



TEST REPORT

Report No. : AC021419-1 Date : 2003 January 17

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

Sample Description : Sample stated to be :
Description: 9.6 V Dodge Ram
Model No. : B2219
Rating : 1 x 9 V size battery
No. of sample(s) : Two(2) pieces ***

Date Received : 2002 November 16.
2002 November 30.

Test Period : 2002 November 16 – 2002 November 21.
2002 November 30 – 2002 December 04.

Test Requested : FCC Part 15 Certification

Test Method : FCC Rules and Regulations Part 15 – May 2002
ANSI C63.4 – 1992

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 Testing and Certification Laboratories

Authorized Signature : _____

Danny Chui
EMC Engineer - EL. Division

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FCC ID : PIYB2219-03A4T



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1 General Information

1.1 General Description

The equipment under test (EUT) is a transmitter for 9.6 V Dodge Ram operating at 49.86 MHz which is controlled by a crystal. The EUT is powered by a 9 V size battery. It has 4 switches incorporated on two button, forward and backward are on left-hand side of the controller, left turn and right turn are on right-hand side of the controller.

The brief circuit description is saved with filename : Opdes.pdf

The brief circuit description is listed as follows :

- IC1 and associated circuit act as encoding
- Y1, Q2 and associated circuit act as oscillation
- Q4 and associated circuit act as amplification and modulation

1.2 Related Submittal Grants

This is a 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	Mar. 20, 2003
Broadband Antenna	Schaffner	CBL6113B	2718	AC1753	Dec. 15, 2000	Jun. 14, 2003
Signal Generator	IFR	2023B	202302/938	Nil	Oct. 23, 2000	Apr. 22, 2003
LISN	R&S	ESH3-Z5	100010	20-70405	Mar. 29, 2001	Mar. 28, 2003
Pulse Limiter	R&S	ESH3-Z2	100001	20-73194	May 2, 2001	May 1, 2003



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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.

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

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 quasip-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**

Data : Fundamental and its harmonics

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)
49.861	V	58.4	12.9	71.3	80.0	-8.7
99.721	H	6.8	12.1	18.9	43.5	-24.6
149.589	H	2.8	14.5	17.3	43.5	-26.2
199.445	H	3.1	13.4	16.5	43.5	-27.0
*249.296	H	5.6	14.2	19.8	46.0	-26.2
299.166	H	3.1	14.5	20.6	46.0	-25.4
349.027	H	2.9	19.7	22.6	46.0	-23.4
399.888	H	4.1	19.7	23.8	46.0	-22.2
448.749	H	1.7	24.2	25.9	46.0	-20.1
498.591	H	4.1	24.2	28.3	46.0	-17.7



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2.3 Radiated Emission Measurement Data

**Radiated emission
pursuant to
the requirement of FCC Part 15 subpart C**

Data : Spurious

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)
33.234	H	6.7	20.0	26.7	40.0	-13.3
548.471	H	2.4	27.3	29.7	46.0	-16.3
598.333	H	3.2	27.3	30.5	46.0	-15.5
698.054	H	2.3	28.5	30.8	46.0	-15.2
747.915	H	3.9	30.0	33.9	46.0	-12.1



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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 – 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 IntPho2.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 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 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	1 page
A4	ID Label/Location	1 page
A5	Block Diagram	1 page
A6	Schematics	1 page
A7	User Manual	4 pages
A8	Operation Description	1 page
A9	Bandwidth Plot	1 page

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