EMC TEST REPORT					
	For				
Shenzh	en Qiangwei Electronic Co., Ltd				
	Infrared Thermometer				
	Test Model: K3				
Prepared for	: Shenzhen Qiangwei Electronic Co., Ltd				
Address	: 4F, Building 3, Xialingpai Industrial Zone, Dalang				
	Subdistrict, Longhua District, Shenzhen, China				
Prepared by	: Shenzhen LCS Compliance Testing Laboratory Ltd.				
Address	: Room 101, 201, Building A and Room 301, Building C,				
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Web	: www.LCS-cert.com				
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Date of receipt of test sample	: March 30, 2020				
Number of tested samples	: 1				
Serial number : Prototype					
Date of Test	: March 30, 2020 ~ April 02, 2020				
Date of Report : April 03, 2020					

CE

	EMC TEST REPORT
	EN 55032: 2015 ment-Radio disturbance characteristics – Limits of measurement EN 55035: 2017 atibility of multimedia equipment – Immunity requirements
Report Reference No	
Date of Issue	
	: Shenzhen LCS Compliance Testing Laboratory Ltd.
	 Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, 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 Qiangwei Electronic Co., Ltd
Address	: 4F, Building 3, Xialingpai Industrial Zone, Dalang Subdistrict, Longhua District, Shenzhen, China
Test Specification Standard	: EN 55032: 2015 EN 55035: 2017 EN 61000-3-2: 2014 EN 61000-3-3: 2013
Test Report Form No	: LCSEMC-1.0
TRF Originator	: Shenzhen LCS Compliance Testing Laboratory Ltd.
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Test Item Description	: Infrared Thermometer
Trade Mark Test Model Ratings Result	 Testacy K3 DC 5V Positive
Compiled by:	Supervised by: Approved by:
Rita Muang	Jason Deng
Rita Huang/ File administrators	Jason Deng/ Technique principal Gavin Liang/ Manager
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Page 2 of 55

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SHENZHEN LCS COMPLIANCE TESTING LABORATORY LTD.

EMC -- TEST REPORT

Test Report No. : LCS200327014AE

Date of issue

Test Model..... : K3 EUT..... : Infrared Thermometer Applicant..... : Shenzhen Qiangwei Electronic Co., Ltd Address..... : 4F, Building 3, Xialingpai Industrial Zone, Dalang Subdistrict, Longhua District, Shenzhen, China Telephone..... : / Fax..... : / Manufacturer..... : Shenzhen Qiangwei Electronic Co., Ltd Address..... : 4F, Building 3, Xialingpai Industrial Zone, Dalang Subdistrict, Longhua District, Shenzhen, China Telephone..... : / Fax..... : / Factory..... : Shenzhen Qiangwei Electronic Co., Ltd Address..... : 4F, Building 3, Xialingpai Industrial Zone, Dalang Subdistrict, Longhua District, Shenzhen, China Telephone..... : / Fax..... :/

Test Result 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.

April 03, 2020

Revision History

Revision	Issue Date	Revisions	Revised By
000	April 03, 2020	Initial Issue	Gavin Liang

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TABLE OF CONTENTS

Test Report Description

1. TEST STANDARDS	6
2.SUMMARY OF STANDARDS AND RESULTS	7
2.1. DESCRIPTION OF STANDARDS AND RESULTS 2.2. DESCRIPTION OF PERFORMANCE CRITERIA	7 8
3. GENERAL INFORMATION	9
 3.1. DESCRIPTION OF DEVICE (EUT) 3.2. DESCRIPTION OF TEST FACILITY	9 9
4. MEASURING DEVICES AND TEST EQUIPMENT	11
5. TEST RESULTS	14
 5.1. POWER LINE CONDUCTED EMISSION MEASUREMENT	16 18 19 20 22 22 24 24 26 28 30 31
ANNEXE A	32
ANNEXE B	
ANNEXE C	51

Page

1. TEST STANDARDS

The tests were performed according to following standards:

<u>EN 55032: 2015</u> Electromagnetic compatibility of multimedia equipment - Emission Requirements

EN 55035:2017 Information technology equipment – Immunity characteristics

<u>EN 61000-3-2:2014</u> Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase) <u>EN 61000-3-3:2013</u> Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current \leq 16 A per phase and not subject to conditional connection

2.SUMMARY OF STANDARDS AND RESULTS

2.1. Description of Standards and Results

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

Emission (EN 55032: 2015)					
Description of Test Item	Limits	Results			
Conducted disturbance at mains terminals	EN 55032: 2015	Class B	PASS		
Conducted disturbance at telecommunication port	EN 55032: 2015	Class B	N/A		
Radiated disturbance	EN 55032: 2015	Class B	PASS		
Harmonic current emissions	EN 61000-3-2: 2014	Class A	PASS		
Voltage fluctuations & flicker	EN 61000-3-3: 2013		PASS		
	Immunity (EN 55035: 2017)				
Description of Test Item	Basic Standard	Performance Criteria	Results		
Electrostatic discharge (ESD)	EN 61000-4-2: 2009	В	PASS		
Radio-frequency, Continuous radiated disturbance	EN 61000-4-3: 2006+A2: 2010	А	PASS		
Electrical fast transient (EFT)	EN 61000-4-4: 2012	В	PASS		
Surge (Input a.c. power ports)	EN 61000-4-5: 2014+A1: 2017	В	PASS		
Surge (Telecommunication ports)	EN 01000-4-5. 2014+A1. 2017	В	N/A		
Radio-frequency, Continuous conducted disturbance	EN 61000-4-6: 2014	А	PASS		
Power frequency magnetic field	EN 61000-4-8: 2010	А	PASS		
Voltage dips, >95% reduction		В	PASS		
Voltage dips, 30% reduction	EN 61000-4-11: 2004+A1: 2017	С	PASS		
Voltage interruptions		С	PASS		
***Note: N/A is an abbreviat	ion for Not Applicable.				

Test mode:		
Mode 1	Normal operation	Record

2.2. Description of Performance Criteria

General Performance Criteria

Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following: — essential operational modes and states;

2.2.1. Performance criterion A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacture when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deriver from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

2.2.2. Performance criterion B

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacture, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operation state or stored data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be deriver from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

2.2.3. Performance criterion C

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacture's instructions.

Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be loss.

Report No.: LCS200327014AE

3. GENERAL INFORMATION

3.1. Description of Device (EUT)

EUT	: Infrared Thermometer
Trade Mark	: Testacy
Test Model	: K3
Power Supply	: DC 5V

Highest internal frequency (Fx)	Highest measured frequency			
Fx ≤ 108 MHz	1 GHz			
108 MHz < Fx ≤ 500 MHz	2 GHz			
500 MHz < Fx ≤ 1 GHz	5 GHz			
Fx > 1 GHz	5 × Fx up to a maximum of 6 GHz			
NOTE 1 For FM and TV broadcast receivers	s, Fx is determined from the highest frequency			
generated or used excluding the local oscillator and tuned frequencies.				
NOTE 2 Fx is defined in EN 55032 Section 3.1.19.				
Where Fx is unknown, the radiated emission	measurements shall be performed up to 6 GHz			

3.2. Description of Test Facility

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.

3.3. 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.

3.4. Measurement Uncertainty

Test	Test Parameters		Expanded uncertainty (U _{cispr})	
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 2.63 dB ± 2.35 dB	± 3.8 dB ± 3.4 dB	
Power Disturbance	Level accuracy (30MHz to 300MHz)	\pm 2.90dB	\pm 4.5 dB	
Electromagnetic Radiated Emission (3-loop)	Level accuracy (9kHz to 30MHz)	\pm 3.60 dB	\pm 3.3 dB	
Radiated Emission	Radiated Emission Level accuracy (9kHz to 30MHz)		N/A	
Radiated Emission	Level accuracy (30MHz to 1000MHz)	\pm 3.48 dB	\pm 5.3 dB	
Radiated Emission Level accuracy (above 1000MHz)		\pm 3.90 dB	\pm 5.2 dB	
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%.

