ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
CERTIFICATION TO FCC PART 15 REQUIREMENTS

for

INTENTIONAL RADIATOR

RC CAR TRANSMITTER

MODEL NO: 89900

FCC ID NO: APB89900-99A2T

REPORT NO: 99U0598

ISSUE DATE: OCTOBER 5, 1999

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

Prepared by
COMPLIANCE ENGINEERING SERVICES, INC.
d.b.a.
COMPLIANCE CERTIFICATION SERVICES
1366 BORDEAUX DRIVE
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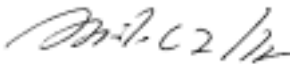
1. VERIFICATION OF COMPLIANCE

COMPANY NAME	:	MATTEL TOYS, INC. 333 CONTINENTAL BLVD. EL SEGUNDO, CA 90245, USA
CONTACT PERSON	:	VLADIMIR SOSNOVSKY / SENIOR ELECTRONIC ENGINEER, CES
TELEPHONE NO.	:	(310) 252-5595
EUT DESCRIPTION	:	RC CAR TRANSMITTER
MODEL NAME/NUMBER	:	89900
SERIAL NUMBER	:	1
BRAND NAME	:	MICRO KEY FOB
FCC ID	:	APB89900-99A2T
DATE TESTED	:	October 5, 1999
REPORT NUMBER	:	99U0598

TYPE OF EQUIPMENT	REMOTE CONTROL
EQUIPMENT TYPE	27 MHz TRANSMITTER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
APPLICATION PROCEDURE	CERTIFICATION
FCC RULE	CFR 47, PART 15.227,15.209,15.205

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	**27.145 MHz**
Power Source	**9V Battery**
Transmitting Time	**CONTINUOUS**
NO. OF LAYER	**1**
Local Osc.	**27.145 MHz**

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)

6. Measurement Equipment Used

Manufacturer	Model Number	Description	Cal Due Date
H.P.	8566B	Spectrum Analyzer (100Hz - 22GHz)	7/01/00
EMCO	3110	Antenna (25 - 200MHz)	8/12/00
EMCO	3146	Antenna (200-1000 MHz)	8/12/00
H.P.	8447D	Preamplifier (0.1 - 1300 MHz)	09/3/00

7. POWERLINE RFI LIMIT

CONNECTED TO AC POWER LINE	SECTION 15.207
BATTERY POWER	NOT REQUIRED.

8. RADIATED EMISSION LIMITS

GENERAL REQUIREMENTS	SECTION 15.209, 15.205.
OPERATION WITHIN THE BAND 26.96 - 27.28 MHZ	SECTION 15.227

COMPLIANCE ENGINEERING SERVICES, INC. CCS DOCUMENT NO:CCSUP4022B
1366 BORDEAUX DRIVE, SUNNYVALE, CA 94089, USA TEL:(408)752-8166 FAX:(408)752-8168

9. SYSTEM TEST CONFIGURATION

The EUT was configured for testing in a typical fashion (as a customer would normally use it). Push-to-Transmit switch is held in transmit position using electrician's (PVC) tape for transmit mode. Please refer to the following photograph for actual setup.

Radiated Open Site Test Set-up

X-AXIS

Z-AXIS

Y-AXIS

10. Equipment Modifications

To achieve compliance to FCC Section 15.227 technical limits, the following change(s) were made during compliance testing:

NONE

11. TEST PROCEDURE AND RESULT

Powerline RFI Limits	Eut	Radiated Emission Limits	Eut
SECTION 15.207	N/A	SECTION 15.209, 15.205	Y
		SECTION 15.227	Y

