



## TEST REPORT

Report No. : AJ037385-001 Date : 2007 December 27

Application No. : LJ211992(2)

Client : Mattel Asia Pacific Sourcing Limited  
13/F., South Tower, World Finance Centre,  
Harbour City, Tsim Sha Tsui,  
Kowloon, Hong Kong.

Sample Description : One(1) submitted sample(s) stated to be Batman Walkie Talkie and Speed Racer Walkie Talkie of Model No. M4859 and M7716  
Radio Frequency : 49.860MHz Transmitter with in Transceiver  
Rating : 1 x 9V size battery  
No. of submitted sample : Two (2) piece(s) \*\*\*

Date Received : 2007 November 23

Test Period : 2007 November 23 – 2007 December 03

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.

Remark : All Two models are the same in circuitry and components; and therefore model M4859 was chose to be the representative of the test sample.

The receiver within a transceiver is under verification procedure.

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

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

Danny Chui  
Deputy Manager - EL. Division



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### **1 General Information**

#### **1.1 General Description**

The equipment under test (EUT) is a transceiver for Batman Walkie Talkie. It operates at 49.860MHz and the oscillation of radio control is generated by a crystal. The EUT is powered by 1 x 9V size battery. When it switched on and pressed the “Push Switch” once, it will transmit a radio signal to other Walkie Talkie.

The antenna is permanently attached in the device and without standard antenna jack.

The brief circuit description is listed as follows:

- Q1 and associated circuit act as RF amplifier.
- Y1 and associated circuit act as oscillator.
- Q2, IC1 and associated circuit act as voice controller.



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



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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	2008 October 14
Broadband Antenna	Schaffner	CBL6112B	2718	2008 May 23



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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.

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.

“#” means 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

Operation Mode: Transmitter

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dB $\mu$ V/m)	Antenna and Cable factor (dB)	Field Strength (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
49.844	V	53.9	10.6	64.5	80.0	-15.5
99.666	H	19.6	9.5	29.1	43.5	-14.4
149.500	H	16.2	12.0	28.2	43.5	-15.3
199.330	H	17.8	9.5	27.3	43.5	-16.2
#249.162	H	19.0	9.8	28.8	46.0	-17.2
298.994	H	10.4	13.9	24.3	46.0	-21.7
348.826	H	7.6	14.9	22.5	46.0	-23.5
398.658	H	8.9	14.9	23.8	46.0	-22.2
448.490	H	5.2	17.9	23.1	46.0	-22.9
498.332	H	8.0	17.9	25.9	46.0	-20.1



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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

The plot 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 10kHz above and below the band edges (49.81 and 49.91MHz) is at least 26dB below the carrier level. It meets the requirement of Section 15.235(b).

#### 5.2 Duty cycle

Not Applicable

#### 5.3 Transmission time

Not Applicable

#### 5.4 Power Spectral Density

Not Applicable



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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	1	page
A4.	ID Label/Location	2	pages
A5.	Bandwidth Plot	1	page
A6.	Block Diagram	1	page
A7.	Schematics Diagram	1	page
A8.	User Manual	3	pages
A9.	Operation Description	1	page

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