4. MEASURING DEVICES AND TEST EQUIPMENT

Tes	Test Item: Conducted Disturbance					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	
1	EMI Test Software	EZ	EZ-EMC	/	N/A	
2	EMI Test Receiver	R&S	ESPI	101840	2019-06-11	
3	Artificial Mains	R&S	ENV216	101288	2019-06-12	
4	10dB Attenuator	SCHWARZBECK	MTS-IMP-136	261115-001-0032	2019-06-11	
5	Impedance Stabilization Network	TESEQ	ISN T800	45130	2019-11-14	

Test Item: Radiated Disturbance (Electric Field)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Software	EZ	EZ-EMC	/	N/A
2	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2019-06-12
3	Positioning Controller	MF	MF-7082	/	2019-06-12
4	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2019-07-25
5	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2019-07-01
6	EMI Test Receiver	R&S	ESR 7	101181	2019-06-12
7	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2019-11-14
8	Broadband Preamplifier	/	BP-01M18G	P190501	2019-07-01
9	RF Cable-R03m	Jye Bao	RG142	CB021	2019-06-12
10	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2019-06-12

Test Item: Harmonic Current

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power Analyzer Test System	Voltech	PM6000	20000670053	2019-06-12

Test Item: Voltage fluctuation and Flicker

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power Analyzer Test System	Voltech	PM6000	20000670053	2019-06-12

Test Item: Electrostatic Discharge Item Equipment Manufacturer Model No. Serial No. Last Cal. 1 ESD Simulator SCHLODER SESD 230 604035 2019-06-13

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Test Item: RF Field Strength Susceptibility					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	RS Test Software	Tonscend	/	/	N/A
2	ESG Vector Signal Generator	Agilent	E4438C	MY42081396	2019-11-14
3	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2019-06-12
4	RF POWER AMPLIFIER	OPHIR	5225R	1052	NCR
5	RF POWER AMPLIFIER	OPHIR	5273F	1019	NCR
6	Stacked Broadband Log Periodic Antenna	SCHWARZBECK	STLP 9128	9128ES-145	NCR
7	Stacked Mikrowellen LogPer Antenna	SCHWARZBECK	STLP 9149	9149-484	NCR
8	Electric field probe	Narda S.TS./PMM	EP601	611WX80208	2020-03-24
Note:	NCR means no calibra	tion requirement		•	

Test Item: Electrical Fast Transient/Burst

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Immunity Simulative Generator	EMTEST	UCS500 M4	0101-34	2019-06-11

Test Item: Surge					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Immunity Simulative Generator	EM TEST	UCS 500 M4	0101-34	2019-06-11

Test Item: Conducted Susceptibility

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Simulator	FRANKONIA	CIT-10/75	A126A1195	2019-06-11
2	CDN	FRANKONIA	CDN-M2+M3	A2210177	2019-06-11
3	6dB Attenuator	FRANKONIA	DAM25W	1172040	2019-06-11
4	EM-Clamp	ZHINAN	ZN23203	14017	2019-06-11

Test Item: Power Frequency Magnetic Field Susceptibility

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power frequency mag-field generator System	EVERFINE	EMS61000-8K	906003	2019-06-11

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Report No.: LCS200327014AE

Test Item: Voltage Dips

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2019-06-11

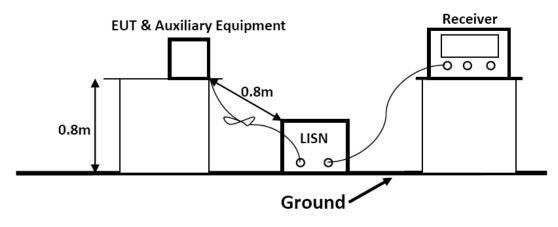
Test Item: Voltage Short Interruptions

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2019-06-11

5. TEST RESULTS

5.1. POWER LINE CONDUCTED EMISSION MEASUREMENT

5.1.1. Block Diagram of Test Setup



5.1.2. Test Standard

EN 55032: 2015 Class B

Power Line Conducted Emission Limits (Class B)				
Frequency	Limit (dBµV)			
(MHz)	Quasi-peak Level	Average Level		
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *		
0.50 ~ 5.00	56.0	46.0		
5.00 ~ 30.00	60.0	50.0		
NOTE1-The lower limit shall apply at the transition frequencies.				
NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to				
NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to				

0.50MHz.

5.1.3. EUT Configuration on Test

The following equipments are installed on Power Line Conducted Emission Measurement to meet the EN 55032 requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

5.1.4. Operating Condition of EUT

- 5.1.4.1.Setup the EUT as shown on Section 5.1.1
- 5.1.4.2.Turn on the power of all equipments.
- 5.1.4.3.Let the EUT work in measuring mode(1) and measure it.

5.1.5. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided 50-ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the EN 55032 regulations during conducted emission measurement.

The bandwidth of the field strength meter is set at 9kHz in 150kHz~30MHz. The frequency range from 150kHz to 30MHz is investigated.

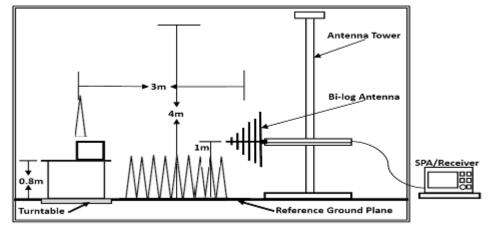
5.1.6. Test Results

PASS.

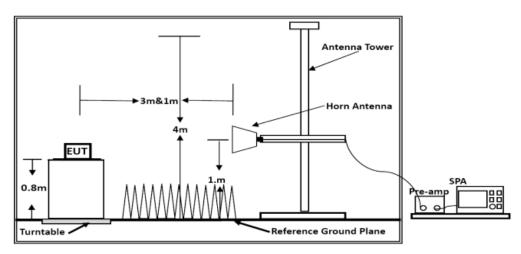
Refer to attached Annexe B.1

5.2. RADIATED EMISSION MEASUREMENT

5.2.1. Block Diagram of Test Setup



Below 1GHz



Above 1GHz

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5.2.2. Test Standard

EN 55032: 2015 Class B

All emanations from a class B device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

Limits for Radiated Emission Below 1GHz					
Frequency Distance Field Strengths Limit					
(MHz)	(Meters)	(dBµV/m)			
30 ~ 230	3	42-35			
230 ~ 1000	3	42			

***Note:

(1) The smaller limit shall apply at the combination point between two frequency bands.(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

Limits for Radiated Emission Above 1GHz				
Frequency	Distance	Peak Limit	Average Limit	
(MHz)	(Meters)	(dBµV/m)	(dBµV/m)	
1000 ~ 3000	3	70	50	
3000 ~ 6000	3	74	54	
***Note: The lower limit applies at the transition frequency				

***Note: The lower limit applies at the transition frequency.

5.2.3. EUT Configuration on Test

The EN 55032 regulations test method must be used to find the maximum emission during radiated emission measurement.

5.2.4. Operating Condition of EUT

5.2.4.1.Turn on the power.

5.2.4.2.Let the EUT work in the test mode(1) and measure it.

5.2.5. Test Procedure

The EUT is placed on a turntable, which is 0.8 meter high above the ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. By-log antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.

The bandwidth of the EMI test receiver is set at RBW/VBW=120kHz/300kHz.

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

The bandwidth of the Spectrum analyzer is set at RBW/VBW=1MHz/3MHz.

The frequency range from 1GHz to the frequency which about 5th carrier harmonic or 6GHz is checked.

5.2.6. Test Results

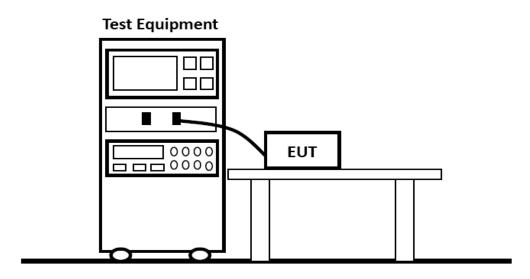
PASS.

Refer to attached Annexe B.2

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5.3. HARMONIC CURRENT EMISSION MEASUREMENT

5.3.1. Block Diagram of Test Setup



5.3.2. Test Standard

EN 61000-3-2: 2014

5.3.3. Operating Condition of EUT

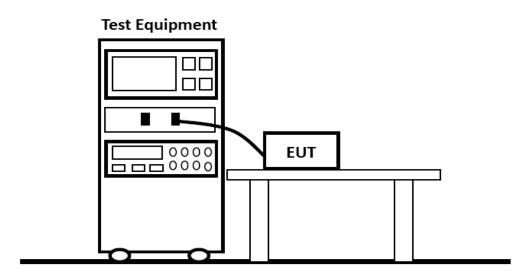
Same as Section 5.2.4, except the test setup replaced as Section 5.3.1.

