.

Remark : All two models are the same in circuitry, components and construction; and therefore model T9484 was chosen to be the representative of the test sample. The difference between the tested model and the declared model(s) are the package, color and model number.

*For and on behalf of*  
CMA Industrial Development Foundation Limited

Authorized Signature : \_\_\_\_\_

  
Mr. WONG Lap-pong, Andrew  
Assistant Manager  
Electrical Division

Page 1 of 11

FCC ID: PIYT9484-11A4T



## TEST REPORT

Report No. : AM0062740(8)

Date : 2010-12-14

### 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  |
| 1.4 | Measurement Uncertainty .....                                                    | 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 .....                                         | 7  |
| 3   | Description of the Line-conducted Test .....                                     | 8  |
| 3.1 | Test Procedure .....                                                             | 8  |
| 3.2 | Test Result .....                                                                | 8  |
| 3.3 | Graph and Table of Conducted Emission Measurement Data .....                     | 8  |
| 4   | Photograph .....                                                                 | 9  |
| 4.1 | Photographs of the Test Setup for Radiated Emission and Conducted Emission ..... | 9  |
| 4.2 | Photographs of the External and Internal Configurations of the EUT .....         | 9  |
| 5   | Supplementary document .....                                                     | 10 |
| 5.1 | Bandwidth .....                                                                  | 10 |
| 5.2 | Duty cycle .....                                                                 | 10 |
| 5.3 | Transmission time .....                                                          | 10 |
| 6   | Appendices .....                                                                 | 11 |



## **TEST REPORT**

Report No. : AM0062740(8)

Date : 2010-12-14

### **1 General Information**

#### **1.1 General Description**

The equipment under test (EUT) is a transmitter for RC CARS MINI RIDES-MATER. It operates at 49.860MHz and the oscillation of radio control is generated by a crystal. The EUT is powered by 2 x 1.5V AA size batteries. There is one button on the EUT. When the button is pressed, it will transmit radio control signal to receiver.

The antenna is permanently attached in EUT and the radio output power is unable to adjust.

The brief circuit description is listed as follows:

- U1 and its associated circuit act as an encoder.
- Y1 and its associated circuit act as an oscillator.



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

## **TEST REPORT**

Report No. : AM0062740(8)

Date : 2010-12-14

### **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.

FCC ID: PIYT9484-11A4T

Page 4 of 11



## TEST REPORT

Report No. : AM0062740(8)

Date : 2010-12-14

### 1.3 List of measuring equipment

| Equipment         | Manufacturer | Model No. | Serial No. | Calibration Due Date |
|-------------------|--------------|-----------|------------|----------------------|
| EMI Test Receiver | R&S          | ESCI      | 100152     | 2010 December 23     |
| Broadband Antenna | Schaffner    | CBL6112B  | 2692       | 2011 May 31          |
| Coaxial Cable     | Schaffner    | RG 213/U  | N/A        | 2012 August 03       |
| Coaxial Cable     | Suhner       | RG 214/U  | N/A        | 2012 August 03       |

### 1.4 Measurement Uncertainty

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k=2$ , providing a level of confidence of approximately 95%.

#### Radiated emissions

| Frequency                     | Uncertainty ( $U_{lab}$ ) |
|-------------------------------|---------------------------|
| 30MHz ~ 200MHz (Horizontal)   | 4.63dB                    |
| 30MHz ~ 200MHz (Vertical)     | 4.64dB                    |
| 200MHz ~ 1000MHz (Horizontal) | 4.65dB                    |
| 200MHz ~ 1000MHz (Vertical)   | 4.64dB                    |

#### Conducted emissions

| Frequency    | Uncertainty ( $U_{lab}$ ) |
|--------------|---------------------------|
| 150kHz~30MHz | 3.04dB                    |



## **TEST REPORT**

Report No. : AM0062740(8)

Date : 2010-12-14

### **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.

The device was rotated through three orthogonal axes to determine which attitude and configuration produce the highest emission during measurement for Radiated Emission measurement.

#### **2.2 Test Result**

Peak Detector data was measured unless otherwise stated.

“#” means emissions appearing within the restricted bands shall follow the requirement of section 15.205.

