SAR TEST REPORT

For

FOSHAN CITY TONGHUI ELECTRONIC FIREPLACE LTD.

Water Vapor Fireplace

Model No.: AWP Series, AWO Series, AWX Series, AWA Series, AWB Series, AWD Series, AW-VIP Series

Prepared For : **FOSHAN CITY TONGHUI ELECTRONIC FIREPLACE LTD.**

: **5th Floor, Chuangxing Building, Zhangbian Bridge Side, Gaobian Industrial Park, Shishan Town, Nanhai District, Foshan, Guangdong, China**

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TABLE OF CONTENTS

1. DESCRIPTION OF DEVICE (EUT) 3
1.1 Description of Device (EUT) 3
1.2 Technical Characteristics of Device (EUT) 3
1.3 Test Standards 3
2. RF EXPOSURE BASIC RESTRICTIONS 5
2.1 Standard Applicable 5
2.2 Evaluation Methods 5
2.3 Evaluation Results 6
3. APPENDIX: PHOTOS OF EUT 7

TEST REPORT VERIFICATION

Applicant	:	FOSHAN CITY TONGHUI ELECTRONIC FIREPLACE LTD.
Manufacturer	:	FOSHAN CITY TONGHUI ELECTRONIC FIREPLACE LTD.
Brand	:	AFIRE
EUT	:	Water Vapor Fireplace
Model No.	:	AWP Series, AWO Series, AWX Series, AWA Series, AWB Series, AWD Series, AW-VIP Series
Input Voltage	:	DC 24V, 4A, Max 65W

Measurement Procedure Used:

EN 62479

The objective of the manufacturer is to demonstrate compliance with the described standards above. In this report, all the test method used was reference to the standard of EN 62479

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen PTSI Testing Co., Ltd.

Prepared by : Tina Tian
(Tina Tian, Engineer)

Reviewed by : Jack Chan
(Jack Chan, Manager)

SHENZHEN PTSI TESTING CO.,LTD Approved

1. DESCRIPTION OF DEVICE (EUT)

1.1 Description of Device (EUT)

EUT	:	Water Vapor Fireplace
Model Number	:	AWP Series, AWO Series, AWX Series, AWA Series, AWB Series, AWD Series, AW-VIP Series
Test Model Number	:	AWP20-50

Remark:
All models are identical in the same PCB layout, interior structure and electrical circuits. The only differences are the model no. and appearance.
Unless otherwise specified, model AWP20-50 was chosen to be the representative one to conduct the test.

Brand	:	AFIRE
Power Supply	:	DC 24V, 4A, Max 65W
Adapter	:	AC/DC POWER ADAPTER: Model: XYY100-240400 Input: AC 100-240V, 50/60Hz, 1.2A Output: 24VDC, 4A
Applicant	:	FOSHAN CITY TONGHUI ELECTRONIC FIREPLACE LTD.
Address	:	5th Floor, Chuangxing Building, Zhangbian Bridge Side, Gaobian Industrial Park, Shishan Town, Nanhai District, Foshan, Guangdong, China
Manufacturer	:	FOSHAN CITY TONGHUI ELECTRONIC FIREPLACE LTD.
Address	:	5th Floor, Chuangxing Building, Zhangbian Bridge Side, Gaobian Industrial Park, Shishan Town, Nanhai District, Foshan, Guangdong, China
Date of Sample Receipt	:	December 26, 2018
Date of Test	:	December 26, 2018 - January 22, 2019

1.2 Technical Characteristics of Device (EUT)

Wi-Fi:		
Frequency Range	:	802.11b/g/n(20M), 2412MHz-2472MHz
Type of Modulation	:	DSSS, OFDM
Type of Antenna	:	PCB Antenna
Antenna Gain	:	2 dBi

1.3 Test Standards

The following report is prepared on behalf of the FOSHAN CITY TONGHUI ELECTRONIC FIREPLACE LTD. in accordance with EN 62479, Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz).

The objective of the manufacturer is to determine compliance with EN 62479, Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz).

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained.

2. RF EXPOSURE BASIC RESTRICTIONS

2.1 Standard Applicable

According to EN 62479 Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)

When SAR is the basic restriction, a conservative minimum value for P_{max} can be derived, equal to the localized SAR limit (SAR_{max}) multiplied by the averaging mass (m):

$$P_{max} = SAR_{max}\, m \qquad (A.1)$$

Example values of P_{max} according to Equation (A.1) are provided in Table A.1 for cases described by the ICNIRP guidelines [1], IEEE Std C95.1-1999 [2] and IEEE Std C95.1-2005 [3] where SAR limits are defined. Other exposure guidelines or standards may be applicable depending on national regulations.