5.3.4. Test Results

Refer to attached Annexe B.3

5.4. VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

5.4.1. Block Diagram of Test Setup



5.4.2. Test Standard

EN 61000-3-3: 2013

5.4.3. Operating Condition of EUT

Same as Section 5.2.4, except the test setup replaced as Section 5.4.1.

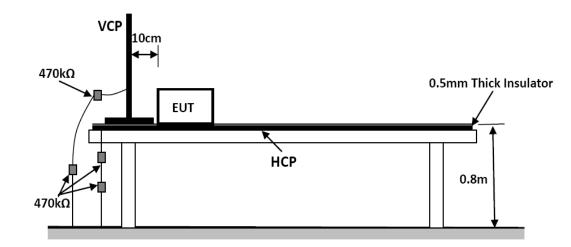
5.4.4. Test Results

PASS.

Refer to attached Annexe B.4

5.5. ELECTROSTATIC DISCHARGE IMMUNITY TEST

5.5.1. Block Diagram of Test Setup



5.5.2. Test Standard

EN 55035: 2017 (EN 61000-4-2: 2009, Severity Level: 3 / Air Discharge: ±8KV, Level: 2 / Contact Discharge: ±4KV)

5.5.3. Severity Levels and Performance Criterion

5.5.3.1.	Severity	level
0.0.0.1.	Coverity	10101

L evel	Test Voltage	Test Voltage
Level	Contact Discharge (KV)	Air Discharge (KV)
1	±2	±2
2	±4	±4
3	±6	±8
4	±8	±15
Х	Special	Special

5.5.3.2. Performance Criterion Performance Criterion: B

5.5.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.5.1.

5.5.5. Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section 5.1.4. Except the test set up replaced by Section 5.5.1.

5.5.6. Test Procedure

5.2.6.1. Air Discharge

This test is done on a non-conductive surfaces. The round discharge tip of the Electrostatic Discharge simulator shall be approached as fast as possible then to touch the EUT. After each discharge, the simulator shall be removed from the EUT. The simulator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

5.2.6.2. Contact Discharge

All the procedure shall be same as air discharge, except using the acute discharge tip. The top end of the Electrostatic Discharge simulator is touch the EUT all the time when the simulator is re-triggered for a new single discharge and repeated 10 times for each pre-selected test point.

5.2.6.3. Indirect Discharge For Horizontal Coupling Plane

The vertical coupling plane(VCP) is placed 0.1m away from EUT. The top end of Electrostatic Discharge simulator should aim at the center of one border of the VCP for at least 25 times discharge.

5.2.6.4. Indirect Discharge For Vertical Coupling Plane

The top end of Electrostatic Discharge simulator should place at the point 0.1m away from EUT on the horizontal coupling plane(HCP). At least 25 times discharge should be done for every pre-selected point around EUT.

Record any performance degradation of the EUT during the test and judge the test result according to ce criterion.

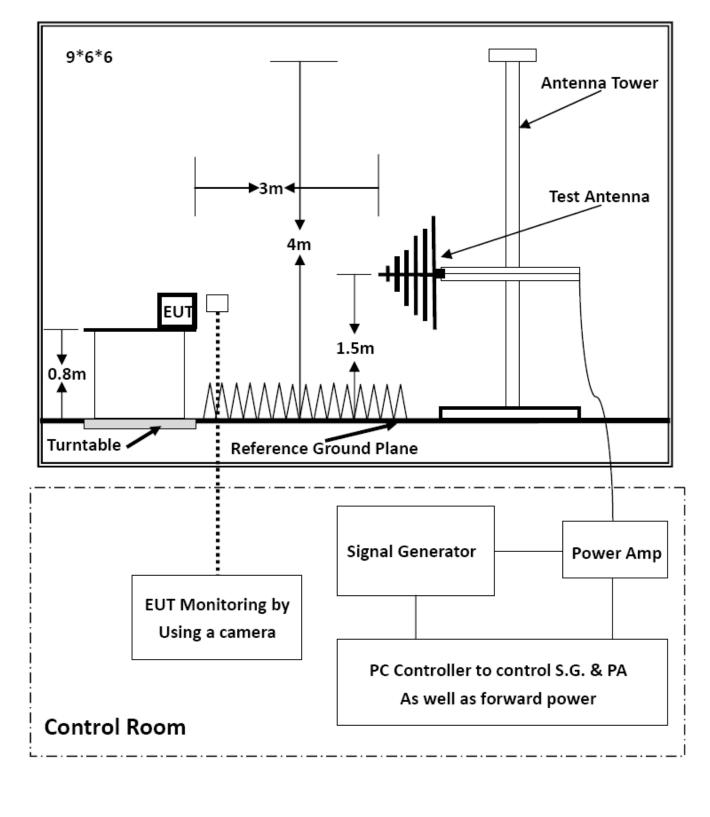
5.5.7. Test Results

PASS.

Refer to attached Annexe B.5

5.6. RF FIELD STRENGTH SUSCEPTIBILITY TEST

5.6.1. Block Diagram of Test Setup



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5.6.2. Test Standard

EN 55035: 2017 (EN 61000-4-3: 2006+A2: 2010 Severity Level: 2, 3V/m)

5.6.3. Severity Levels and Performance Criterion

5.6.3.1.	Severity	level
01010111	0010111	

Level	Field Strength (V/m)
1	1
2	3
3	10
X	1

5.6.3.2. Performance Criterion Performance Criterion: A

5.6.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.6.1.

5.6.5. Operating Condition of EUT

Same as radiated emission measurement, which is listed in Section 5.2..4, except the test setup replaced as Section 5.6.1.

5.6.6. Test Procedure

The EUT are placed on a table, which is 0.8 meter high above the ground. The EUT is set 3 meters away from the transmitting antenna, which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna is set on test. Each of the four sides of the EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD Recording is used to monitor its screen. All the scanning conditions are as following:

Condition of Test	Remark
Fielded Strength	3 V/m (Severity Level 2)
Radiated Signal	Unmodulated
Test Frequency Range (swept test)	80-1000MHz
Test Frequency (spot test)	1800MHz, 2600MHz, 3500MHz, 5000MHz
Dwell time of radiated	0.0015 decade/s
Waiting Time	3 Sec.

5.6.7. Test Results

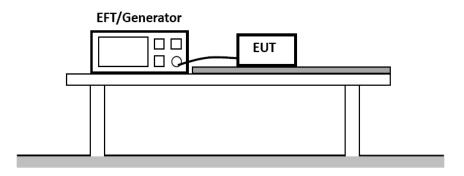
PASS.

Refer to attached Annexe B.6

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5.7. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

5.7.1. Block Diagram of Test Setup



5.7.2. Test Standard

EN 55035: 2017 (EN 61000-4-4: 2012, Severity Level, Level 2: 1KV)

5.7.3. Severity Levels and Performance Criterion

5.7.3.1. Severity level

Open Circuit Output Test Voltage ±10%		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1	0.5 KV	0.25 KV
2	1 KV	0.5 KV
3	2 KV	1 KV
4	4 KV	2 KV
Х	Special	Special

5.7.3.2. Performance Criterion

Performance Criterion: B

5.7.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.7.1.

5.7.5. Operating Condition of EUT

- 5.7.5.1. Setup the EUT as shown in Section 5.7.1.
- 5.7.5.2. Turn on the power of all equipments.
- 5.7.5.3. Let the EUT work in test mode(1) and measure it.

5.7.6. Test Procedure

The EUT is put on the table, which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

5.7.6.1. For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device, which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 1 mins.

5.7.6.2. For signal lines and control lines ports: It's unnecessary to test.

5.7.6.3. For DC output line ports: It's unnecessary to test.

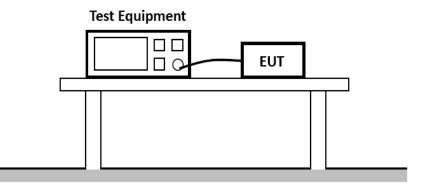
5.7.7. Test Results

PASS.

