CERTIFICATE OF EMC

CERTIFICATE NO.: SET2015-01557

Product:	Car board
Model:	BL2000-CZB-V* (*=10-10.99, indicate the different customer or/and Software function number)
Applicant:	ShenYang Bluelight Automatic Technology Co., Ltd.
Address:	No. 37 Shiji Road, Hunnan New District, Shenyang, China

This is to certify that, on the basis of the tests undertaken as per Report No. **SET2015-01557**, the submitted sample of the above item complies with:

EN61000-6-4:2007+A1:2011
EN61000-6-2:2005

and fulfils testing requirement of the EMC directive 2004/108/EC

Signed for and on behalf of
CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd.

Wu Li An, Vice Director

Date of Issue: Feb. 06, 2015

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EMC TEST REPORT

Report No.: SET2015-01557

Product:

[redacted]



Report

Product.....:	Car board
Model No. .....:	BL2000-CZB-V* (*=10-10.99, indicate the different customer or/and Software function number)
Brand Name.....:	/
Applicant.....:	ShenYang Bluelight Automatic Technology Co., Ltd.
Applicant Address.....:	No. 37 Shiji Road, Hunnan New District, Shenyang, China
Manufacturer.....:	ShenYang Bluelight Automatic Technology Co., Ltd.
Manufacturer Address.....:	No. 37 Shiji Road, Hunnan New District, Shenyang, China
Test Standards.....:	

Chen Weichang

Zhu Qi

Wu Lian

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1 General Information

1.1 Description of EUT

Product: Car board
Model No.: BL2000-CZB-V10
Brand Name: /
Serial No.: /
Rating: Input: 24V DC
Accessories: /

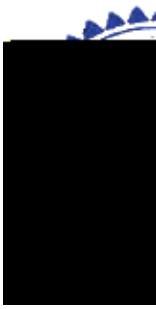
NOTE:

1. For more detailed features description about the EUT, please refer to User's Manual.
2. Application model is BL2000-CZB-V* (*=10-10.99, indicate the different customer or/and Software function number). Models differencUT

2.3 Test Standards and Results

The EUT has been tested according to the following specifications:





3 Emission Test

3.1 EUT Setup and Operating Conditions

The EUT was powered by 24V DC mains. The EUT was continuously operated during the test.

3.2 Radiated Disturbance Measurement

3.2.1 Limits of Radiated Disturbance

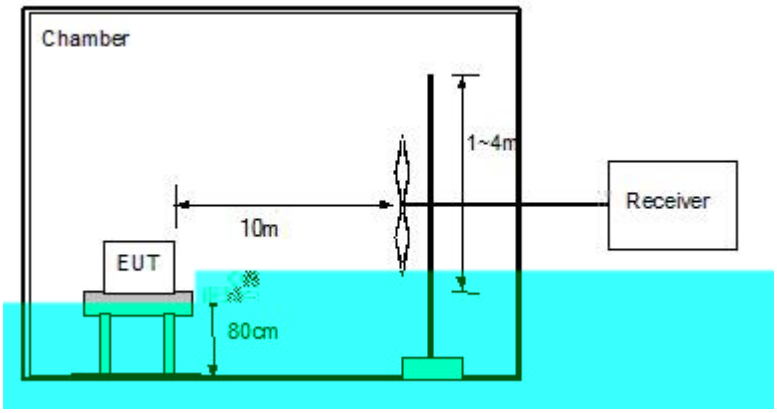
Frequency range (MHz)	Quasi peak limits(dBμV/m), at 10m measurement distance
30 – 230	40
230 - 1000	47

Notes:

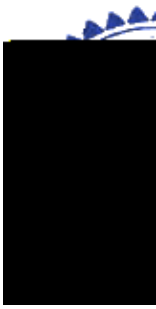
(1) The lower limit shall apply at the transition frequency.

(2) Additional provisions may be required for cases where interference occurs.