The frequencies from fundamental up to the tenth harmonics were investigated, and emissions more 20dB below limited were not reported. Thus, those highest emissions were presented in next page (section 2.3)

It was found that the EUT meet the FCC requirement.



## TEST REPORT

Report No. : AM0062740(8)

Date : 2010-12-14

### 2.3 Radiated Emission Measurement Data

#### Radiated emission

#### pursuant to

#### the requirement of FCC Part 15 subpart C

Environmental conditions:

| Parameter            | Recorded value |     |
|----------------------|----------------|-----|
| Ambient temperature: | 24             | ° C |
| Relative humidity:   | 54             | %   |

| Frequency (MHz) | Polarity (H/V) | Reading at 3m (dBμV) | Antenna Factor and Cable Loss (dB/m) | Average Factor (dB) | Field Strength at 3m (dBμV/m) | Limit at 3m (dBμV/m) | Margin (dB) |
|-----------------|----------------|----------------------|--------------------------------------|---------------------|-------------------------------|----------------------|-------------|
| #38.006         | V              | 21.3                 | 15.5                                 | -                   | 36.8                          | 40.0                 | - 3.2       |
| 49.861          | V              | 62.7                 | 10.5                                 | - 5.7               | 67.5                          | 80.0                 | - 12.5      |
| 99.722          | V              | 24.7                 | 9.7                                  | -                   | 34.4                          | 43.5                 | - 9.1       |
| 149.584         | V              | 15.2                 | 12.2                                 | -                   | 27.4                          | 43.5                 | - 16.1      |
| 199.445         | H              | 18.2                 | 10.0                                 | -                   | 28.2                          | 43.5                 | - 15.3      |
| #249.305        | H              | 15.3                 | 10.5                                 | -                   | 25.8                          | 46.0                 | - 20.2      |
| 299.166         | H              | 13.2                 | 14.3                                 | -                   | 27.5                          | 46.0                 | - 18.5      |
| 349.027         | H              | 14.0                 | 15.9                                 | -                   | 29.9                          | 46.0                 | - 16.1      |
| 398.888         | H              | 15.7                 | 15.9                                 | -                   | 31.6                          | 46.0                 | - 14.4      |
| 448.749         | H              | 12.8                 | 18.9                                 | -                   | 31.7                          | 46.0                 | - 14.3      |
| 498.611         | H              | 12.5                 | 18.9                                 | -                   | 31.4                          | 46.0                 | - 14.6      |



## **TEST REPORT**

Report No. : AM0062740(8)

Date : 2010-12-14

### **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. : AM0062740(8)

Date : 2010-12-14

### **4 Photograph**

#### **4.1 Photographs of the Test Setup for Radiated Emission and Conducted 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. : AM0062740(8)

Date : 2010-12-14

### 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

The plot on saved in TestRpt2.pdf shows the fundamental emission is confined in the specified band. The field strength of any emission appearing between the band edges and up to 10 kHz above and below the band edges (49.81 and 49.91 MHz) is at least 26dB below the carrier level. It meets the requirement of Section 15.235(b).

#### 5.2 Duty cycle

The duty cycle is simply the on-time divided by the period:

$$\begin{aligned}\text{The duration of one cycle} &= 33.52\text{ms} \\ \text{Effective period of the cycle} &= (1.02\text{ms} \times 8) + (510\mu\text{s} \times 18) \\ &= 17.34\text{ms} \\ \text{Duty Cycle} &= 17.34 / 33.52 \\ &= 0.52\end{aligned}$$

Therefore, the average factor is found by  $20 \log_{10} 0.52 = -5.7\text{dB}$

#### 5.3 Transmission time

Not Applicable



## TEST REPORT

Report No. : AM0062740(8)

Date : 2010-12-14

### 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.  | Bandwidth Plot                             | 1 | page  |
| A6.  | Average Factor                             | 2 | pages |
| A7.  | Block Diagram                              | 1 | page  |
| A8.  | Schematics Diagram                         | 1 | page  |
| A9.  | User Manual                                | 2 | pages |
| A10. | Operation Description                      | 1 | page  |

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