Refer to attached Annexe B.7

5.8. SURGE IMMUNITY TEST

5.8.1. Block Diagram of Test Setup



5.8.2. Test Standard

EN 55035: 2017 (EN 61000-4-5: 2014+A1: 2017, Severity Level: Line to Line: Level 2, 1.0KV, Line to Earth: Level 3, 2.0KV)

5.8.3. Severity Levels and Performance Criterion

5.8.3.1. Severity leve

Severity Level	Open-Circuit Test Voltage (KV)	
1	0.5	
2	1.0	
3	2.0	
4	4.0	
*	Special	

5.8.3.2. Performance Criterion Performance Criterion: B

5.8.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.8.1.

5.8.5. Operating Condition of EUT

- 5.8.5.1. Setup the EUT as shown in Section 5.8.1.
- 5.8.5.1.Turn on the power of all equipments.
- 5.8.5.1.Let the EUT work in test mode (1) and measure it.

5.8.6. Test Procedure

5.8.6.1. Set up the EUT and test generator as shown on Section 5.8.1.

5.8.6.2. For line to line coupling mode, provide a 1.0 KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.

5.8.6.3. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.

5.8.6.4. Different phase angles are done individually.

5.8.6.5. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

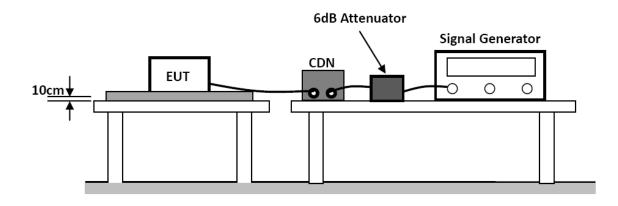
5.8.7. Test Results

PASS.

Refer to attached Annexe B.8

5.9. INJECTED CURRENTS SUSCEPTIBILITY TEST

5.9.1. Block Diagram of Test Setup



5.9.2. Test Standard

EN 55035: 2017(EN 61000-4-6: 2014, Severity Level: Level 2, (0.15MHz ~ 80MHz))

5.9.3. Severity Levels and Performance Criterion

Level	Field Strength (V)
1	1
2	3
3	10
X	Special

5.9.3.2. Performance Criterion Performance Criterion: A

5.9.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.9.1.

5.9.5. Operating Condition of EUT

- 5.9.5.1.Setup the EUT as shown in Section 5.9.1.
- 5.9.5.2.Turn on the power of all equipments.
- 5.9.5.3.Let the EUT work in test mode(1) and measure it.

5.9.6. Test Procedure

5.9.6.1. Set up the EUT, CDN and test generators as shown on Section 5.9.1.

5.9.6.2. Let the EUT work in test mode and measure it.

5.9.6.3. The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).

5.9.6.4. The disturbance signal described below is injected to EUT through CDN. 5.9.6.5. The EUT operates within its operational mode(s) under intended climatic conditions after power on.

5.9.6.6. The frequency range is swept from 150kHz to 10MHz using 3V signal level,10MHz to 30MHz using 3V to 1V signal level,30MHz to 80MHz using 1V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave. 5.9.6.7. The rate of sweep shall not exceed 1.5*10-3decades/s. where the frequency is swept incrementally; the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

5.9.6.8. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

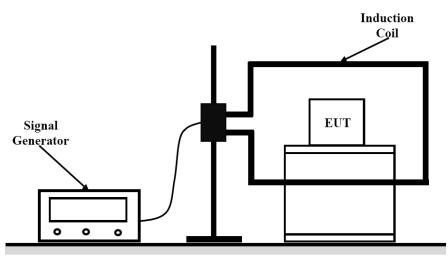
5.9.7. Test Results

PASS.

Refer to attached Annexe B.9

5.10. MAGNETIC FIELD SUSCEPTIBILITY TEST

5.10.1. Block Diagram of Test Setup



5.10.2. Test Standard

EN 55035: 2017 (EN 61000-4-8: 2010, Severity Level: Level 1, 1A/m)

5.10.3. Severity Levels and Performance Criterion

5.10.3.1.	Severity	level
-----------	----------	-------

Level	Field Strength (A/m)
1	1
2	3
3	10
4	30
5	100
X	Special

5.10.3.2. Performance Criterion Performance Criterion: A

5.10.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.10.1.

5.10.5. Test Procedure

EUT is placed on an insulating support of 0.1m high above a table of 0.8m high. There is a minimum 1m*1m ground metallic plane put on this table. EUT is put in the center of the magnetic coil then two orientations of the magnetic coil, horizontal and vertical, shall be rotated in order to expose the EUT to the difference polarization magnetic field. Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

5.10.6. Test Results

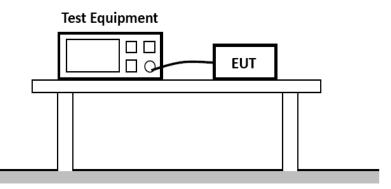
PASS. Refer to attached Annexe B.10

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Report No.: LCS200327014AE

5.11. VOLTAGE DIPS AND INTERRUPTIONS TEST

5.11.1. Block Diagram of Test Setup



5.11.2. Test Standard

EN 55035: 2017 (EN 61000-4-11: 2004+A1: 2017)

5.11.3. Severity Levels and Performance Criterion

5.11.3.1. Severity level

	Test Level	
Voltage Reduction	Voltage Dips	Duration
%U_T	%U _T	(in Period)
100	0	0.5
100	0	1
30	70	5
Voltage Reduction	Voltage Dips	Duration
%U_T	%Uт	(in Period)
100	0	250

5.11.3.2. Performance Criterion Performance Criterion: B&C

5.11.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.11.1.

5.11.5. Operating Condition of EUT

5.11.5.1. Setup the EUT as shown in Section 5.11.1.

5.11.5.2. Turn on the power of all equipments.

5.11.5.3. Let the EUT work in test mode (1) and measure it.

5.11.6. Test Procedure

5.11.6.1. Set up the EUT and test generator as shown on Section 5.11.1.

5.11.6.2. The interruptions are introduced at selected phase angles with specified duration.

5.11.6.3. Record any degradation of performance.

5.11.7. Test Results

PASS.

Refer to attached Annexe B.11

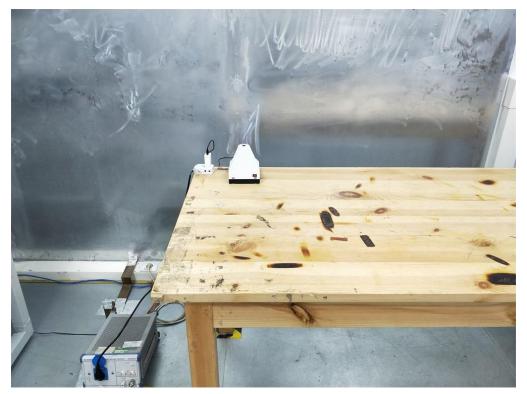
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Report No.: LCS200327014AE

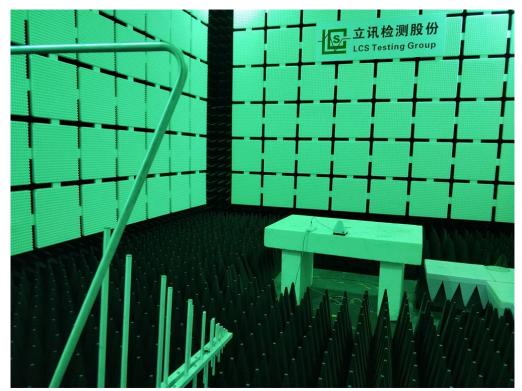
Annexe A

(Test photograph)

A.1 Test Setup Photo of Power Line Conducted Measurement



A.2 Test Setup Photo of Radiated Measurement (30MHz~1GHz)



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A.3 Test Setup Photo of Harmonic & Flicker Measurement

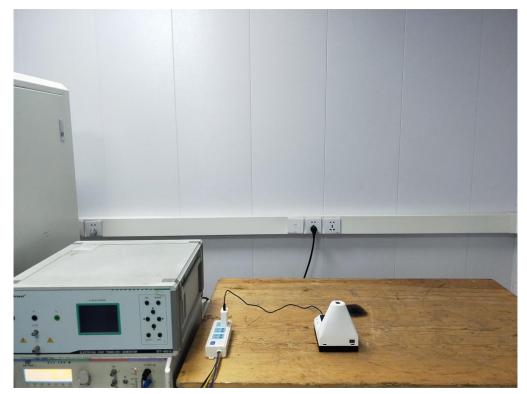


A.4 Test Setup Photo of Electrostatic Discharge Test

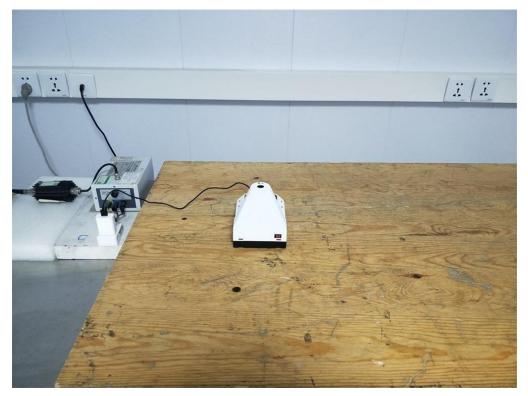


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A.5 Photo of Electrical Fast Transient/Burst Test & Surge Immunity Test



