

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

for

UNINTENTIONAL RADIATOR

49.860 MHz RADIO CONTROL RECEIVER

MODEL NO: 91554-6508-49R

BRAND NAME: TYCO RC-AIR REBOUND TMH VERSION

FCC ID NO: APB91554-02A4R

REPORT NO: 02U1172-2

DATE: MARCH 26, 2002

Prepared for
**MATTEL MT. LAUREL
6000 MIDLANTIC AVENUE
MT. LAUREL, NJ 08054
USA**

Prepared by
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1. VERIFICATION OF COMPLIANCE

COMPANY NAME : MATTEL MT. LAUREL
6000 MIDLANTIC AVENUE
MT. LAUREL, NJ 08504
USA

CONTACT PERSON : STEVE WEISS, MANAGER ELECTRONIC DESIGN &
DEVELOPMENT

TELEPHONE NO. : 856-840-1149

EUT DESCRIPTION : 49.860MHz RADIO CONTROL RECEIVER

MODEL NAME/NUMBER : 91554-6508-49R

BRAND NAME : TYCO RC-AIR REBOUND TMH VERSION

FCC ID : APB91554-02A4R

DATE TESTED : MARCH 15, 2002

REPORT NUMBER : 02U1172-2

TYPE OF EQUIPMENT	REMOTE CONTROL TOY RECEIVER (UNINTENTIONAL RADIATOR)
EQUIPMENT TYPE	49 MHz SUPERREGENERATE RECEIVER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15 SUBPART B

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in CFR 47, PART 15 SUBPART B. 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 By:



KERWIN CORPUZ
ASSOCIATE EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

Approved & Released For CCS By:



MIKE HECKROTTE
CHIEF EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. PRODUCT DESCRIPTION

MATTEL MT. LAUREL., Model No# 91554-6508-49R TYCO RC-AIR REBOUND TMH VERSION is the receiving portion of a remote control toy. The associated Transmitter is manufactured by MATTEL MT. LAUREL., Model No# 91554-6508-49T, FCC ID APB91554-02A4T.

The Air Rebound is a full function radio controlled toy vehicle. It is powered by a 7.2Volt NiMH battery and operates at a single fixed frequency of 49.860MHz. The receiver has two motors which operate independently and bi-directionally. The toy has an over current sense and lockout feature that prevents hazardous conditions to both the toy and user.

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.

4. MEASUREMENT EQUIPMENT USED

TEST EQUIPMENTS LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
Spectrum Analyzer	HP100Hz - 22GHz	8566B	2140A01296	5/4/02
Spectrum Display	HP	85662A	2152A03066	5/10/02
Quasi-Peak Detector	HP9K - 1GHz	85650A	2811A01335	5/4/02
Pre-Amplifier, 25 dB	HP 0.1 - 1300MHz	8447D (P_1M)	2944A06833	8/21/02
Antenna, BiLog	Chase EMC Ltd.30 - 2000MHz	CBL6112	2049	8/2/02
Signal Generator	HP	8640B	2322A22402	4/10/02