Table A.1 – Example values of SAR-based P_{max} for some cases described by ICNIRP, IEEE Std C95.1-1999 and IEEE Std C95.1-2005

Guideline / Standard	SAR limit, SAR_{max} W/kg	Averaging mass, m g	P_{max} mW	Exposure tier[a]	Region of body[a]
ICNIRP [1]	2	10	20	General public	Head and trunk
	4	10	40	General public	Limbs
	10	10	100	Occupational	Head and trunk
	20	10	200	Occupational	Limbs
IEEE Std C95.1-1999 [2]	1,6	1	1,6	Uncontrolled environment	Head, trunk, arms, legs
	4	10	40	Uncontrolled environment	Hands, wrists, feet and ankles
	8	1	8	Controlled environment	Head, trunk, arms, legs
	20	10	200	Controlled environment	Hands, wrists, feet and ankles
IEEE Std C95.1-2005 [3]	2	10	20	Action level	Body except extremities and pinnae
	4	10	40	Action level	Extremities and pinnae
	10	10	100	Controlled environment	Body except extremities and pinnae
	20	10	200	Controlled environment	Extremities and pinnae

[a] Consult the appropriate standard for more information and definitions of terms.

2.2 Evaluation Methods

Based on the above standard limit, the basic restriction at frequency between 10MHz to 300GHz is on localized SAR in the head. Any device with output power below 20mW cannot produce an exposure exceeding this restriction under the most pessimistic exposure conditions.

The basic restriction is 2W/Kg for general public device, so any unit which supplies less than 20mW from it's antenna port, averaged over 6 minutes, will meet the basic restriction.

2.3 Evaluation Results

Maximum Average Output Power

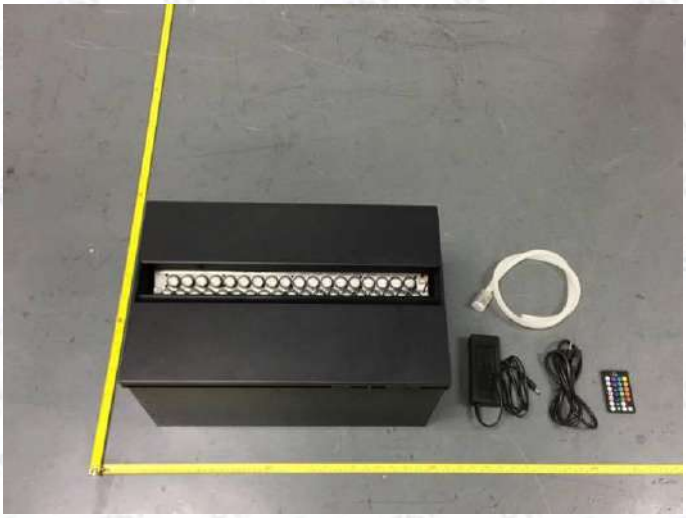
Frequency	ERP/EIRP	ERP/EIRP	Limit	Result
MHz	dBm	mW	mW	Pass/Fail
DSSS modulation (802.11b)				
2412	2.62	1.08	20	Pass
2442	2.76	1.17	20	Pass
2472	2.96	1.29	20	Pass
OFDM modulation (802.11g)				
2412	2.57	1.05	20	Pass
2442	2.78	1.18	20	Pass
2472	2.80	1.19	20	Pass
OFDM modulation (802.11n-HT20)				
2412	-1.54	-0.51	20	Pass
2442	-1.64	-0.53	20	Pass
2472	-1.67	-0.54	20	Pass

