



## SGS-CSTC Standards Technical Services Ltd.

No.198 Kezhu Road, Science Town Economic& Technology  
Development District Guangzhou, China 510663  
Telephone: +86 (0) 20 8215 5555 Fax: +86 (0) 20 8207 5059  
Email: sgs\_internet\_operations@sgs.com

**FEDERAL COMMUNICATIONS COMMISSION**  
Registration number: 556682

Report No.: SZEMO070601398RFF(I)

Page : 1 of 8

FCC ID : VJK73833T49

# TEST REPORT

**Application No.** : SZEMO070601398RF(SGS SZ NO.: SZTYR070601575/EL)

**Applicant** : Smart Christmas Solutions Ltd.

**FCC ID** : VJK73833T49

**Fundamental Frequency** : 49.860MHz

**Equipment under Test (EUT):**

**EUT Name** : The Rattler

**Item No.** :#73833

**Labelled Age Grading** : 8+

**Standards** : FCC PART 15, SUBPART C : 2006  
Section 15.235

**Date of Receipt** : 11 June 2007

**Date of Test** : 12 June 2007

**Date of Issue** : 15 June 2007

<b>Test Result :</b>	<b>PASS *</b>
----------------------	---------------

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo  
Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. 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.

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf. Attention is drawn to the limitations of liability, indemnification and jurisdictional issues defined therein. The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.



## **2 Test Summary**

<b>Test</b>	<b>Test Requirement</b>	<b>Stanadard Paragraph</b>	<b>Result</b>
Radiated Emission (30MHz to 1000MHz)	FCC PART 15 :2006	Section 15.235	PASS
Occupied Bandwidth	FCC PART 15 :2006	Section 15.235	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.



### 3 Contents

	Page
1 COVER PAGE .....	1
2 TEST SUMMARY .....	2
3 CONTENTS .....	3
4 GENERAL INFORMATION .....	4
4.1 CLIENT INFORMATION .....	4
4.2 DETAILS OF E.U.T. ....	4
4.3 DESCRIPTION OF SUPPORT UNITS .....	4
4.4 TEST LOCATION .....	4
4.5 OTHER INFORMATION REQUESTED BY THE CUSTOMER .....	4
5 TEST RESULTS .....	5
5.1 TEST INSTRUMENTS .....	5
5.2 E.U.T. OPERATION .....	5
5.3 TEST PROCEDURE & MEASUREMENT DATA .....	5
5.3.1 <i>Radiated Emissions</i> .....	5
5.3.2 <i>Occupied Bandwidth</i> .....	8



## **4 General Information**

### **4.1 Client Information**

Applicant: Smart Christmas Solutions Ltd.

Address of Applicant: RM 2105-06, 21/F, Greenfield Tower (South), Concordia Plaza, No.1,  
Science Museum Road, Tsim Sha Tsui East, Kowloon, Hong Kong

### **4.2 Details of E.U.T.**

Product Name: The Rattler

Item No: #73833

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

9.6V DC (Rechargeable Battery) for Rx.

Power Cord: N/A-

### **4.3 Description of Support Units**

The EUT was tested as an independent unit: a 49MHz 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.



## 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	28-03-2006	27-03-2008
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	22-09-2006	21-09-2007
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	30-05-2006	29-05-2008
5	Coaxial cable	SGS	N/A	SEL0027	30-05-2006	29-05-2008
6	BiConiLog Antenna	ETS-LINDGREN	3142C	00042673	03-03-2007	02-03-2008
7	EMI Test Receiver	Rohde & Schwarz	ESCI	100119	12-03-2007	11-03-2008
8	Loop Antenna	Emco	6502	00042963	30-05-2006	29-05-2008

### 5.2 E.U.T. Operation

Input voltage: 9.0V DC (1\*9.0V '6F22' Size Battery)

Operating Environment:

Temperature: 23.0 °C

Humidity: 52 % RH

Atmospheric Pressure: 1010 mbar

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 15.235

Test Method: ANSI C63.4

Test Date: 12 June 2007

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 dBμV/m between 30MHz & 88MHz

43.5 dBμV/m between 88MHz & 216MHz

46.0 dBμV/m between 216MHz & 960MHz

54.0 dBμV/m above 960MHz

Detector: Peak Scan (120kHz resolution bandwidth)



## SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO070601398RFF(I)

Page : 6 of 8

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. The EUT was measured by Bilog antenna with 2 orthogonal polarities and peak emissions from the EUT were detected within 6dB of the class B limit line.

The following measurements were performed on the modified modified EUT on 12 June 2007:

Test the EUT in transmitting mode.

