CMA Testing and Certification Laboratories
廠商會檢定中心

TEST REPORT

Report No. : AD002849-1 Date : 2003 March 28

Applicant : Kin Yat Industrial Co., Ltd.
7/F., Galaxy Factory Building,
25-27 Luk Hop Street, San Po Kong,
Kowloon, Hong Kong.

Sample Description : One(1) submitted sample stated to be Dump Truck of Model No. 90659.
Rating : 1 x 9 V size battery
No. of sample(s) : Two(2) pieces ***

Date Received : 2003 February 25.

Test Period : 2003 February 25 – 2003 March 03.

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 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 : _____
Danny Chui
EMC Engineer - EL. Division

FCC ID : HDT90659TX

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1 General Information

1.1 General Description

The equipment under test (EUT) is a transmitter for Dump Truck operating at 49.860 MHz which is controlled by a crystal. The EUT is powered by a 9 V size battery. There is a steering wheel for turning left and right direction; two buttons in the middle control the dump up and down; one button at the bottom control forward and backward movement.

The brief circuit description is listed as follows :
- ICU2 and associated circuit act as encoding
- X1, Q1 and associated circuit act as oscilliation
- Q2 and associated circuit act as amplification

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	S21141	Dec. 19, 2002	Dec. 18, 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	100038	S21142	Dec. 19, 2002	Dec. 18, 2003
Pulse Limiter	R&S	ESH3-Z2	100001	20-73194	May 2, 2001	May 1, 2003
Biconical Antenna	R&S	HK116	837414/004	4000.7752.02	Oct. 23, 2000	Apr. 22, 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 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)
49.861	V	53.1	11.4	64.5	80.0	-15.5
99.722	H	17.9	10.0	27.9	43.5	-15.6
149.582	V	24.3	12.2	36.5	43.5	-7.0
199.443	V	14.1	10.5	24.6	43.5	-18.9
*249.304	V	15.9	10.7	26.6	46.0	-19.4
299.165	V	14.9	13.9	28.8	46.0	-17.2
349.026	V	13.9	15.3	29.2	46.0	-16.8
398.887	H	19.0	15.3	34.3	46.0	-11.7
448.748	H	22.5	18.6	41.1	46.0	-4.9
498.609	H	22.9	18.6	41.5	46.0	-4.5

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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 15.236(b).

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6 Appendices

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A2.	Photos of External Configurations	1 page
A3.	Photos of Internal Configurations	1 page
A4.	ID Label/Location	2 pages
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 *****

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