FCC 47 CFR PART 15 SUBPART B
TEST REPORT

ShenZhen ZhangQing Electronic LTD

poe tester

Model No.: WS POE Tester/Detector

Additional Model No: Please Refer to Page 8

Prepared for	:	ShenZhen ZhangQing Electronic LTD
Address	:	Number 622 HuaYuan Commercial center XiXiang Road XiXiang Street Bao' An District, ShenZhen
Prepared by	:	Shenzhen LCS Compliance Testing boratory Ltd.
Address	:	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
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Web	:	www.LCS-cert.com
Mail	:	webmaster@LCS-cert.com
Date of receipt of test sample	:	April 20, 2018
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	April 20, 2018 ~ April 23, 2018
Date of Report	:	April 27, 2018

FCC TEST REPORT
FCC 47 CFR PART 15 SUBPART B

Report Reference No. ..... : LCS180420010AE

Date Of Issue ..... : April 27, 2018

Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.

Address ..... : 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China

Testing Location/ Procedure..... : Full application of Harmonised standards ■
Partial application of Harmonised standards ☐
Other standard testing method ☐

Applicant's Name ..... : ShenZhen ZhangQing Electronic LTD

Address ..... : Number 622 HuaYuan Commercial center XiXiang Road XiXiang Street Bao' An District, ShenZhen

Test Specification

Standard..... : FCC 47 CFR Part 15 Subpart B, ANSI C63.4 -2014

Test Report Form No..... : LCSEMC-1.0

TRF Originator ..... : Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF..... : Dated 2011-03

Test Item Description..... : poe tester

Trade Mark ..... : ZhangQing

Model/ Type Reference ..... : WS POE Tester/Detector

Ratings..... : DC 5-57V

Result ..... : Positive

Compiled by:	Supervised by:	Approved by:
Lylian Li	Davey Xu	Leo Lee
Lylian Li/ File administrators	Davey Xu/ Technique principal	Leo Lee/ Manager

FCC -- TEST REPORT

Test Report No. : LCS180420010AE	April 27, 2018 Date of issue

Type / Model.....	:	WS POE Tester/Detector
EUT.....	:	poe tester
Applicant.....	**:**	**ShenZhen ZhangQing Electronic LTD**
Address.....	:	Number 622 HuaYuan Commercial center XiXiang Road XiXiang Street Bao' An District, ShenZhen
Telephone.....	:	/
Fax.....	:	/
Manufacturer.....	**:**	**ShenZhen ZhangQing Electronic LTD**
Address.....	:	Number 622 HuaYuan Commercial center XiXiang Road XiXiang Street Bao' An District, ShenZhen
Telephone.....	:	/
Fax.....	:	/
Factory.....	:	**ShenZhen ZhangQing Electronic LTD**
Address.....	:	Number 622 HuaYuan Commercial center XiXiang Road XiXiang Street Bao' An District, ShenZhen
Telephone.....	:	/
Fax.....	:	/

Test Result according to the standards on page 6: **Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions	Revised By
000	April 27, 2018	Initial Issue	Leo Lee

TABLE OF CONTENTS

Test Report Description Page

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	**Standard**	**Limits**	**Results**
Conducted disturbance at mains terminals	FCC 47 CFR Part 15 Subpart B	Class B	N/A
Radiated disturbance	FCC 47 CFR Part 15 Subpart B	Class B	PASS
N/A is an abbreviation for Not Applicable.			

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	poe tester
Trade Mark	:	ZhangQing
Model Number	:	WS POE Tester/Detector
Additional Model No	:	POE tester, POE Tester V7, POE Tester V8, POE Tester+, Power over ethernet tester, DC power supply tester, load tester, poe load tester, poe monitor, universal poe tester, WS POE Tester/Detector, POE Texas tester/Detector, ZQ poe tester/detector, WS POE Tester+, POE Texas Tester/Detector+
Model Declaration	:	all these models are for the same products, but just with differe nt product names.
Power Supply	:	DC 5-57V
EUT Clock Frequency	:	≤15MHz

2.2. Description of Test Facility

Site Description

EMC Lab. : FCC Registration Number. is 254912.

Industry Canada Registration Number. is 9642A-1.

ESMD Registration Number. is ARCB0108.

UL Registration Number. is 100571-492.