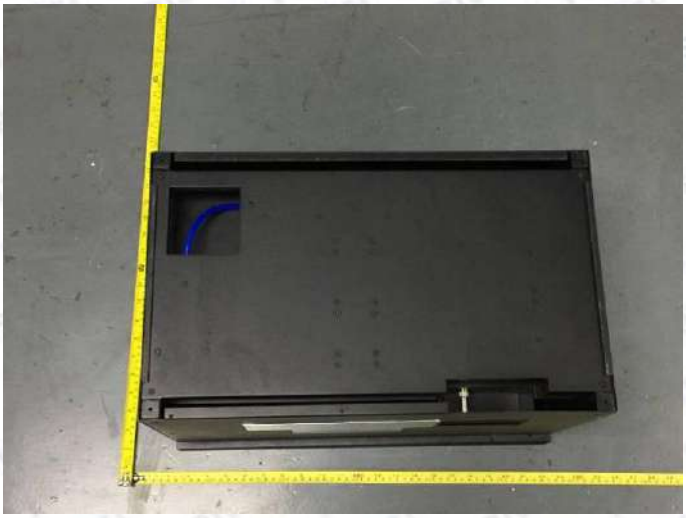
Since the average output power at worse case doesn't exceed the exempt condition, 20mW specified in EN 62479. It is deemed to full fit the requirement of RF exposure basic restriction specified in EC Council Recommendation (1999/519/EC).

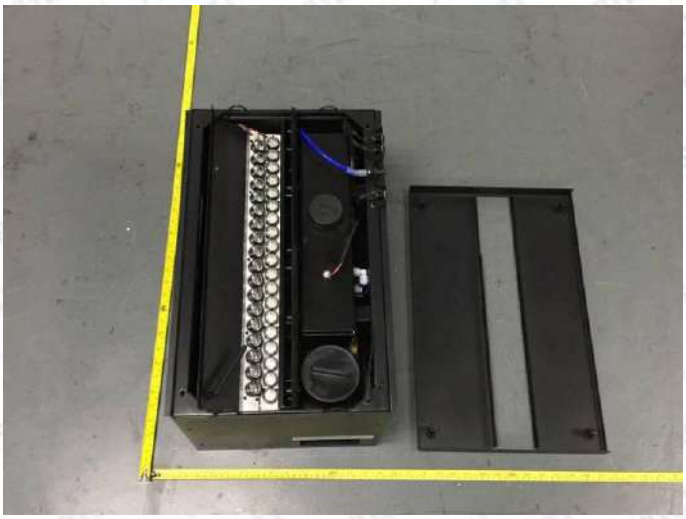
3. APPENDIX: PHOTOS OF EUT

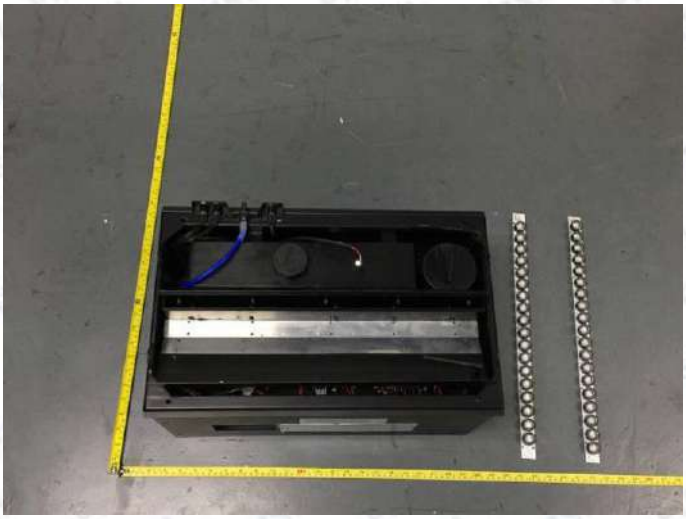
Photo Documentation

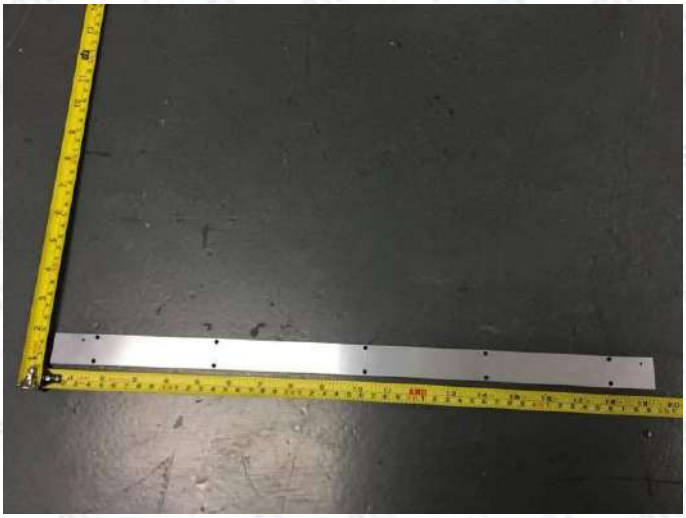
Type of Equipment, Model: Water Vapor Fireplace, AWP20-50

