ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
CERTIFICATION TO FCC PART 15 REQUIREMENTS

for

INTENTIONAL RADIATOR

RC CAR TRANSMITTER

MODEL NO: 34337

BRAND NAME: HOT ROD ROADSTER

FCC ID NO: APB34337-98A4T

REPORT NO: 98E7680

ISSUE DATE: AUGUST 18, 1998

Prepared for

MATTEL TOYS, INC.
333 CONTINENTAL BLVD.
EL SEGUNDO, CA 90245
USA

Prepared by

COMPLIANCE ENGINEERING SERVICES, INC.
1366 BORDEAUX DRIVE
SUNNYVALE, CA 94089, USA
TEL: (408) 752-8166
FAX: (408) 752-8168

TABLE OF CONTENTS **PAGE**

1. VERIFICATION OF COMPLIANCE

COMPANY NAME	:	MATTEL TOYS, INC. 333 CONTINENTAL BLVD. EL SEGUNDO, CA 90245 USA
CONTACT PERSON	:	VLADIMIR BUZGA DIRECTOR OF DEVELOPMENT, CES
TELEPHONE NO.	:	310-252-2000
EUT DESCRIPTION	:	RC CAR TRANSMITTER
MODEL NAME/NUMBER	:	34337
FCC ID	:	APB34337-98A4T
DATE TESTED	:	AUGUST 18, 1998
REPORT NUMBER	:	98E7680

EQUIPMENT TYPE	49.86 MHz TRANSMITTER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15.235

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in CFR 47, PART 15. This said equipment in the configuration described in this report shows that maximum emission levels emanating from equipment are within the compliance requirements.

MIKE C.I. KUO / VICE PRESIDENT
COMPLIANCE ENGINEERING SERVICES, INC.

2. Product Description

CHASSIS TYPE	**PLASTIC**
Fundamental Frequency	**49.86 MHz**
Power Source	**9 VOLT Battery (4 X AA)**
Transmitting Time	**Continuous**
Type of Antenna	**Permanently attached**
No. of Channel	**One**
NO. OF LAYER	**1**
Board Revision No	**33309-9519**
Associated Receiver	**Mattel Toys, Inc. Model no: 34337 FCC ID:APB34337-98A4R**

3. Test Facility

The 3/10/30 meter open area test site and conducted measurement facility used to collect the radiated data is located at 561F Monterey Road, Morgan Hill, California, U.S.A. A detailed description of the test facility was submitted to the Commission on May 27, 1994.

4. Measurement Standards

The site is constructed and calibrated in conformance with the requirements of ANSI C63.4/1992.

5. Test Methodology

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 KHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. (CFR 47 Section 15.33)

COMPLIANCE ENGINEERING SERVICES, INC. CCS DOCUMENT NO:CCSUP4026B
1366 BORDEAUX DRIVE, SUNNYVALE, CA 94089, USA TEL:(408)752-8166 FAX:(408)752-8168

6. Measurement Equipment Used

Manufacturer	Model Number	Description	Cal Due Date
H.P.	8546A	EMI Receiver (9kHz - 6.5GHz)	03/99
H.P.	85460A	RF Filter Section (9kHz - 6.5GHz)	03/99
EMCO	3146	Antenna (200-1000 MHz)	10/98
EMCO	3110	Antenna (30-200 MHz)	10/98
H.P.	8447D	Preamplifier (0.1 - 1300 MHz)	09/98

7. Test Procedures and Test Results

Radiated Emission Test: (15.235 (a))

Test Procedure

1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3 meter from the EUT. The EUT was placed in X,Y, and Z position to simulate the actual usage.

2. The turntable was slowly rotated to locate the direction of maximum emission at each EUT position. Once the maximum direction and EUT position was determined, the search antenna was raised and lowered in both vertical and horizontal polarization. The maximum reading so obtained are recorded in the data list below.

Test Result : Refer to attached tabular data sheet. (Data report number :980818F1

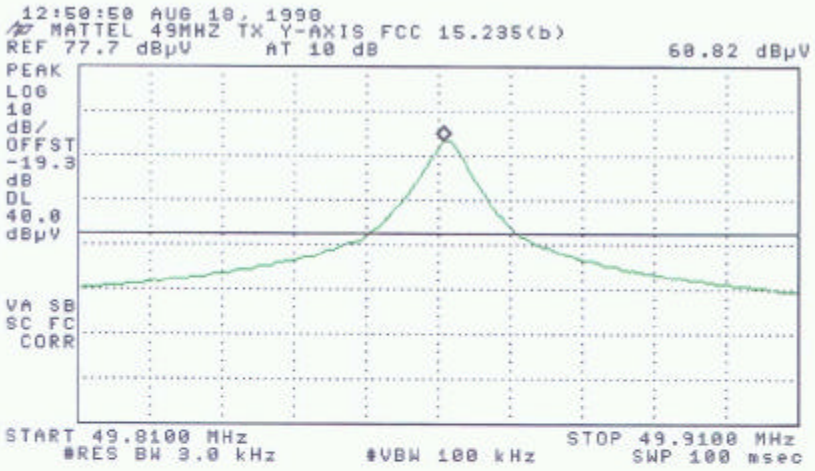
Radiated Emission Test: (15.235 (b))