TUV SUD Registration Number. is SCN1081.

TUV RH Registration Number. is UA 50296516-001.
NVLAP Registration Code is 600167-0.

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

2.4. Measurement Uncertainty

Test	Parameters	Expanded uncertainty (U_{lab})	Expanded uncertainty (U_{cispr})
Coucted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 2.63 dB ± 2.35 dB	± 4.0 dB ± 3.6 dB
Power disturbance	Level accuracynd (30MHz to 300MHz)	± 2.90dB	± 4.5 dB
Electromagnetic Radiated Emission (3-loop)	Level accuracy (9kHz to 30MHz)	± 3.60 dB	± 2.63 dB
Radiated Emission	Level accuracy (9kHz to 30MHz)	± 3.68 dB	± 2.63 dB
Radiated Emission	Level accuracy (30MHz to 1000MHz)	± 3.48 dB	± 2.63 dB
Radiated Emission	Level accuracy (above 1000MHz)	± 3.90 dB	N/A
Mains Harmonic	Voltage	± 0.510%	N/A
Voltage Fluctuations & Flicker	Voltage	± 0.510%	N/A
EMF		± 21.59%	N/A

(1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

(2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

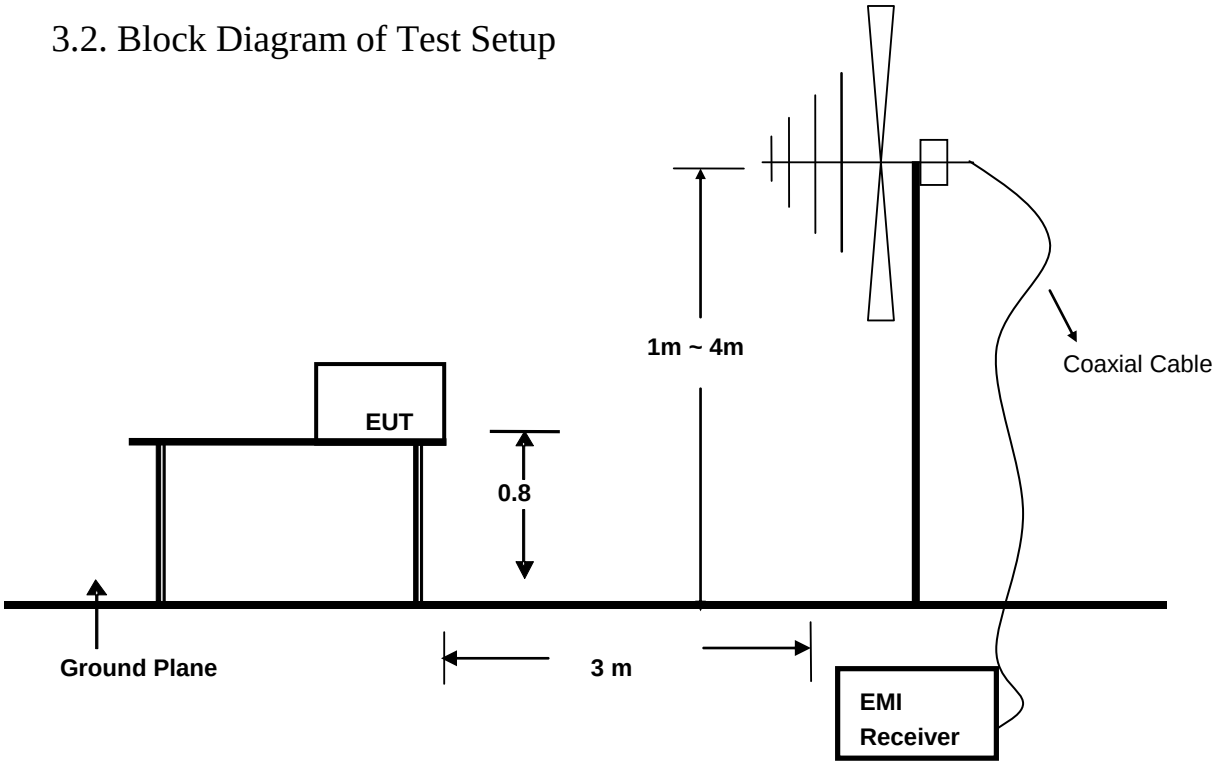
3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2017-06-17
2	EMI Test Receiver	ROHDE & SCHWARZ	ESR 7	101181	2017-06-17
3	By-Log Antenna	SCHWARZBECK	VULB9163	9163-470	2017-05-02
4	EMI Test Software	AUDIX	E3	N/A	2017-06-17
5	Positioning Controller	MF	MF-7082	/	2017-06-17