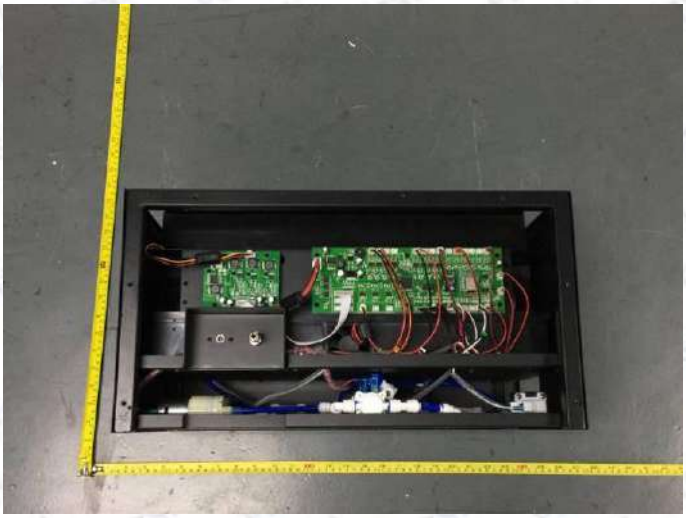


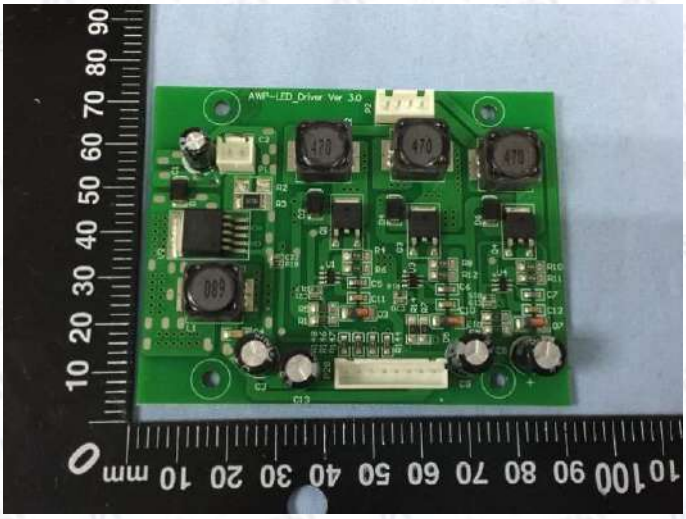


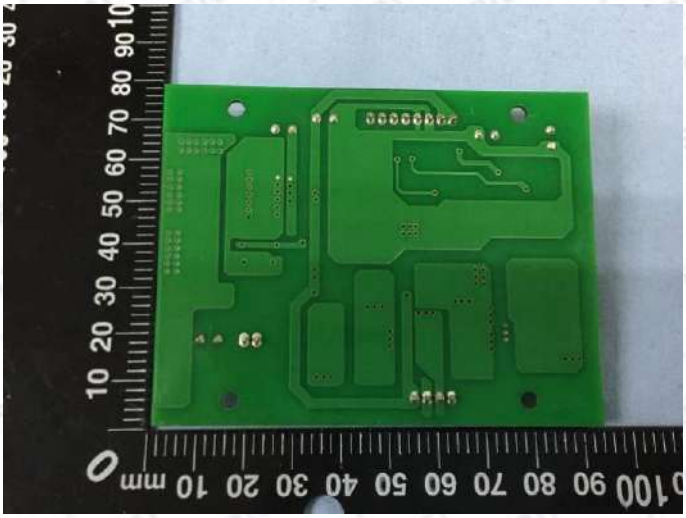


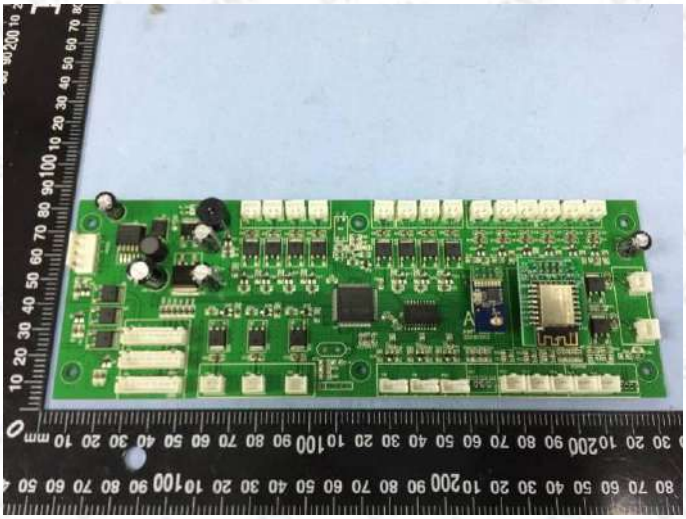


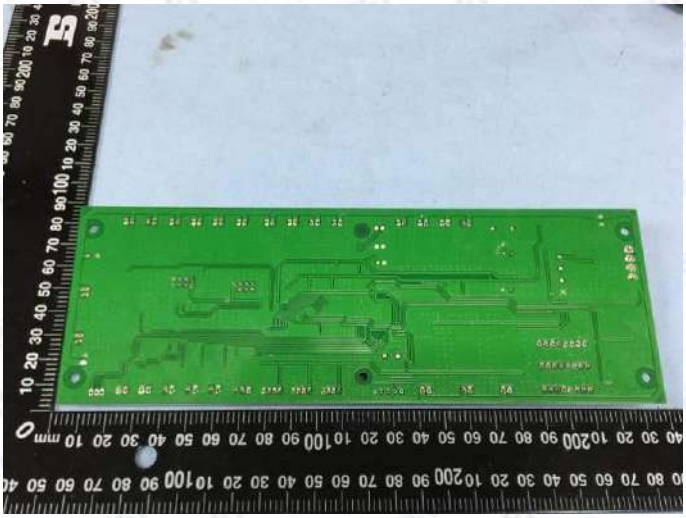