### Intentional emission

Test Frequency (MHz)	Peak (dB $\mu$ V/m)		Limits (dB $\mu$ V/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
49.860	58.1	45.2	100.0	41.9	54.8

Test Frequency (MHz)	Average (dB $\mu$ V/m)		Limits (dB $\mu$ V/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
49.860	54.0	41.5	80.0	26.0	38.5

### 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.



## SGS-CSTC Standards Technical Services Ltd.

Report No.: SZEMO070601398RFF(I)

Page : 7 of 8

Other emissions

Vertical

Frequenc y (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Quasi-peak Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
97.900	1.18	9.02	27.89	53.80	36.11	43.50	-7.39
148.340	1.32	8.86	27.47	39.52	22.23	43.50	-21.27
249.220	1.67	12.27	26.92	35.18	22.20	46.00	-23.80
397.630	2.20	16.27	27.39	36.88	27.96	46.00	-18.04
447.100	2.40	16.84	27.56	36.62	28.30	46.00	-17.70

Horizontal

Frequenc y (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Quasi-peak Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)
97.900	1.18	9.02	27.89	35.51	17.82	43.50	-25.68
148.340	1.32	8.86	27.47	36.79	19.50	43.50	-24.00
249.220	1.67	12.27	26.92	35.32	22.34	46.00	-23.66
347.190	2.05	15.34	27.07	34.78	25.10	46.00	-20.90
447.100	2.40	16.84	27.56	36.08	27.76	46.00	-18.24

**Test Results: The unit does meet the FCC Part 15 C Section 15.235 requirements.**



### 5.3.2 Occupied Bandwidth

Test Requirement: FCC Part15 C Section 15.235

Test Method: ANSI C63.4

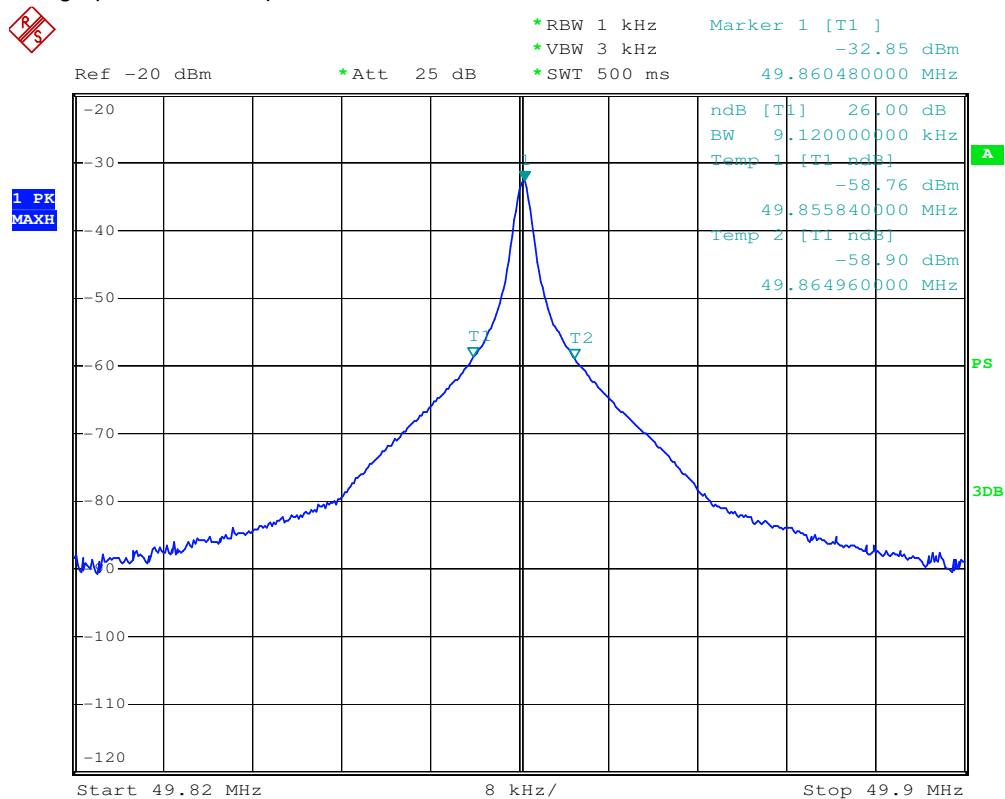
Operation within the band 49.82 – 49.90 MHz

Test Date: 12 June 2007

Requirements: The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in Section 15.209, whichever permits the higher emission levels. The field strength of any emissions removed by more than 10 kHz from the band edges shall not exceed the general radiated emission limits in Section 15.209.

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 8KHz per division.

The graph as below, represents the emissions take for this device.



N

Date: 12.JUN.2007 10:24:43

The results: The unit does meet the FCC Part 15 C Section 15.235 requirements.