3.2. Block Diagram of Test Setup



3.3. Radiated Emission Limit (Class B)

Limits for radiated disturbance Blow 1GHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46
960 ~ 1000	3	500	54

Remark：(1) Emission level (dB)μV = 20 log Emission level μV/m
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

3.4. EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.5. Operating Condition of EUT

3.5.1.Setup the EUT as shown in Section 3.2.
3.5.2.Let the EUT work in test mode (on) and measure it.

3.6. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009 on radiated emission measurement.

The bandwidth of the EMI test receiver is set at 120kHz, 1000kHz.

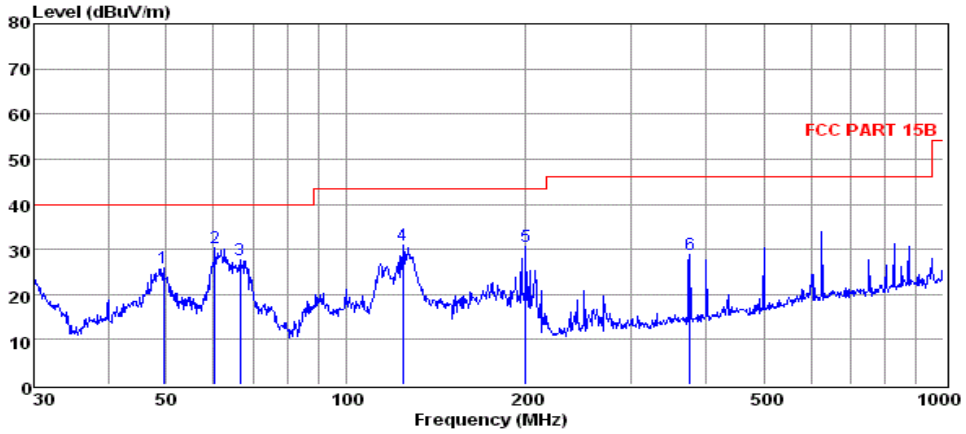
The frequency range from 30MHz to 1000MHz is checked.

3.7. Radiated Emission Noise Measurement Result

PASS.

The scanning waveforms please refer to the next page.

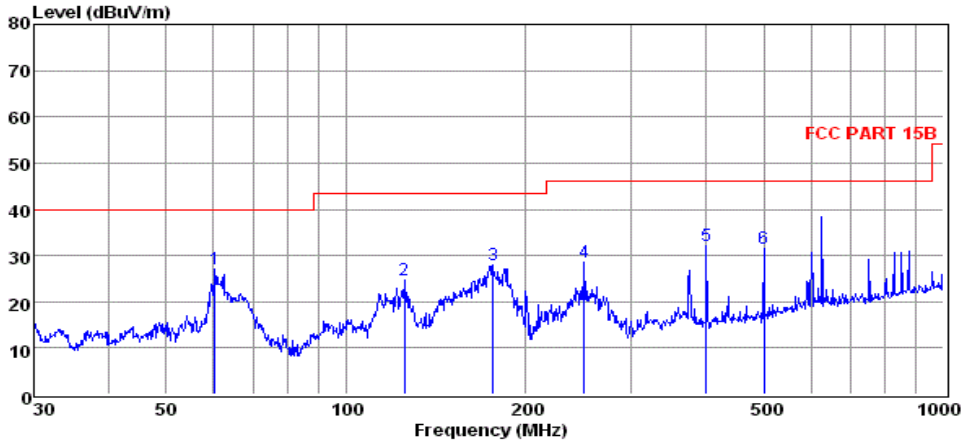
Model No.	WS POE Tester/Detector	**Test Mode**	ON
Environmental Conditions	23.5℃, 51.6% RH	**Detector Function**	Quasi-peak
Pol	Vertical	**Distance**	3m
Test Engineer	Sunny Chen		



