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FEDERAL COMMUNICATIONS COMMISSION
Registration number: 282399

FCC TEST REPORT

Application No. :	GLEMO040600293ET
Applicant:	POWERSOURCES ENTERPRISES
FCC ID:	R2Y10089112289
Fundamental Frequency :	27.145MHz
Equipment Under Test (EUT):	
Name:	R/C Helicopter 27MHz
Model No.:	10089-11, 10089-12, 3389, 2289, 9099♣
♣	Which models as above were been test, please refert the section 3.2 of this report for the detail.
Standards:	FCC PART 15, SUBPART C : 2002
Date of Receipt:	18 June 2004
Date of Test:	22 June & 20 July 2004
Date of Issue:	26 July 2004
Test Result :	**PASS ***

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

Authorized Signature:

Kent Hsu
Laboratory Manager

2 Contents

Page

1 COVER PAGE 1

2 CONTENTS 2

3 GENERAL INFORMATION 3

3.1 CLIENT INFORMATION 3
3.2 DETAILS OF E.U.T. 3
3.3 DESCRIPTION OF SUPPORT UNITS 3
3.4 TEST LOCATION 3
3.5 OTHER INFORMATION REQUESTED BY THE CUSTOMER 3
3.6 TEST FACILITY 4

4 TEST RESULTS 5

4.1 TEST INSTRUMENTS 5
4.2 E.U.T. OPERATION 5
4.3 TEST PROCEDURE & MEASUREMENT DATA 5
4.3.1 Radiated Emissions 5
4.3.2 Occupied Bandwidth 7
4.3.3 Photographs - Radiated Emission Test Setup in Chamber 8
4.3.4 Modification for RE Test: 8

5 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS 9-10

3 General Information

3.1 Client Information

Applicant Name:	POWERSOURCES ENTERPRISES
Applicant Address:	Unit A, 17/F., Asia Harvest Commercial Centre, 324 Shaukei Wan Road, Shaukeiwan, Hong Kong.

3.2 Details of E.U.T.

Name:	R/C Helicopter 27MHz
Model No.:	10089-11, 10089-12, 3389, 2289, 9099
♣	Only one model was tested, since the model no.'s above listed were identical in cosmetics, material, mechanical, and physical design, including software and they are different in paking only.
Power Supply:	12V DC (8 x 'AA' Size Batteries)
Power Cord:	N/A-

3.3 Description of Support Units

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

3.4 Test Location

All tests were performed at:-

SGS-CSTC Standards Technical Services Ltd., Guangzhou Safety & EMC Laboratory, 1/F, Building No. 1, Agriculture Machinery Materials Company Warehouse Ltd., Wushan Road Shipai, Tianhe District, Guangzhou, China. P.C. 510630.

Tel: +86 20 3848 1001

Fax: +86 20 3848 1006

3.5 Other Information Requested by the Customer

None.

3.6 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, 2004.
- **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: February 28, 2003. Valid until May 30, 2005
- **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.
  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.
- **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.

4 Test Results

4.1 Test Instruments

Test Equipment	Manufacturer	Model	Asset No.	Cal. Due Date
3m Semi- Anechoic Chamber	Frankonia	3m method	EMC0501	15-02-2005
EMI Test Receiver	Rohde & Schwarz	ESCS30	EMC0506	15-02-2005
Bilog Type Antenna	Schaffner Chase	CBL6143	EMC0519	17-01-2005
Coaxial cable	SGS-CSTC	10m	EMC0514	04-11-2004
Temperature, Humidity & Barometer	Oregon Scientific	BA-888	EMC0003	24-07-2004

4.2 E.U.T. Operation

Input voltage: 12V DC (8 x 'AA' Size Batteries)

Operating Environment:
Temperature: 25.0 °C
Humidity: 59 % RH
Atmospheric Pressure: 1009 mbar

EUT Operation: Test the EUT in transmitting mode.

4.3 Test Procedure & Measurement Data

4.3.1 Radiated Emissions

Test Requirement: FCC Part15 C

Test Method: Based on FCC Part15 C Section 15.227

Test Date: 22 June 2004 (Initial Test);
19 July 2004 (Test after modification).

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)

Test Procedure: The procedure uesd was ANSI Standard C63.4-2000. The receive was scanned from 30MHz to 1000MHz.When an emission was found,the table was roated 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 EUT on 19 April 2004:
Test the EUT in transmitting mode.
Intentional emission

Test Frequency (MHz)	Peak (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
27.145	76.8	87.1	100.0	23.2	12.9

Test Frequency (MHz)	Average (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
27.145	71.8	77.3	80.0	8.2	2.7

Other emissions

Test Frequency (MHz)	Quasi-Peak (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
54.290	29.2	24.3	40.0	10.8	15.7
81.435	32.3	26.4	40.0	7.7	13.6
108.590	25.1	16.5	43.5	18.4	27.0
138.500	23.6	23.4	43.5	19.9	20.1
165.345	22.4	18.7	43.5	21.1	24.8
192.625	20.7	15.7	43.5	22.8	27.8
217.160	20.0	18.3	46.0	26.0	27.7
244.305	22.3	25.8	46.0	23.7	20.2
271.450	25.4	31.4	46.0	20.6	14.6

Remark:

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

4.3.2 Occupied Bandwidth

Test Requirement:	FCC Part 15 C
Test Method:	Based on ANSI C63.4
	Operation within the band 26.960 – 27.280 MHz
Test Date:	20 July 2004
Requirements:	The field strength of any emissions which appear outside of this band 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 5KHz per division.

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