

# **TIMCO ENGINEERING INC.**

849 NW State Road 45  
Newberry, Florida 32669  
<http://www.timcoengr.com>  
888.472.2424 F 352.472.2030 email: [tei@timcoengr.com](mailto:tei@timcoengr.com)



## **Test Report**

**Product Name: 49 MHZ WIRELESS REMOTE CONTROL CAR - RX**

**FCC ID: RCB912849**

### **Applicant:**

TOYS "R" US  
255 SUMMIT AVENUE  
MONTAVALA NJ 07645-1523

**Date Receipt: AUGUST 6, 2004**

**Date Tested: AUGUST 11, 2004**

**APPLICANT:** TOYS "R" US  
**FCC ID:** RCB912849  
**REPORT #:** T\TOYS\_\1255HT4\1255HT4\TestReport.doc

**COVER PAGE**

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## EMC Equipment List

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/27/04	3/26/07
3-Meter OATS	TEI	N/A	N/A	Listed 1/13/03	1/12/06
Biconnical Antenna	Eaton	94455-1	1057	CAL 3/18/03	3/18/05
Biconnical Antenna	Eaton	94455-1	1096	CAL 10/1/01	10/1/03
Biconnical Antenna	Electro-Metrics	BIA-25	1171	CAL 4/26/01	4/26/03
Blue Tower Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 4/15/03	4/15/05
Blue Tower RF Preselector	HP	85685A	2620A00294	CAL 4/27/04	4/27/06
Blue Tower Spectrum Analyzer	HP	8568B	2928A04729 2848A18049	CAL 4/15/03	4/15/05
LISN	Electro-Metrics	ANS-25/2	2604	CAL 10/9/01	10/9/03
LISN	Electro-Metrics	EM-7820	2682	CAL 3/12/03	3/12/05
Log-Periodic Antenna	Eaton	96005	1243	CAL 5/8/03	5/8/05

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## TEST PROCEDURE

**GENERAL:** This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

**RADIATION INTERFERENCE:** The test procedure used was ANSI STANDARD C63.4-2001 using a HEWLETT PACKARD spectrum analyzer with a pre-selector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100kHz and the video bandwidth was 300kHz. The ambient temperature of the UUT was 80°F with a humidity of 70%.

**FORMULA OF CONVERSION FACTORS:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

**Example:**

Freq (MHz) METER READING + ACF = FS  
33 20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

**ANSI STANDARD C63.4-2001 10.1.7 MEASUREMENT PROCEDURES:** The unit under test was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

**ANSI STANDARD C63.4-1992 12.1.1.1 SUPERREGENERATIVE RECEIVER:** A signal Generator was set to the unit under test operating frequency. An un-Modulated continuous wave (CW) signal was radiated at the superregenerative receiver operating frequency to cohere the characteristic broadband emissions from the receiver.

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**APPLICANT:** TOYS "R" US

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**NAME OF TEST:** RADIATION INTERFERENCE

**RULES PART NO.:** 15.109

**REQUIREMENTS:**

30 to 88 MHz:	40.0 dBuV/M @ 3 METERS
88 to 216 MHz:	43.5 dBuV/M
216 to 960 MHz:	46.0 dBuV/M
ABOVE 960 MHz:	54.0 dBuV/M

**TEST RESULTS:** A search was made of the spectrum from 30 to 1000MHz and the measurements indicate that the unit DOES meet the FCC requirements.

**TEST DATA:**

Tuned Frequency	Emission Frequency	Meter Reading	Ant. Polarity	Coax Loss	Correction Factor	Field Strength	Margin
MHz	MHz	dBuV		dB	dB/m	dBuV/m	dB
49.9	44.45	11.3	V	0.47	10.36	22.15	17.85
49.9	260.00	11.0	V	1.02	12.70	24.67	21.33

**Please see the following plots.**

**SAMPLE CALCULATION:**  $FSdBuV/m = MR (dBuV) + ACFdB$ .

**TEST PROCEDURE:** ANSI STANDARD C63.4-2001 using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard Model 85650A Quasi-Peak adapter, and an appropriate antenna - see the test equipment list. The bandwidth of spectrum analyzer was 100 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