	Freq MHz	Reading dBuV	CabLos dB	Antfac dB/m	Measured dBuV/m	Limit dBuV/m	Over dB	Remark
1	49.53	12.15	0.54	13.28	25.97	40.00	-14.03	QP
2	60.28	17.12	0.49	12.58	30.19	40.00	-9.81	QP
3	66.50	16.93	0.52	10.09	27.54	40.00	-12.46	QP
4	124.57	20.42	0.71	9.77	30.90	43.50	-12.60	QP
5	199.99	19.24	0.84	10.57	30.65	43.50	-12.85	QP
6	375.94	13.21	1.10	14.56	28.87	46.00	-17.13	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

Model No.	WS POE Tester/Detector	**Test Mode**	ON
Environmental Conditions	23.5℃, 51.6% RH	**Detector Function**	Quasi-peak
Pol	Horizontal	**Distance**	3m
Test Engineer	Sunny Chen		



	Freq MHz	Reading dBuV	CabLos dB	Antfac dB/m	Measured dBuV/m	Limit dBuV/m	Over dB	Remark
1	60.28	13.84	0.49	12.58	26.91	40.00	-13.09	QP
2	125.01	14.13	0.71	9.70	24.54	43.50	-18.96	QP
3	176.27	17.83	0.73	9.42	27.98	43.50	-15.52	QP
4	250.30	15.36	1.02	12.07	28.45	46.00	-17.55	QP
5	400.43	15.82	1.20	15.07	32.09	46.00	-13.91	QP
6	501.18	13.46	1.54	16.60	31.60	46.00	-14.40	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

Note: Pre-Scan all mode, Thus record worse case mode result in this report.

