

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

for

INTENTIONAL RADIATOR

27MHz RC STREET LUGE TRANSMITTER

MODEL NO: 92769

FCC ID NO: APB92769-00A2T

REPORT NO: 00U0541-1

ISSUE DATE: NOVEMBER 30, 2000

Prepared for

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

Prepared by

COMPLIANCE ENGINEERING SERVICES, INC.

d.b.a.

COMPLIANCE CERTIFICATION SERVICES

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

1. VERIFICATION OF COMPLIANCE

COMPANY NAME : MATTEL MOUNT LAUREL
6000 MIDATLANTIC DRIVE
MOUNT LAUREL, NJ 08054
USA

CONTACT PERSON : FRANK WINKLER, SENIOR PROJECT ENGINEER

TELEPHONE NO. : (856) 840-1259

EUT DESCRIPTION : 27MHz RC STREET LUGE TRANSMITTER

MODEL NAME/NUMBER : 92769

BRAND NAME : TYCO R/C-6VDP STREET LUGE

SERIAL NUMBER : N/A

FCC ID : APB92769-00A2T

DATE TESTED : NOVEMBER 06, 2000

REPORT NUMBER : 00U0541-1

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.

STEVE CHENG / SENIOR EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

T. N. COKENIAS / ENGINEERING DIRECTOR
COMPLIANCE CERTIFICATION SERVICES

2. PRODUCT DESCRIPTION

CHASSIS TYPE	PLASTIC
Fundamental Frequency	27.145 MHz
Power Source	9 VOLT BATTERY
Transmitting Time	CONTINUOUS
Chip Set Brand and Model	MATTEL 92769/TX
NO. OF LAYER	1
Local Osc.	27.145MHz

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)	06/16/01
EATON	94455-1	Antenna (30-200MHz)	08/10/01
EMCO	6502	Active Loop Antenna (10K-30MHz)	02/23/01

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
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 configured for testing in a typical fashion (as a customer would normally use it). Attached a plastic module to the EUT button by using a rubber band to cause continuous transmission during testing. Push-to-Transmit switch is held in transmit position using PVC tape for transmit mode. The tape is removed for receive mode. 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

Radiated Emission Limits	Eut
SECTION 15.209	x
SECTION 15.205	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.



Project #: 00U0541-1
Report #: 001031C1
Date & Time: 11/06/00 6:34 PM
Test Engr: STEVE CHENG

Company:	MATTEL MOUNT LAUREL FW
EUT Description:	27 MHz TRANSMITTER FOR RC TOY
Test Configuration :	EUT ONLY
Type of Test:	FCC CLASS B
Mode of Operation:	CONTINUOUSLY TRANSMITTING CONTRL SIGNAL

[<< Main Sheet](#)

Freq.	Reading	AF	Closs	Pre-amp	Level	Limit	Margin	Pol	Az	Height	Mark
(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)		(dB)	(H/V)	(Deg)	(Meter)	(P/Q/A)
461.49	48.10	17.39	3.17	27.47	41.19	46.00	-4.81	3mV	0.00	1.20	P
488.64	46.80	18.36	3.27	27.65	40.79	46.00	-5.21	3mH	0.00	1.00	P
488.64	47.10	17.95	3.27	27.65	40.68	46.00	-5.32	3mV	0.00	1.20	P
488.64	46.30	18.36	3.27	27.65	40.29	46.00	-5.71	3mH	0.00	1.00	P
54.29	50.20	8.92	1.02	27.26	32.88	40.00	-7.12	3mV	0.00	1.00	P
434.35	45.70	16.84	3.06	27.30	38.30	46.00	-7.70	3mV	0.00	1.20	P
6 Worst Data											



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

1366 BORDEAUX DRIVE, SUNNYVALE, CA 94089
PHONE: (408) 752-8166 FAX: (408) 752-8168

Project #: 00U0541-1
Report #: 001031C1
Date & Time: 11/6/00 6:34 PM
Test Engr: STEVE CHENG *SC*

Company: MATTEL MOUNT LAUREL FW
EUT Description: 27 MHz TRANSMITTER FOR RC TOY
Test Configuration: EUT ONLY
Type of Test: FCC CLASS B
Mode of Operation: CONTINUOUSLY TRANSMITTING CONTRL SIGNAL

