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Report No.: SZEM150800498702
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SAR Evaluation Report

Application No.: SZEM1508004987CR (SGS SZ No.: T51510230034EM)
Applicant: ZHEN CHENG TOYS FACTORY
Manufacturer: SEMTEL (HONGKONG) LTD
Supplier: SEMTEL (HONGKONG) LTD
Importer: SEMTEL (HONGKONG) LTD
Product Name: 7 CH R/C BATTING TANKS 2 PK
Model No.(EUT): 130436
Add Model No.: 1412F396-1, 333-ZJ01, 333-ZJ01A, 333-ZJ11, 333-ZJ11A, 333-TK01, 333-TK01A, 333-TK11, 333-TK11A
FCC ID: 2AAGPSMLTD1508
Standards: 47 CFR Part 1.1307 (2014)
47 CFR Part 2.1093 (2014)
KDB447498D01 General RF Exposure Guidance v05r02
Date of Receipt: 2015-08-12
Date of Test: 2015-08-20
Date of Issue: 2015-08-26

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

Authorized Signature:



Jack Zhang
EMC 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.

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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2015-08-26		Original

Authorized for issue by:			
		<i>Eric Fu</i>	2015-08-20
Tested By		<hr/> (Eric Fu) /Project Engineer	<hr/> Date
		<i>Hedy Wen.</i>	2015-08-26
Prepared By		<hr/> (Hedy Wen) /Clerk	<hr/> Date
		<i>Owen Zhou</i>	2015-08-26
Checked By		<hr/> (Owen Zhou) /Reviewer	<hr/> Date



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4 General Information

4.1 Client Information

Applicant:	ZHEN CHENG TOYS FACTORY
Address of Applicant:	CHENGHAI DISTRICT, SHANTOU CITY, GUANGDONG PROVINCE, CHINA
Manufacturer:	SEMTEL (HONGKONG) LTD
Supplier:	SEMTEL (HONGKONG) LTD
Importer:	SEMTEL (HONGKONG) LTD

4.2 General Description of EUT

Product Name:	7 CH R/C BATTING TANKS 2 PK
Model No.:	130436
Country of Origin:	CHINA
Country of Destination:	USA
Request Age Grading:	3+
Sample Type:	Portable production
Operation Frequency:	27.145MHz
Modulation Type:	AM
Antenna Type:	Integral
Antenna Gain:	0dBi
Power Supply:	DC 3.0V (2*1.5V"AAA"Size Batteries) for TX, DC 4.5V (3*1.5V"AAA"Size Batteries) for RX.

Remark:

Model No.: 130436, 1412F396-1, 333-ZJ01, 333-ZJ01A, 333-ZJ11, 333-ZJ11A, 333-TK01, 333-TK01A, 333-TK11, 333-TK11A.

Only the model 130436 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for all above models. Only different on colors.

4.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.



4.4 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen 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 No.: 556682.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers of SGS-CSTC Standards Technical Services Co., Ltd. have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-2.

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.



5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v05r02

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

5.1.2 Limits

At frequencies below 100 MHz, the following may be considered for SAR test exclusion:

- a) The power threshold at the corresponding test separation distance at 100 MHz in below step 1) is multiplied by $[1 + \log(100/f(\text{MHz}))]$ for test separation distances > 50 mm and < 200 mm
 - b) The power threshold determined by the equation in a) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$ for test separation distances ≤ 50 mm.
- 1) $[\text{Power allowed at numeric threshold for } 50 \text{ mm in step 1)} + (\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)] \text{ mW}$, at 100 MHz to 1500 MHz

5.1.3 EUT RF Exposure

The maximum conducted output power specified is $-43.0\text{dbm} = 0.5 \cdot 10^{-4} \text{ mW}$

The source- based time-averaging conducted output power

$$= 0.00005 \cdot \text{Duty Cycle mW} = 0.000016 \text{ mW}$$

The SAR Exclusion Threshold Level for 27.145MHz when the minimum test separation distance is $< 50\text{mm}$:

$$= 474 \cdot [1 + \log(100/f(\text{MHz}))]/2$$

$$= 371.2 \text{ mW}$$

Since the source-based time-averaging conducted output power is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.