

Test Report

No. BCTC-FYC170081640R

Date: Aug. 21, 2017

Page 1 of 12

Applicant : ITEAD Intelligent Systems Co., Ltd
Address : 5F, Building A, Yuxing Multiple-use Building, Huaya Industrial Park,
Jihua Road., Longhua Dist, Shenzhen, GD, 518000, China

The submitted sample and sample information was/were submitted and identified by/on the behalf of the client

Sample name : Sonoff WiFi&RF Wall Switch
Testing type /model : Sonoff T1 (UK/EU/US)
Additional type /model : Sonoff T2 (UK/EU/US) , Sonoff T3 (UK/EU/US)
Trademark : 
Manufacturer : ITEAD Intelligent Systems Co., Ltd
Address : 5F, Building A, Yuxing Multiple-use Building, Huaya Industrial Park,
Jihua Road., Longhua Dist, Shenzhen, GD, 518000, China
Sample received date : Aug. 10, 2017
Testing period : Aug. 10, 2017 - Aug. 21, 2017
Test requested : 1. As specified by client, to screen Lead(Pb), Cadmium(Cd),
Mercury(Hg), Chromium(Cr) and Bromine(Br) in the submitted
sample(s) by XRF.
2. As specified by client, when screening results exceed the XRF
screening limit in IEC 62321-3-1:2013, further use of chemical
methods are required to test the Lead(Pb), Cadmium(Cd),
Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated
Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs) in the
submitted samples.

According to the RoHS Directive 2011/65/EU

*****For more detailed information, please refer to the next page*****

Tested by





Approved by



Lab: Shenzhen BCTC Testing Co., Ltd.

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

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Date: Aug. 21, 2017

Page 2 of 12

Test Method:

A. Screening test by XRF spectroscopy

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013.

Element	Limit of IEC 62321-3-1:2013. Unit (mg/kg)		MDL	
	Polymers and metals	Composite material	Polymers	Other material
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma)$ $\leq OL$	$LOD \leq (50-3\sigma) < X < (150+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$	10 mg/kg	50 mg/kg
Br	$BL \leq (300-3\sigma) < X$	$BL \leq (250-3\sigma) < X$	10 mg/kg	50 mg/kg

Note:

-BL = Under the XRF screening limit

-OL = Further chemical test will be conducted while result is above the screening limit

-X= The symbol "X" marks the region where further investigation is necessary

-3σ= The reproducibility of analytical instruments

-LOD= Detection limit

B. Chemical Test

Test Item(s)	Test Method	Measured Equipment(s)	MDL	Limit
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES	2 mg/kg	1000 mg/kg
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES	2 mg/kg	100 mg/kg
Mercury (Hg)	IEC 62321-4:2013 Ed.1.0	ICP-OES	2 mg/kg	1000 mg/kg
Hexavalent Chromium Cr(VI)	IEC 62321-7-1:2015 Ed.1.0	UV-VIS	/	1000 mg/kg
	IEC 62321-7-2:2017 Ed.1.0	UV-VIS	8 mg/kg	1000 mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015 Ed.1.0	GC-MS	5 mg/kg	1000 mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015 Ed.1.0	GC-MS	5 mg/kg	1000 mg/kg

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No. BCTC-FYC170081640R

Date: Aug. 21, 2017

Page 3 of 12

Test Results:

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
1	Glass	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
2	White plastic	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
3	White plastic	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
4	Transparent plastic	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
5	Gold screw	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
6	Crystal	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	

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Page 4 of 12

7	Silver screw	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
8	PCB	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	31045	N.D.	
9	Tin solder	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
10	SMD diode	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
11	Yellow plastic paper	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
12	SMD resistor	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
13	SMD capacitor	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	

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Test Report

No. BCTC-FYC170081640R

Date: Aug. 21, 2017

Page 5 of 12

14	Aluminum shell	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
15	Green plastic paper	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
16	Blue Y capacitor	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
17	Color ring inductance	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
18	Yellow capacitor	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
19	Glass diode	Pb	277281*	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
20	Relay	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	

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Test Report

No. BCTC-FYC170081640R

Date: Aug. 21, 2017

Page 6 of 12

21	Gold metal	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
22	Buzzer	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
23	Black plastic	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
24	Copper wire	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	

Note:

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

-Negative = Absence of Cr(VI) , the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.1 mg/kg with 50cm² sample surface area used.

-Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than 0.1 mg/kg with 50cm² sample surface area used.

-*=According to the directive(2011/65 / EU),Lead is exempted in the electronic appliances and parts in glass or ceramic.

Remark:

- The screening results are only used for reference.

- When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br Exclusively; When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.

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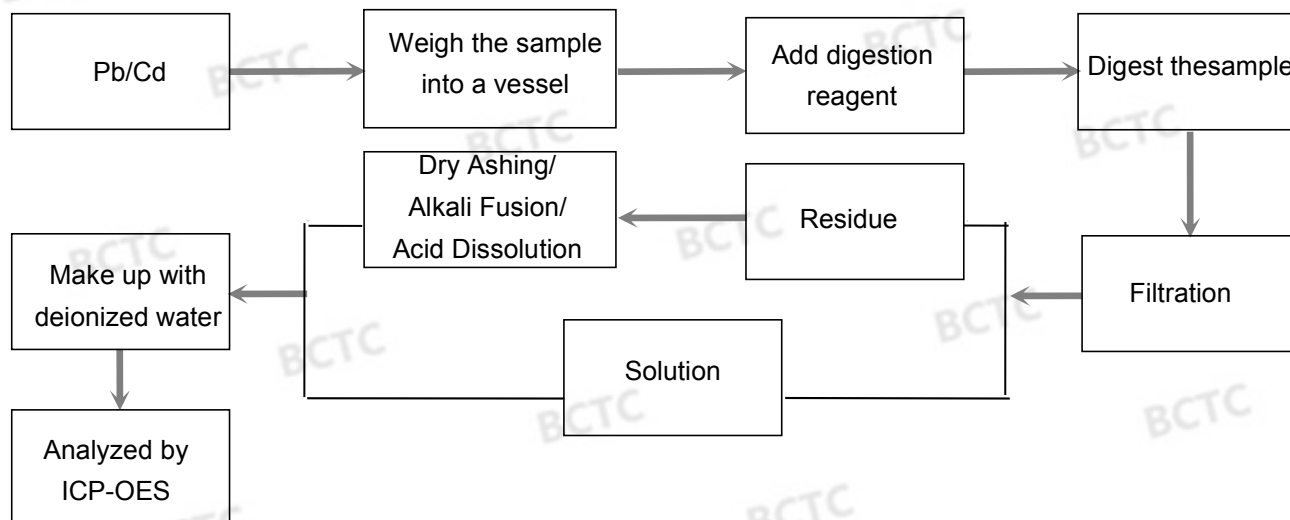
Date: Aug. 21, 2017

Page 7 of 12

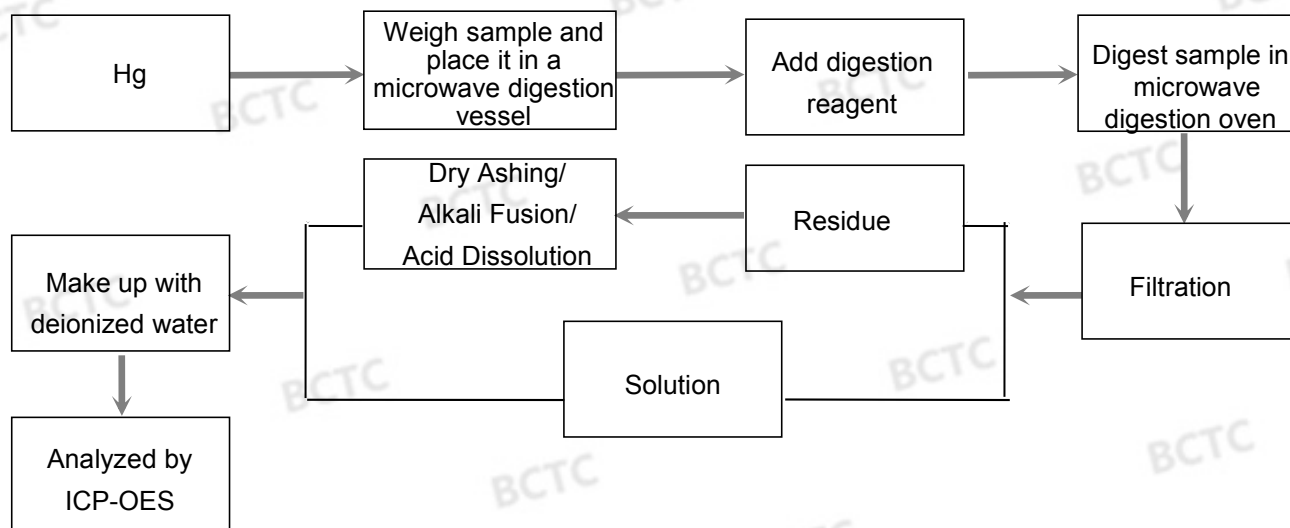
Test Process:

The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

◆ IEC 62321-5:2013 Ed.1.0



◆ IEC 62321-4:2013 Ed.1.0



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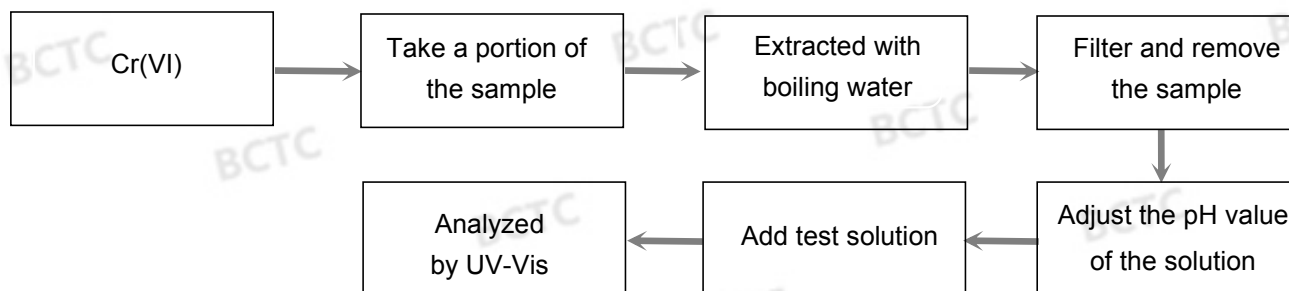
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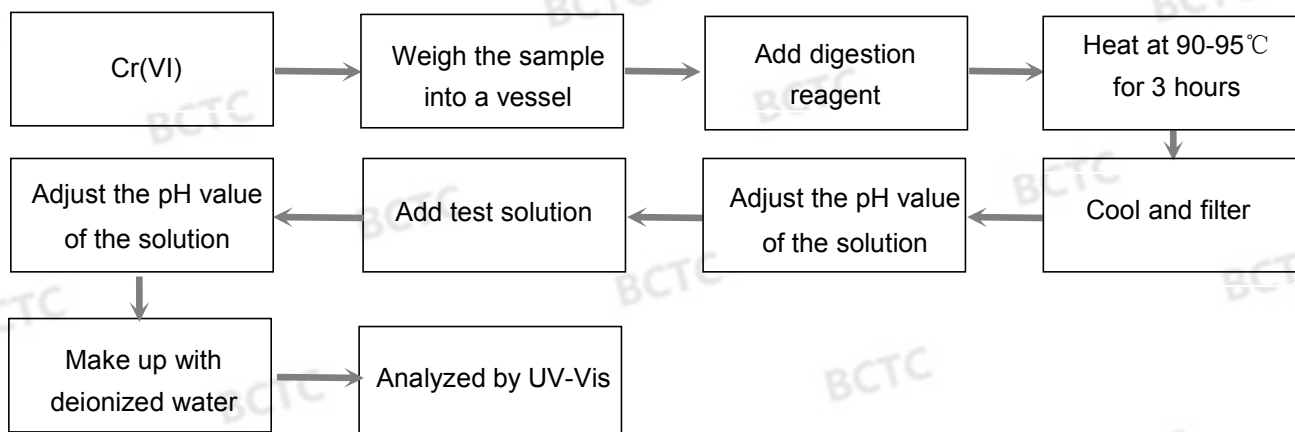
Date: Aug. 21, 2017

