ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
CERTIFICATION TO FCC PART 15 REQUIREMENTS

for

UNINTENTIONAL RADIATOR

49 MHz RADIO CONTROL CAR RECEIVER

MODEL NO: 95086-49R

BRAND NAME: TYCO R/C-6V CORVETTE

FCC ID NO: APB95086-00A4R

REPORT NO: 01U0710-1

DATE: MARCH 13, 2001

Prepared for
MATTEL MT. LAUREL
6000 MIDATLANTIC DRIVE
MOUNT LAUREL, NJ 08054
USA

Prepared by
COMPLIANCE ENGINEERING SERVICES, INC.
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1. VERIFICATION OF COMPLIANCE

COMPANY NAME	:	MATTEL MT. LAUREL 6000 MIDATLANTIC DRIVE MOUNT LAUREL, NJ 08054 USA
CONTACT PERSON	:	FRANK WINKLER, SENIOR PROJECT ENGINEER
TELEPHONE NO.	:	(856) 840-1259
EUT DESCRIPTION	:	49MHz RADIO CONTROL CAR RECEIVER
MODEL NAME/NUMBER	:	95086-49R
BRAND NAME	:	TYCO R/C-6V CORVETTE
SERIAL NUMBER	:	N/A
FCC ID	:	APB95086-00A4R
DATE TESTED	:	MARCH 06, 2001
REPORT NUMBER	:	01U0710-1

TYPE OF EQUIPMENT	SECURITY EQUIPMENT (UNINTENTIONAL RADIATOR)
EQUIPMENT TYPE	49 MHz SUPERREGENERATE RECEIVER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15.109

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. **Warning**: This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification will constitute fraud and shall nullify the document.

Tested and/or Reviewed By:

MIKE ZHU
SENIOR EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

Released For CCS By:

THU CHAN
SENIOR EMC ENGINEERING
COMPLIANCE CERTIFICATION SERVICES

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2. PRODUCT DESCRIPTION

MATTEL MT. LAUREL, Model TYCO R/C-6V CORVETTE is the receiving portion of a remote control toy. The associated Transmitter is manufactured by MATTEL MT. LAUREL, Model No 95086-49T: FCC ID APB95086-00A4T.

3. TEST FACILITY

The 3 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 facilities was submitted to the Commission on May 27, 1994.

The measuring instrument, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

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4. MEASUREMENT EQUIPMENT USED

Manufacturer	Model Number	Description	Cal Due Date
H.P.	8568B	Spectrum Analyzer (100Hz - 1.5GHz)	07/14/01
EATON	94455-1	Antenna, Biconical	09/12/01
H.P.	8640B	Signal Generator (0.5 - 1024 MHz)	11/09/00
BATTERY	N/A	6 Volt Nicad or 6V Alkaline (4 x AA)	N/A

5. TEST CONFIGURATION

Set signal generator to transmit at 49 MHz. Adjusted generator level and frequency to get the maximum coherent and emission of the Eut. The receiver receives the signal. All the wires are placed on the turntable to their maximum length to simulate the worse emission condition.

6. TESTS CONDUCTED

CFR 47, 15.109 RADIATED EMISSION TESTS	CONDUCTED AT 3 METERS

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7. RADIATED EMISSION TEST PROCEDURE

The EUT and all other support equipment are placed on a wooden table 80 cm above the ground screen. Antenna to EUT distance is 3 meters. During the test, the table is rotated 360 degrees to maximize emissions and the antenna is positioned from 1 to 4 meters above the ground screen to further maximize emissions. The antenna is polarized in both vertical and horizontal positions.

Monitor the frequency range of interest at a fixed antenna height and EUT azimuth. Frequency span should be small enough to easily differentiate between broadcast stations and intermittent ambients. Rotate EUT 360 degrees to maximize emissions received from EUT. If emission increases by more than 1 dB, or if another emission appears that is greater by 1 dB, return to azimuth where maximum occurred and perform additional cable manipulation to further maximize received emission.

Move antenna up and down to further maximize suspected highest amplitude signal. If emission increased by 1 dB or more, or if another emission appears that is greater by 1dB or more, return to antenna height where maximum signal was observed and manipulate cables to produce highest emissions, noting frequency and amplitude.

8. COHERENT TESTS

During Radiated Emission Tests, H.P. Signal Generator Model No: 8640B (0.5 - 1024 MHz) was used to radiate unmodulated CW signal to EUT at 49 MHz. Please refer to radiated emission data for six highest readings.

