




EN62311 TEST REPORT

Product : Sonoff WiFi smart switch
Trade Name : 
Model Name : Sonoff RF
Serial Model : Sonoff Basic
Report No. : BCTC-FY180100467-1E

Prepared for

Shenzhen Sonoff Technologies Co.,Ltd.

301, 3F, BLDG 52, the Third Industrial Park, Bantian, Longgang Dist
Shenzhen, GD, 518055 China.

Prepared by

Shenzhen BCTC Testing Co., Ltd.


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Shenzhen BCTC Testing Co., Ltd.

Applicant : Shenzhen Sonoff Technologies Co.,Ltd.
Address : 301, 3F, BLDG 52, the Third Industrial Park, Bantian, Longgang Dist
Shenzhen, GD, 518055 China.
Manufacturer : Shenzhen Sonoff Technologies Co.,Ltd.
Address : 301, 3F, BLDG 52, the Third Industrial Park, Bantian, Longgang Dist
Shenzhen, GD, 518055 China.
EUT : Sonoff WiFi smart switch
Model Number : Sonoff RF
Serial Model: : Sonoff Basic
Trademark: : 
Test Date : Feb. 01 – Feb. 08, 2018
Date of Report : Feb. 08, 2018
Test Result: : This device described above has been tested by BCTC, and the test results show that the equipment under test (EUT) is in compliance with the 2014/53/EU RED Directive Art.3.1(a) requirements.

Test Procedure Used:
EN 62311:2008

Prepared by(Engineer): Willem Wang



Reviewer(Supervisor): Rita Xiao



Approved(Manager): Carson Zhang






This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen BCTC Testing Co., Ltd.

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Product Name:	Sonoff WiFi smart switch
Model No.:	Sonoff RF
Serial Model:	Sonoff Basic
Trademark:	
Operation Frequency:	WIFI:2412MHz~2472MHz (802.11b/802.11g/802.11n(H20))
Channel separation:	WIFI : 5MHz
Modulation technology:	OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n, DSSS with DBPSK/DQPSK/CCK for 802.11b
Data rate:	802.11b: 1Mbps, 2Mbps, 5.5Mbps, 11Mbps 802.11g: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps 802.11n: Up to 75Mbps
Antenna Type:	Internal Antenna
Antenna gain:	1dBi
Power supply:	AC 90V~250V 50Hz-60Hz 2200W 10A



1.2. Test Facility

Site Description

Name of Firm : Shenzhen BCTC Testing Co., Ltd.

Site Location : BCTC Building & 1-2F, East of B Building, Pengzhou
Industrial, Fuyuan 1st Road, Qiaotou Community,
Fuyong Street, Bao'an District, Shenzhen, China

Lab Qualifications : Certificated by Industry Canada
Registration No.: 12655A
Date of registration: January 19, 2015

Certificated by FCC, USA
Registration No.: 187086
Date of registration: November 28, 2014

Certificated by CNAS China
Registration No.: CNAS L6046
Date of registration: February 3, 2013

2. MAXIMUM PERMISSIBLE EXPOSURE

1, Applicable Standard

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.

2, Limit

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 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:

1. f as indicated in the frequency range column.



3, Test Method

$$E (V/m) = (30 * P * G)^{0.5} / d$$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

4 Calculated Result and Limit

802.11b							
Channel	Frequency (MHz)	Output power (dBm)	Output Power (W)	Antenna gain (dBi)	Electric Field (V/m)	Limit of Electric Field(V/m)	Result
Low	2412	13.72	0.023550	1	4.72	61	Pass
Middle	2442	14.04	0.025351	1	4.89	61	Pass
High	2472	14.80	0.030200	1	5.34	61	Pass

802.11g							
Channel	Frequency (MHz)	Output power (dBm)	Output Power (W)	Antenna gain (dBi)	Electric Field (V/m)	Limit of Electric Field(V/m)	Result
Low	2412	13.7	0.023442	1	4.70	61	Pass
Middle	2442	14.39	0.027479	1	5.09	61	Pass
High	2472	14.24	0.026546	1	5.01	61	Pass

802.11n(HT20)							
Channel	Frequency (MHz)	Output power (dBm)	Output Power (W)	Antenna gain (dBi)	Electric Field (V/m)	Limit of Electric Field(V/m)	Result
Low	2412	13.73	0.023605	1	4.72	61	Pass
Middle	2442	14.35	0.027227	1	5.07	61	Pass
High	2472	14.31	0.026977	1	5.05	61	Pass

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