Page 8 of 12

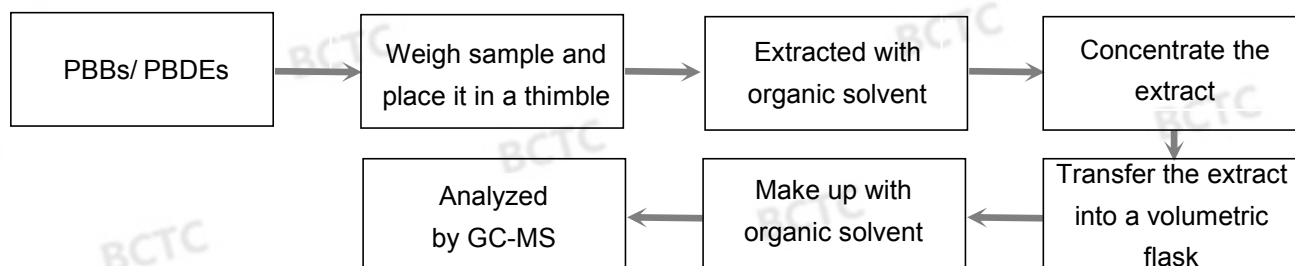
◆IEC 62321-7-1:2015 Ed.1.0



◆IEC 62321-7-2:2017 Ed.1.0



◆IEC 62321-6:2015 Ed.1.0



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Test Report

No. BCTC-FYC170081640R

Date: Aug. 21, 2017

Page 9 of 12

Photograph of Sample

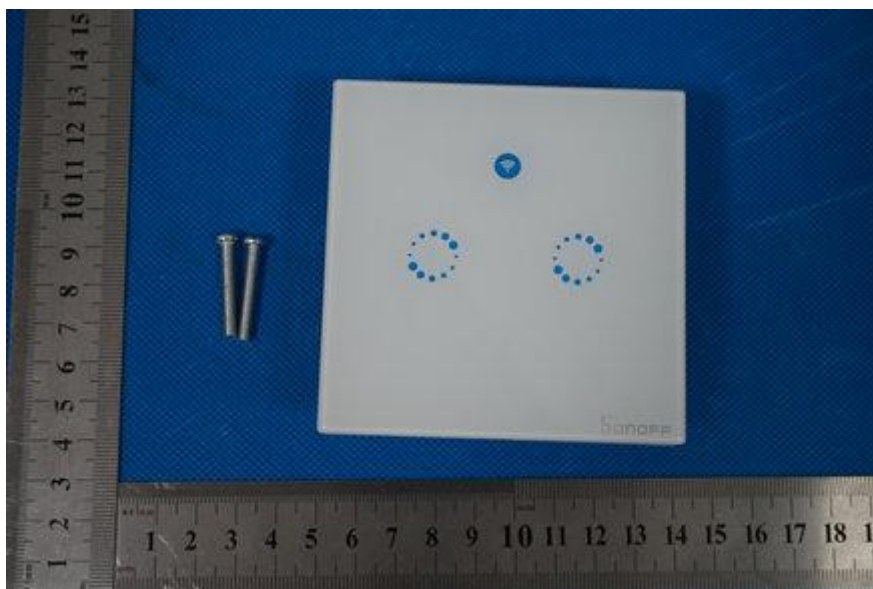


Fig. 1



Fig. 2

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Test Report

No. BCTC-FYC170081640R

Date: Aug. 21, 2017

Page 10 of 12

Photo(s) of the tested component(s)

