RF EXPOSURE EVALUATION REPORT

Application No.:	GZCR2206000854HS
Applicant:	Breville Pty Ltd
Address of Applicant:	Ground Floor, Suite 2, 170-180 Bourke Road, Alexandria, NSW 2015, Australia
Manufacturer:	Flextronics International Kft.
Address of Manufacturer:	Ikervari út 25, Building 4, 9600 Sárvár / HUNGARY
Factory:	Flextronics International Kft.
Address of Factory:	Ikervari út 25, Building 4, 9600 Sárvár / HUNGARY
Equipment Under Test (EUT):	
EUT Name:	Coffee maker machine
Model No.:	BVE850 XXXUSC (where XXX=A-Z, for colours) ♣
♣	Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Trade Mark:	Breville
Standard(s) :	47 CFR Part 1.1310
	KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2022-06-30
Date of Evaluation:	2022-07-05 to 2022-07-07
Date of Issue:	2022-08-25
Evaluation Result:	**Pass***

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

Kobe Jian
EMC Laboratory Manager

Revision Record			
Version	**Report No.**	**Date**	**Remark**
01	GZCR220600085403	2022-08-25	Original

Authorized for issue by:				
		Kevin Zhang **Kevin Zhang/Project Engineer**		
		Vico Cui **Vico Cui/Reviewer**		

2 Evaluation Summary

Item	Standard	Method	Requirement	Result
RF Exposure	KDB447498D01 General RF Exposure Guidance v06	KDB447498D01 General RF Exposure Guidance v06	47 CFR Part 1.1310	Pass

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

♣ **Declaration of EUT Family Grouping:**

Model No.: BVE850 XXXUSC (where XXX=A-Z, for colours)

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on model name and colour.

Therefore only one model BVE850 BSSUSC was tested in this report.

3 Contents

4 General Information

4.1 Details of E.U.T.

Power supply:	AC 120V, 60Hz 1350W
Cable(s):	AC mains
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz; 802.11n(HT40): 2422MHz to 2452MHz; BLE:2402MHz to 2480MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK); 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK); BLE: GFSK
Number of Channels:	802.11b/g/n(HT20):11; 802.11n(HT40):7; BLE: 40
Channel Spacing:	802.11b/g/n(HT20)/(HT40):5MHz; BLE: 2MHz
Antenna Type:	Integral Antenna
Antenna Gain:	3.7 dBi

4.2 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

4.3 Facility

The 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 accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

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.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **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.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.4 Deviation from Standards

None

4.5 Abnormalities from Standard Conditions

None

5 Technical Requirements Specification

5.1 General Description of Applied Standards

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.

5.2 RF Exposure Evaluation

5.2.1 Limit & Test Method

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f^2)	6
30–300	61.4	0.163	1.0	6
300–1500	.....	.....	f/300	6
1500–100,000	.....	.....	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f^2)	30
30–300	27.5	0.073	0.2	30
300–1500	.....	.....	f/1500	30
1500–100,000	.....	.....	1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out}*G)/(4* P_i * R^2)$

Where

P_d = power density in mW/cm^2

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

P_i = 3.1416

R = distance between observation point and center of the radiator in cm

P_d id the limit of MPE, 1 mW/cm^2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

5.2.2 Conclusion

Normal use condition for Distance between antenna and body: >20cm declared by applicant

Antenna Gain: 3.7 dBi

For Bluetooth BLE

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
2402	2.344	-5.27	0.297	0.00014	1	Complies
2440	2.344	-5.15	0.305	0.00014	1	Complies
2480	2.344	-4.58	0.348	0.00016	1	Complies

For 2.4 GHz Wi-Fi

Frequency (MHz)	Antenna Gain (Numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm²)	Limit of Power Density (S) (mW/cm²)	Test Result
11B						
2412	2.344	14.74	29.785	0.01389	1	Complies
2442	2.344	15.63	36.559	0.01705	1	Complies
2462	2.344	16.23	41.976	0.01958	1	Complies
11G						
2412	2.344	17.13	51.642	0.02408	1	Complies
2442	2.344	17.05	50.699	0.02364	1	Complies
2462	2.344	17.49	56.105	0.02616	1	Complies
11N20						
2412	2.344	17.25	53.088	0.02476	1	Complies
2442	2.344	17.18	52.240	0.02436	1	Complies
2462	2.344	17.53	56.624	0.02641	1	Complies
11N40						
2422	2.344	17.59	57.412	0.02677	1	Complies
2442	2.344	17.57	57.148	0.02665	1	Complies
2452	2.344	17.79	60.117	0.02804	1	Complies

The Bluetooth and Wi-Fi can be transmitted together, the result is

0.00016/1 + 0.02804/1 =0.02820 < 1.0

So SAR report is not required.

Note: Refer to report No. GZCR220600085402 for EUT test Max Conducted Peak Output Power value.

6 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for GZCR2206000854HS

- End of the Report -