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9. EQUIPMENT MODIFICATIONS

To achieve compliance to FCC Section 15.109, the following change(s) were made during compliance testing:

No changes were required in order to achieve compliance to FCC Section 15.109.

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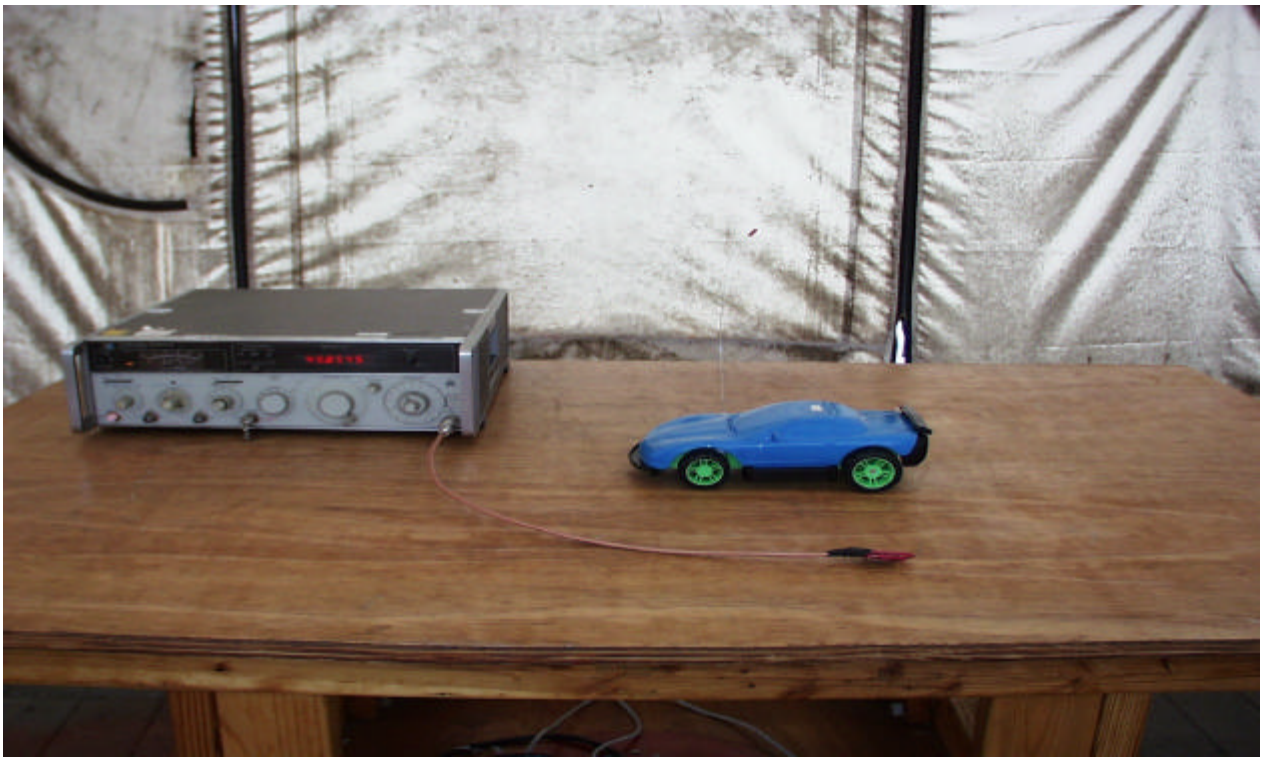
10. TEST CONFIGURATION PHOTOS (Radiated Emission Test)



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MATTEL, FCC15.109, FCCID APB95086-00A4R