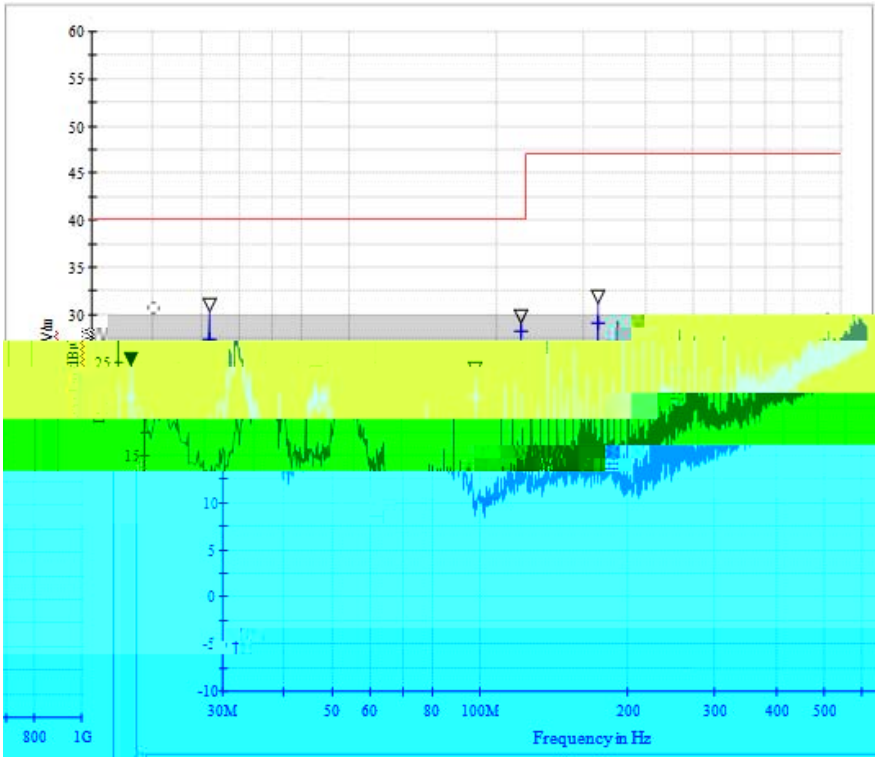
3.2.2Test Setup



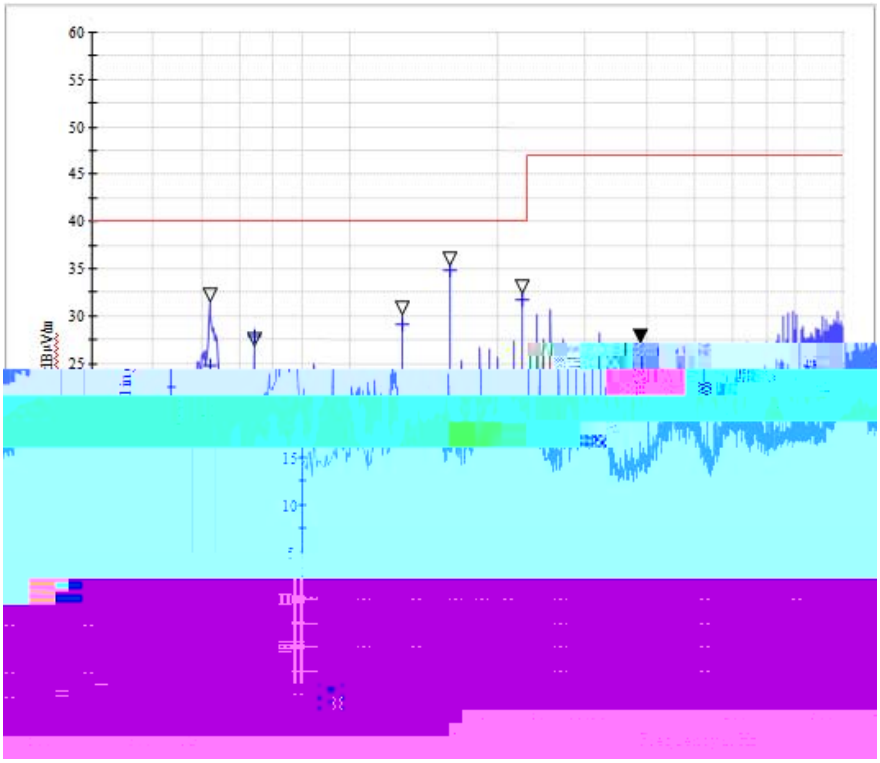




1. Electromagnetic radiation disturbances, max peak detector, antenna polarization: Vertical



2. Electromagnetic radiation disturbances, max peak detector, antenna polarization: Horizontal



4 Immunity Test

4.1 EUT Setup and Operating Conditions

Same as 3.1.

