



**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
Email: ee.shenzhen@sgs.com

Report No.: SZEM180200117401
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TEST REPORT

Application No.: SZEM1802001174CR
Applicant: Buzz Products Pty Ltd
Address of Applicant: 18 Studley Street Abbotsford, Victoria, Australia 3067
Manufacturer: Shenzhen Longtech Smart Control Co., Ltd.
Address of Manufacturer: 148, Zhengfeng Industrial Area, Shajing Town, Baoan, Shenzhen City, PRC
Factory: Shenzhen Longtech Smart Control Co., Ltd.
Address of Factory: 148, Zhengfeng Industrial Area, Shajing Town, Baoan, Shenzhen City, PRC
Equipment Under Test (EUT):
EUT Name: DUAL CONNECTED IN-STADIUM FLASHING DRINKWARE
Model No.: BUZCONBTRFA
FCC ID: 2AA7CBUZCONBTRFA
Standard(s) : 47 CFR Part 15, Subpart C 15.247
(only for Radiated Spurious Emissions)
Date of Receipt: 2018-02-26
Date of Test: 2018-02-27
Date of Issue: 2018-02-28

Test Result:	Pass*
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* 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.

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<i>Revision Record</i>				
<i>Version</i>	<i>Chapter</i>	<i>Date</i>	<i>Modifier</i>	<i>Remark</i>
01		2018-02-28		Original

Authorized for issue by:			
			
	<hr/>		
	Peter Geng /Project Engineer		
			
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	Eric Fu /Reviewer		

2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass

Remark:

Model No: BUZCONBTRFA

This test report (Ref. No.: SZEM180200117401) is only valid with the original test report (Ref. No.: SZEM170700724002).

Compared with the original report, this report changed the information as below:

The JP3 and components and parts (e.g. capacitance) in MCU has been removed and Q5 with some capacitance has changed. Both of two changed parts are independent from RF electrical circuit.

Considering to the difference, pre-scan were performed on the sample in this report to find the items which can be influential to the result in the original test report for fully retest.

Therefore in this report Radiated Spurious Emissions was fully retested on model BUZCONBTRFA and shown the data in this report, other tests please refer to original report SZEM170700724002.



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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 3V by 2x1.5V "AAA" batteries
Bluetooth version:	V4.0 BLE
Operation frequency:	2402-2480MHz
Modulation type:	GFSK
Channel number:	40
Channel separation:	2MHz
Antenna type:	PCB_Printed Antenna
Antenna gain:	-2dBi

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radiated emission	4.5dB (30MHz-1GHz)
2	Temperature test	1 °C
3	Humidity test	3%



4.4 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.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 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.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



5 Equipment List

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2017-08-05	2020-08-04
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2017-07-13	2018-07-12
EMI Test Receiver	Agilent Technologies	N9038A	SEM004-05	2017-09-27	2018-09-26
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2017-06-27	2020-06-26
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2017-04-14	2018-04-13

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2017-09-29	2018-09-28
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2017-04-18	2018-04-17

6 Emission Test Results

6.1 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15, Subpart C 15.205 & 15.209
Test Method:	ANSI C63.10 (2013) Section 6.4,6.5,6.6
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Limit:	
30MHz -88MHz	40.0(dB μ V/m) quasi-peak
88MHz-216MHz	43.5(dB μ V/m) quasi-peak
216MHz-960MHz	46.0(dB μ V/m) quasi-peak
960MHz-1000MHz	54.0(dB μ V/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz

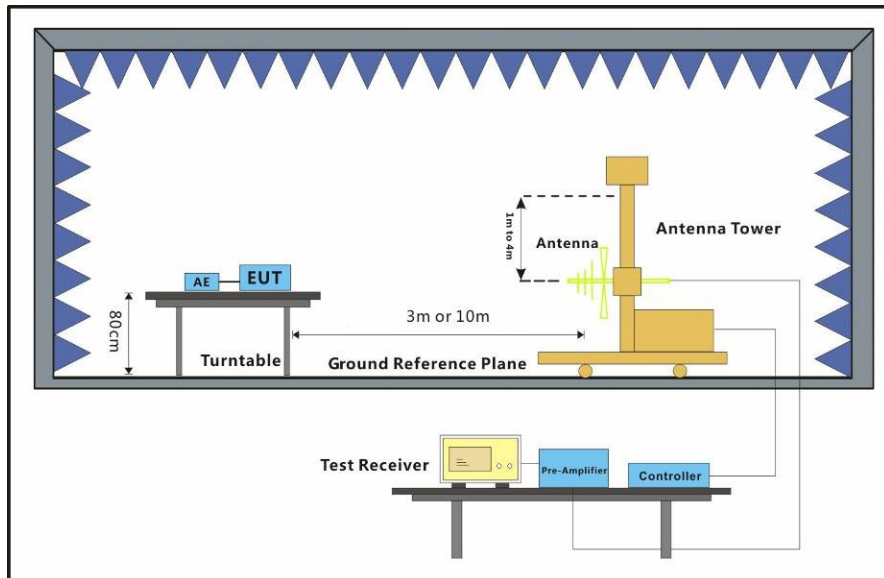
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.2 °C Humidity: 58.6 % RH Atmospheric Pressure: 1015 mbar

Test mode a:TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation for below 1GHz, pre-tests were conducted in highest/middle/lowest channel and only the worst case (lowest channel) is reported.

