

# **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: 49.82-49.80MHz WIRELESS R/C TOY--RX**

**FCC ID: GLE60155R**

**Applicant:**

**SUNCON TOYS INDUSTRY LTD.  
11/F, KAI TAK FACTORY BUILDING  
99 KING FUK STREET SANPOKONG, KOWLOON  
HONG KONG**

**Date Receipt: 12/20/2006**

**Date Tested: 1/10/2007**

**APPLICANT: SUNCON TOYS INDUSTRY LTD.  
FCC ID: GLE60155R  
REPORT #: S\SUNCONGLE\3453HT6\3453HT6TestReport.doc**

**COVER SHEET**

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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 1/11/06	1/10/09
Antenna: Biconnical	Eaton	94455-1	1057	CAL 12/12/05	12/12/07
Antenna: Biconnical	Eaton	94455-1	1096	CAL 10/11/06	10/11/08
Antenna: Biconnical Analyzer	Electro-Metrics	BIA-25	1171	CAL 4/29/05	4/29/07
Blue Tower Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 4/13/05	4/13/07
Blue Tower RF Preselector	HP	85685A	2926A00983	CAL 9/5/05	9/5/07
Blue Tower Spectrum Analyzer	HP	8568B	2928A04729	CAL 4/13/05	4/13/07
			2848A18049		
LISN	Electro-Metrics	ANS-25/2	2604	CAL 10/5/06	10/5/08
LISN	Electro-Metrics	EM-7820	2682	CAL 4/28/05	4/28/07
Antenna: Log-Periodic	Eaton	96005	1243	CAL 12/14/05	12/14/07

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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 C63.4-2003 using a spectrum analyzer with a preselector. 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 100 kHz and the video bandwidth was 300 kHz. 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	+	CL	+	ACF	=	FS
33	20 dBuV		+1.2		+ 10.36 dB	=	31.56 dBuV/m @ 3m

**ANSI STANDARD C63.4-2003 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 super-regenerative receiver operating frequency to cohere the characteristic broadband emissions from the receiver.

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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 dB	Field Strength dBuV/m	Margin dB
49.8 MHz	47.67 MHz	25.1 dBuV	H	0.49	11.20 dB	36.79	3.21
49.8	47.68	28.5	V	0.49	10.64	39.63	0.37
49.8	49.29	27.5	V	0.50	10.96	38.96	1.04
49.8	49.31	23.0	H	0.50	11.20	34.70	5.30
49.8	50.26	19.1	H	0.50	11.20	30.80	9.20
49.8	50.28	24.0	V	0.50	11.14	35.64	4.36
49.8	51.07	13.6	H	0.50	11.20	25.30	14.70
49.8	51.12	18.0	V	0.50	11.26	29.76	10.24
49.8	51.86	8.1	H	0.51	11.20	19.81	20.19
49.8	51.87	12.3	V	0.51	11.36	24.17	15.83
49.8	94.06	8.6	H	0.64	9.17	18.41	25.09
49.8	94.62	19.5	V	0.64	10.61	30.75	12.75
49.8	96.76	9.6	H	0.64	10.14	20.38	23.12
49.8	96.78	14.4	V	0.64	11.02	26.06	17.44
49.8	98.24	11.6	V	0.65	11.28	23.53	19.97
49.8	98.38	8.6	H	0.65	10.82	20.07	23.43
49.8	99.32	10.0	V	0.65	11.48	22.13	21.37
49.8	100.38	6.6	H	0.65	11.51	18.76	24.74
49.8	100.38	9.8	V	0.65	11.62	22.07	21.43
49.8	142.02	6.7	H	0.69	13.26	20.65	22.85
49.8	142.22	9.9	V	0.69	12.93	23.52	19.98
49.8	144.06	10.3	V	0.69	13.04	24.03	19.47
49.8	144.34	9.3	H	0.69	13.45	23.44	20.06
49.8	145.82	9.8	V	0.70	13.28	23.78	19.72
49.8	147.10	9.8	H	0.70	13.88	24.38	19.12

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**TEST DATA CONTD:**

Tuned Frequency	Emission Frequency	Meter Reading	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
MHz	MHz	dBuV					
49.8	149.44	8.2	H	0.70	14.30	23.20	20.30
49.8	149.46	9.2	V	0.70	14.08	23.98	19.52
49.8	188.46	14.0	H	0.85	17.31	32.16	11.34
49.8	188.50	7.9	V	0.85	17.37	26.12	17.38
49.8	197.32	13.5	H	0.89	17.41	31.80	11.70
49.8	199.50	10.8	V	0.90	17.22	28.92	14.58
49.8	199.50	13.6	H	0.90	17.32	31.82	11.68
49.8	200.50	12.5	V	0.90	11.70	25.10	18.40
49.8	201.36	14.4	H	0.90	12.07	27.37	16.13

Emissions attenuated more than 20 dB below the permissible value are not reported.