4. PHOTOGRAPH

4.1. Photo of Radiated Measurement

5. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

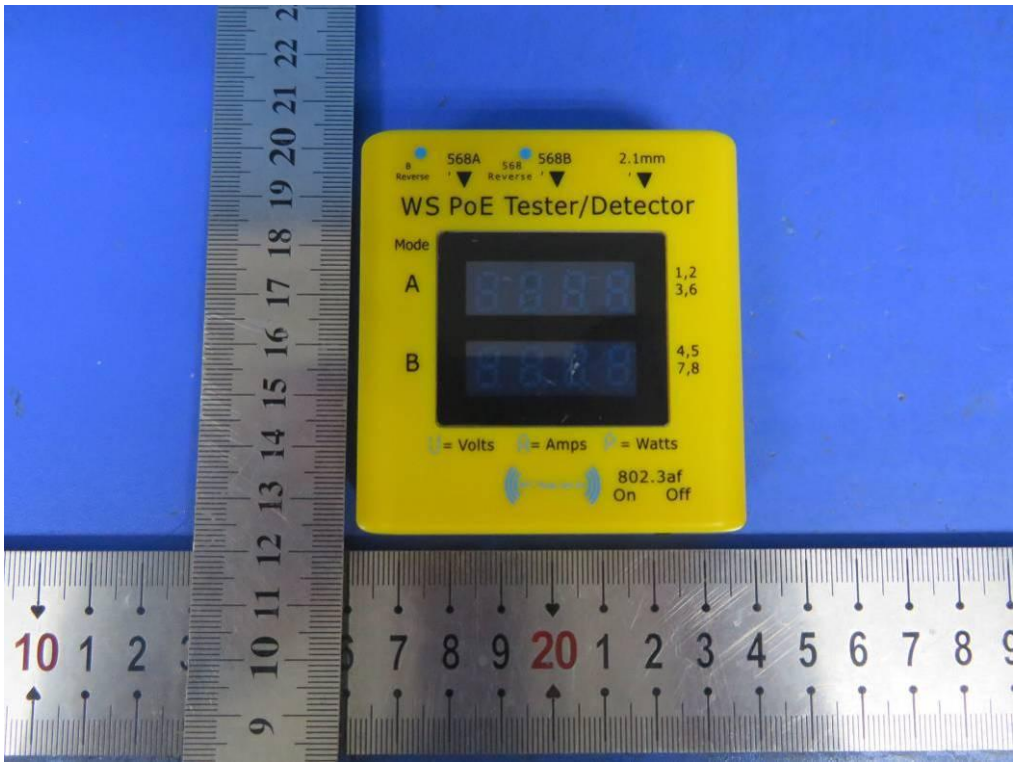


Fig. 1

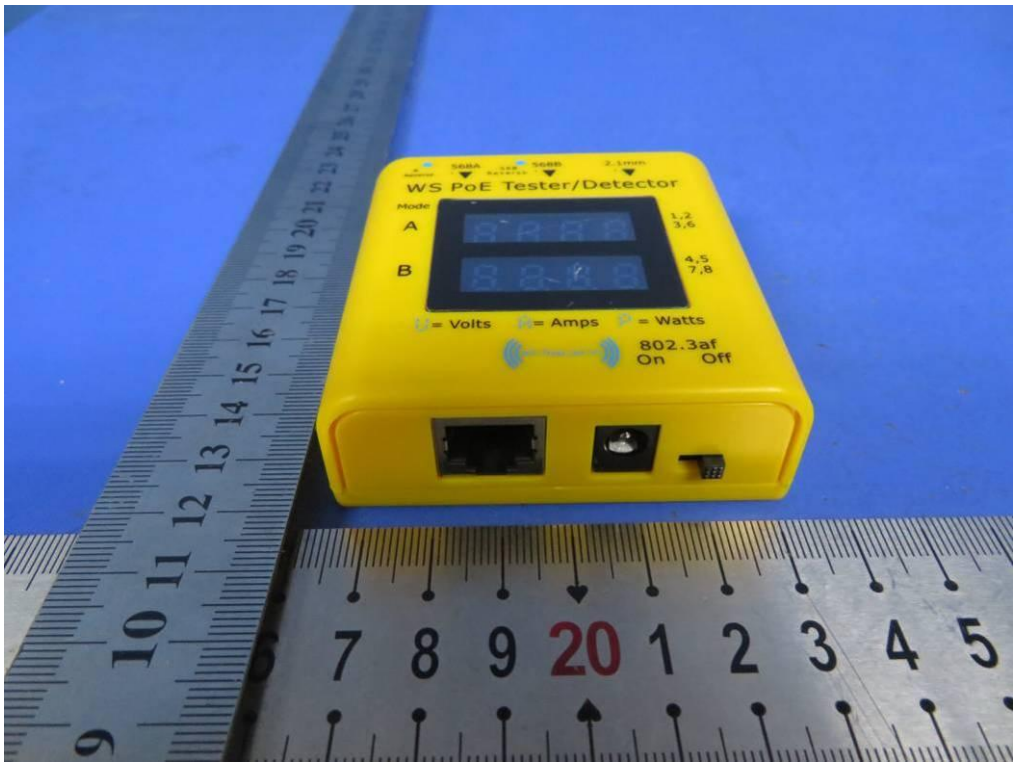


Fig. 2


WS PoE Tester/Detector
568A
568B
2.1mm
Mode
A
B

Fig. 3


WS PoE Tester/Detector
Mode
A
B
1,2
3,6
4,5
7,8
= Volts
= Amps
= Watts
802.3af
On Off
6V-56V
568B
568A
PoE Texas
PoE Tester
@ 2014 POE Texas,Inc
gigabit compatible
operating range
Mode A 20v to 56v 10 to 500 ma
Mode B 20v to 56v 10 to 500 ma
2.1mm 6v to 56v 0 to 5 amp
see www.poetexas.com
802.3af
Pass-Thru Simulate
DC-OUT 568B