**PERFORMED BY:** NAM NGUYEN

**DATE:** AUGUST 11, 2004

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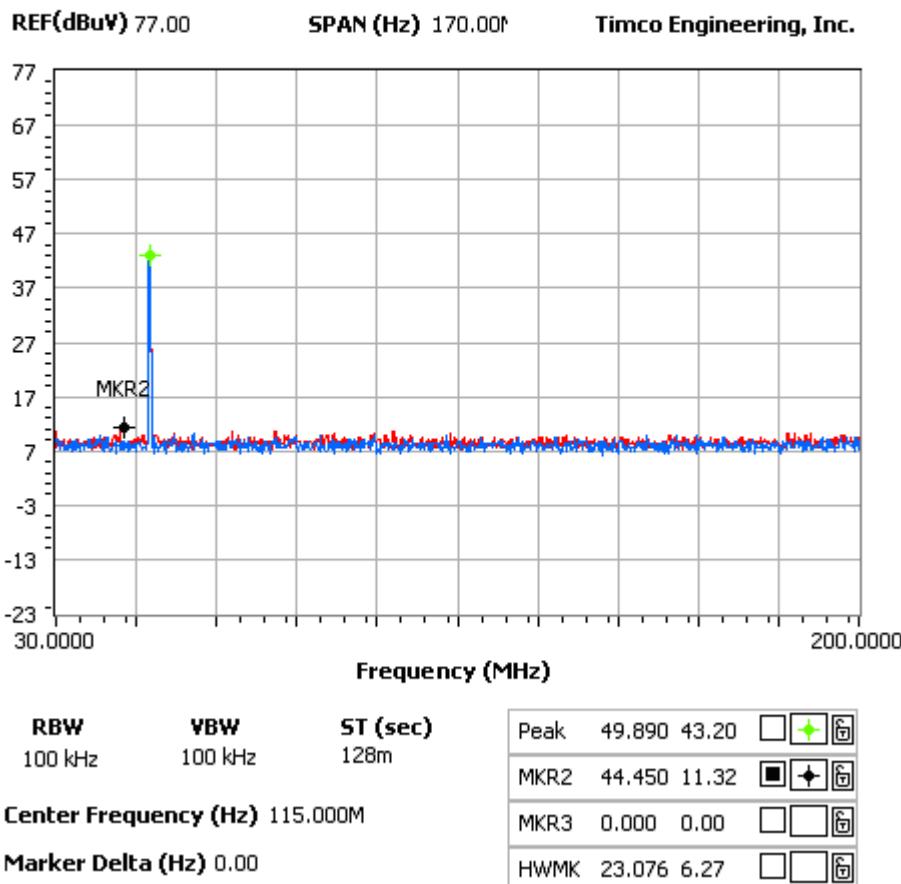
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## EMMISSION PLOT 1

### NOTES:

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49 MHz WIRELESS REMOTE CONTROL CAR - RX



This plot was captured at the bandwidth from 30 MHz to 200 MHz. The blue line was captured when the EUT turning off. The peak is the signal from the Signal Generator. The red line was captured when the EUT turning on, the max measured emission corresponds to the noise floor of 11.32 dBuV at 44.45MHz.

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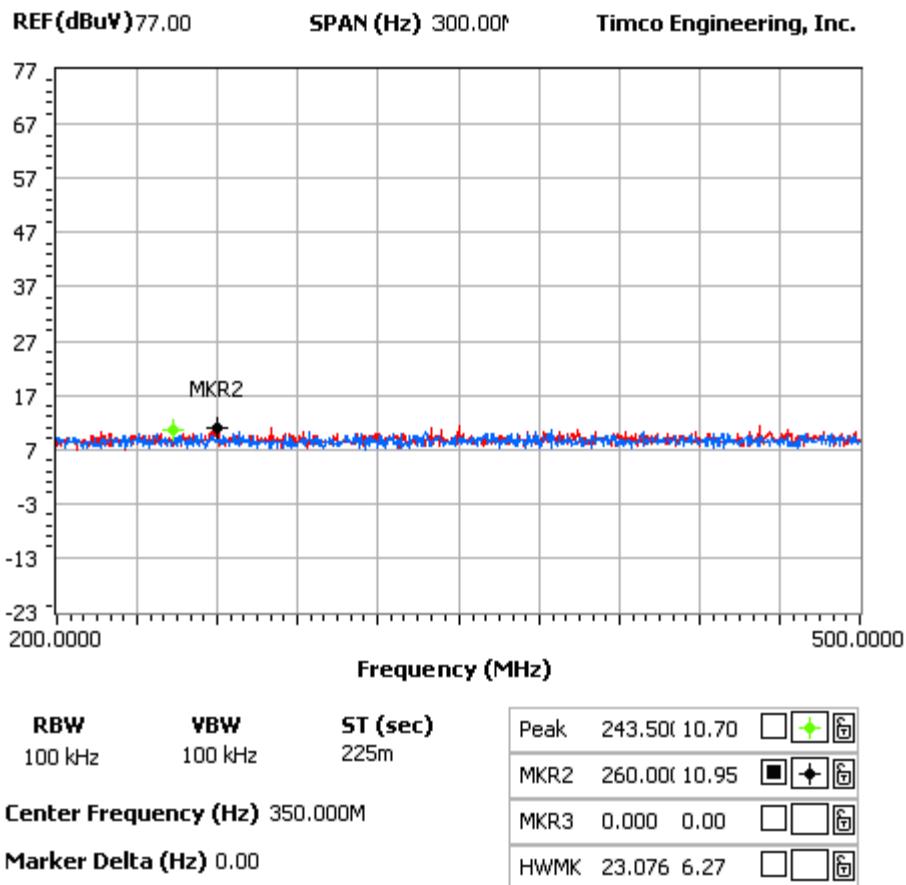
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## EMISSION PLOT 2