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 TEST

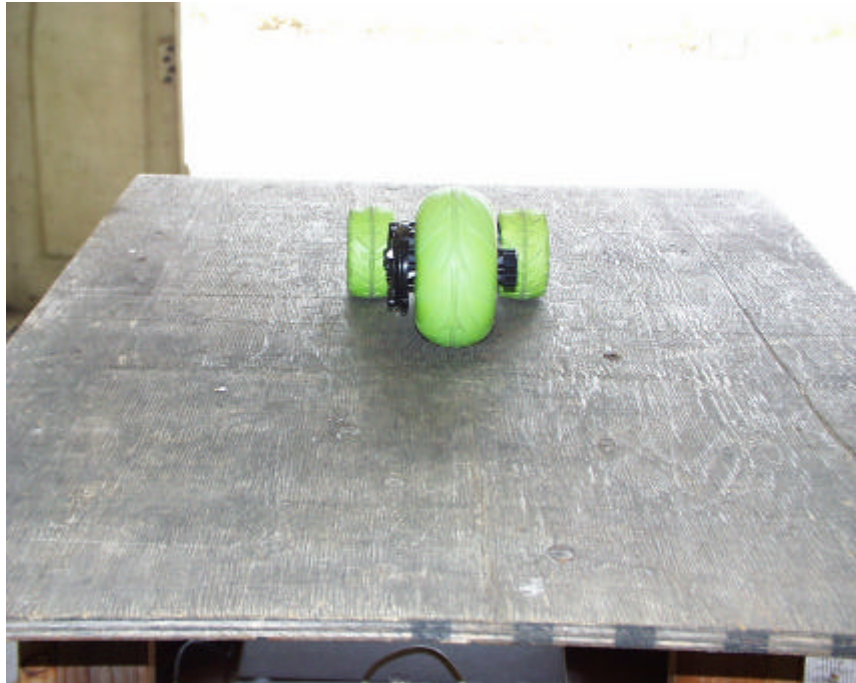
During Radiated Emission Tests, H.P. Signal Generator Model No: 8640B was used to radiate unmodulated CW signal to EUT at 49.882 MHz. Please refer to radiated emission data for six highest readings.

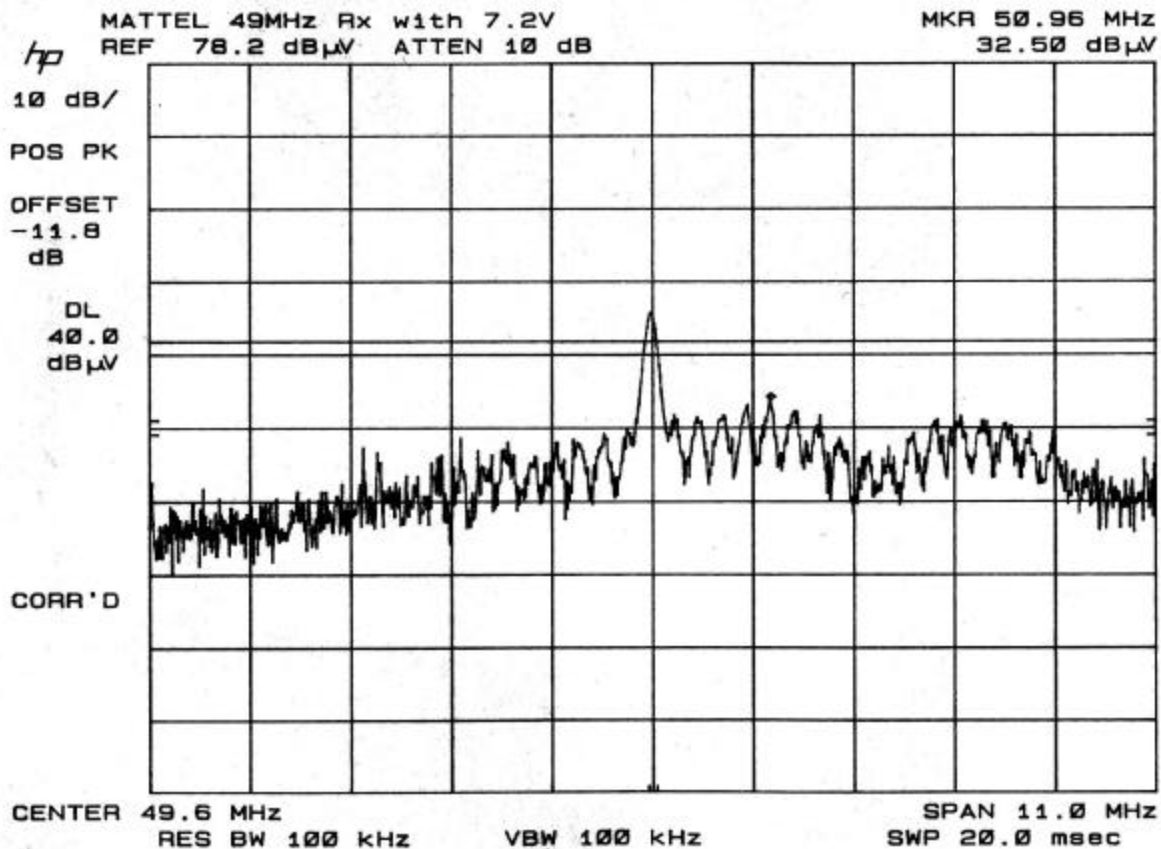
9. EQUIPMENT MODIFICATIONS

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.