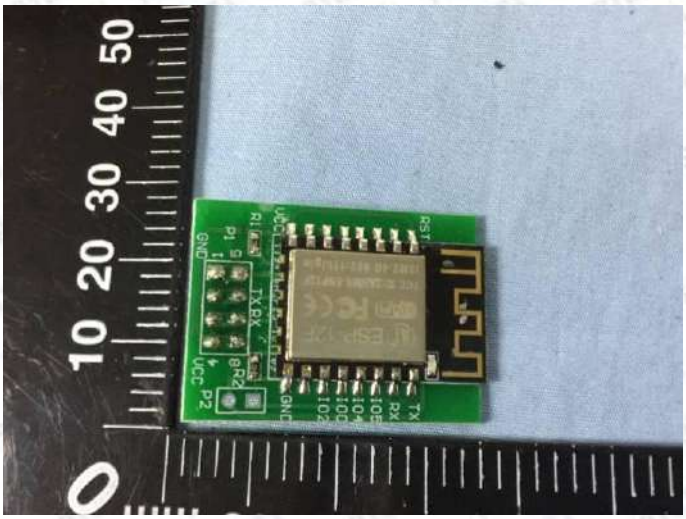


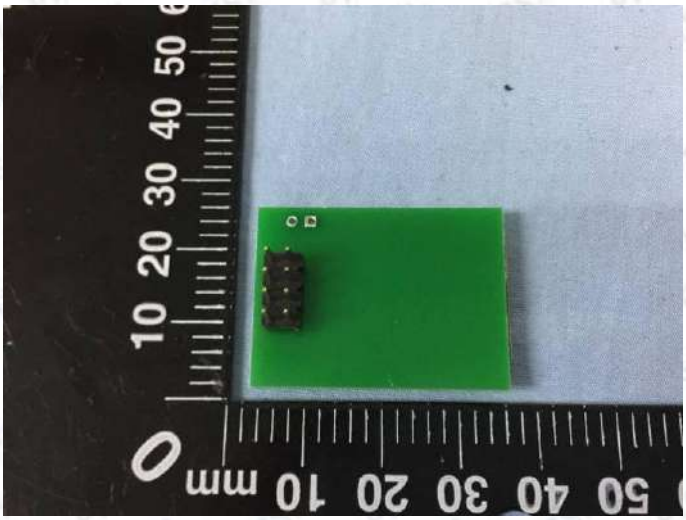

AWP-LED_Driver Ver 3.0

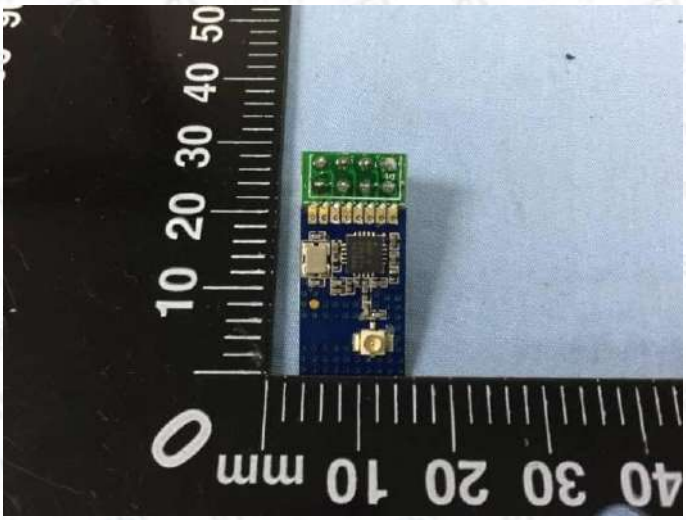


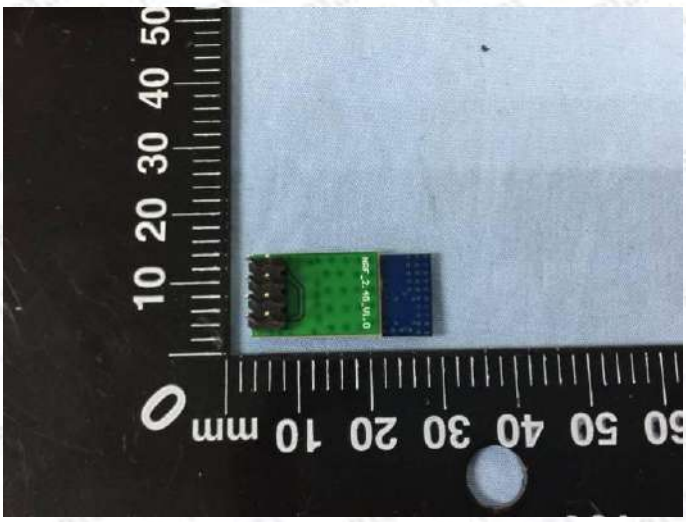


