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FEDERAL COMMUNICATIONS COMMISSION
Registration number: 282399

Report No.: SZEMO060801831RFF
Page: 1 of 10
FCC ID: HAP91389

TEST REPORT

Application No. : SZEMO060801831RFF(SGS SZ NO.: SZTYR060802259/EL)
Applicant: ECHO TOYS LIMITED
FCC ID: HAP91389
Fundamental Frequency : 27.145MHz
Equipment Under Test (EUT):
EUT Name: Hummer
Model No.: Not supplied by client.
Labelled Age Grading: 6+
Standards: FCC PART 15, SUBPART C : 2006
Section 15.227
Date of Receipt: 14 August 2006
Date of Test: 17 to 23 August 2006
Date of Issue: 24 August 2006

Test Result :	PASS *
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* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf
This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.
All test results in this report can be traceable to National or International Standards.



2 Test Summary

Test	Test Requirement	Stanadard Paragraph	Result
Radiated Emission (30MHz to 1000MHz)	FCC PART 15 :2006	Section 15.227	PASS*
Occupied Bandwidth	FCC PART 15 :2006	Section 15.215	PASS

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

* The EUT passed the RE test after retest.



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4 General Information

4.1 Client Information

Applicant Name: ECHO TOYS LIMITED

Applicant Address: TIN PO ROAD, TIN PO INDUSTRIAL DISTRICT, DONGGUAN CITY,
GUANGDONG, CHINA

4.2 Details of E.U.T.

EUT Name: Hummer

Item No.: Not supplied by client.

Power Supply: 9.0V DC (1*9.0V '6F22' Size Battery) for Tx.

Power Cord: N/A-

4.3 Description of Support Units

The EUT was tested as an independent unit: 27MHz radio transmitter.

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory, No.198
Kezhu Road, Science Town Economic & Technology Development District Guangzhou, China
510663

Tel: +86 20 8215 5555 Fax: +86 20 8207 5059

4.5 Other Information Requested by the Customer

None.



4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **NVLAP – Lab Code: 200611-0**
SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0. Effective through December 31, 2005.
- **ACA**
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.
- **VCCI**
The 3m Semi-anechoic chamber and Shielded Room (11.5m x 4m x 4m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-1599 and C-1706 respectively.
Date of Registration: June 01, 2005. Valid until February 22, 2008.
- **SGS UK (Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**
Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.
- **CNAL – LAB Code: L0141**
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of Testing Laboratories.
- **FCC – Registration No.: 282399**
SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 282399, May 31, 2002. With the above and NVLAP's accreditation, SGS-CSTC is an authorised test laboratory for the DoC process.
- **Industry Canada (IC)**
The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5169.



5 Test Results

5.1 Test Instruments

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	28-04-2005	27-04-2007
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	22-09-2005	21-09-2006
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	20-05-2006	19-05-2007
5	Coaxial cable	SGS	N/A	SEL0027	20-05-2006	19-05-2007
6	BiConiLog Antenna	ETS-LINDGREN	3142C	00042673	10-01-2006	09-01-2007
7	BiConiLog Antenna	ETS-LINDGREN	3142C	00042670	10-01-2006	09-01-2007
8	EMI Test Receiver	Rohde & Schwarz	ESCI	100119	03-03-2006	02-03-2007
9	Loop Antenna	Emco	6502	00042963	30-05-2006	29-05-2007

5.2 E.U.T. Operation

Input voltage:	9.0V DC (1* 9.0V '6F22' Size Battery)
Operating Environment:	
Temperature:	26.0 °C
Humidity:	51% RH
Atmospheric Pressure:	1004mbar
EUT Operation:	Test the EUT in transmitting mode.

5.3 Test Procedure & Measurement Data

5.3.1 Radiated Emissions

Test Requirement:	FCC Part15 C Section 15.227
Test Method:	ANSI C63.4
Test Date:	17 August 2006 (Initial Test) 22 August 2006(Retest)
Measurement Distance:	3m (Semi-Anechoic Chamber)
Requirements:	Carrier frequency will not exceed 80dBuV/m AT 3m. Out of band emissions shall not exceed: 40.0 dBuV/m between 30MHz & 88MHz 43.5 dBuV/m between 88MHz & 216MHz 46.0 dBuV/m between 216MHz & 960MHz 54.0 dBuV/m above 960MHz
Detector:	Peak Scan (9kHz resolution bandwidth for 9kHz to 30MHz; 120kHz resolution bandwidth for 30MHz to 1000MHz)

**27.145MHz Mode.**

Test Procedure: For testing performed with the loop antenna, testing was performed in accordance to ANSI C63.4 section 8.2.1. The center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

Horizontal.

Test Frequency (MHz)	Peak (dB μ V/m)			Limits (dB μ V/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	76.1	70.8	76.4	100.0	23.9	29.2	23.6

Test Frequency (MHz)	Average (dB μ V/m)			Limits (dB μ V/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	71.9	65.4	72.3	80.0	8.1	14.6	7.7

Vertical.

