




## EN62311 TEST REPORT

**Product :** Sonoff RF Bridge  
**Trade Name :**   
**Model Name :** Sonoff RF Bridge 433  
**Serial Model :** N/A  
**Report No. :** BCTC-FY180100372-1E

### 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 RF Bridge  
Model Number : Sonoff RF Bridge 433  
Serial Model: : N/A  
Trademark: :   
Test Date : Jan. 24 – Jan. 30, 2018  
Date of Report : Jan. 30, 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 RF Bridge
Model No.:	Sonoff RF Bridge 433
Serial Model:	N/A
Trademark:	
Operation Frequency:	WIFI:2412MHz~2472MHz (802.11b/802.11g/802.11n(H20))
Channel numbers:	WIFI: 13 for 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:	DC 5V from USB



## 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 <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:

1.  $f$  as indicated in the frequency range column.



### 3, Test Method

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

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	14.36	0.027290	1	5.08	61	Pass
Middle	2442	13.75	0.023714	1	4.73	61	Pass
High	2472	13.62	0.023014	1	4.66	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	12.16	0.016444	1	3.94	61	Pass
Middle	2442	11.98	0.015776	1	3.86	61	Pass
High	2472	12.08	0.016144	1	3.90	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	11.94	0.015631	1	3.84	61	Pass
Middle	2442	11.79	0.015101	1	3.78	61	Pass
High	2472	11.91	0.015524	1	3.83	61	Pass

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