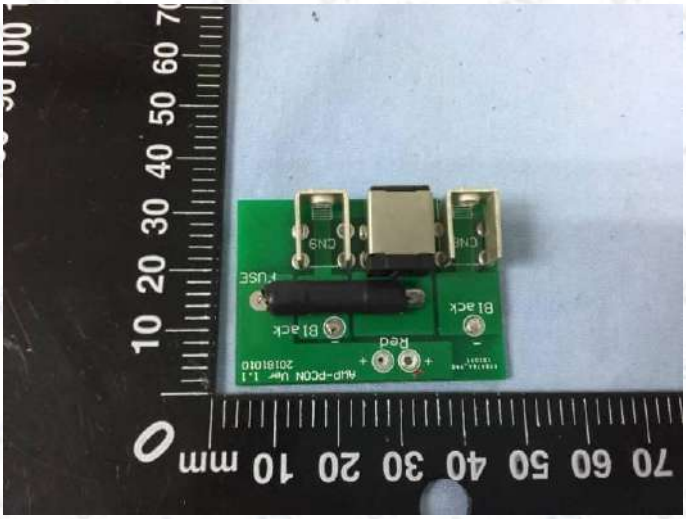








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CN8
FUSE
Black
Red
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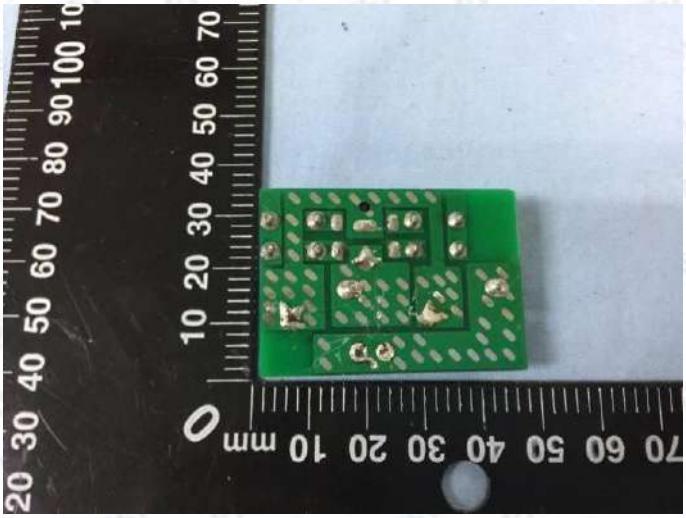
