

**EN 50665:2017**  
**EN IEC 62311:2020**  
**ASSESSMENT REPORT**

For

**Shenzhen Sonoff Technologies Co.,Ltd.**

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**Tested Model: T5-3C-86**  
**Multiple Models: T5-1C-86, T5-2C-86**

<b>Report Type:</b> Original Report	<b>Product Type:</b> Smart Touch Wall Switch
<b>Report Number:</b>	DG1230129-03798E
<b>Report Date:</b>	2023/3/14
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**DOCUMENT REVISION HISTORY**

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	DG1230129-03798E	Original Report	2023/3/14

## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

<b>Product Name:</b>	Smart Touch Wall Switch
<b>Tested Model:</b>	T5-3C-86
<b>Multiple Models:</b>	T5-1C-86, T5-2C-86
<b>Model Difference:</b>	Refer to Dos
<b>Rated Input Voltage:</b>	100-240 Vac
<b>Serial Number:</b>	Configuration 1:1ZG0-1 Configuration 2:1ZG0-2 Configuration 3:1ZG0-3
<b>EUT Received Date:</b>	2023/1/31
<b>EUT Received Status:</b>	Good

### EUT Configuration:

Component	X-Capacitor	Varistor	Relay
Configuration 1#	MPX <sup>(1)</sup>	05D471K	W18-1AST-DC5V
Configuration 2#	MPX <sup>(3)</sup>	05D471K	SRB-S-105DM
Configuration 3#	MPX <sup>(2)</sup>	DL-05D471KT50220LB	HF46F/5-HS1T

### Changeable Material List:

Component	Manufacturer	Model	Specification
X-Capacitor	SHENZHEN SURETOP TECHNOLOGY Co., LTD	MPX <sup>(1)</sup>	0.047uF 275V
	DONG GUAN AJC INDUSTRIAL CO., LTD	MPX <sup>(2)</sup>	0.047uF 310V
	Guangdong Jurcc Electronics Co., Ltd.	MPX <sup>(3)</sup>	0.047uF 310V
Varistor	Shantou Dongling Electronic Technology Co., Ltd.	DL-05D471KT50220LB	470V
	DongGuan City Jiankun Electronics Technology Co.Ltd	05D471K	470V
Relay	Zhejiang FanharElectronics Co., Ltd.	W18-1AST-DC5V	DC5V 5A 250VAC
	Sanyou CorporationLimited	SRB-S-105DM	DC5V 5A 250VAC
	Xiamen HongfaElectroacoustic Co., Ltd.	HF46F/5-HS1T	5A 250VAC 5A 30VDC

### Objective

This report is prepared on behalf of *Shenzhen Sonoff Technologies Co.,Ltd.* in accordance with EN 50665:2017 Generic standard for assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz - 300 GHz); EN IEC 62311:2020, Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz).

The objective is to determine the compliance of EUT with EN 50665:2017 &EN IEC 62311:2020.

### Test Methodology

All measurements contained in this report were conducted with EN IEC 62311:2020.

## Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

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## Technical Requirements Specification in EN IEC 62311

### General Description of Applied Standards

In general, the basic restrictions shall be used as exposure limits for the assessment of compliance. However, in most cases reference levels are used as limits. Such reference levels for exposure to electric, magnetic and electromagnetic fields are derived from the basic restrictions using realistic worst-case assumptions about exposure. If the reference levels are met, then the basic restrictions will also be met; if the reference levels are exceeded, that does not necessarily mean that the basic restrictions are exceeded. In some situations, it may be possible to show compliance with the basic restrictions directly. It may also be possible to derive compliance criteria that allow a simple measurement or calculation to demonstrate compliance with the basic restrictions. Often these compliance criteria can be derived using realistic assumptions about conditions under which exposures from a device may occur, rather than the conservative assumptions that are the basis for the reference levels.

### RF Exposure Evaluation

#### Limit:

According to EN 50665:2017, 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( $\mu$ T)	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.

**Test method**

**Far Field:**

The antenna of the product, under normal use condition is at least 20cm away from the body of the user. So, this product under normal use is located on electromagnetic far field between the human body.

**Far Field Calculation Formula**

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

Where:

P= Tune-up average conducted power

G= antenna gain relative to an isotropic antenna

$\theta, \phi$  = elevation and azimuth angles to point of investigation

r= distance from observation point to the antenna

**Equivalent plane wave power density:**

**Equivalent plane wave power density Seq Calculation Formula**

$$\text{Power density Seq} = PG / (4 \pi r^2)$$

Where:

P= Tune-up average conducted power

G= antenna gain relative to an isotropic antenna

r= distance from observation point to the antenna

**Test Data(Far Field Calculation)**

RF Mode	Frequency	Tune-up EIRP Power	E-Field Strength	Limit	Result
	(MHz)	(dBm)	(V/m)	(V/m)	
BLE	2402-2480	6	1.73	61	Pass
Wi-Fi	2412-2472	20	8.66	61	Pass

**Note:**

The distance from observation point to the antenna is 20cm.

**Conclusion:** Compliant

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## **EXHIBIT A – EUT PHOTOGRAPHS**

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For photos in this section, please refer to report No.: DG1230129-03798E-02 EXHIBIT A.

**\*\*\*\*\*END OF REPORT\*\*\*\*\***