

FCC PART 15 ID

EMI MEASUREMENT AND TEST REPORT

For

KONG SHING PLASTIC MANUFACTORY

Rm B4, 24/F, BLK.B, Fortune Factory Bldg., 40 Lee Chung St., Chai Wan, H. K.

FCC ID: QTX85293810037

May 8, 2004

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: Radio Control ATV- Remote Toy Controller
Test Engineer: <u>Jandy Su</u>	
Report Number: <u>RSZ04040502</u>	
Test Date: <u>April 3, 2004</u>	
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Note: The test report is specially limited to the use of the above client company and the product model. It may not be duplicated without prior written consent of Bay Area Compliance Laboratory Corporation. This report **must not** be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *KONG SHING PLASTIC MANUFACTORY*'s product, model: 1058 or the "EUT" as referred to in this report is a Radio Control ATV which measures approximately 13.00cm L x 4.50cm W x 4.00cm H, With permanent and antenna :0. 3M rated input voltage: DC 4.5V battery.

** The test data gathered are from production sample, serial number: 040418, provided by the manufacturer.*

Objective

The following test report is prepared on behalf of *KONG SHING PLASTIC MANUFACTORY* in accordance with Part 2, Subpart J, and Part 15, Subparts A and C of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine compliance with FCC PART 15 C. limits.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2001, 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 Corporation. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The open Area Test site used by Bay Area Compliance Laboratory Corporation to collect radiated electromagnetic disturbance and disturbance voltage measurement data is located in the No. 3 building JingHua Courtyard, Shennanzhong Rd ShenZhen, Guandong 518031, P.R. C.

Test site at Bay Area Compliance Laboratory Corporation has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports has been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997 and Article 8 of the VCCI regulations on December 25, 1997. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2001.

The Federal Communications Commission and Voluntary Control Council for Interference has the reports on file and is listed under FCC file 31040/SIT 1400F2 and VCCI Registration No.: C-1298 and R-1234. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratory Corporation is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (NVLAP). The scope of the accreditation covers the FCC Method - 47 CFR Part 15 - Digital Devices, IEC/CISPR 22: 1998, and AS/NZS 3548: Electromagnetic Interference - Limits and Methods of measurement of Information Technology Equipment test methods under NVLAP Lab Code 200167-0.

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

As shown in section 2.6, interface cable used for compliance testing is shielded as normally supplied by *KONG SHING PLASTIC MANUFACTORY*, and its respective support equipment manufacturers.

Equipment Modifications

The EUT tested was not modified by BACL.

Configuration of Test System



LIE View



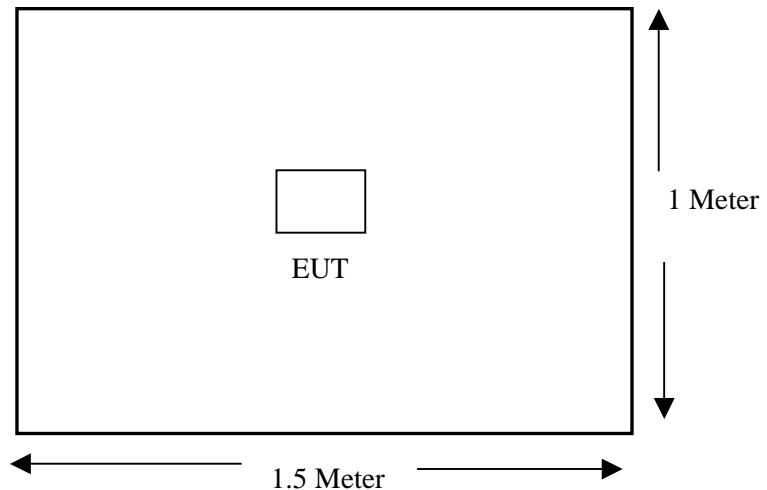
Side view



stand view

Stand model and lying model the data was included in this report.