A.6 Test Setup Photo of Injected Currents Susceptibility Test

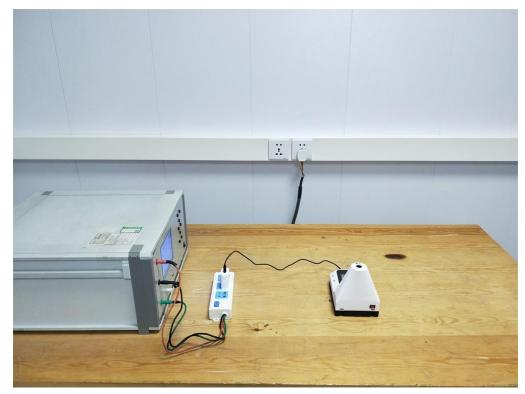


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A.7 Test Setup Photo of Magnetic Field Immunity Test

A.8 Test Setup Photo of Voltage Dips and Interruptions Test



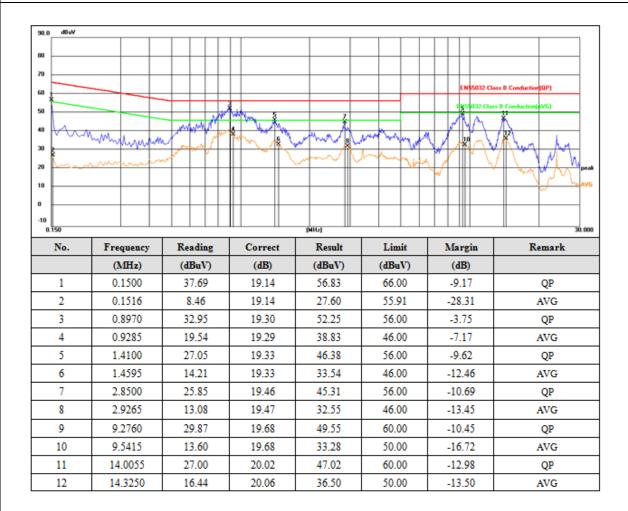
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ANNEXE B

(Emission and Immunity test results)

B.1 POWER LINE CONDUCTED EMISSION MEASUREMENT

Environmental Conditions:	22.8°C, 54.1% RH
Test Voltage:	AC 230V,50Hz
Test Model:	К3
Test Mode:	Mode 1
Test Engineer:	Jay Li
Pol:	Line
Detailed results are shown below	



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nvironmen	ital Condition	ns: 22.8	3℃, 54.1%	RH			
est Voltage							
est Model:		K3					
est Mode:		Moc	de 1				
est Engine	er:	Jay	Li				
ol:		Neu					
-	ults are sho						
90.0 dBvV							
80							
70							
60						EN\$5032 C	lass 8 Conduction(QP)
50						EN55032 Cla	as B Conduction(eVG)
40		AND	M when	m		MM	-Å
30	monton	M nem /	Mr. A	want h	New March		Villan m
20	mul				my		/ / / peak
	mile				my		Peak NVG
20	mile						AVG
20 10 10	- Andrewski - A - Andrewski - A - Andrewski - A						AVG
20	Frequency	Reading	Correct	(HHz) Result	Limit	Margin	30.000 Remark
20 10 0 -10 0.150	Frequency (MHz)	Reading (dBuV)	Correct (dB)		Limit (dBuV)	Margin (dB)	
20 10 0 -10 0.150				Result			
20 10 0 -10 0.150 No.	(MHz)	(dBuV)	(dB)	Result (dBuV)	(dBuV)	(dB)	Remark
20 10 0 -10 0.150 No.	(MHz) 0.5955	(dBuV) 27.16	(dB) 19.18	Result (dBuV) 46.34	(dBuV) 56.00	(dB) -9.66	Remark QP
20 10 0 10 0,150 No. 1 2	(MHz) 0.5955 0.6090	(dBuV) 27.16 12.49	(dB) 19.18 19.19	Result (dBuV) 46.34 31.68	(dBuV) 56.00 46.00	(dB) -9.66 -14.32	Remark QP AVG
20 10 0 10 0.150 No. 1 2 3	(MHz) 0.5955 0.6090 0.8790	(dBuV) 27.16 12.49 32.87	(dB) 19.18 19.19 19.29	Result (dBuV) 46.34 31.68 52.16	(dBuV) 56.00 46.00 56.00	(dB) -9.66 -14.32 -3.84	Remark QP AVG QP
20 10 0 -10 0,150 No. 1 2 3 4	(MHz) 0.5955 0.6090 0.8790 0.8880	(dBuV) 27.16 12.49 32.87 22.30	(dB) 19.18 19.19 19.29 19.29	Result (dBuV) 46.34 31.68 52.16 41.59	(dBuV) 56.00 46.00 56.00 46.00	(dB) -9.66 -14.32 -3.84 -4.41	Remark QP AVG QP AVG
20 10 0 10 0.150 No. 1 2 3 4 5	(MHz) 0.5955 0.6090 0.8790 0.8880 1.4325	(dBuV) 27.16 12.49 32.87 22.30 26.70	(dB) 19.18 19.19 19.29 19.29 19.32	Result (dBuV) 46.34 31.68 52.16 41.59 46.02	(dBuV) 56.00 46.00 56.00 46.00 56.00	(dB) -9.66 -14.32 -3.84 -4.41 -9.98	Remark QP AVG QP AVG QP QP
20 10 0 10 0.150 No. 1 2 3 4 5 6	(MHz) 0.5955 0.6090 0.8790 0.8880 1.4325 1.4640	(dBuV) 27.16 12.49 32.87 22.30 26.70 13.90	(dB) 19.18 19.19 19.29 19.29 19.32 19.32	Result (dBuV) 46.34 31.68 52.16 41.59 46.02 33.22	(dBuV) 56.00 46.00 56.00 46.00 56.00 46.00	(dB) -9.66 -14.32 -3.84 -4.41 -9.98 -12.78	Remark QP AVG QP AVG QP AVG
20 10 0 10 0 10 0 150 No. 1 2 3 4 5 6 7	(MIHz) 0.5955 0.6090 0.8790 0.8880 1.4325 1.4640 9.3480	(dBuV) 27.16 12.49 32.87 22.30 26.70 13.90 29.07	(dB) 19.18 19.19 19.29 19.29 19.32 19.32 19.32	Result (dBuV) 46.34 31.68 52.16 41.59 46.02 33.22 48.74	(dBuV) 56.00 46.00 56.00 46.00 56.00 46.00 60.00	(dB) -9.66 -14.32 -3.84 -4.41 -9.98 -12.78 -11.26	Remark QP AVG QP AVG QP AVG QP AVG
20 10 0 10 0,150 No. 1 2 3 4 5 6 7 8	(MHz) 0.5955 0.6090 0.8790 0.8880 1.4325 1.4640 9.3480 9.6180	(dBuV) 27.16 12.49 32.87 22.30 26.70 13.90 29.07 12.20	(dB) 19.18 19.19 19.29 19.29 19.32 19.32 19.67 19.67	Result (dBuV) 46.34 31.68 52.16 41.59 46.02 33.22 48.74 31.87	(dBuV) 56.00 46.00 56.00 46.00 56.00 46.00 60.00 50.00	(dB) -9.66 -14.32 -3.84 -4.41 -9.98 -12.78 -11.26 -18.13	Remark QP AVG QP AVG QP AVG QP AVG QP AVG QP AVG QP
20 10 0 10 0.150 No. 1 2 3 4 5 6 7 8 9	(MHz) 0.5955 0.6090 0.8790 0.8880 1.4325 1.4640 9.3480 9.6180 10.7430	(dBuV) 27.16 12.49 32.87 22.30 26.70 13.90 29.07 12.20 27.14	(dB) 19.18 19.19 19.29 19.29 19.32 19.32 19.67 19.67 19.76	Result (dBuV) 46.34 31.68 52.16 41.59 46.02 33.22 48.74 31.87 46.90	(dBuV) 56.00 46.00 56.00 46.00 56.00 46.00 60.00 50.00 60.00	(dB) -9.66 -14.32 -3.84 -4.41 -9.98 -12.78 -11.26 -18.13 -13.10	Remark QP AVG QP AVG QP AVG QP AVG QP AVG QP QP

