CMA Testing and Certification Laboratories
廠商會檢定中心

TEST REPORT

Report No.	:	AG029718-001	Date :	2007 January 05

Application No. : LG225584(4)

Client : Jakks Pacific (HK) Ltd.
Room 718, 7/F., AIA Tower,
New World Centre,
20 Salisbury Road, Tsim Sha Tsui East,
Kowloon, Hong Kong

Sample Description : One(1) submitted sample(s) stated to be Mini XPV
of Model No. 74000
Radio Frequency : 49.860MHz Transmitter
Rating : 6 x 1.5V AA size batteries
No. of submitted sample : Two (2) piece(s) ***

Date Received : 2006 November 13

Test Period : 2006 November 14 – 2006 November 15

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 11.

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

For and on behalf of
CMA Industrial Development Foundation Limited

Authorized Signature : _____
Danny Chui
Deputy Manager - EL. Division

FCC ID: OTARC74000T49

CMA Industrial Development Foundation Limited
Room 1302, 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

CMA Testing and Certification Laboratories
廠商會檢定中心

TEST REPORT

Report No. : AG029718-001 Date : 2007 January 05

Table of Contents

CMA Industrial Development Foundation Limited
Room 1302, 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

TEST REPORT

Report No. : AG029718-001 Date : 2007 January 05

1 General Information

1.1 General Description

The equipment under test (EUT) is a transmitter for Mini XPV. It operates at 49.860MHz which is controlled by a crystal. The EUT is powered by six AA size batteries. There are two control sticks and one push button on the EUT. When the push button is pushed to “ON” and the forward, left or right stick is pressed once, it will transmit different radio control signal to receiver. When the push button is pushed to “CH”, it will charge up the battery in the receiver.

The brief circuit description is listed as follows:

- U1 and associated circuit act as an encoder.
- X1, Q6 and associated circuit act as an oscillator.
- Q7 and associated circuit act as a RF amplifier.
- Q5 and associated circuit act as a voltage regulator.
- Q4 and associated circuit act as a reference circuit.
- Q1 and associated circuit act as an indicator circuit.
- Q2, Q3 and associated circuit act as a current protect circuit.

CMA Industrial Development Foundation Limited
Room 1302, 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

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.

CMA Industrial Development Foundation Limited
Room 1302, 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

1.3 List of measuring equipment

Equipment	Manufacturer	Model No.	Serial No.	Calibration Due Day
EMI Test Receiver	R&S	ESCI	100152	2007 September 30
Broadband Antenna	Schaffner	CBL6112B	2718	2008 May 24

CMA Industrial Development Foundation Limited
Room 1302, 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

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.

2.2 Test Result

Peak Detector data was measured unless otherwise stated.

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

It was found that the EUT meet the FCC requirement.

CMA Industrial Development Foundation Limited
Room 1302, 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

TEST REPORT

Report No. : AG029718-001 Date : 2007 January 05

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)	Average Factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
49.862	V	59.9	10.6	-5.5	65.0	80.0	-15.0
99.730	H	18.3	9.5	-	27.8	43.5	-15.7
149.592	H	11.8	12.0	-	23.8	43.5	-19.7
199.450	H	8.3	9.5	-	17.8	43.5	-25.7
*249.316	H	15.8	9.8	-	25.6	46.0	-20.4
299.178	H	10.7	13.9	-	24.6	46.0	-21.4
349.034	H	10.0	14.9	-	24.9	46.0	-21.1
398.894	H	11.3	14.9	-	26.2	46.0	-19.8
448.756	H	10.5	17.9	-	28.4	46.0	-17.6
498.614	H	10.2	17.9	-	28.1	46.0	-17.9

CMA Industrial Development Foundation Limited
Room 1302, 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

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

CMA Industrial Development Foundation Limited
Room 1302, 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

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.

CMA Industrial Development Foundation Limited
Room 1302, 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

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:

The duration of one cycle = 42.05ms

Effective period of the cycle = 4 x 1.47ms + 34 x 0.48ms
= 22.20ms

Duty Cycle = 22.20ms/ 42.05ms
= 0.53

Therefore, the average factor is found by $\underline{20 \log_{10}} 0.53 = -5.5$dB

5.3 Transmission time

N/A

CMA Industrial Development Foundation Limited
Room 1302, 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

TEST REPORT

Report No. : AG029718-001 Date : 2007 January 05

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 *****

CMA Industrial Development Foundation Limited
Room 1302, 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