

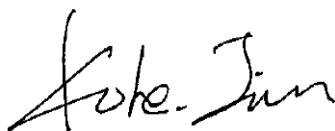
# TEST REPORT

**Application No.:** GZEM2010016105CR  
**Applicant:** Shenzhen Sonoff Technologies Co., Ltd.  
**Address of Applicant:** 1001, BLDG8, Lianhua Industrial Park, shenzhen, GD, China  
**Manufacturer:** Foshan Electrical and Lighting Co., Ltd.  
**Address of Manufacturer:** 64 North Fenjiang Road, Foshan, Guangdong, China  
**Factory:** Foshan Electrical and Lighting Co., Ltd.  
**Address of Factory:** 64 North Fenjiang Road, Foshan, Guangdong, China  
**Equipment Under Test (EUT):**  
**EUT Name:** Wi-Fi Smart LED Bulb  
**Model No.:** B01-B-A60, B01-B-S-A60, B02-B-A60, B02-B-S-A60, B04-B-A60, B04-B-S-A60, B05-B-A60, B05-B-S-A60 □  
 □ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.  
**Trade Mark:** SONOFF  
**Standard(s):** EN 62311:2008  
**Date of Receipt:** 2020-10-30  
**Date of Test:** 2020-11-11 to 2020-11-23  
**Date of Issue:** 2020-12-18

<b>Test Result:</b>	<b>Pass</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.




Kobe Jian  
 EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2020-12-18		Original

<b>Authorized for issue by:</b>			
<b>Tested By</b>			
	Lily_Kuang /Project Engineer	2020-11-11 to 2020-11-23	Date
<b>Checked By</b>			
	Jerry_Chan /Reviewer	2020-12-18	Date



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## 2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
RF Exposure	EN 62311:2008	EN 62311:2008	EN 62311:2008	Pass

### ▣ Declaration of EUT Family Grouping:

**Series 1: Model No.:** B01-B-A60, B01-B-S-A60, B02-B-A60, B02-B-S-A60

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 the color temperature and lamp holder.

**Series 2: Model No.:** B04-B-A60, B04-B-S-A60, B05-B-A60, B05-B-S-A60

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 the color temperature and lamp holder.

Furthermore the two series of models are with the identical Wi-Fi mode, the difference compressors don't impact the RF evaluation.

Therefore two models B02-B-A60 were tested in this report.



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## 4 General Information

### 4.1 Details of E.U.T.

Power Supply:	AC 220-240V,50-60Hz
Test Voltage:	AC230V,50Hz
Cable/Ports:	E27 cap
Receiver Category:	1
Antenna Gain	0 dBi
Antenna Type	Integrated antenna
Channel Spacing	5MHz
Modulation Type	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Number of Channels	802.11b/g/n(HT20): 13
Operation Frequency	802.11b/g/n(HT20): 2412MHz to 2472MHz

### 4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop	Lenovo	T430u	REF. No.SEA1800

### 4.3 Test Location

All tests were performed at:

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

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

No tests were sub-contracted.



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#### 4.4 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 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 C-Tick mark as a result of our NVLAP accreditation.

● **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 2.948 Listed Test Firm(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.

● **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, Jul 13, 2017.

● **Industry Canada (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-10449 and T-11179)**

The 10m Semi-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-10449 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 17025:2005, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.



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**4.5 Deviation from Standards**

None

**4.6 Abnormalities from Standard Conditions**

None



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## 5 Radio Spectrum Technical Requirement

### 5.1 RF Exposure

#### 5.1.1 Test Requirement:

EN 62311:2008

Limit:

According to EN 62311, the criteria listed in the below table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified table 2 of Council Recommendation 1999/519/EC.

Reference levels for electric, magnetic and electromagnetic fields  
(0 Hz to 300 GHz, unperturbed rms values)

Frequency range	E-field strength (V/m)	H-field strength (A/m)	B-field (μT)	Equivalent plane wave power density $S_{eq}$ (W/m <sup>2</sup> )
0-1 Hz	—	$3,2 \times 10^4$	$4 \times 10^4$	—
1-8 Hz	10 000	$3,2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8-25 Hz	10 000	$4\ 000/f$	$5\ 000/f$	—
0,025-0,8 kHz	$250/f$	$4/f$	$5/f$	—
0,8-3 kHz	$250/f$	5	6,25	—
3-150 kHz	87	5	6,25	—
0,15-1 MHz	87	$0,73/f$	$0,92/f$	—
1-10 MHz	$87/f^{1/2}$	$0,73/f$	$0,92/f$	—
10-400 MHz	28	0,073	0,092	2
400-2 000 MHz	$1,375 f^{1/2}$	$0,0037 f^{1/2}$	$0,0046 f^{1/2}$	$f/200$
2-300 GHz	61	0,16	0,20	10

#### Notes:

- $f$  as indicated in the frequency range column.
- For frequencies between 100 kHz and 10 GHz,  $S_{eq}$ ,  $E^2$ ,  $H^2$ , and  $B^2$  are to be averaged over any six-minute period.
- For frequencies exceeding 10 GHz,  $S_{eq}$ ,  $E^2$ ,  $H^2$ , and  $B^2$  are to be averaged over any  $68/f^{1.05}$  -minute period ( $f$  in GHz).
- No E-field value is provided for frequencies < 1 Hz, which are effectively static electric fields. For most people the annoying perception of surface electric charges will not occur at field strengths less than 25 kV/m. Spark discharges causing stress or annoyance should be avoided.



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The antenna of the product, under normal use condition is at least 20cm away from the body of the user. Warning **statement** to the user for keeping 20cm separation distance and the prohibition of operating to a person has been printed on the user manual. So, this product under normal use is located on electromagnetic far field between the human body.

**Far Field Calculation Formula**

$$E = \frac{\sqrt{30PG(\theta, \phi)}}{r}$$

G = the antenna gain relative to an isotropic antenna;  
 θ, φ = elevation and azimuth angles to point of investigation;  
 r = distance from observation point to the antenna;

**5.1.2 Conclusion**

Evaluating mode: Test these three frequencies with DSSS, OFDM modulation type respectively:  
 Enter test mode for the product. Test in lowest Channel 2412 MHz (HT20), middle Channel 2442 MHz and highest Channel 2472 MHz (HT20), keep in continuously transmitting status.

Distance to human body (r): 20cm

Normal use condition for Distance between antenna and body: 20cm

The max EIRP was tested with 17.91 dBm for 802.11b (HT20) at 2442 channel.

Antenna Gain: 0 dBi

Channel	Frequency (MHz)	PG (dBm)	PG (mW)	E-field strength (E) (V/m)	Limit of E-field strength (E) (V/m)	Result
7	2442	17.91	61.802	6.808	61	Pass

The device meets the RF exposure and without SAR test.



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## 6 Photographs

### 6.1 EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for GZEM2010016105CR.

**--End of Report--**



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