Test Requirement : The field strength between the band edges and up to 10kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in 15.209, which permits the higher emission levels.

Test Procedure:

1. Verification of antenna output power was made before the tests. Since the EUT's antenna is permanently attached and can not produce unmodulated signle, EUT was tested with radited emission setup at 3 meter with 15.208 general requirement. Please refer to Plot #1. Output power=60.82dBuV

2. Modulated emission of +/-10kHz of the band edge were measured with instrument setting: Plot #1 (Start Frequency=49.81MHz, Stop frequency=49.91MHz, RBW=3kHz, VBW=100kHz) shows the emissions level at band edge are below 15.209 general requirement (40dBuV).


12:50:50 AUG 10, 1990
MATTEL 49MHZ TX Y-AXIS FCC 15.235(b)
REF 77.7 dBµV
AT 10 dB
60.82 dBµV
PEAK
LOG
10
dB/
OFFST
-19.3
dB
DL
40.0
dBµV
VA SB
SC FC
CORR
START 49.8100 MHz
#RES BW 3.0 kHz
#VBW 100 kHz
STOP 49.9100 MHz
SWP 100 msec

PK

PLOT #1

PK

Compliance Engineering Services Inc.

Project No. : 98E7680
Report No. : 980818F1
Date : 08/18/1998
Time : 10:11
Test Engr : PETE K

>> 3 M RADIATED EMISSION DATA <<

Company : MATTEL
Equipment Under Test : RC CAR 49MHZ TRANSMITTER
Test Configuration : EUT ONLY
Type of Test : FCC 15.209, 15.235
Mode of Operation : TX

Freq.	dBuV	PreAmp	Ant	Cable	dBuV/m	Limit	Margin	Pol	Hgt(m)	Az
Biconical 8909-1079 ; Pre-pamp = 8447D-P2 2944A07781:										
X-AXIS:										
PEAK:										
49.86	86.12	-31.83	12.10	1.71	68.10	100.00	-32.90	H	3.0	90
AVG:										
49.86	72.05	-31.83	12.10	1.71	54.03	80.00	-25.97	H	3.0	90
149.58	47.37	-31.33	14.83	2.81	33.68	43.50	-9.82	H	1.5	90
Z-AXIS:										
PEAK:										
49.86	86.52	-31.83	12.10	1.71	68.50	100.00	-31.50	H	2.0	90
AVG:										
49.86	71.95	-31.83	12.10	1.71	53.93	80.00	-26.07	H	2.0	90
149.58	46.56	-31.33	14.83	2.81	32.87	43.50	-10.63	H	2.0	90
Y-AXIS:										
PEAK:										
49.86	93.40	-31.83	10.78	1.71	74.05	100.00	-25.95	V	1.0	0
AVG:										
49.86	78.58	-31.83	10.78	1.71	59.23	80.00	-20.77	V	1.0	0
149.58	47.00	-31.33	14.83	2.81	33.31	43.50	-10.19	V	1.0	0
Y-AXIS:										
LP NSN=X100 ; Pre-pamp = 8447D-P2 2944A07781:										
249.30	42.10	-30.79	12.00	3.72	27.02	46.00	-18.98	V	1.0	0
299.16	35.86	-30.60	14.94	4.08	24.28	46.00	-21.72	V	1.0	0
349.02	35.04	-30.74	15.49	4.43	24.22	46.00	-21.78	V	1.0	0
398.88	38.30	-30.88	16.00	4.77	28.19	46.00	-17.81	V	1.0	0
448.74	35.80	-31.09	17.22	5.11	27.04	46.00	-18.96	V	1.0	0
498.60	32.32	-31.30	18.47	5.44	24.92	46.00	-21.08	V	1.0	0
747.90	33.79	-30.75	20.68	6.74	30.47	46.00	-15.53	V	1.0	0

Total # of data 15
V. f2.2

SCANNED HORIZONTAL AND VERTICAL MAXIMUM POLARITY REPORTED
ALL EMISSIONS ABOVE 20uV/m REPORTED.

8. Radiated Emission Test Setup Photo