4.2 Performance Criteria

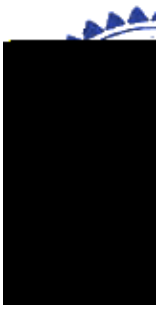
Criterion A	The apparatus shall continue to operate as intended. No degradation of performance or loss o function is allowed below a performance level specified by the manufacturer, when th apparatus is used as intended.
Criterion B	The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended.
Criterion C	Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

4.3 Electrostatic Discharge Immunity Test

4.3.1 Test Specification

Basic Standard:	IEC 61000-4-2
Discharge Impedance	330 / 150 pF
Discharge Voltage:	Air Discharge: 8 kV Contact Discharge: 4kV
Polarity:	Positive / Negative
Number of Discharge:	Minimum 20 times at each test point
Discharge Mode:	Single discharge
Discharge Period:	1-second minimum
Criterion:	B



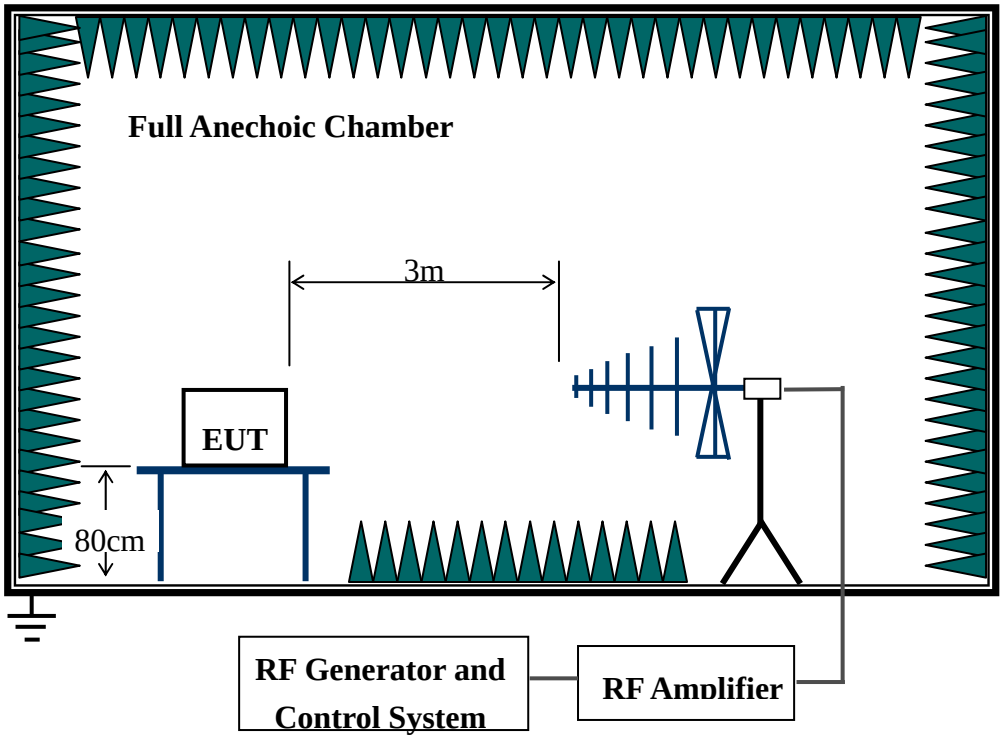


4.4 Radiated, Radio Frequency Electromagnetic Field Immunity Test

4.4.1 Test Specification

Basic Standard:	EN 61000-4-3		
Frequency Range:	80 MHz – 1000MHz	1.4GHz – 2.0GHz	2.0GHz – 2.7GHz
Field Strength:	10V/m	3V/m	1V/m
Modulation:	1kHz sine wave, 80%, AM modulation		
Frequency Step:	1% of fundamental		
Polarity of Antenna	Horizontal and Vertical		
Test Distance:	3m		
Antenna Height:	1.5m		
Dwell Time:	3 seconds		
Criterion:	A		

4.4.2 Test Setup



4.4.3 Test Result

Frequency	Polarity	Azimuth	Field Strength (V/m)	Observation	Comply with Criterion
80-1000 MHz	V&H	0,90, 80, 270	10	Note(1)	A
1.4-2.0GHz	V&H	0,90, 80, 270	3	Note(1)	A
2.0-2.7GHz	V&H	0,90, 80, 270	1	Note(1)	A

For the actual test configuration, please refer to Appendix II Photographs of the Test Configuration.

