FCC PART 15.227

EMI MEASUREMENT AND TEST REPORT

For

AHA Toys Inc

709 Main Street Lake Geneva WI 53147

FCC ID: SLP27MHZ00190

May 20, 2005

This Report Concerns:	Equipment Type:
☒ Original Report	Toy Remote Control

Test Engineer:	Jandy Su
Report No.:	RSZ05051610
Test Date:	May 19, 2004
Reviewed By:	Chris Zeng
Prepared By:	Bay Area Compliance Lab Corp. (ShenZhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China Tel: 86-755-33320018 Fax: 86-755-33320008

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *AHA Toys Inc*'s product, model number: #00190 or the "EUT" as referred to in this report is a Toy Remote Control and product name is RC Money.The EUT is measured approximately 12.0cmL x 11.0cmW x 5.0cmH, rated input voltage: DC 9 V battery.

Antenna Length: 0.5M.

** The test data gathered are from production sample, serial number: 0504014, provided by the manufacturer.*

Objective

This Type approval report is prepared on behalf of *AHA Toys Inc* in accordance with Part 2, Subpart J, and Part 15, Subparts A, B and C of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules, sec 15.203, 15.205, 15.209 and sec 15.227.

Related Submittal(s)/Grant(s)

No Related Submittals.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Lab Corp. (ShenZhen) to collect radiated and conducted emission measurement data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China.

Test site at Bay Area Compliance Lab Corp. (ShenZhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0). The current scope of accreditations can be found at http://ts.nist.gov/ts/htdocs/210/214/scopes/2007070.htm

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

N/A.

Special Accessories

N/A.

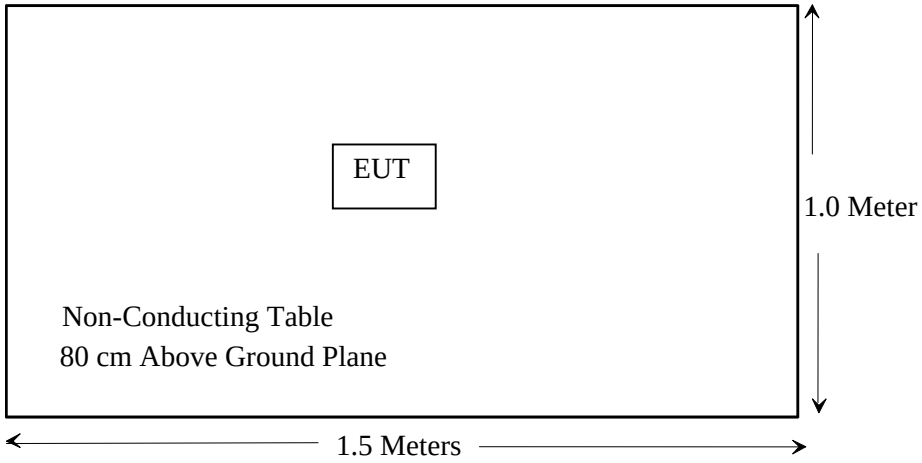
Equipment Modifications

BACL has not done any modification on the EUT.

Configuration of Test Setup

EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

Results reported relate only to the product tested, serial number: 0504014.

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.203	Antenna requirement	Compliant
§15.205	Restricted Band of operation	Compliant
§15.209	Radiated Emission Limit	Compliant
§15.227(a)	Field Strength	Compliant
§15.227(b)	Out of Band Emission	Compliant

§15.203 - ANTENNA REQUIREMENT

Standard Applicable

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

This product has a permanent antenna, fulfill the requirement of this section.

Test Result: Pass

§15.205, §15.209, §15.227(a) - RADIATED EMISSIONS TEST

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at BACL is ±4.0 dB.

The fundamental data was recorded in average detection mode: set the VBW AVE on, then record the data.

EUT Setup

The radiated emission tests were performed in the chamber A test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part 15 Subpart C section 15.227 limits.

Test Receiver Setup

According to FCC Rules, 47 CFR 15.33, the EUT emissions were investigated from 27 to 1000 MHz.

During the radiated emission test, the test receiver was set with the following configurations:

Frequency Range	***R B/W***	***Video B/W***
Below 30 MHz	10 kHz	10 kHz
30 – 1000 MHz	100 kHz	100 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2004-9-1	2005-8-31
Rohde & Schwarz	Test Receiver	ESCI	100035	2004-9-15	2005-9-14
ETS	Bi-Conical Antenna	#3110B	#3360	2004-4-19	2005-4-18
ETS	Passive Loop Antenna	6512	00029604	2005-2-12	2006-2-11

*** Statement of Traceability: BACL** attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Meter Reading + Antenna Loss + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

Margin = Corr. Ampl. - Limit

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.227&15.209, with the worst margin reading of:

-4.9 dB at **27.145 MHz** in the **Horizontal** polarization.

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	56 %
ATM Pressure:	1010mbar

The testing was performed by Jandy Su on 2005-5-19.