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Report No.: LCS200327014AE

Enviror	nmenta	Condition	ns: 22.8	℃, 54.1%	KH			
Test Vo	oltage:		AC 1	120V/60Hz	Z			
Test M	lodel:		K3					
Test M	lode:		Mod	e 1				
Test Er	ngineer	:	Jay	Li				
Pol:	0		Line					
Detaile	d resul	ts are show						
90.0	with o							
80								
70								
60							EN55032 CA	ass 8 Conduction[0P]
50			1	2			ENSI032 Cla	es 8 Conduction(#V6)
40			MAR 1	Mr. Jun		when	mil	Λ
	-www.			- U3 - UN \				
30		man	MI WANT		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	10		
30 20		man	and the second s					AMA
		Manala				-		
20		M						
29 10 0 -10		······································						
29 10 0 -10	a. 150		Reading	Correct	(Hiz)		Margin	Remark
29 10 0 -10		Frequency	Reading	Correct	Result	Limit	Margin	30.000 Remark
20 10 0 -10	a. 150	Frequency (AfHz)	(dBuV)	(dB)			(dB)	Remark
20 10 0 -10	a.150 No.	Frequency			Result (dBuV)	Limit (dBuV)		
20 10 0 -10	No.	Frequency (MIHz) 0.6630	(dBuV) 30.71	(dB) 19.25	Result (dBuV) 49.96	Limit (dBuV) 56.00	(dB) -6.04	Remark QP
29 10 0 -10	No.	Frequency (MIHz) 0.6630 0.6720	(dBuV) 30.71 19.30	(dB) 19.25 19.26	Result (dBuV) 49.96 38.56	Limit (dBuV) 56.00 46.00	(dB) -6.04 -7.44	Remark QP AVG
20 10 0 -10	No.	Frequency (MHz) 0.6630 0.6720 1.0230	(dBuV) 30.71 19.30 32.68	(dB) 19.25 19.26 19.26	Result (dBuV) 49.96 38.56 51.94	Limit (dBuV) 56.00 46.00 56.00	(dB) -6.04 -7.44 -4.06	Remark QP AVG QP
29 10 0 -10	1 2 3 4	Frequency (MHz) 0.6630 0.6720 1.0230 1.0500	(dBuV) 30.71 19.30 32.68 17.89	(dB) 19.25 19.26 19.26 19.27	Result (dBuV) 49.96 38.56 51.94 37.16	Limit (dBuV) 56.00 46.00 56.00 46.00	(dB) -6.04 -7.44 -4.06 -8.84	Remark QP AVG QP AVG
20 10 0 -10	No. 1 2 3 4 5	Frequency (MHz) 0.6630 0.6720 1.0230 1.0500 1.3875	(dBuV) 30.71 19.30 32.68 17.89 27.04	(dB) 19.25 19.26 19.26 19.27 19.32	Result (dBuV) 49.96 38.56 51.94 37.16 46.36	Limit (dBuV) 56.00 46.00 56.00 46.00 56.00	(dB) -6.04 -7.44 -4.06 -8.84 -9.64	Remark QP AVG QP AVG QP
29 10 0 -10	n 150 No. 1 2 3 4 5 6	Frequency (MHz) 0.6630 0.6720 1.0230 1.0500 1.3875 1.4280	(dBuV) 30.71 19.30 32.68 17.89 27.04 16.93	(dB) 19.25 19.26 19.26 19.27 19.32 19.33	Result (dBuV) 49.96 38.56 51.94 37.16 46.36 36.26	Limit (dBuV) 56.00 46.00 56.00 46.00 56.00 46.00	(dB) -6.04 -7.44 -4.06 -8.84 -9.64 -9.74	Remark QP AVG QP AVG QP AVG
29 10 0 -10	1 2 3 4 5 6 7	Frequency (MHz) 0.6630 0.6720 1.0230 1.0500 1.3875 1.4280 2.9175	(dBuV) 30.71 19.30 32.68 17.89 27.04 16.93 25.18	(dB) 19.25 19.26 19.26 19.27 19.32 19.33 19.47	Result (dBuV) 49.96 38.56 51.94 37.16 46.36 36.26 44.65	Limit (dBuV) 56.00 46.00 56.00 46.00 56.00 46.00 56.00	(dB) -6.04 -7.44 -4.06 -8.84 -9.64 -9.74 -11.35	Remark QP AVG QP AVG QP AVG QP AVG QP QP
29 10 0 -10	No. 1 2 3 4 5 6 7 8	Frequency (MHz) 0.6630 0.6720 1.0230 1.0500 1.3875 1.4280 2.9175 3.0255	(dBuV) 30.71 19.30 32.68 17.89 27.04 16.93 25.18 13.26	(dB) 19.25 19.26 19.26 19.27 19.32 19.33 19.47 19.47	Result (dBuV) 49.96 38.56 51.94 37.16 46.36 36.26 44.65 32.73	Limit (dBuV) 56.00 46.00 56.00 46.00 56.00 46.00 56.00 46.00	(dB) -6.04 -7.44 -4.06 -8.84 -9.64 -9.74 -11.35 -13.27	Remark QP AVG QP AVG QP AVG QP AVG QP AVG QP AVG QP
29 10 0 -10	No. 1 2 3 4 5 6 7 8 9	Frequency (MHz) 0.6630 0.6720 1.0230 1.0500 1.3875 1.4280 2.9175 3.0255 3.9885	(dBuV) 30.71 19.30 32.68 17.89 27.04 16.93 25.18 13.26 26.01	(dB) 19.25 19.26 19.26 19.27 19.32 19.33 19.47 19.47 19.47	Result (dBuV) 49.96 38.56 51.94 37.16 46.36 36.26 44.65 32.73 45.48	Limit (dBuV) 56.00 46.00 56.00 46.00 56.00 46.00 56.00 46.00 56.00	(dB) -6.04 -7.44 -4.06 -8.84 -9.64 -9.74 -11.35 -13.27 -10.52	Remark QP AVG QP AVG QP AVG QP AVG QP AVG QP QP