10. TEST CONFIGURATION PHOTOS (Radiated Emission Test)





COHERENT EMISSION PLOT



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

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Project #: 02U1172-2
Report #: 020315B1
Date & Time: 03/15/02 10:19 AM
Test Engr: KERWIN CORPUZ

Company: MATTEL
EUT Description: 49 MHz RX with 7.2V (Air Rebound)
Test Configuration : EUT/SIGNAL GENERATOR
Type of Test: FCC CLASS B
Mode of Operation: RX Coherent

☐ A-Site

☒ B-Site

☐ C-Site

☐ F-Site

☐ 6 Worst Data

☐ Descending

Freq.	Reading	AF	Closs	Pre-amp	Level	Limit	Margin	Pol	Az	Height	Mark
(MHz)	(dBuV)	(dB)	(dB)	(dB)	(dBuV/m)	FCC_B	(dB)	(H/V)	(Deg)	(Meter)	(P/Q/A)
Maximized coherent frequency @ 49.6 MHz.											
48.40	44.80	6.36	1.73	29.68	23.21	40.00	-16.79	3mV	0.00	1.00	P
48.88	48.80	6.24	1.74	29.68	27.10	40.00	-12.90	3mV	0.00	1.00	P
49.40	48.50	6.12	1.75	29.68	26.69	40.00	-13.31	3mV	0.00	1.00	P
49.93	50.50	6.00	1.76	29.68	28.58	40.00	-11.42	3mV	0.00	1.00	P
50.43	51.30	5.92	1.77	29.68	29.31	40.00	-10.69	3mV	0.00	1.00	P
50.67	52.90	5.89	1.77	29.68	30.88	40.00	-9.12	3mV	0.00	1.00	P
50.96	54.30	5.85	1.77	29.68	32.25	40.00	-7.75	3mV	0.00	1.00	P
51.24	52.20	5.82	1.77	29.68	30.12	40.00	-9.88	3mV	0.00	1.00	P
52.79	51.30	5.61	1.79	29.67	29.04	40.00	-10.96	3mV	0.00	1.00	P
53.03	52.60	5.58	1.80	29.67	30.31	40.00	-9.69	3mV	0.00	1.00	P
53.28	52.60	5.55	1.80	29.67	30.28	40.00	-9.72	3mV	0.00	1.00	P
53.53	50.80	5.51	1.80	29.67	28.45	40.00	-11.55	3mV	0.00	1.00	P
48.90	47.70	7.77	1.74	29.68	27.53	40.00	-12.47	3mH	120.00	1.70	P
49.42	48.40	7.43	1.75	29.68	27.89	40.00	-12.11	3mH	120.00	1.70	P
50.43	51.20	6.98	1.77	29.68	30.27	40.00	-9.73	3mH	120.00	1.70	P
50.94	51.70	6.92	1.77	29.68	30.71	40.00	-9.29	3mH	120.00	1.70	P
51.21	51.60	6.88	1.77	29.68	30.58	40.00	-9.42	3mH	120.00	1.70	P
53.04	50.70	6.64	1.80	29.67	29.47	40.00	-10.53	3mH	120.00	1.70	P

COMPLETED SCAN 30 - 1000 MHz, VERTICAL AND HORIZONTAL POLARIZATION

Total data #: 18

V.2b

RADIATION DATA

END OF REPORT

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COMPLIANCE CERTIFICATION SERVICES

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CCS DOCUMENT NO: CCSUP4021B

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