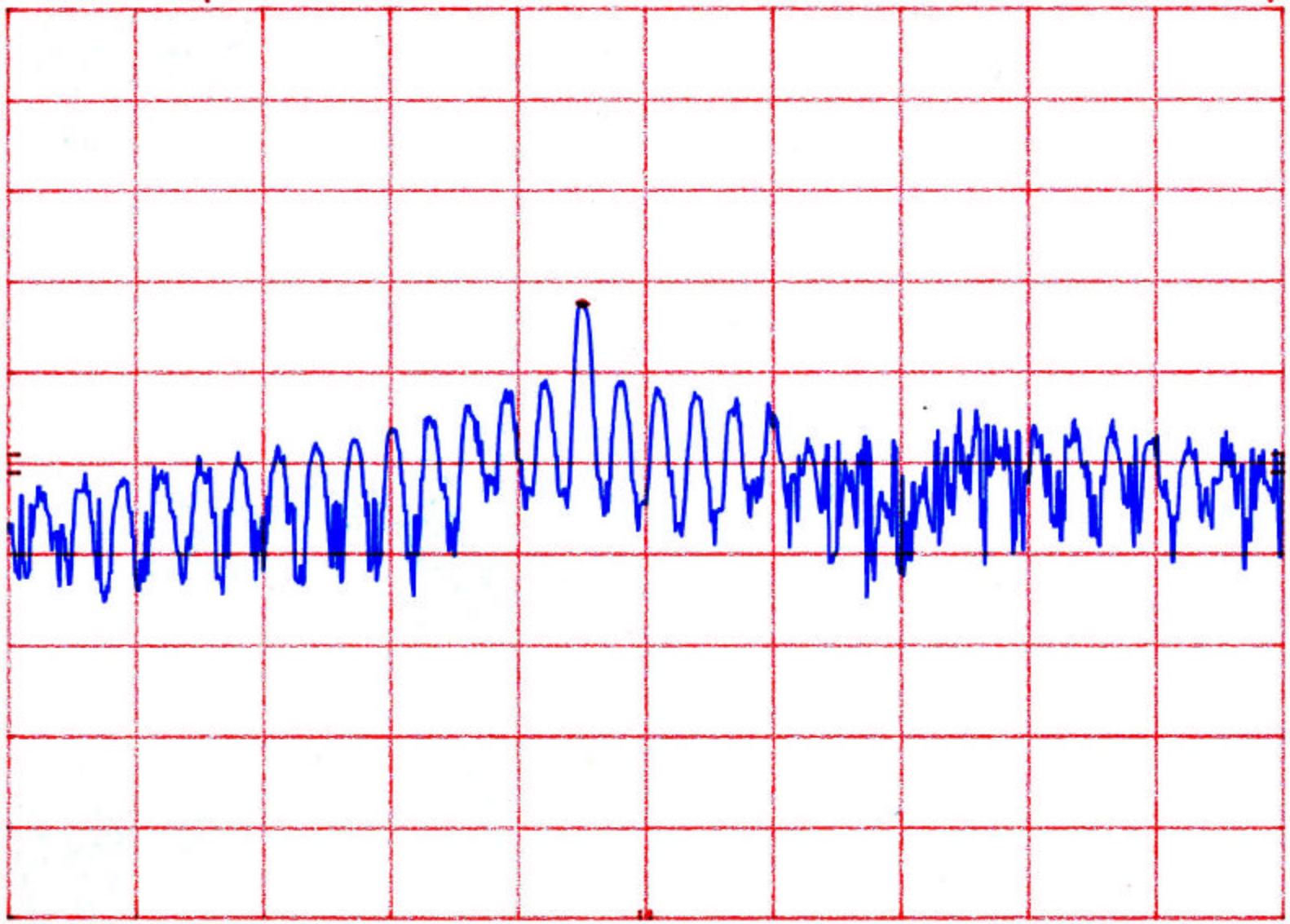
MKR 49.700 MHz

REF 80.9 dBμV ATTEN 10 dB

48.40 dBμV

10 dB/

OFFSET
-16.1
dB



CENTER 50.100 MHz

SPAN 8.000 MHz

RES BW 100 kHz VBW 100 kHz

SWP 20 msec

m2

MATTEL, FCC15.109, FCCID APB95086-00A4R

MKR 49.940 MHz

REF 80.9 dBμV ATTEN 10 dB

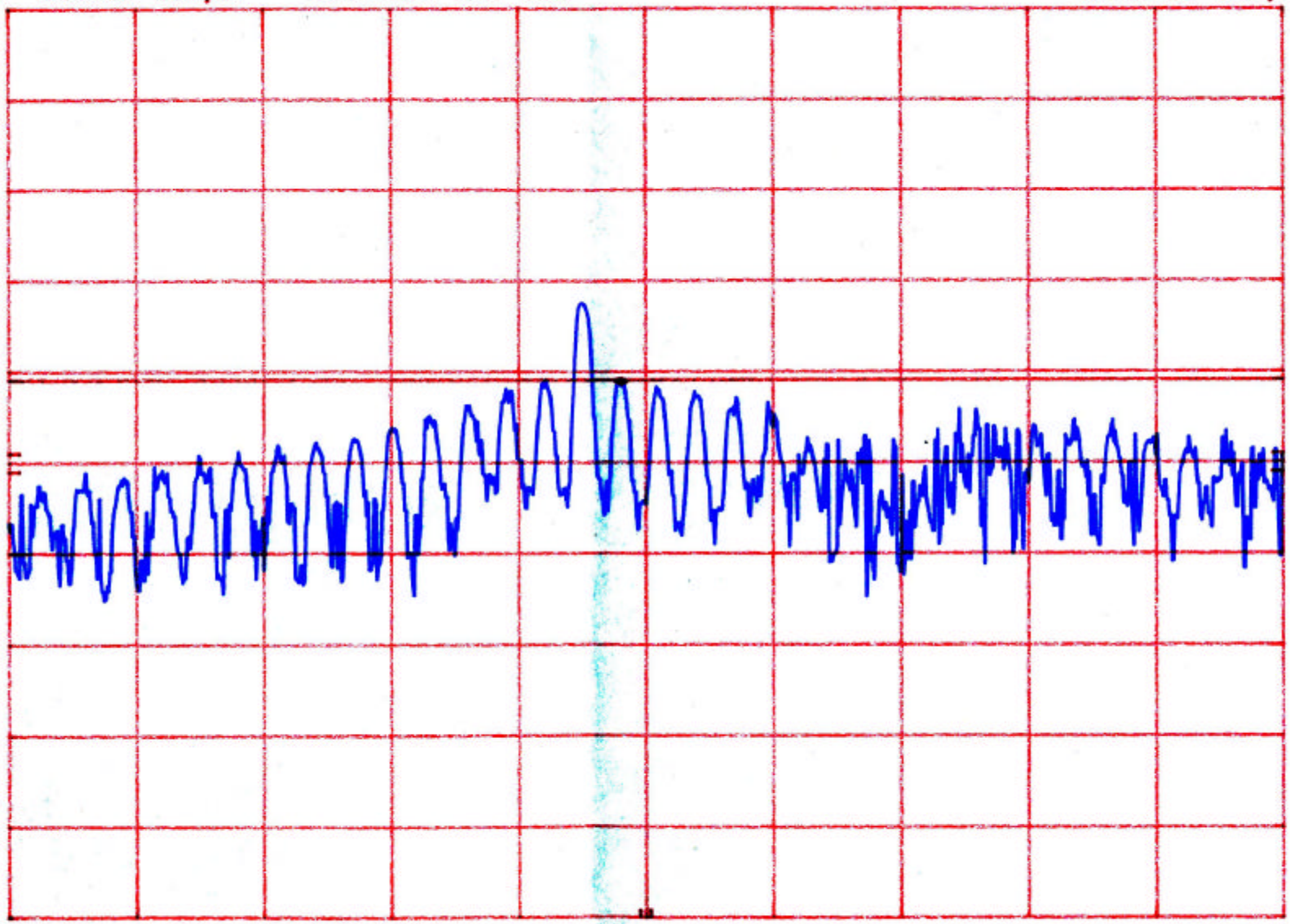
39.80 dBμV

hp

10 dB/

OFFSET
-16.1
dB

DL
40.0
dBμV



CENTER 50.100 MHz

SPAN 8.000 MHz

RES BW 100 kHz VBW 100 kHz

SWP 20 msec

COMPLIANCE
Certification Services

FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

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Project #: 01U0710-1
Report #: 010306C2
Date& Time: 03/06/01 2:30 PM
Test Engr: MIKE ZHU

Company: MATTEL MOUNT LAUREL FW
EUT Description: 49MHZ RADIO CONTROL CAR,M/N: 95086-49R
Test Configuration : EUT/SIGNAL GENERATOR
Type of Test: FCC CLASS B
Mode of Operation: NORMAL

Data Entry | ☑ C-Site Preamp | ○ FCC_A ◉ FCC_B ○ EN_A ○ EN_B ○ EN11B_G2

Freq. (MHz)	Reading (dBuV)	AF (dB)	Closs (dB)	Pre-amp (dB)	Level (dBuV/m)	Limit FCC_B	Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)	Mark (P/Q/A)
49.94	55.90	10.18	0.98	27.26	39.80	40.00	-0.20	3mV	180.00	1.00	P
50.15	55.30	10.12	0.98	27.26	39.14	40.00	-0.86	3mV	180.00	1.00	P
50.37	54.60	10.05	0.98	27.26	38.38	40.00	-1.62	3mV	180.00	1.00	P
49.68	55.10	10.25	0.98	27.26	39.07	40.00	-0.93	3mV	180.00	1.00	P
49.22	54.90	10.38	0.97	27.26	38.99	40.00	-1.01	3mV	180.00	1.00	P
49.01	53.20	10.44	0.97	27.27	37.35	40.00	-2.65	3mV	180.00	1.00	P

Above data was taken using a coherent frequency 49.7Mhz

*Completed full scan in the range of 30-1000Mhz in vertical and horizontal pol.