	ronmenta	al Conditior	ns: 22.8	°C, 54.1%	RH			
Test	Voltage:			120V/60Hz				
Test	Model:		K3					
Test	Mode:		Mod	e 1				
Test	Enginee	er:	Jay	Li				
Pol:	5		Neut					
	ailed resu	Its are show						
Г	W/8b 0.00							
	80							
	70						EN\$5032 Ck	ass B Conduction[QP]
	60			2			EN55032_Cia	a B ConductionIAVG)
	50		MAN 21	man Luna	ž		MIM	Δ
	40 2000	Manun	willing	the law	JANA N	10	N N	
	30		1 V	$H \rightarrow h$	m			
	20	mante			v~		<u>√//* </u> ∨	Peak Peak
							r	
	10						<u></u>	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	0							~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
					(MHz)			30.000
	0 -10	Frequency	Reading	Correct	(MHz) Result	Limit	Margin	30.000 Remark
	0 -10 0.150	Frequency (MHz)	Reading (dBuV)	Correct (dB)		Limit (dBuV)	Margin (dB)	
	0 -10 0.150		-		Result			
-	0 -10 0.150 No.	(MHz)	(dBuV)	(dB)	Result (dBuV)	(dBuV)	(dB)	Remark
-	0 -10 0.150 No.	(MIHz) 0.6630	(dBuV) 33.20	(dB) 19.24	Result (dBuV) 52.44	(dBuV) 56.00	(dB) -3.56	Remark QP
-	0 -10 0.150 No.	(MHz) 0.6630 0.6765	(dBuV) 33.20 20.37	(dB) 19.24 19.25	Result (dBuV) 52.44 39.62	(dBuV) 56.00 46.00	(dB) -3.56 -6.38	Remark QP AVG
-	0 -10 0.150 No. 1 2 3	(MHz) 0.6630 0.6765 1.0005	(dBuV) 33.20 20.37 31.51 18.93 27.79	(dB) 19.24 19.25 19.25	Result (dBuV) 52.44 39.62 50.76	(dBuV) 56.00 46.00 56.00	(dB) -3.56 -6.38 -5.24	Remark QP AVG QP
-	0 -10 0.150 No. 1 2 3 4	(MHz) 0.6630 0.6765 1.0005 1.0410	(dBuV) 33.20 20.37 31.51 18.93	(dB) 19.24 19.25 19.25 19.26	Result (dBuV) 52.44 39.62 50.76 38.19	(dBuV) 56.00 46.00 56.00 46.00	(dB) -3.56 -6.38 -5.24 -7.81	Remark QP AVG QP AVG
-	0 -10 0.150 No. 1 2 3 4 5	(MHz) 0.6630 0.6765 1.0005 1.0410 1.4100	(dBuV) 33.20 20.37 31.51 18.93 27.79	(dB) 19.24 19.25 19.25 19.26 19.32	Result (dBuV) 52.44 39.62 50.76 38.19 47.11	(dBuV) 56.00 46.00 56.00 46.00 56.00	(dB) -3.56 -6.38 -5.24 -7.81 -8.89	Remark QP AVG QP AVG QP
-	0 -10 0.150 No. 1 2 3 4 5 6	(MHz) 0.6630 0.6765 1.0005 1.0410 1.4100 1.4775	(dBuV) 33.20 20.37 31.51 18.93 27.79 15.65	(dB) 19.24 19.25 19.25 19.26 19.32 19.33	Result (dBuV) 52.44 39.62 50.76 38.19 47.11 34.98	(dBuV) 56.00 46.00 56.00 46.00 56.00 46.00	(dB) -3.56 -6.38 -5.24 -7.81 -8.89 -11.02	Remark QP AVG QP AVG QP AVG
-	0 -10 0.150 No. 1 2 3 4 5 6 7	(MHz) 0.6630 0.6765 1.0005 1.0410 1.4100 1.4775 2.8635	(dBuV) 33.20 20.37 31.51 18.93 27.79 15.65 24.55	(dB) 19.24 19.25 19.25 19.26 19.32 19.33 19.45	Result (dBuV) 52.44 39.62 50.76 38.19 47.11 34.98 44.00	(dBuV) 56.00 46.00 56.00 46.00 56.00 46.00 56.00	(dB) -3.56 -6.38 -5.24 -7.81 -8.89 -11.02 -12.00	Remark QP AVG QP AVG QP AVG QP
-	0 -10 0.150 No. 1 2 3 4 5 6 7 7 8	(MHz) 0.6630 0.6765 1.0005 1.0410 1.4100 1.4775 2.8635 2.9670	(dBuV) 33.20 20.37 31.51 18.93 27.79 15.65 24.55 13.35	(dB) 19.24 19.25 19.25 19.26 19.32 19.33 19.45 19.46	Result (dBuV) 52.44 39.62 50.76 38.19 47.11 34.98 44.00 32.81	(dBuV) 56.00 46.00 56.00 46.00 56.00 46.00 56.00 46.00	(dB) -3.56 -6.38 -5.24 -7.81 -8.89 -11.02 -12.00 -13.19	Remark QP AVG QP AVG QP AVG QP AVG
-	0 -10 0.150 No. 1 2 3 4 5 6 7 8 9	(MHz) 0.6630 0.6765 1.0005 1.0410 1.4100 1.4775 2.8635 2.9670 4.1415	(dBuV) 33.20 20.37 31.51 18.93 27.79 15.65 24.55 13.35 26.85	(dB) 19.24 19.25 19.25 19.26 19.32 19.33 19.45 19.46 19.46	Result (dBuV) 52.44 39.62 50.76 38.19 47.11 34.98 44.00 32.81 46.31	(dBuV) 56.00 46.00 56.00 46.00 56.00 46.00 56.00 46.00 56.00	(dB) -3.56 -6.38 -5.24 -7.81 -8.89 -11.02 -12.00 -13.19 -9.69	Remark QP AVG QP AVG QP AVG QP AVG QP AVG QP AVG QP QP AVG QP AVG QP

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B.2 Radiated Disturbance Test Results (30MHz to 1000MHz)

/oltag /lodel	ie:						
) -	AC 23	30V,50Hz				
viouei	:	K3					
Node:		Mode	1				
Engin	eer:	Jay Li	i				
		Vertic	al				
ed re	sults are shov	vn below					
80.0 dlw	/m						
70							
60							
50						N55032 RE-Claude_30-100	OMIKe
40						Hag	
20				* *		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	mont
10	×		2		Mundersonalis	hereter	
	NUMBER OF STREET	man	and the state of t	north			
30.000	60			(MHz)	~	~	1000.0
No.		_					Det.
							QP QP
-							QP QP
-							QP QP
							QP
6							QP
	ed re	ed results are show	Vertice ed results are shown below a a b c c c c c c c c c c c c	Vertical ed results are shown below additional and a stress of the stress o	Vertical ed results are shown below and any and any and any and any	Vertical ed results are shown below additional and a stress of the stress o	Vertical ed results are shown below ed results are shown belo

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Environme	ntal Condition	s: 24.6°	C, 54.1% F	RH				
Test Voltag	je:	AC 23	AC 230V,50Hz					
Test Mode	1:	K3						
Test Mode		Mode	1					
Test Engin	eer:	Jay L	İ					
Pol:		Horizo	ontal					
Detailed re	sults are shov	vn below						
80.0 48-0	/m							
70								
60								
50								
40						CN55032 PE-Class8_30-100	DMHz	
40						Harp	44	
30								
20				3	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	1	Mush	
		ont. It l		Www W	Mulman	maketerston		
10	and Marchan	Wwww	Mar margareter	miller				
-10								
-20								
300.000	cò cò	100		(MHz)		00	1000.0	
No.	Frequency	Reading	Factor	Level	Limit	Margin	Det.	
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)		
1	70.8315	37.20	-20.63	16.57	39.05	-22.48	QP	
2	84.9995	38.88	-21.11	17.77	38.42	-20.65	QP	
3	213.7634	38.90	-17.81	21.09	35.25	-14.16	QP	
4	257.4222	41.32	-16.49	24.83	42.00	-17.17	QP	
5	292.0583	37.77	-15.83	21.94	42.00	-20.06	QP	
6	441.7426	36.03	-12.53	23.50	42.00	-18.50	QP	

B.3 HARMONIC CURRENT EMISSION MEASUREMENT

Pass

Because the power of EUT is less than 75W, according to standard EN 61000-3-2, harmonic current unnecessary to test.

B.4 VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

Test Model		K3		Te	st Engineer	Jay	/ Li
Test Voltage		AC 230V/50H	Ηz				
Overall Result: PASS	Note Mea	es: surement method	- Voltage				
		Pst	dc (%)		dmax (%)		Tmax(> 3.3%)(ms)
Limit		1.000	3.300		4.000		500
Reading 1		0.089	0.005		0.191		0

B.5 ELECTROSTATIC DISCHARGE IMMUNITY TEST

Electrostatic Discharge Test Results								
Standard	□ IEC 61000-4-2 ☑ EN 61000-	4-2						
Applicant	Shenzhen Qiangwei Electronic Co.,	Ltd						
EUT	Infrared Thermometer	Temperature	24.4 ℃					
M/N	КЗ	Humidity	52.3%					
Criterion	Criterion B Pressure 1021mbar							
Test Mode	Mode 1	Test Engineer	Jay Li					