6.1.2 Test Setup Diagram

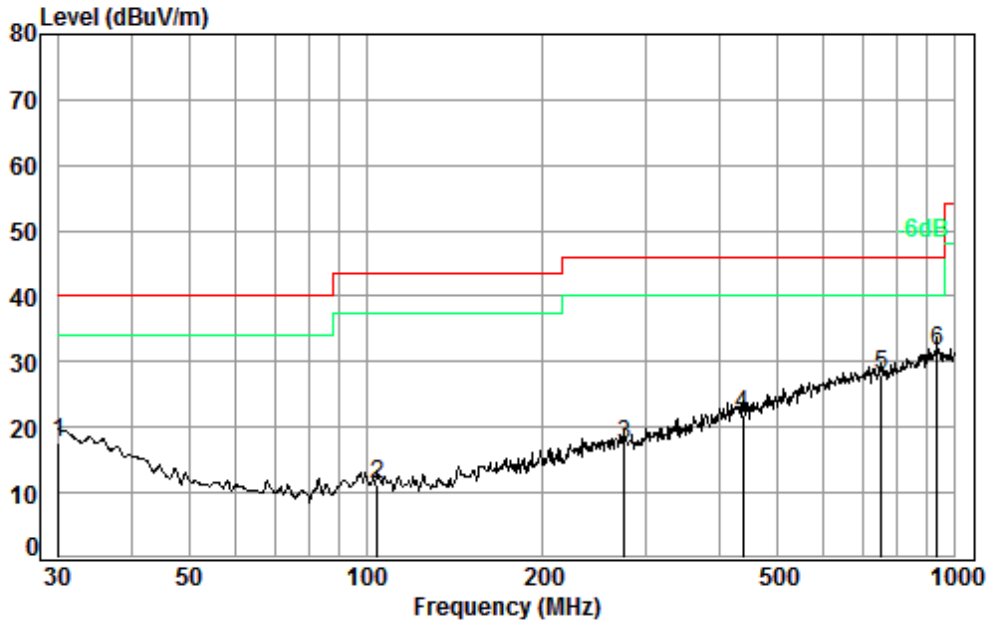


6.1.3 Measurement Data

An initial pre-scan was performed in the 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 BiConiLog antenna with 2 orthogonal polarities.



Mode:a; Polarization:Horizontal

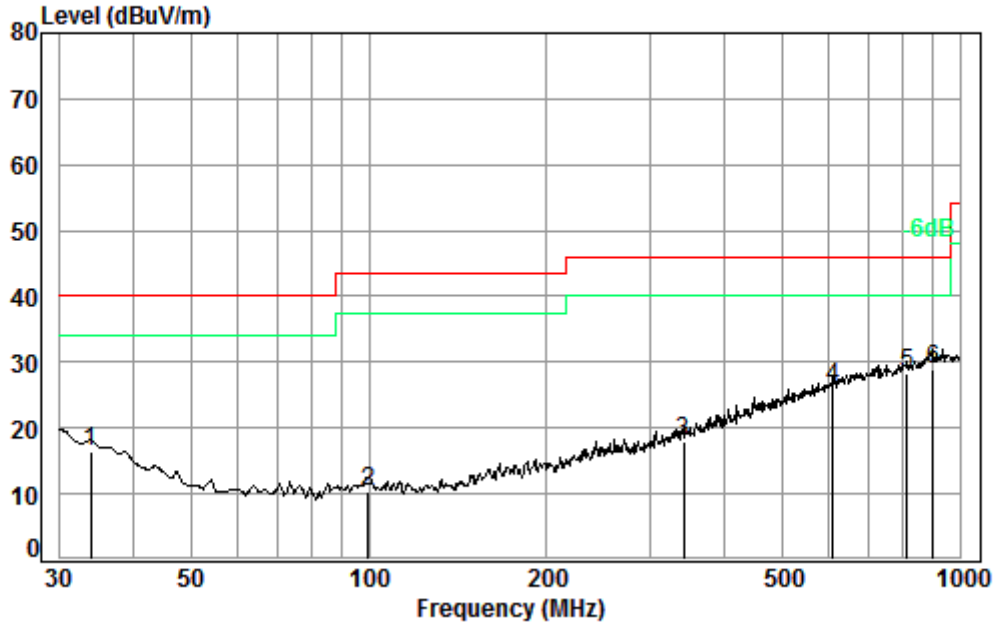


Condition: 3m HORIZONTAL
Job No. : 01174CR
Test mode: a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Limit Level	Over Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.11	0.60	22.44	27.36	21.94	17.62	40.00	-22.38
2	104.54	1.21	13.78	27.17	23.47	11.29	43.50	-32.21
3	275.16	1.79	18.87	26.46	23.21	17.41	46.00	-28.59
4	437.12	2.36	23.27	27.35	23.68	21.96	46.00	-24.04
5	750.11	3.06	28.21	27.35	23.98	27.90	46.00	-18.10
6 pp	932.27	3.63	29.97	26.61	24.67	31.66	46.00	-14.34



Mode:a; Polarization:Vertical



Condition: 3m Vertical
Job No. : 01174CR
Test mode: a

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	33.92	0.60	20.37	27.65	22.98	16.30	40.00	-23.70
2	99.88	1.20	13.99	27.51	22.77	10.45	43.50	-33.05
3	340.78	2.03	20.84	27.62	22.85	18.10	46.00	-27.90
4	607.79	2.72	26.71	27.69	24.29	26.03	46.00	-19.97
5	810.27	3.25	28.64	27.38	23.74	28.25	46.00	-17.75
6 pp	900.15	3.60	29.80	27.08	22.69	29.01	46.00	-16.99

- End of the Report -