### NOTES:

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This plot was captured at the bandwidth from 200 MHz to 500 MHz. The blue line was captured when the EUT turning off. The red line was captured when the EUT turning on, the max measured emission for the noise floor is 10.95 dBuV at 260MHz.

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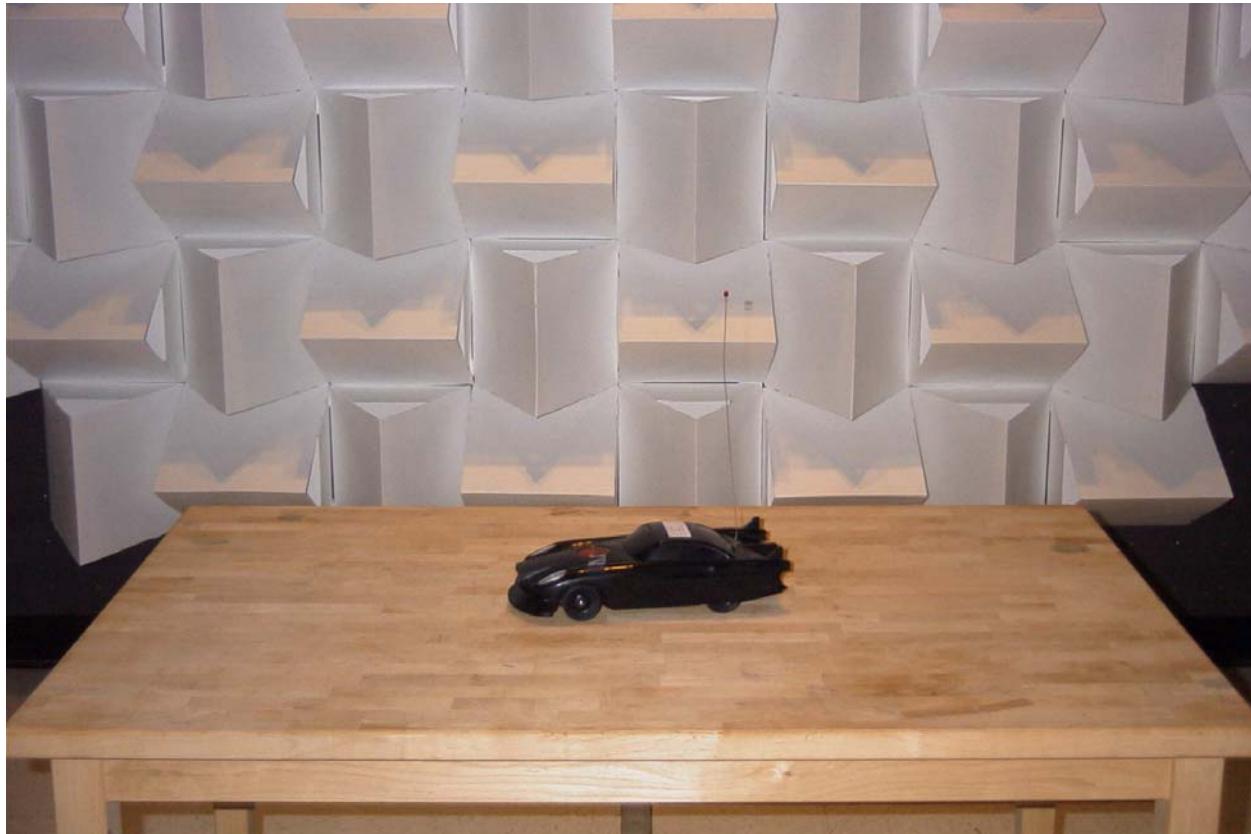
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## TEST SET UP PHOTOGRAPH



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