Test Setup Block Diagram



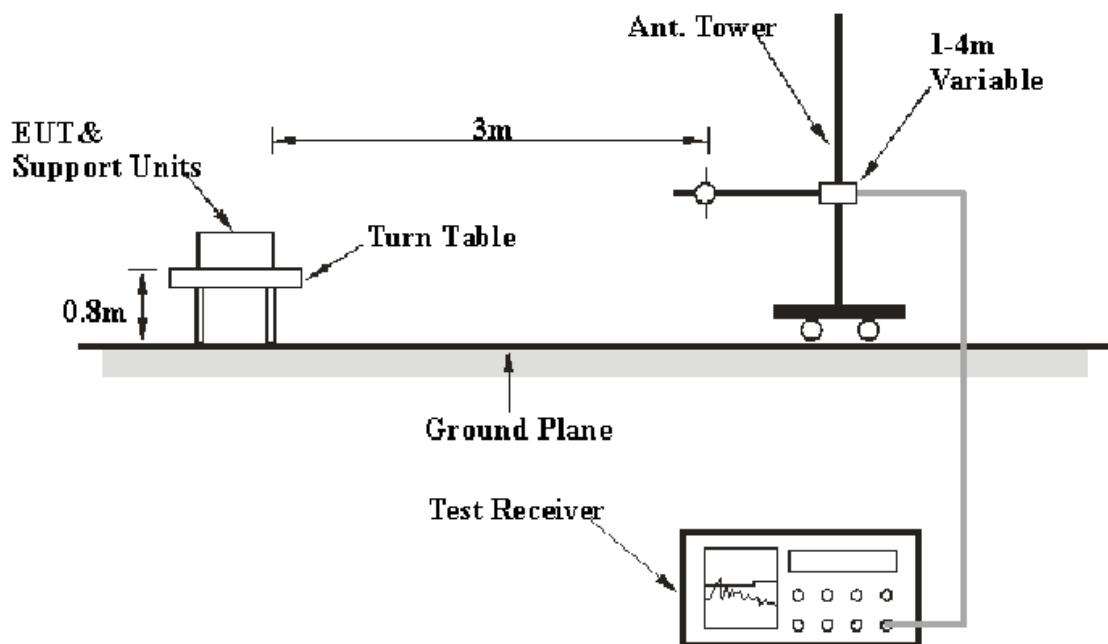
§15.209, §15.227 - RADIATED EMISSION

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.

EUT Setup



The radiated emission tests were performed in the open area 3-meter test site, using the setup accordance with the ANSI C63.4-2001. The specification used was the FCC 15.205, 15.209, 15.227 limits.

Spectrum Analyzer Setup

The system was investigated from 27MHz to 1000MHz.

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

<u>Frequency Range</u>	<u>RBW</u>	<u>Video B/W</u>
27 – 1000MHz	100KHz	100KHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R/S	Spectrum Analyzer	FSEM	849720/019	2003-10-30	2004-10-29
HP	Amplifier	8447D	2944A09795	2003-8-5	2004-8-4
ETS	Log Periodic Antenna	3146	9603-4421	2003-8-5	2004-8-4
ETS	Biconical Antenna	3110B	3360	2003-8-5	2004-8-4
FLUKE	True RMS Multimeter	187	78540402	2004-3-24	2005-3-23
HP	Amplifier (1-26.5GHz)	8449B	3147A00400	2003-11-5	2004-11-4
A.H.System	Horn Antenna (700MHz-18GHz)	SAS-200/571	261	2003-11-5	2004-11-4
YOKOROWA	Coaxial Cable 1#	N/A	NO: 001	2003-8-5	2004-8-4
YOKOROWA	Coaxial Cable 1#	N/A	NO: 002	2003-8-5	2004-8-4
ETS	Passive Loop Antenna	6512	00029604	2003-8-5	2004-8-4

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

Test Procedure

For the radiated emissions test, the power cord of the host system and all support equipment were connected to the AC floor outlet.

Maximizing procedure was performed on the six (6) highest emissions in the described configurations.

All data was recorded in the Quasi-peak detection mode.

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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

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

$$\text{Margin} = \text{Corr. Ampl.} - \text{Class B Limit}$$

Test Data

Date of Test :	April 3, 2004	Temperature :	25°C
EUT :	Radio Control ATV	Humidity :	70%
M/N :	1058	Operating Mode :	Transmitting
S/N :	040418	Test Engineer:	Jandy Su

INDICATED		TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC PART 15 C			
Frequency	Ampl.		Angle	Height	Polar	Antenna	Cable	Amp.	Limit	Margin	Detector	
MHz	dB μ V/m	Degree	Meter	H/V	dB	dB	dB	dB μ V/m	dB μ V/m	dB		
54.29	41.76	180	1.2	v	10.5	0.2	25	27.5	40	-12.5	QP	
81.44	41.94	45	1.0	v	9.6	0.6	25	27.1	40	-12.9	QP	
54.29	40.63	60	1.2	h	10.5	0.2	25	26.3	40	-13.7	QP	
81.44	40	270	1.0	h	9.6	0.6	25	25.2	40	-14.8	QP	
135.77	38.39	45	1.2	v	12.9	0.9	25	27.2	43.5	-16.3	QP	
108.58	39.46	60	1.0	v	11.4	1.2	25	27.1	43.5	-16.4	QP	
135.77	37.42	90	1.2	h	12.9	0.9	25	26.2	43.5	-17.3	QP	
108.58	38.37	45	1.2	h	11.4	1.2	25	26.0	43.5	-17.5	QP	
162.85	35.98	180	1.2	v	13.2	0.8	25	25.0	43.5	-18.5	QP	
162.85	34.76	180	1.2	h	13.2	0.8	25	23.8	43.5	-19.7	QP	
27.145	51.24	45	1.0	h	15.3	0.7	25	42.2	80	-37.8	FUND (AV)	
27.145	46.94	45	1.0	v	15.3	0.7	25	37.9	80	-42.1	FUND (AV)	
27.145	53.70	45	1.0	h	15.3	0.7	25	44.66	100	-55.34	FUND (PK)	
27.145	48.62	45	1.0	v	15.3	0.7	25	39.58	100	-60.42	FUND (PK)	

Test Result: Pass