mm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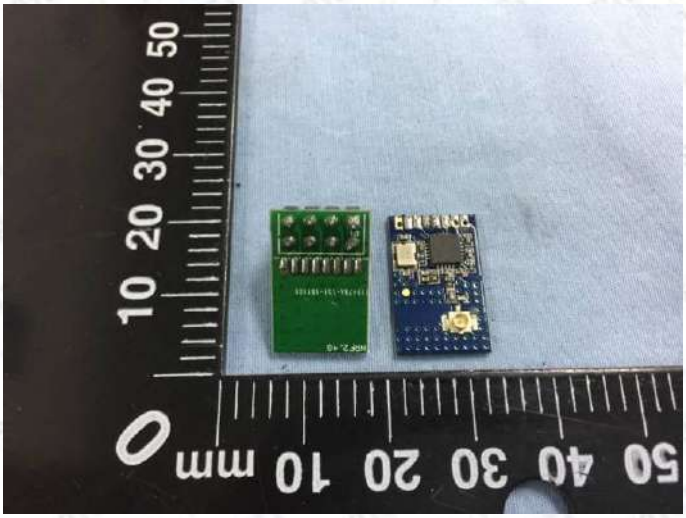
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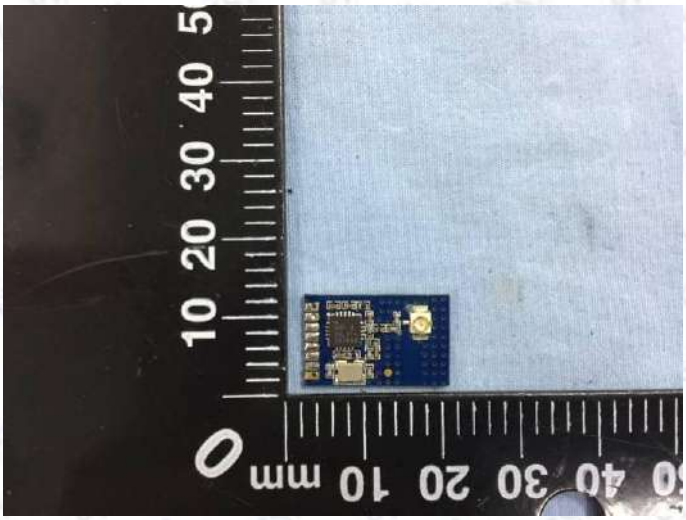