-		Ai	r Discharge)		
		Test Levels			Resul	ts
Test Points	± 2kV	± 4kV	± 8kV	Passed	Fail	Performance Criterion
Front	\square					A B
Back						A B
Left						A B
Right	\boxtimes	\boxtimes				□A ⊠B
Тор	\boxtimes	\square				□A ⊠B
Bottom	\boxtimes	\boxtimes	\square			□A ⊠B
			act Discha	ge		
		Test Levels			Resul	
Test Points	± 2 kV		±4 kV	Passed	Fail	Performance Criterion
Front	\boxtimes		\boxtimes	\square		□A ⊠B
Back	\boxtimes		\boxtimes	\square		□A ⊠B
Left	\boxtimes		\boxtimes	\square		□A ⊠B
Right	\boxtimes		\boxtimes	\square		□A ⊠B
Тор	\boxtimes		\boxtimes	\square		□A ⊠B
Bottom	\square		\boxtimes			□A ⊠B
	Disc	harge To H	orizontal C	oupling Pla	ne	
		Test Levels			Resul	
Side of EUT	± 2 kV		± 4 kV	Passed	Fail	Performance Criterion
Front	\boxtimes		\boxtimes	\square		□A ⊠B
Back	\boxtimes		\boxtimes	\square		□A ⊠B
Left	\boxtimes		\boxtimes	\square		□A ⊠B
Right	\boxtimes		\boxtimes	\square		A 🛛 B
	Dis	-	Vertical Co	upling Plan		
		Test Levels			Resul	
Side of EUT	± 2 kV		± 4 kV	Passed	Fail	Performance Criterion
Front						A B
Back	\square					□A ⊠B
Left						□A ⊠B
Right	\boxtimes		\boxtimes	\square		□A ⊠B

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B.6 RF FIELD STRENGTH SUSCEPTIBILITY TEST

RF Field Strength Susceptibility Test Results							
Standard	□ IEC 61000-4-3 ☑ EN 61000-	-4-3					
Applicant	Shenzhen Qiangwei Electronic Co.	, Ltd					
EUT	Infrared Thermometer	Temperature	23.2 ℃				
M/N	КЗ	Humidity	53.1%				
Field Strength	3 V/m	Criterion	А				
Test Mode	Mode 1	Test Engineer	Jay Li				
Test Frequency	80MHz to 1000MHz (swept test)						
Modulation	□None □ Pulse	☑AM 1KHz 80%)				
Steps	1%						

	Horizontal	Vertical
Front	PASS	PASS
Right	PASS	PASS
Rear	PASS	PASS
Left	PASS	PASS

Test Equipment:

1. Signal Generator: 2031 (MARCONI)

2. Power Amplifier: 500A100 & 100W/1000M1 (A&R)

3. Power Antenna: 3108 (EMCO) & AT1080 (A&R)

4. Field Monitor: FM2000 (A&R)

Note:

B.7 ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

Electrical Fast Transient/Burst Test Results							
Standard	□ IEC 61000-4-4 ☑ EN 61000	-4-4					
Applicant	Shenzhen Qiangwei Electronic Co.	, Ltd					
EUT	Infrared Thermometer	Temperature	23.5 ℃				
M/N	КЗ	Humidity	52.9%				
Test Mode	Test Mode Mode 1 Criterion B						
Test Engineer	Jay Li						

Line	Test Voltage	Result (+)	Result (-)
L	1KV	PASS	PASS
Ν	1KV	PASS	PASS
L-N	1KV	PASS	PASS
L-PE			
N-PE			
L-N-PE			
Signal Line			
I/O Cable			

Note:

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B.8 SURGE IMMUNITY TEST

Surge Immunity Test Result					
Standard	□ IEC 61000-4-5 ☑ EN 61000-4-5				
Applicant	Shenzhen Qiangwei Electronic Co., Ltd				
EUT	Infrared Thermometer	Temperature	22.4 ℃		
M/N	K3 Humidity 52.3%				
Test Mode	Mode 1 Criterion B				
Test Engineer	Jay Li				

Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (KV)	Result
L-N	+	0°, 90°, 180°, 270°	5	1.0	PASS
L-IN	-	0°, 90°, 180°, 270°	5	1.0	PASS
L-PE					
N-PE					
Signal Line					
Note					

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B.9 INJECTED CURRENTS SUSCEPTIBILITY TEST

Injected Currents Susceptibility Test Results				
Standard	□ IEC 61000-4-6 ☑ EN 61000-4-6			
Applicant	Shenzhen Qiangwei Electronic Co., Ltd			
EUT	Infrared Thermometer Temperature 24.7 °C			
M/N	К3	Humidity	54.2%	
Test Mode	Mode 1	Criterion	A	
Test Engineer	Jay Li			

Frequency Range (MHz)	Injected Position	Strength (Unmodulated)	Criterion	Result
0.15 ~ 10		3V		
10 ~ 30	AC Mains	3V ~ 1V	А	PASS
30 ~ 80		1V		

Remark:

1. Modulation Signal:1kHz 80% AM

2. Measurement Equipment :

Simulator: CIT-10 (FRANKONIA)

CDN : ☑CDN-M2 (FRANKONIA)

CDN-M3 (FRANKONIA)

Note:

B.10 MAGNETIC FIELD SUSCEPTIBILITY TEST

Magnetic Field Immunity Test Result				
Standard	□ IEC 61000-4-8 ☑ EN 61000-4-8			
Applicant	Shenzhen Qiangwei Electronic Co., Ltd			
EUT	Infrared Thermometer Temperature 23.6°C			
M/N	K3 Humidity 54.1%			
Test Mode	Mode 1 Criterion A			
Test Engineer	Jay Li			

Test Level (A/M)	Testing Duration	Coil Orientation	Criterion	Result
1	5 mins	Х	А	PASS
1	5 mins	Y	A	PASS
1	5 mins	Z	A	PASS

Note:

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B.11 VOLTAGE DIPS AND INTERRUPTIONS TEST

Voltage Dips And Interruptions Test Results					
Standard	□ IEC 61000-4-11 ☑ EN 61000-4-11				
Applicant	Shenzhen Qiangwei Electronic Co., Ltd				
EUT	Infrared Thermometer Temperature 23.6°C				
M/N	K3 Humidity 54.9%				
Test Mode	Mode 1 Criterion B&C				
Test Engineer	r Jay Li				

Test Level % U _T	Voltage Dips & Short Interruptions % U _T	Duration (in periods)	Criterion	Result
0	100	0.5P	В	PASS
70	30	25P	С	PASS
0	100	250P	С	PASS

Note:

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Report No.: LCS200327014AE

ANNEXE C

(External and internal photos of the EUT)



Fig. 1



Fig. 2

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Fig. 3



Fig. 4

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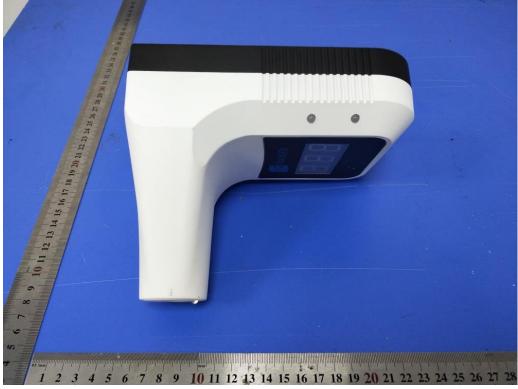


Fig. 6

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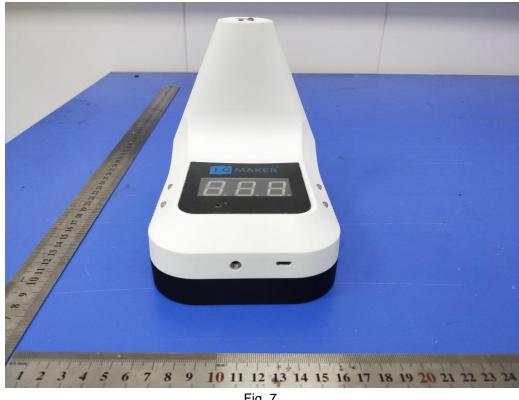


Fig. 7



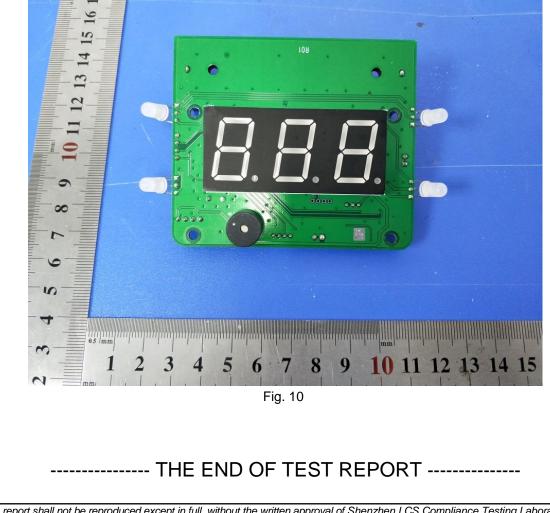
Fig. 8

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Report No.: LCS200327014AE



Fig. 9



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