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)
X AXIS											
54.29	45.60	10.09	1.02	27.26	29.45	40.00	-10.55	3mH	0.00	3.50	P
81.44	46.40	8.79	1.22	27.22	29.19	40.00	-10.81	3mH	0.00	4.00	P
108.58	46.20	11.13	1.47	27.12	31.68	43.50	-11.82	3mH	0.00	4.00	P
135.73	40.60	14.43	1.66	27.02	29.66	43.50	-13.84	3mH	0.00	4.00	P
54.29	42.90	8.92	1.02	27.26	25.58	40.00	-14.42	3mV	90.00	4.00	P
81.44	43.20	9.02	1.22	27.22	26.22	40.00	-13.78	3mV	90.00	4.00	P
217.17	44.20	12.06	2.07	26.66	31.67	46.00	-14.33	3mH	0.00	1.50	P
352.91	41.50	15.87	2.72	26.76	33.33	46.00	-12.67	3mH	0.00	1.00	P
380.05	41.70	16.18	2.83	26.95	33.77	46.00	-12.23	3mH	0.00	1.00	P
434.35	41.90	17.17	3.06	27.30	34.82	46.00	-11.18	3mH	0.00	1.00	P
461.49	43.30	17.76	3.17	27.47	36.76	46.00	-9.24	3mH	0.00	1.00	P
488.64	46.30	18.36	3.27	27.65	40.29	46.00	-5.71	3mH	0.00	1.00	P
Y AXIS											
54.29	50.20	8.92	1.02	27.26	32.88	40.00	-7.12	3mV	0.00	1.00	P
81.44	48.90	9.02	1.22	27.22	31.92	40.00	-8.08	3mV	0.00	1.00	P
108.58	49.10	10.75	1.47	27.12	34.20	43.50	-9.30	3mV	0.00	1.00	P
135.73	43.50	14.14	1.66	27.02	32.28	43.50	-11.22	3mV	0.00	1.00	P
190.02	42.10	16.66	1.93	26.80	33.89	43.50	-9.61	3mV	0.00	1.00	P
54.29	42.30	8.92	1.02	27.26	24.98	40.00	-15.02	3mV	0.00	2.00	P
81.44	41.60	8.79	1.22	27.22	24.39	40.00	-15.61	3mH	0.00	1.00	P
217.17	41.90	12.33	2.07	26.66	29.64	46.00	-16.36	3mV	0.00	1.20	P
217.17	41.90	12.33	2.07	26.66	29.64	46.00	-16.36	3mV	0.00	1.20	P
352.91	44.50	15.86	2.72	26.76	36.32	46.00	-9.68	3mV	0.00	1.20	P
380.05	46.80	16.02	2.83	26.95	38.71	46.00	-7.29	3mV	0.00	1.20	P
407.16	47.30	16.29	2.95	27.13	39.41	46.00	-6.59	3mV	0.00	1.20	P
434.35	45.70	16.84	3.06	27.30	38.30	46.00	-7.70	3mV	0.00	1.20	P
461.49	48.10	17.39	3.17	27.47	41.19	46.00	-4.81	3mV	0.00	1.20	P
488.64	47.10	17.95	3.27	27.65	40.68	46.00	-5.32	3mV	0.00	1.20	P
Z AXIS											
54.29	46.00	10.09	1.02	27.26	29.85	40.00	-10.15	3mH	0.00	3.50	P
81.44	46.70	8.79	1.22	27.22	29.49	40.00	-10.51	3mH	0.00	4.00	P

108.58	47.30	11.13	1.47	27.12	32.78	43.50	-10.72	3mH	0.00	4.00	P
135.73	41.30	14.43	1.66	27.02	30.36	43.50	-13.14	3mH	0.00	4.00	P
54.29	43.60	8.92	1.02	27.26	26.28	40.00	-13.72	3mV	90.00	4.00	P
81.44	43.80	9.02	1.22	27.22	26.82	40.00	-13.18	3mV	90.00	4.00	P
217.17	44.30	12.06	2.07	26.66	31.77	46.00	-14.23	3mH	0.00	1.00	P
352.91	42.20	15.87	2.72	26.76	34.03	46.00	-11.97	3mH	0.00	1.00	P
380.05	42.60	16.18	2.83	26.95	34.67	46.00	-11.33	3mH	0.00	1.00	P
434.35	42.90	17.17	3.06	27.30	35.82	46.00	-10.18	3mH	0.00	1.00	P
461.49	44.00	17.76	3.17	27.47	37.46	46.00	-8.54	3mH	0.00	1.00	P
488.64	46.80	18.36	3.27	27.65	40.79	46.00	-5.21	3mH	0.00	1.00	P