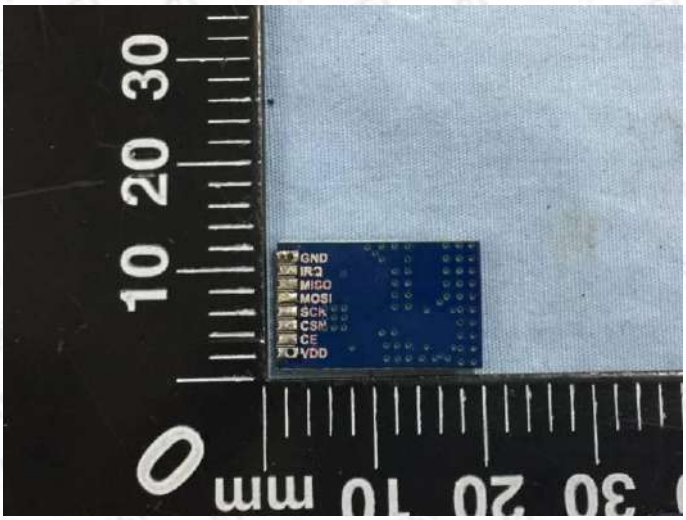
GND
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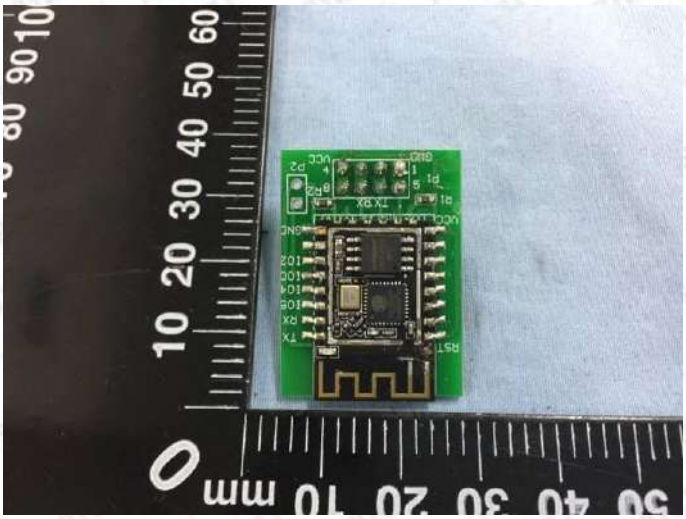
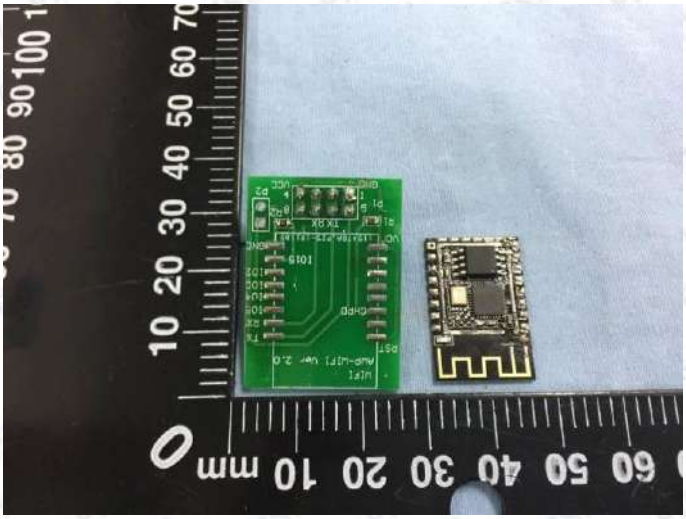
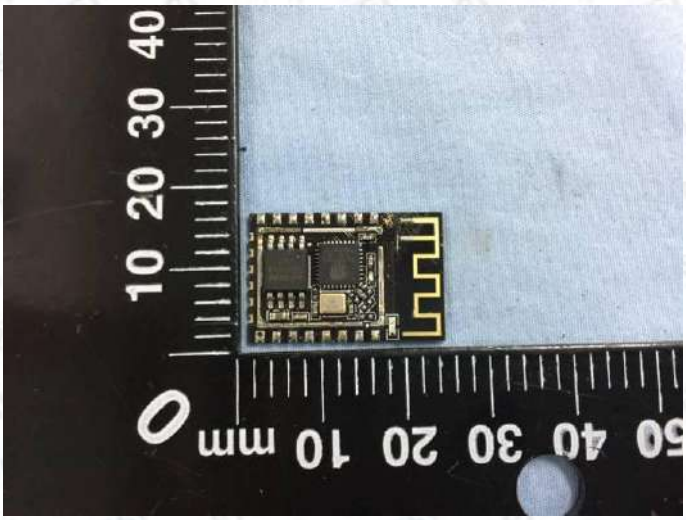
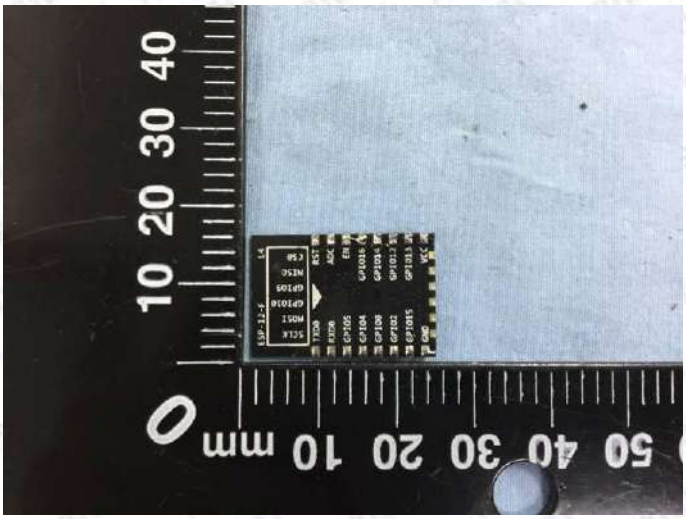
MISO
MOSI
SCK
CSN
CE
VDD









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