



## TEST REPORT

Report No. : AF002022-001 Date : 2005 January 31  
Applicant No. : LF200156(3)  
Client : Mattel Asia Pacific Sourcing Limited  
13/F., South Tower, World Finance Centre,  
Harbour City, Tsimshatsui, Kowloon, Hong Kong.  
Sample Description : One(1) submitted sample stated to be 1 : 10 Drifting Vehicle Nissan Silvia S15  
of Model No. H3623  
Rating : 4 x 1.5V "AA" size battery  
No. of sample(s) : Three (3) piece(s)\*\*\*  
Date Received : 2005 January 18  
Test Period : 2005 January 18 – 2005 January 28  
Test Requested : FCC Part 15 Certification  
Test Method : FCC Rules and Regulations Part 15 – July 2004  
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 Testing and Certification Laboratories

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

Danny Chui  
EMC Engineer - EL. Division

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FCC ID : PIYH3623-05A4T



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### **1 General Information**

#### **1.1 General Description**

The equipment under test (EUT) is a transmitter for 1 :10 Drifting Vehicle Nissan Silvia S15 operating at 49.860 MHz which is controlled by a crystal. The EUT is powered by 4 x 1.5V "AA" size battery. There are two control stick and a on / off switch in the EUT. When switch "on" the unit and push the forward or backward control stick once, it will transmit a radio signal for receiver go forward or backward. When the turn left or turn right wheel trigger once, it will transmit a radio signal for receiver turn left or turn right.

The brief circuit description is listed as follows:

- U2 and associated circuit act as encoder.
- X1, Q2 and associated circuit act as oscillator.
- Q3 and associated circuit act as amplify.
- Q1 and associated circuit act as voltage readjust.

#### **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 – 2003. 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 – 2003. 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.
EMI Test Receiver	R&S	ESCS30	100001	S43284
Broadband Antenna	Schaffner	CBL6112B	2718	AC1753
Signal Generator	IFR	2023B	202302/938	S43098
LISN	R&S	ESH3-Z5	100038	S43101
Pulse Limiter	R&S	ESH3-Z2	100001	S43325
Biconical Antenna	R&S	HK116	837414/004	4000.7752.02



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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.

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.



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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 (dB $\mu$ V/m)	Antenna and Cable factor (dB)	Average Factor (dB)	Field Strength (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
49.860	V	71.3	10.8	-6.3	75.8	80.0	-4.2
99.722	V	13.0	10.2	-	23.2	43.5	-20.3
149.585	H	13.7	12.5	-	26.2	43.5	-17.3
199.446	H	25.7	10.1	-	35.8	43.5	-7.7
* 249.308	H	18.2	10.8	-	29.0	46.0	-17.0
299.169	H	18.4	14.3	-	32.7	46.0	-13.3
349.031	H	10.5	15.7	-	26.2	46.0	-19.8
398.891	H	9.3	15.7	-	25.0	46.0	-21.0
448.751	H	6.2	18.9	-	25.1	46.0	-20.9
498.612	H	5.9	18.9	-	24.8	46.0	-21.2



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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 – 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 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).

#### 5.2 Duty cycle

The duty cycle is simply the on-time divided by the period

The duration of one cycle = 17.58 ms

Effective period of the cycle = (0.66 x 8) ms + (0.32 x 10) ms  
= 8.48 ms

Duty Cycle = (8.48 / 17.58) ms  
= 0.482 ms

Therefore, the average factor is found by  $20 \log_{10} 0.482 = -6.3$  dB



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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.	Bandwidth Plot	1 page
A6.	Average Factor	2 pages
A7.	Block Diagram	1 page
A8.	Schematics	1 page
A9.	User Manual	2 pages
A10.	Operation Description	1 page

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