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Shenzhen Branch

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SAR Evaluation Report

Application No.:	SZEM1803002204CR
Applicant:	Buzz Bee Toys (HK) Co. Limited
Address of Applicant:	Units 1206-08, Tower B, New Mandarin Plaza, 14 Science Museum Road, Kowloon, Hong Kong
Equipment Under Test (EUT):	
EUT Name:	COVERT SQUAD AND WALKIE TALKIE DEVICE
Model No.:	62850, 62800, 62801, 62802, 62803, 62804, 62805, 62806, 62807, 62808, 62809, 62810, 62811, 62812, 62813, 62814, 62815, 62816, 62817, 62818, 62819, 62820, 62821, 62822, 62823, 62824, 62825, 62826, 62827, 62828, 62829, 62830, 62831, 62832, 62833, 62834, 62835, 62836, 62837, 62838, 62839, 62840, 62841, 62842, 62843, 62844, 62845, 62846, 62847, 62848, 62849, 62851, 62852, 62853, 62854, 62855, 62856, 62857, 62858, 62859, 62860, 62861, 62862, 62863, 62864, 62865, 62866, 62867, 62868, 62869, 62870, 62871, 62872, 62873, 62874, 62875, 62876, 62877, 62878, 62879, 62880, 62881, 62882, 62883, 62884, 62885, 62886, 62887, 62888, 62889, 62890, 62891, 62892, 62893, 62894, 62895, 62896, 62897, 62898, 62899 ♣
♣	Please refer to section 4 of this report which indicates which model was actually tested and which were electrically identical.
FCC ID:	2APIW-62850
Standard(s) :	47 CFR Part 1.1307, 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06 RSS 102 Issue 5 March 2015
Date of Receipt:	2018-03-26
Date of Test:	2018-03-26 to 2018-03-28
Date of Issue:	2018-03-30
Test Result:	Pass*

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

Keny Xu
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.

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2018-03-30		Original

Authorized for issue by:				
				
		Harry Wu /Project Engineer		
				
		Eric Fu /Reviewer		

3 Contents

4 General Information

4.1 General Description of EUT

Power supply:	DC 4.5V (3 x 1.5V AA batteries)
Cable:	Earphone: 100cm, Unshielded
Frequency Range:	462.5625-462.6625MHz
Modulation Type:	FM
Emission Type:	F3E
Antenna Type:	Integral
Antenna Gain:	0dBi

Remark:

Model No.: 62850, 62800, 62801, 62802, 62803, 62804, 62805, 62806, 62807, 62808, 62809, 62810, 62811, 62812, 62813, 62814, 62815, 62816, 62817, 62818, 62819, 62820, 62821, 62822, 62823, 62824, 62825, 62826, 62827, 62828, 62829, 62830, 62831, 62832, 62833, 62834, 62835, 62836, 62837, 62838, 62839, 62840, 62841, 62842, 62843, 62844, 62845, 62846, 62847, 62848, 62849, 62851, 62852, 62853, 62854, 62855, 62856, 62857, 62858, 62859, 62860, 62861, 62862, 62863, 62864, 62865, 62866, 62867, 62868, 62869, 62870, 62871, 62872, 62873, 62874, 62875, 62876, 62877, 62878, 62879, 62880, 62881, 62882, 62883, 62884, 62885, 62886, 62887, 62888, 62889, 62890, 62891, 62892, 62893, 62894, 62895, 62896, 62897, 62898, 62899

Only the model 62850 was tested, since the electrical circuit design, layout, components used, internal wiring and functions were identical for all the above models, with only difference on item number, accessories and color.

4.2 Test Location

All tests were performed at:

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

4.3 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.

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.4 Deviation from Standards

None.

4.5 Abnormalities from Standard Conditions

None.

4.6 Other Information Requested by the Customer

None.

5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Standard Requirement

For FCC:

According to KDB447498D01 General RF Exposure Guidance v06

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.

For IC:

All transmitters are exempt from routine SAR and RF exposure evaluations provided that they comply with the requirements of sections 2.5.1 or 2.5.2 of RSS102 issue 5 March 2015. If the equipment under test (EUT) meets the requirements of sections 2.5.1 or 2.5.2, applicants are only required to submit a properly signed declaration of compliance.

5.1.2 Limits

For FCC:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

f(GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation[17]

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

For IC:

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1.

Table 1: SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤300	71 mW	101 mW	132 mW	162 mW	193 mW
450	52 mW	70 mW	88 mW	106 mW	123 mW
835	17 mW	30 mW	42 mW	55 mW	67 mW
1900	7 mW	10 mW	18 mW	34 mW	60 mW
2450	4 mW	7 mW	15 mW	30 mW	52 mW
3500	2 mW	6 mW	16 mW	32 mW	55 mW
5800	1 mW	6 mW	15 mW	27 mW	41 mW

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of 30 mm	At separation distance of 35 mm	At separation distance of 40 mm	At separation distance of 45 mm	At separation distance of ≥50 mm
≤300	223 mW	254 mW	284 mW	315 mW	345 mW
450	141 mW	159 mW	177 mW	195 mW	213 mW
835	80 mW	92 mW	105 mW	117 mW	130 mW
1900	99 mW	153 mW	225 mW	316 mW	431 mW
2450	83 mW	123 mW	173 mW	235 mW	309 mW
3500	86 mW	124 mW	170 mW	225 mW	290 mW
5800	56 mW	71 mW	85 mW	97 mW	106 mW

Output power level shall be the higher of the maximum conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power. For controlled use devices where the 8 W/kg for 1 gram of tissue applies, the exemption limits for routine evaluation in Table 1 are multiplied by a factor of 5. For limb-worn devices where the 10 gram value applies, the exemption limits for routine evaluation in Table 1 are multiplied by a factor of 2.5. If the operating frequency of the device is between two frequencies located in Table 1, linear interpolation shall be applied for the applicable separation distance. For test separation distance less than 5 mm, the exemption limits for a separation distance of 5 mm can be applied to determine if a routine evaluation is required.

For medical implants devices, the exemption limit for routine evaluation is set at 1 mW. The output power of a medical implants device is defined as the higher of the conducted or e.i.r.p to determine whether the device is exempt from the SAR evaluation.

5.1.3 EUT RF Exposure

For FCC: (Worst case)

The Max. power (including tune-up tolerance) is	-5.00	dBm on the channel	0.4625625	GHz
-5.00 dBm logarithmic terms convert to numeric result is nearly 0.32 mW				
According to the formula. calculate the test exclusion thresholds:				
[(max. power of channel, including tune-up tolerance, mW)/				
(min. test separation distance, mm)] · [√f(GHz)]				
General RF Exposure = (0.32 mW / 5 mm) x √0.4625625 GHz = 0.04			(1)	
SAR requirement:				
S = 3.0			(2)	
(1) < (2)				
So the SAR report is not required.				

For IC: (Worst case)

Channel	Frequency (MHz)	Max Tune-up power(dBm)	E.I.R.P. (mW)	Limit (mW)	Result
1	462.5625	-5.00	0.52	50.86	Pass

Note:
EIRP=ERP+2.15
Refer to report No. SZEM171201232201 for EUT test ERP value.

- End of the Report -