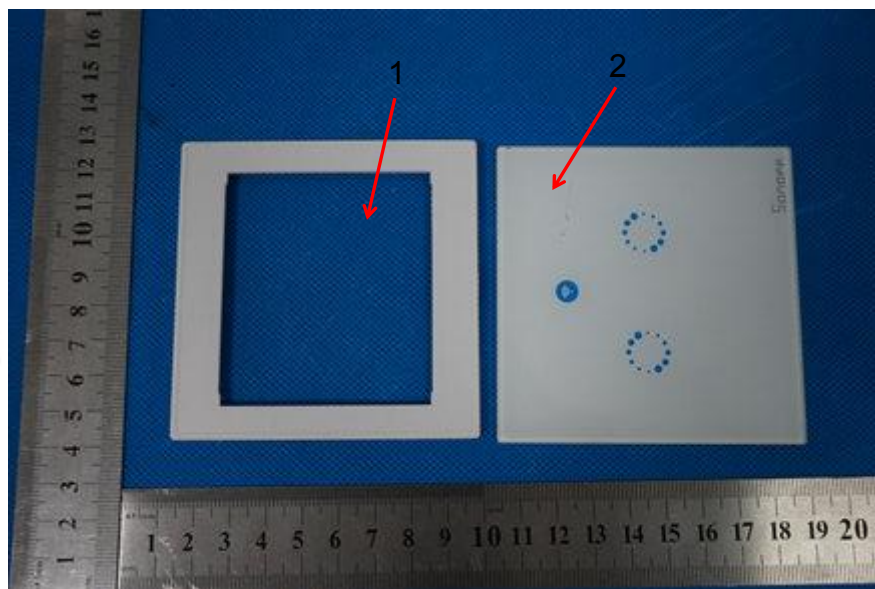


Fig. 3

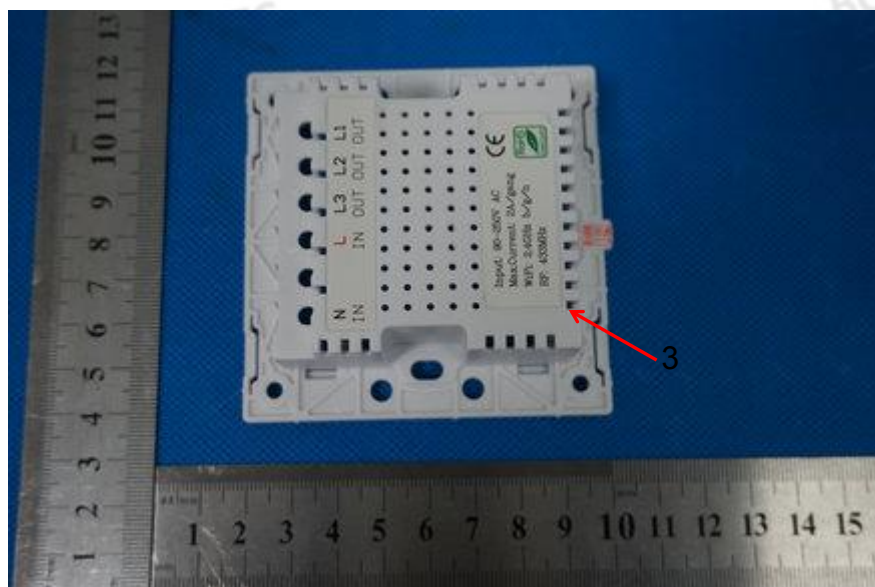


Fig. 4

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Test Report

No. BCTC-FYC170081640R

Date: Aug. 21, 2017

Page 11 of 12

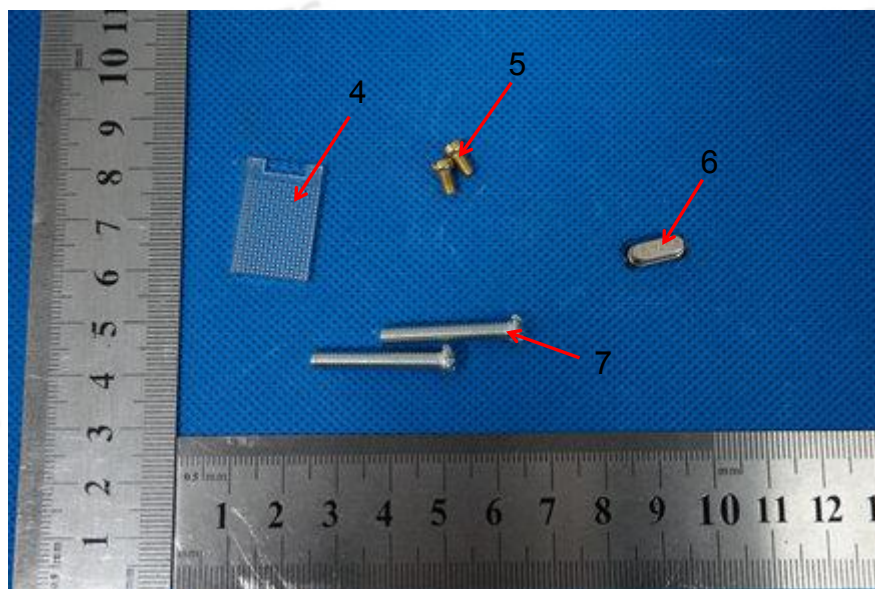


