CMA Testing and Certification Laboratories
廠商會檢定中心

TEST REPORT

Report No. : AC002170-3 Date : 2002 April 09

Client : Capable Toys Ltd.
Unit 2, 11/F., Yau Lee Centre,
45 Hoi Yuen Road, Kwun Tong,
Kowloon, Hong Kong.

Sample Description : Sample stated to be :
Description : Radio Control Mini Racer
Model No. : RC01
Rating : 2 x 1.5 V AA size batteries
Buyer : Daka Development Ltd.
No. of sample(s) : Three(3) set(s) ***

Date Received : 2002 February 19.

Test Period : 2002 February 19 – 2002 March 20.

Test Requested : FCC Part 15 Certification

Test Method : FCC Rules and Regulations Part 15 – May 2001
ANSI C63.4 – 1992

Test Result : See attached sheet(s) from page 2 to 10.

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

For and on behalf of
CMA Testing and Certification Laboratories

Authorized Signature : _____ Page 1 of 10
Danny Chui
EMC Engineer - EL. Division

FCC ID : P9YRC0100000049TX

Room 1401-3, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, Hong Kong.
Tel: (852) 2698 8198 Fax: (852) 2695 4177 E-mail: info@cmatcl.com **Web Site:** http://www.cmatcl.com

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1 General Information

1.1 General Description

The equipment under test (EUT) is a transmitter for remote control toy car operating at 49.860 MHz which is controlled by a crystal. The EUT is powered two 1.5 V AA size batteries. The EUT has auto power off feature, and there are four main buttons to control forward, backward, left and right movement. It also has a charging terminal at the bottom of the EUT for charging the toy car.

The brief circuit description is listed as follows :
- TX2 and associated circuit act as encoding
- A 49.860 MHz Oscillator, Q1 and associated circuit act as oscillation
- Q2 and associated circuit act as amplification

1.2 Related Submittal Grants

This is single application for certification of a transmitter. The receiver for this transmitter is authorized by Certification procedure.

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1.3 Location of the test site

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 1992. An Open Area Testing Site is set up for investigation and located at :

Top of the Roof, 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 – 1992. A double shielded room is located at :

Roof Floor, Yan Hing Centre,

9 – 13 Wong Chuk Yeung Street,

Fo Tan, Shatin,

New Territories,

Hong Kong.

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1.4 List of measuring equipment

Equipment	Manufacturer	Model No.	Serial No.	Calibration Certification No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESCS30	100001	20-69223	Mar. 21, 2001	Sept. 20, 2002
Broadband Antenna	Schaffner	CBL6113B	2718	AC1753	Dec. 15, 2000	Jun. 14, 2002
Signal Generator	IFR	2023B	202302/938	Nil	Oct. 23, 2000	Apr. 22, 2002
LISN	R&S	ESH3-Z5	100010	20-70405	Mar. 29, 2001	Sept. 28, 2002
Pulse Limiter	R&S	ESH3-Z2	100001	20-73194	May 2, 2001	Nov. 1, 2002
Biconical Antenna	R&S	HK116	837414/004	4000.7752.02	Oct. 23, 2000	Apr. 22, 2002

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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 – 1992.

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.

2.2 Test Result

The fundamental emission was based on measurements employing the peak detector on the open area test site.

The harmonic emissions meeting the requirement of section 15.209 are based on measurements employing the CISPR qusai-peak detector.

* Emissions appearing within the restricted bands shall follow the requirement of section 15.205.

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 C

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
49.860	V	63.0	12.9	75.9	80.0	-4.1
99.718	V	22.3	12.1	34.4	43.5	-9.1
149.577	V	14.9	14.5	29.4	43.5	-14.1
199.436	V	9.8	13.4	23.2	43.5	-20.3
*249.295	V	12.3	14.2	26.5	46.0	-19.5
299.154	V	15.4	17.5	32.9	46.0	-13.1
349.013	V	17.1	19.7	36.8	46.0	-9.2
398.872	V	18.4	19.7	38.1	46.0	-7.9
448.731	V	16.1	24.2	40.3	46.0	-5.7
498.590	V	16.1	24.2	40.8	46.0	-5.2

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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 – 1992. 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 ExtPho1.jpg to ExtPho2.jpg and IntPho1.jpg to IntPho3.jpg.

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	LabelSmpl.pdf
Block Diagram	BlkDia.pdf
Schematic Diagram	Schem.pdf
Users Manual	UserMan.pdf
Operational Description	OpDes.pdf

5.1 Bandwidth

The plot on saved in bw.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 26 dB below the carrier level. It meets the requirement of Section 15.235(b).

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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	2 pages
A4	ID Label/Location	1 page
A5	Block Diagram	1 page
A6	Schematics	1 page
A7	User Manual	1 page
A8	Operation Description	1 page
A9	Bandwidth Plot	1 page

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

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