THRU Lab & Engineering.

RM302,Bokjo,29-15 , Chongpa3-Dong
Yongsan-Gu, Seoul, Korea
81221095059F81221095056 email thrukang@kornet.net

Test Report

Product Name: 49.82-49.90 MHz Wireless R/C Toy - RX

FCC ID: BY32887-49TS

Applicant:
SCIENTIFIC TOYS, LTD.

Rm. 1108, 11/F., Block B
New Mandarin Plaza
14 Science Museum Road,TST, Kowloon
Hong Kong

Date Receipt: 06/07/2005

Date Tested: 06/10/2005

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TEST EQUIPMENT LIST

DEVICE	MODEL	MFGR	SERNO	DUE.CAL
EMI Test Receiver	ESVS 10	Rohde & Schwarz	830489/001	2006.04.23.
Spectrum Analyzer	8566B	Hewlett Packard	2311A02394	2006.04.23
Spectrum Display	85662A	Hewlett Packard	2542A12429	2006.04.23.
Quasi-Peak Adapter	85650A	Hewlett Packard	2521A00887	2006.04.23.
RF Preselector	85685A	Hewlett Packard	2648A00504	2006.04.23
Pre-Amplifier	8449B	Hewlett Packard	3008A00375	2006.04.23.
Pre-Amplifier	8447F	Hewlett Packard	3113A05367	2006.04.23.
Spectrum Monitor	EZM	Rohde & Schwarz	862304/007	2006.04.23.
Bico-Antenna	94455-1	Eaton	977	2007.04.01.
Log-Periodic Antenna	3146	EMCO	2051	2007.04.01.
Dipole Antenna	TDA25/1/2	Electro Metrics	176/200/200	2007.04.01.
Horn Antenna	SAS-571	A.H Systems	414	2007.04.01.
Spectrum Analyzer	R3261C	Advantest	71720189	2006.04.23
LISN	KNW-242	Kyoritsu	8-923-2	2007.04.25.
LISN	8012-50-R-24	Solar	8379121	2007.04.25..
Loop Ant	6507	EMCO	1435	2005.10.06.
Signal Generator	SMS	Rohde & Schwarz	872165/100	2006.04.23.
Modulation Analyzer	8901B	Hewlett Packard	3438A05094	2006.04.23.
Frequency Counter	CMC251	Tektronic	CMC-251TW52489	2006.04.23.

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TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of ThruLab & Engineering.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-1992 using a HEWLETT PACKARD 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 100KHZ and the video bandwidth was 300KHZ. The ambient temperature of the UUT was 22ºC with a humidity of 38%.

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 C63.4-1992 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 super regenerative receiver operating frequency to cohere the characteristic broadband emissions from the receiver.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSIC63.4-1992 with the EUT 40 cm from the vertical ground wall.**Not Applicable, battery operated.**

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APPLICANT: SCIENTIFIC TOYS, LTD.

FCC ID: BY32887-49TS

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:

No	Emission Frequency (MHz)	Meter Reading dBuV/m	Ant. Polaritry	Correction Factor dB	Cable Loss dB	Field Strength (dBuv/m)	Margin (dBuv)	Limit (dBuv/m)
1	41.13	10.6	V	12.6	0.9	24.0	-16.0	40.0
2	55.21	5.8	H	9.1	1.1	15.9	-24.1	40.0
3	67.17	2.1	V	6.0	1.2	9.3	-30.7	40.0
4	86.01	7.1	V	9.5	1.5	18.0	-22.0	40.0
5	168.21	7.9	H	16.3	2.3	26.4	-17.1	43.5
6	202.70	3.1	V	10.8	2.6	16.5	-27.0	43.5
7	219.95	2.5	H	10.7	2.7	15.9	-30.1	46.0
8	268.12	1.9	V	13.9	3.2	19.1	-26.9	46.0
9	300.72	8.2	H	16.1	3.4	27.8	-18.2	46.0
10	352.32	2.5	V	14.8	3.8	21.2	-24.8	46.0
11	436.85	3.2	H	16.1	4.5	23.7	-22.3	46.0
12	489.42	4.3	V	18.6	4.8	27.8	-18.2	46.0
13	540.62	2.9	H	18.0	5.2	26.1	-19.9	46.0
14	668.25	4.5	V	20.9	6.0	31.4	-14.6	46.0
15	721.92	3.5	H	21.3	6.3	31.1	-14.9	46.0
16	750.05	3.1	V	21.0	6.5	30.5	-15.5	46.0

SAMPLE CALCULATION: FSdBuV/m = MR (dBuV) + ACFdB.
TEST PROCEDURE: ANSI STANDARD C63.4-1992 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: S.W Ahn **DATE**:**06/10/05**