

EN 62311:2008

ASSESSMENT REPORT

For

Shenzhen Sonoff Technologies Co.,Ltd

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Tested Model: RFR2
Multiple Model: BASICR2

Report Type: Original Report	Product Type: Wi-Fi Smart Switch with RF Control, Wi-Fi Smart Switch
Report Number:	<u>RDG190905007</u>
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FINAL

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:	RFR2: Wi-Fi Smart Switch with RF Control BASICR2: Wi-Fi Smart Switch
EUT Model:	RFR2
Multiple Model:	BASICR2
Rated Input Voltage:	100~240Vac
Serial Number:	RFR2: RDG190905007-RF-S1 BASICR2: RDG190905007-RF-S2
EUT Received Date:	2019.09.05
EUT Received Status:	Good

Notes: Model RFR2 was selected for fully testing, the detailed information about the difference among BASICR2 and model RFR2 can be referred to the declaration letter which was stated and guaranteed by the manufacturer.

Objective

This report is prepared on behalf of *Shenzhen Sonoff Technologies Co.,Ltd* in accordance with EN 62311:2008, Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz–300 GHz) is to demonstrate the compliance of apparatus with the basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields as well as induced and contact current.

The objective is to determine the compliance of EUT with EN 62311:2008.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with EN 62311:2008.

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 62311

General Description of Applied Standards

EN 62311 Generic standard to demonstrate the compliance of electronic and electrical apparatus with the basic restrictions related to human exposure to electromagnetic fields (0 Hz–300 GHz) is to demonstrate the compliance of apparatus with the basic restrictions or reference levels on exposure of the general public related to electric, magnetic, electromagnetic fields as well as induced and contact current.

RF Exposure Evaluation

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(μ T)	Equivalent plane wave power density S_{eq} (W/m ²)
0-1 Hz	-	$3,2 \times 10^4$	4×10^4	-
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

The antenna of the product, under normal use condition is at least 20cm away from the body of the user. Warning statement of 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= 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

Test Data

Mode	Frequency	Tune-up power	E-Field Strength	E-Field Limit	Result
	(MHz)	(dBm)	(V/m)	(V/m)	
Wi-Fi	2412-2472	15	4.87	61	Pass

Note:

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

Conclusion: Compliance

EXHIBIT A - EUT PHOTOGRAPHS

For photos in this section, please refer to report No.: RDG190905007-02 EXHIBIT A.

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

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