EN62311 TEST REPORT

For

ITEAD Intelligent Systems Co., Ltd.

Product Name:	Sonoff WiFi&RF Wall Switch
Trademark:	SONOFF
Model Number:	Sonoff T1(UK/EU/US) Sonoff T2(UK/EU/US), Sonoff T3(UK/EU/US)
Prepared For: Address:	ITEAD Intelligent Systems Co., Ltd. 5F, Building A,Yuxing Multiple-use Building,Jihua Road.,Longhua Dist,Shenzhen, GD 518109,China
Prepared By: Address:	Shenzhen BCTC Testing Co., Ltd. BCTC Building & 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China
Report No.:	BCTC-FY171107614-1E

Shenzhen BCTC Testing Co., Ltd.

Applicant	:	ITEAD Intelligent Systems Co., Ltd.
Address	:	5F, Building A,Yuxing Multiple-use Building,Jihua Road.,Longhua Dist,Shenzhen, GD 518109,China
Manufacturer	:	ITEAD Intelligent Systems Co., Ltd.
Address	:	5F, Building A,Yuxing Multiple-use Building,Jihua Road.,Longhua Dist,Shenzhen, GD 518109,China
EUT	:	Sonoff WiFi&RF Wall Switch
Model Number	:	Sonoff T1(UK/EU/US) Sonoff T2(UK/EU/US), Sonoff T3(UK/EU/US)
Trademark:	:	SONOFF
Test Date	:	Nov. 22 – Nov. 28, 2017
Date of Report	:	Nov. 28, 2017
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):	Jack Bu	Jack Bu
Reviewer(Supervisor):	Rita Xiao	Rita Xiao
Approved(Manager):	Carson Zhang	Carson Zhang

BCTC APPROVED

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&RF Wall Switch
Model No.:	Sonoff T1(UK/EU/US) Sonoff T2(UK/EU/US), Sonoff T3(UK/EU/US)
Trademark:	SONOFF
Operation Frequency:	WIFI: 2412-2472MHz for 802.11b/g; 2412-2472MHz for 802.11n(HT20); 2422-2462MHz for 802.11n(HT40);
Channel numbers:	WIFI: 13 for 802.11b/802.11g/802.11n(H20) ,9 for 802.11n(H40)
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 300Mbps
Antenna Type:	Internal Antenna
Antenna gain:	0dBi
Power supply:	Input: 90~250V AC 50/60HZ Max.current: 2A/gang

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/m²)
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	12.54	0.028510	3.24	1.96	61	Pass
Middle	2442	13.65	0.032509	3.24	1.45	61	Pass
High	2472	13.21	0.028973	3.24	1.38	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	10.23	0.016444	3.24	3.51	61	Pass
Middle	2442	12.54	0.021281	3.24	4.00	61	Pass
High	2472	11.62	0.020797	3.24	3.95	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	13.25	0.027432	3.24	1.96	61	Pass
Middle	2442	13.60	0.032509	3.24	1.45	61	Pass
High	2472	14.27	0.028973	3.24	1.38	61	Pass

802.11 n(HT40)							
Channel	Frequency (MHz)	Output power (dBm)	Output Power (W)	Antenna gain (dBi)	Electric Field (V/m)	Limit of Electric Field(V/m)	Result
Low	2422	11.40	0.010132	3.24	2.77	61	Pass
Middle	2442	10.21	0.013241	3.24	3.28	61	Pass
High	2462	12.30	0.015124	3.24	3.26	61	Pass

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