Test Frequency (MHz)	Peak (dB μ V/m)			Limits (dB μ V/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	72.3	66.9	72.5	100.0	27.7	33.1	27.5

Test Frequency (MHz)	Average (dB μ V/m)			Limits (dB μ V/m)	Margin (dB)		
	X	Y	Z		X	Y	Z
27.145	67.1	61.6	67.4	80.0	12.9	18.4	12.6

Y: EUT as per photograph in section 5.3.3 of this report.

X: As Y, but rotate EUT by 90° clockwise.

Z: As X, but rotate EUT by 90° vertically.

Other emissions

Test Procedure: The procedure used was ANSI Standard C63.4-2003. The receiver was scanned from 30MHz to 1000MHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. The worst case emissions were reported.

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bilog antenna with 2 orthogonal polarities



Test the EUT in transmitting mode.

Horizontal.

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamplifier Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
83.500	1.10	8.07	27.98	36.57	17.76	40.00	-22.24
133.225	1.29	7.84	27.58	40.85	22.40	43.50	-21.10
190.750	1.39	10.11	27.20	37.82	22.12	43.50	-21.38
215.125	1.49	10.97	27.07	46.56	31.95	43.50	-11.55
517.375	2.62	18.28	27.69	38.36	31.57	46.00	-14.43

Vertical.

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamplifier Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
54.250	0.80	7.92	28.08	42.75	23.39	40.00	-16.61
78.625	1.06	7.61	28.00	42.26	22.93	40.00	-17.07
188.800	1.38	10.07	27.21	43.32	27.56	43.50	-15.94
216.100	1.50	11.05	27.07	46.75	32.23	46.00	-13.77
461.800	2.45	17.35	27.60	37.89	30.09	46.00	-15.91

Remark:

According to 15.35 (b) When average radiated emission measurements are specified in the regulations, including emission measurements below 1000 MHz, there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules, e.g., see Section 15.255.

Test Results: The unit does meet the FCC Part 15 C Section 15.227 requirements.



5.3.2 Occupied Bandwidth

Test Requirement: FCC Part 15 C Section 15.215 (C) and Section 15.227.

Test Method: ANSI C63.4

Operation within the band 26.960 – 27.280 MHz .

Test Date: 17 August 2006

26.960–27.280MHz Mode.

Requirements: Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the 20 dB bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Method of measurement: The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector. The vertical Scale is set to 10dB per division. The horizontal scale is set to 32KHz per division.

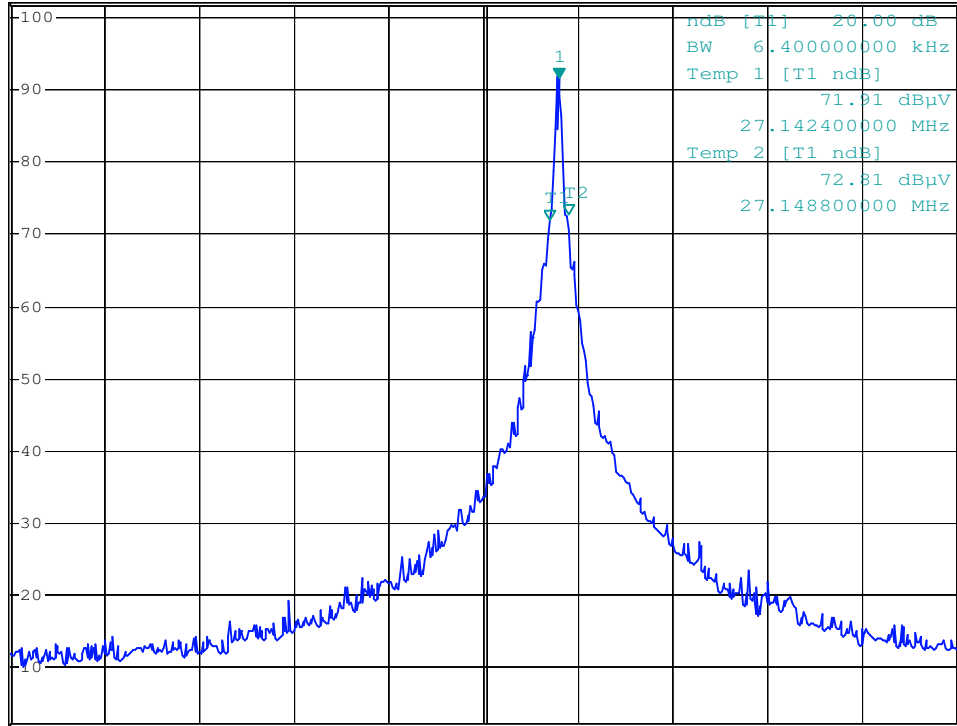


*RBW 1 kHz Marker 1 [T1]
*VBW 3 kHz 91.64 dBuV
*SWT 500 ms 27.14560000 MHz

Ref 102 dBuV

*Att 10 dB

1 PK
MAXH



Start 26.96 MHz

32 kHz/

Stop 27.28 MHz

Date: 17.AUG.2006 10:34:19

The results: The unit does meet the FCC Part 15 C Section 15.215 requirements