

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
CERTIFICATION TO FCC PART 15 REQUIREMENTS**

*for*

**INTENTIONAL RADIATOR**

**27MHz RF RC TOY CAR TRANSMITTER**

**MODEL NO: 92018**

**FCC ID NO: APB92018-00A2T**

**REPORT NO: 00U0166**

**ISSUE DATE: MARCH 30, 2000**

*Prepared for*

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

*Prepared by*

**COMPLIANCE ENGINEERING SERVICES, INC.**

*d.b.a.*

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

	<b>TABLE OF CONTENTS</b>	<b>PAGE</b>
1.	VERIFICATION OF COMPLIANCE.....	1
2.	PRODUCT DESCRIPTION.....	2
3.	TEST FACILITIES .....	2
4.	MEASUREMENT STANDARDS .....	2
5.	TEST METHODOLOGY .....	2
6.	MEASUREMENT EQUIPMENT USED .....	3
7.	PPOWERLINE RFI LIMITS .....	3
8.	RADIATED EMISSION LIMITS .....	3
9.	TEST SETUP AND CONFIGURATION .....	4
10.	EQUIPMENT MODIFICATIONS .....	5
11.	TEST PROCEDURE AND RESULT .....	5
<b>EXHIBIT</b>		
	1. Proposed FCC ID Label Format	
	2. Agent Authorization Letter	
<b>Attachment</b>		
	• EUT Photographs	
	• Schematic Diagram	

## 1. VERIFICATION OF COMPLIANCE

COMPANY NAME : MATTEL, INC.  
333 CONTINENTAL BLVD.  
EL SEGUNDO, CA 90245  
USA

CONTACT PERSON : VLADIMIR SOSNOVSKY / PROJECT ENGINEER

TELEPHONE NO. : (310) 252-5595

EUT DESCRIPTION : 27MHz RF RC TOY CAR TRANSMITTER

MODEL NAME/NUMBER : 92018

BRAND NAME : SPEED WRENCH CAR

SERIAL NUMBER : 1

FCC ID : APB92018-99A2T

DATE TESTED : MARCH 30, 2000

REPORT NUMBER : 00U0166

TYPE OF EQUIPMENT	REMOTE CONTROL
EQUIPMENT TYPE	27 MHZ TRANSMITTER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15.227

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.

---

T. N. COKENIAS / ENGINEERING DIRECTOR  
COMPLIANCE ENGINEERING SERVICES, INC.

## 2. Product Description

CHASSIS TYPE	PLASTIC
Fundamental Frequency	27.145 MHz
Power Source	4 "AA" Alkaline Batteries
Transmitting Time	CONTINUOUS
Chip Set Brand and Model	20DPTXC1
BOARD REVISION NO	1.0
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.	8568A	Spectrum Analyzer (100Hz - 1.5GHz)	7/01/00
EATON	94455-1	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
CARRIER CURRENT SYSTEM IN THE FREQUENCY RANGE OF 450 KHZ TO 30 MHz	SECTION 15.205 AND SECTION 15.209, 15.221, 15.223, 15.225 OR 15.227, AS APPROPRIATE.
BATTERY POWER	NO REQUIRED.

**8. RADIATED EMISSION LIMITS**

GENERAL REQUIREMENTS	SECTION 15.209.
RESTRICTED BANDS OF OPERATION	SECTION 15.205
OPERATION WITHIN THE BAND 26.96 - 27.28 MHZ	SECTION 15.227

## 9. SYSTEM TEST CONFIGURATION

The EUT was attached to a paper box using a rubber band and turn on the switch to cause continuous transmission. Please refer to the following photograph for actual setup.



Radiated Open Site Test Set-up

## 10. Equipment Modifications

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

NOT APPLICABLE

## 11. TEST PROCEDURE AND RESULT

Powerline RFI Limits	Eut	Radiated Emission Limits	Eut
SECTION 15.207		SECTION 15.209	x
SECTION 15.205, 15.209, 15.221, 15.223, x 15.225 OR 15.227		SECTION 15.205	x
BATTERY POWER	X	SECTION 15.227	X

### 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. The EUT antenna was mounted vertically as per normal installation.
2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205. The EUT was moved throughout the XY, XZ, and YZ planes to maximize emissions received by the search antenna.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The six maximum readings so obtained are recorded in the data listed below.