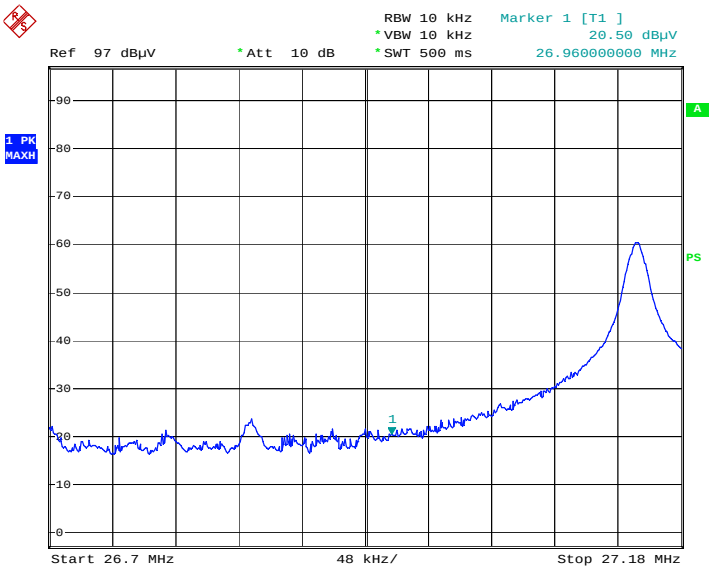
Test Mode: Transmitting

INDICATED			TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC PART 15.227&15.209	
Frequency MHz	Meter Reading dBμV/m	Detector PK /AV	Angle Degree	Height Meter	Polar H/ V	Antenna Loss dB/m	Cable Loss dB	Amp. Gain dB	Corr. Ampl. dBμV/m	Limit dBμV/m	Margin dB
27.145	88.03	AV (Fundamental)	45	1.2	H	15.3	0.6	28.8	75.1	80.0	-4.9
35.850	41.71	PK (Harmonic)	45	1.2	H	13.3	0.6	28.8	26.8	40.0	-13.2
39.350	39.77	PK (Harmonic)	45	1.2	H	13.3	0.6	28.8	24.9	40.0	-15.1
27.145	76.20	AV (Fundamental)	180	1.2	V	15.3	0.6	28.8	63.3	80.0	-16.7
36.200	37.25	PK (Harmonic)	60	1.0	V	13.3	0.6	28.8	22.3	40.0	-17.7
34.450	33.94	PK (Harmonic)	90	1.0	V	15.3	0.6	28.8	21.0	40.0	-19.0
49.850	37.55	PK (Harmonic)	60	1.0	V	11.3	0.6	28.8	20.6	40.0	-19.4
47.750	36.59	PK (Harmonic)	45	1.2	H	11.3	0.6	28.8	19.7	40.0	-20.4
162.900	36.72	PK (Harmonic)	45	1.2	H	13.2	1.1	28.3	22.7	43.5	-20.8
40.050	35.14	PK (Harmonic)	60	1.2	V	12.1	0.6	28.8	19.0	40.0	-21.0
54.050	36.53	PK (Harmonic)	45	1.2	H	10.5	0.7	28.7	19.0	40.0	-21.0
27.145	91.14	PK (Fundamental)	45	1.2	H	15.3	0.6	28.8	78.2	100.0	-21.8
91.150	34.40	PK (Harmonic)	45	1.2	V	10.0	0.9	28.6	16.7	43.5	-26.8
27.145	78.72	PK (Fundamental)	180	1.2	V	15.3	0.6	28.8	65.8	100.0	-34.2

§15.227(b) - Out of Band Emission

The result has been complied with the 15.227(b), see the following plot:

Frequency MHz	Emission dBµV/m	Limit dBµV/m
26.96	20.50	40.0
27.28	35.77	40.0



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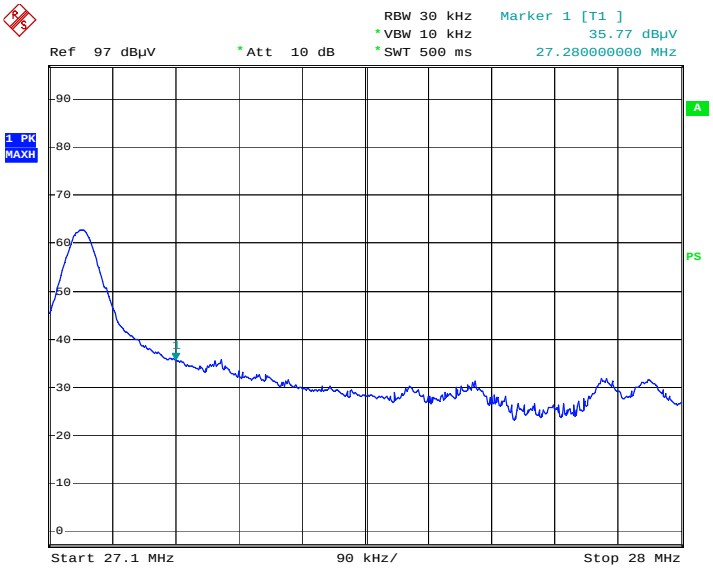

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