**SAMPLE CALCULATION:**  $FS_{dBuV/m} = MR_{(dBuV)} + ACF_{dB}$ .

**PERFORMED BY:** Nam Nguyen

**DATE:** 1/10/2007

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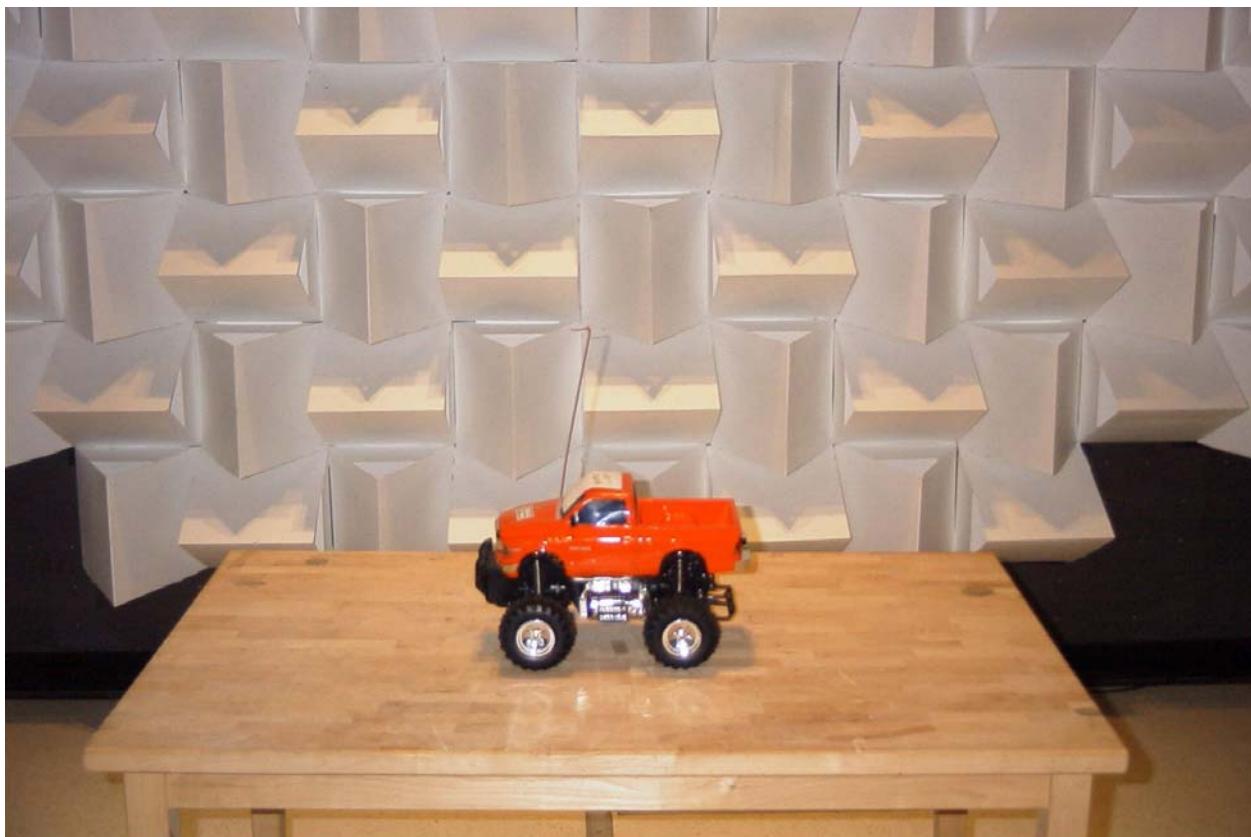
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