Fig. 4

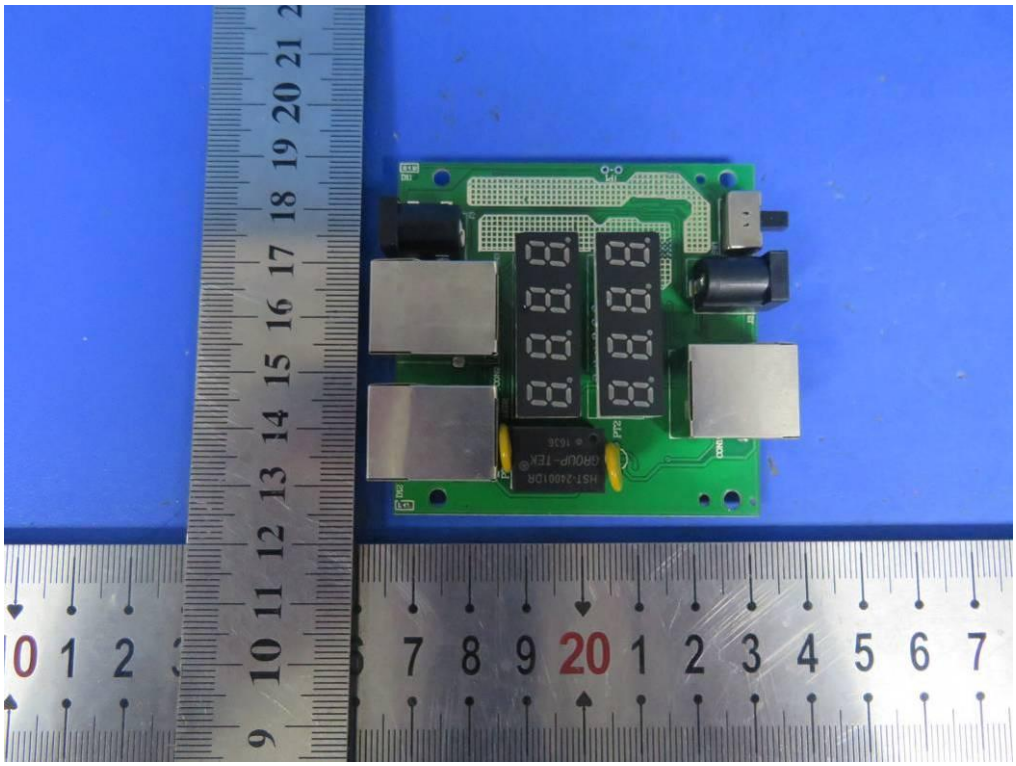


Fig. 5

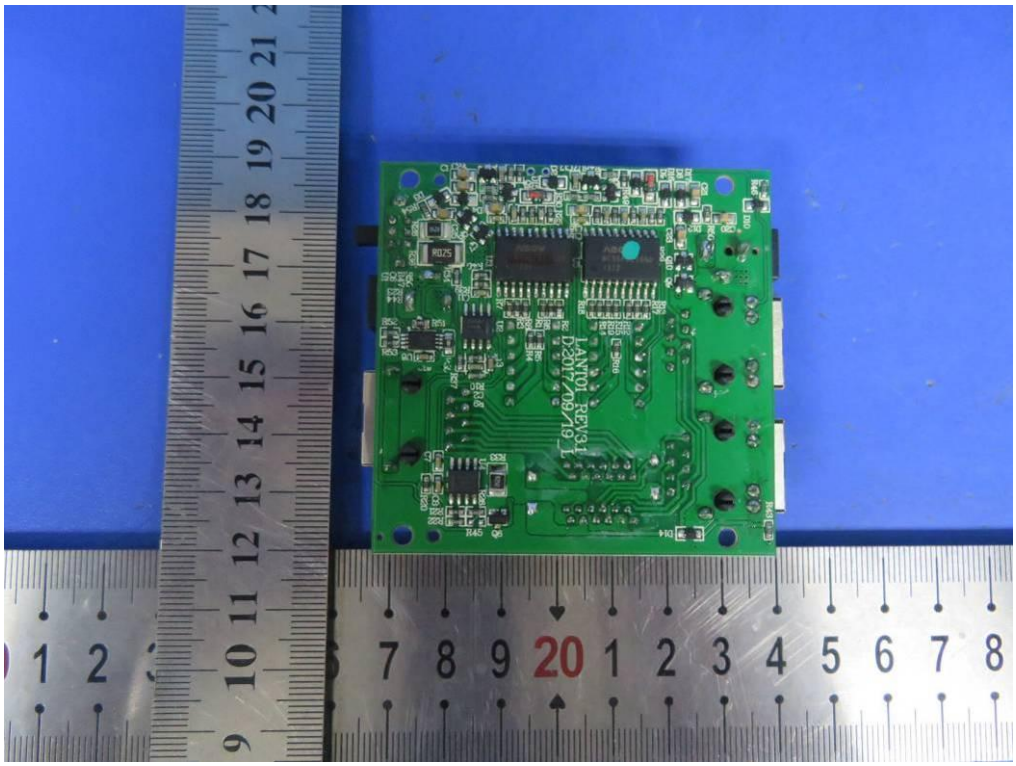


Fig. 6

----------THE END OF TEST REPORT----------