Fig. 5

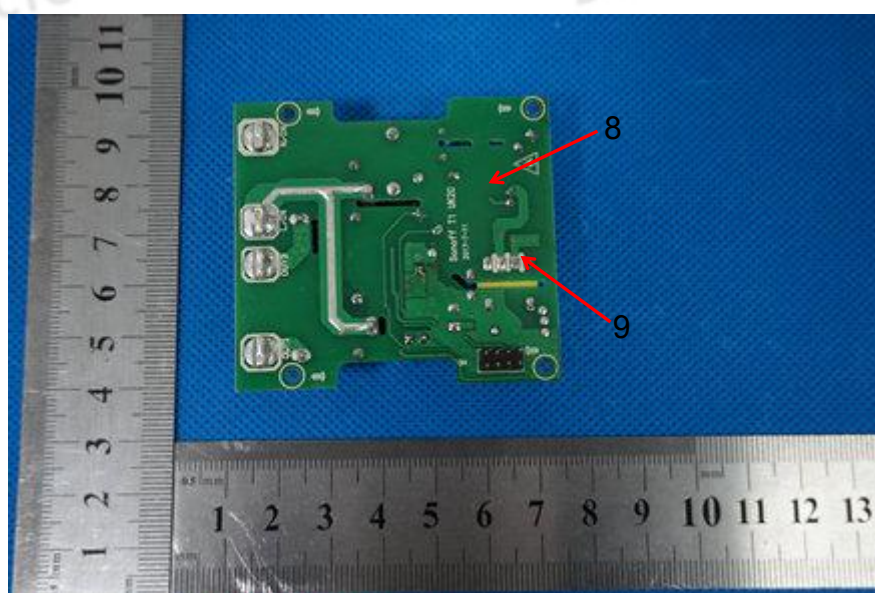


Fig. 6

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Test Report

No. BCTC-FYC170081640R

Date: Aug. 21, 2017

Page 12 of 12

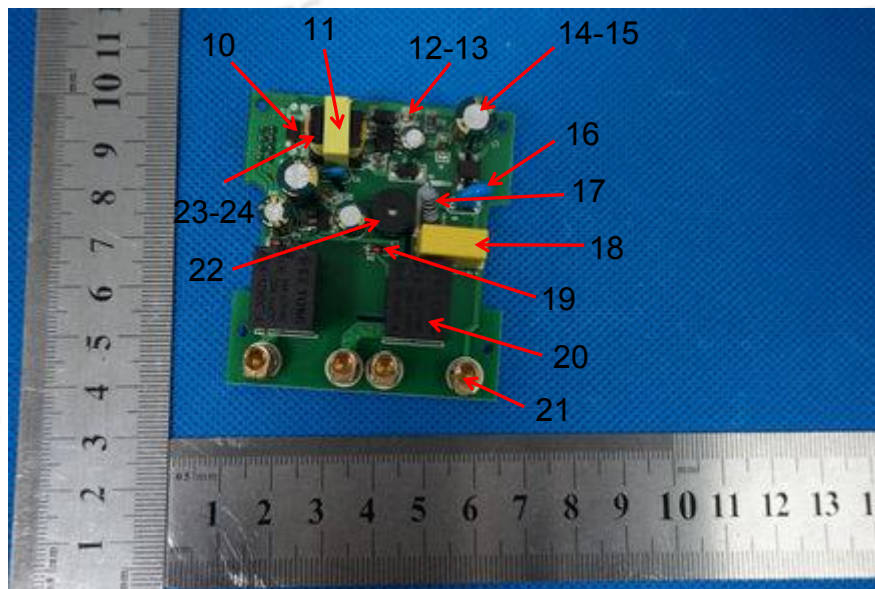


Fig. 7

***** End of Report *****