FUNDAMENTAL SIGNAL LEVEL

27.15	58.50	9.00	0.77	0.00	68.27	80.00	-11.73	3mV	0.00	1.00	P
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MKR 27.1459 MHz
71.30 dB μ V

h_p REF 100.0 dB μ V ATTN 10 dB

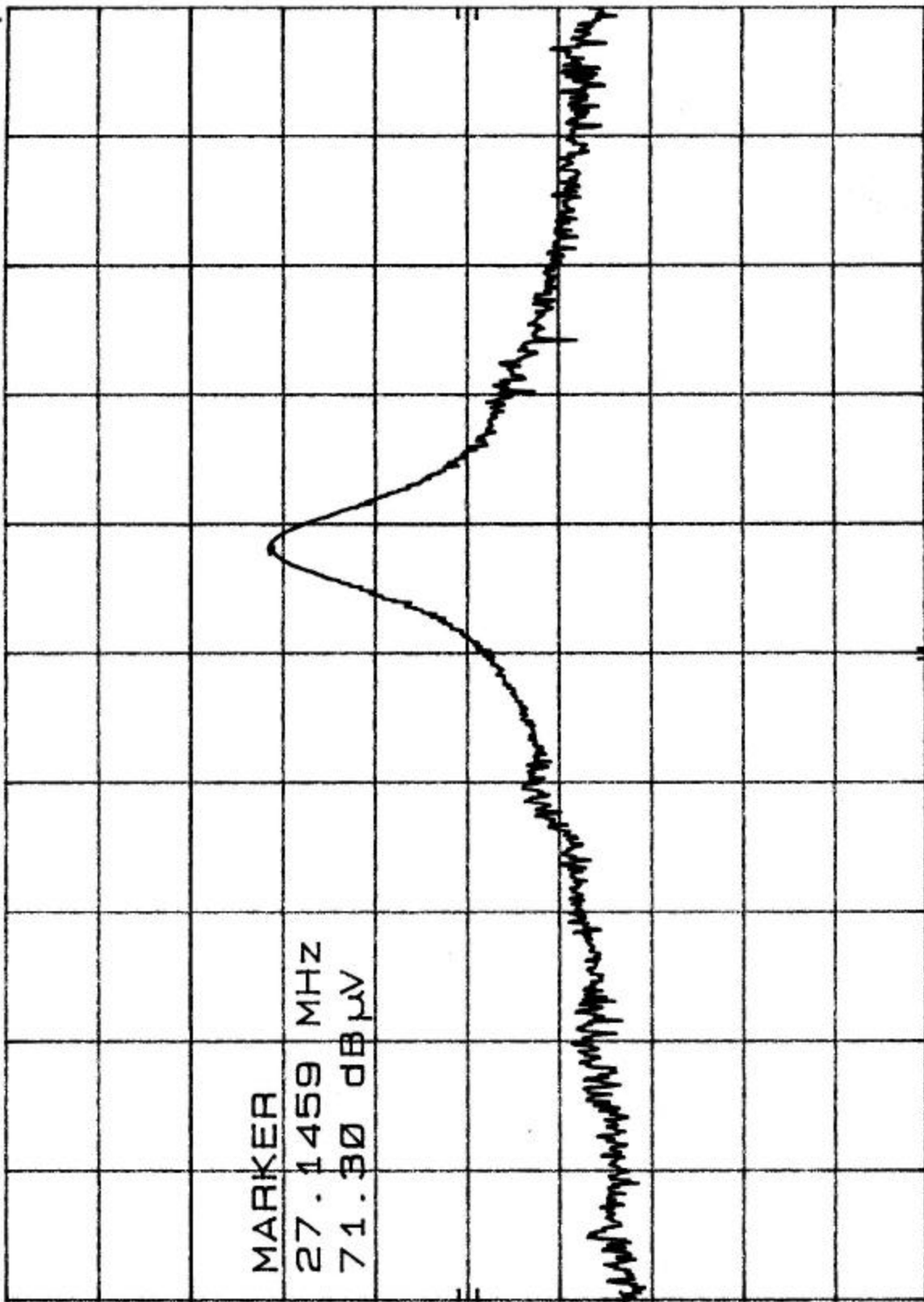
10 dB/

OFFSET
10.2
dB

DL
80.0
dB μ V

MARKER
27.1459 MHz
71.30 dB μ V

2nd LO
CORR'D



START 26.9600 MHz
RES BW 10 KHz
VBW 10 KHz
STOP 27.2800 MHz
SWP 30 msec