

EN IEC 62311:2020

## ASSESSMENT REPORT

For

### Shenzhen Sonoff Technologies Co.,Ltd.

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**Test Models: M5-3C-120**  
**Multiple Model: M5-1C-120, M5-2C-120,**  
**M5-1C-120W, M5-2C-120W, M5-3C-120W,**  
**M5-1C-120G, M5-2C-120G, M5-3C-120G**

<b>Report Type:</b> Original Report	<b>Product Type:</b> SONOFF SwitchMan Smart Wall Switch
<b>Report Number:</b>	<u>DG1220106-00758E</u>
<b>Report Date:</b>	<u>2022-03-23</u>
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## GENERAL INFORMATION

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

<b>EUT Name:</b>	SONOFF SwitchMan Smart Wall Switch
<b>Tested Models:</b>	M5-3C-120
<b>Multiple Models:</b>	M5-2C-120, M5-1C-120, M5-1C-120W, M5-2C-120W, M5-3C-120W, M5-1C-120G, M5-2C-120G, M5-3C-120G
<b>Model Difference:</b>	Refer to DOS
<b>Rated Input Voltage:</b>	100-240Vac 50/60Hz
<b>Serial Number:</b>	M5-3C-120:DG1220106-00758E-RF-S3
<b>EUT Received Date:</b>	2022.1.14
<b>EUT Received Status:</b>	Good

### Objective

This report is prepared on behalf of *Shenzhen Sonoff Technologies Co.,Ltd.* in accordance with 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 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 IEC 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( $\mu$ T)	Equivalent plane wave power density $S_{eq}(W/m^2)$
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:

1. 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

## Test Data

RF Mode	Tune-up EIRP		E-Field Strength	Limit	Result
	(dBm)	(mW)	(V/m)	(V/m)	
Wi-Fi	19	79.4	7.72	61	Pass
BLE	5	3.2	1.54	61	Pass

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

**Conclusion:** Compliant

## **EXHIBIT A – EUT PHOTOGRAPHS**

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For photos in this section, please refer to report No.: DG1220106-00758E-02 EXHIBIT A.

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