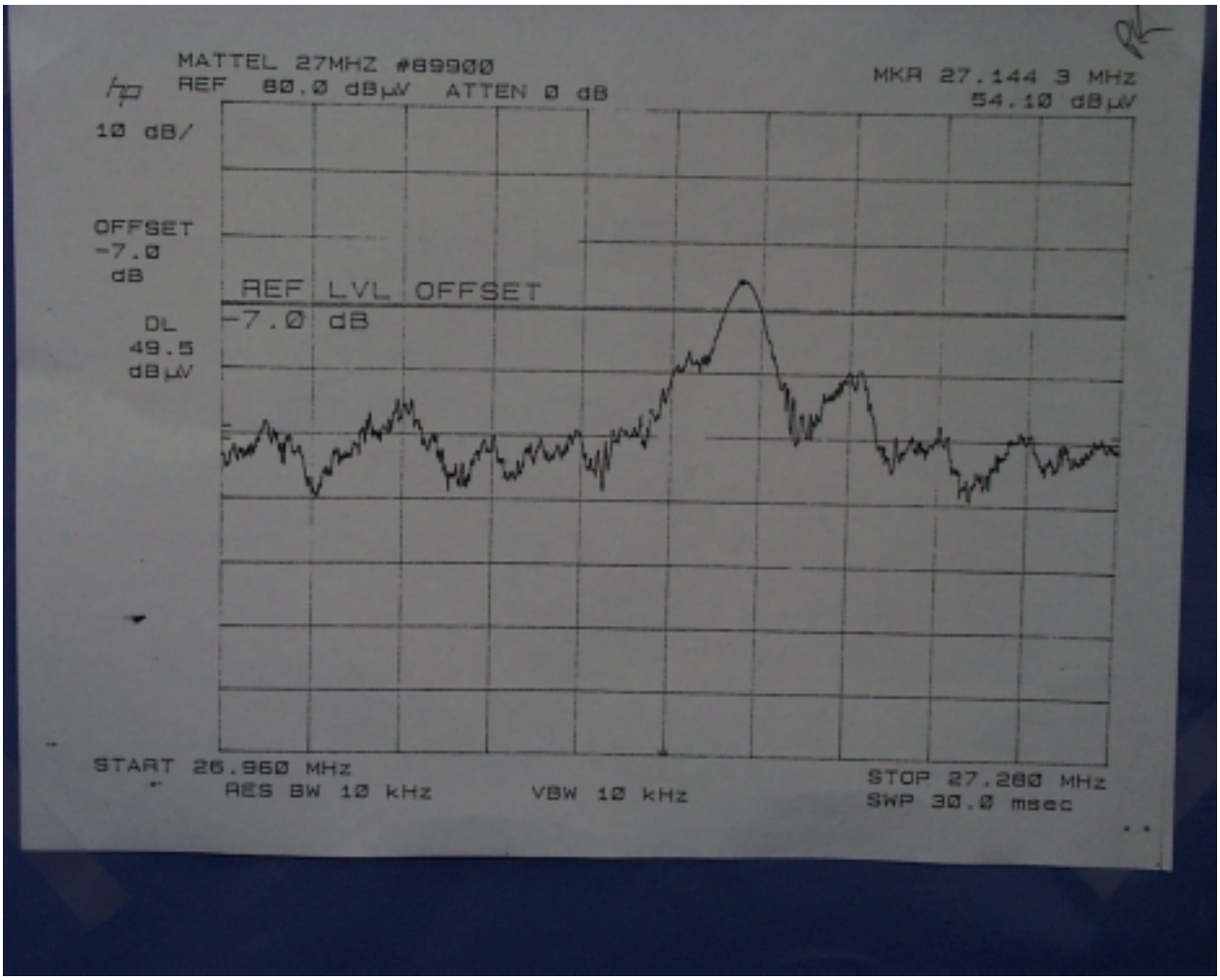
11.1 Radiated Emission Test Procedure and Result

1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3 meter from the EUT.

2. The turntable was slowly rotated to locate the direction of maximum emission at each emission. The EUT was tested in X, Y and Z orientations.

3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarization. Readings so obtained are recorded in the data listed below.

4. At maximum orientation a plot was taken showing no emissions over 15.209 general limits at edges of band. Analyzer was offset for all correction factors and external attenuator. Limit line was set for 15.209 limit including 20dB correction from 3 to 30 meters.
30uV/m=29.5dBuV/m+20dB=49.5dBuV/m. Plot shown below.



Compliance Engineering Services Inc.

Project No. : 99U0598
Report No. : 991005F1
Date : 10/05/1999
Time : 11:49
Test Engr : PETE K

>> 3 M RADIATED EMISSION DATA <<

Company : MATTEL
Equipment Under Test : 27MHZ TOY CAR TX M/N89900
Test Configuration : EUT ONLY
Type of Test : FCC 15.227, 15.209, 15.205
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:										
Y-AXIS:										
27.144	66.00	-31.69	13.37	1.37	49.05	80.00	-30.95	V	1.0	0
54.29	38.30	-31.58	10.09	1.89	18.70	40.00	-21.30	V	1.0	0
N/F BELOW:										
81.42	35.70	-31.55	9.72	2.31	16.19	40.00	-23.81	V	1.0	0
108.50	47.70	-31.38	10.68	2.60	29.60	43.50	-13.90	V	1.0	0
135.72	42.00	-31.21	12.44	2.90	26.13	43.50	-17.37	V	1.0	0
162.86	33.30	-31.10	13.47	3.14	18.81	43.50	-24.69	V	1.0	0
190.00	33.20	-30.96	14.83	3.40	20.47	43.50	-23.03	V	1.0	0
27.144	58.30	-31.69	14.24	1.37	42.22	80.00	-37.78	H	4.0	0
54.29	40.60	-31.58	10.02	1.89	20.93	40.00	-19.07	H	3.0	0
X-AXIS:										
27.144	57.30	-31.69	14.24	1.37	41.22	80.00	-38.78	H	4.0	0
54.29	37.20	-31.58	10.02	1.89	17.53	40.00	-22.47	H	2.0	0
27.144	69.60	-31.69	13.37	1.37	52.65	80.00	-27.35	V	1.0	0
54.29	44.70	-31.58	10.09	1.89	25.10	40.00	-14.90	V	1.0	0
81.43	36.90	-31.55	9.72	2.31	17.39	40.00	-22.61	V	1.0	0
Z-AXIS:										
27.144	71.90	-31.69	13.37	1.37	54.95	80.00	-25.05	V	1.0	0
54.29	44.80	-31.58	10.09	1.89	25.20	40.00	-14.80	V	1.0	0
81.43	36.50	-31.55	9.72	2.31	16.99	40.00	-23.01	V	1.0	0
27.144	54.90	-31.69	14.24	1.37	38.82	80.00	-41.18	H	1.5	0
54.29	41.20	-31.58	10.02	1.89	21.53	40.00	-18.47	H	3.0	0
81.43	35.00	-31.55	9.50	2.31	15.27	40.00	-24.73	H	2.5	0

Total # of data 20
V. f2.2