4.5.3 Test Result

Test Point	Polarity	Test Level (kV)	Observation	Comply with Criterion
DC. power	+/-	2	Note (1)	A
Signal port	+/-	1	Note (1)	A

NOTE:

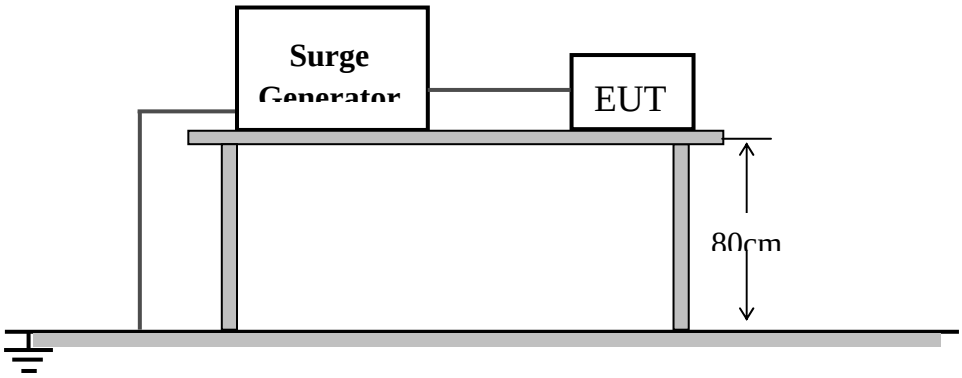
(1). The EUT continued to operate as intended. No degradation of performance was observed.

4.6 Surge Immunity Test

4.6.1 Test Specification

Basic Standard:	IEC 61000-4-5
Waveform:	Voltage 1.2/50 μs; Current 8/20 μs
Test Voltage:	DC power port: line to line 0.5 kV, line to earth 0.5 kV
Polarity:	Positive/Negative
Repetition Rate:	60sec
Times:	5 time/each condition.
Criterion:	B

4.6.2 Test Setup



4.6.3 Test Result

Coupling Line	Polarity	Voltage (kV)	Observation	Comply with Criterion
DC power, Line-Line	+/-	0.5	Note (1)	B

NOTE:

(1). The EUT continued to operate as inten2hd. No degradation of performance was observhd.

4.7 Immunity to Conducted Disturbances Induced by RF Fields

4.7.1 Test Specification

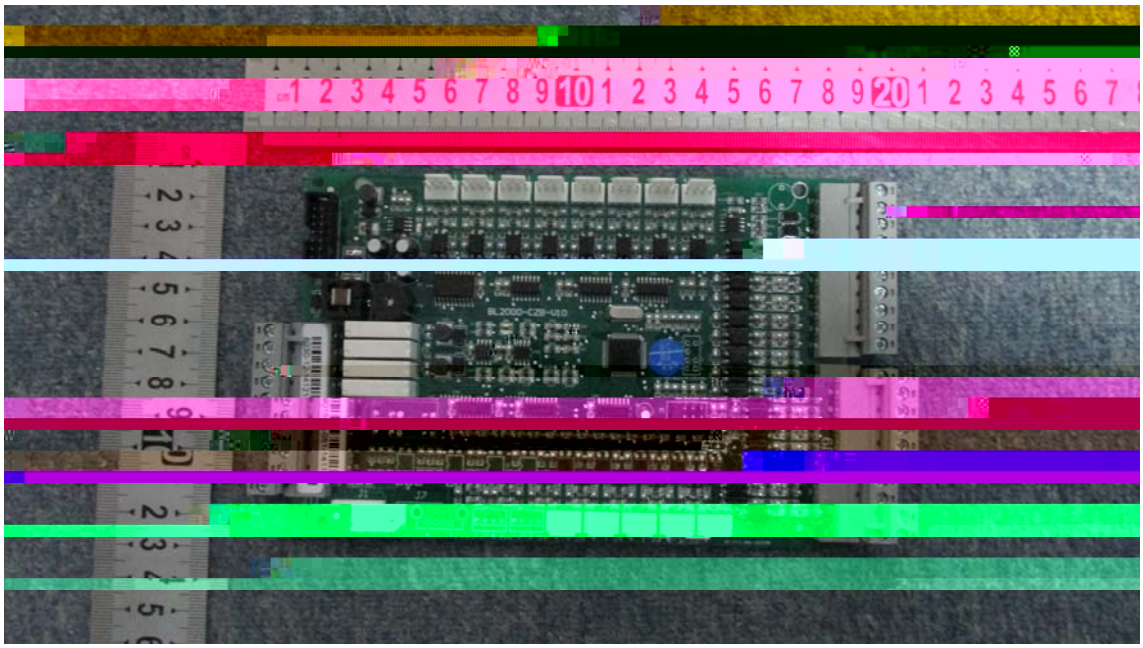
Basic Standard:	IEC 61000-4-6
Frequency Range:	0.15 MHz – 80 MHz
Field Strength:	10V
Modulation:	1 kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1% of fundamental

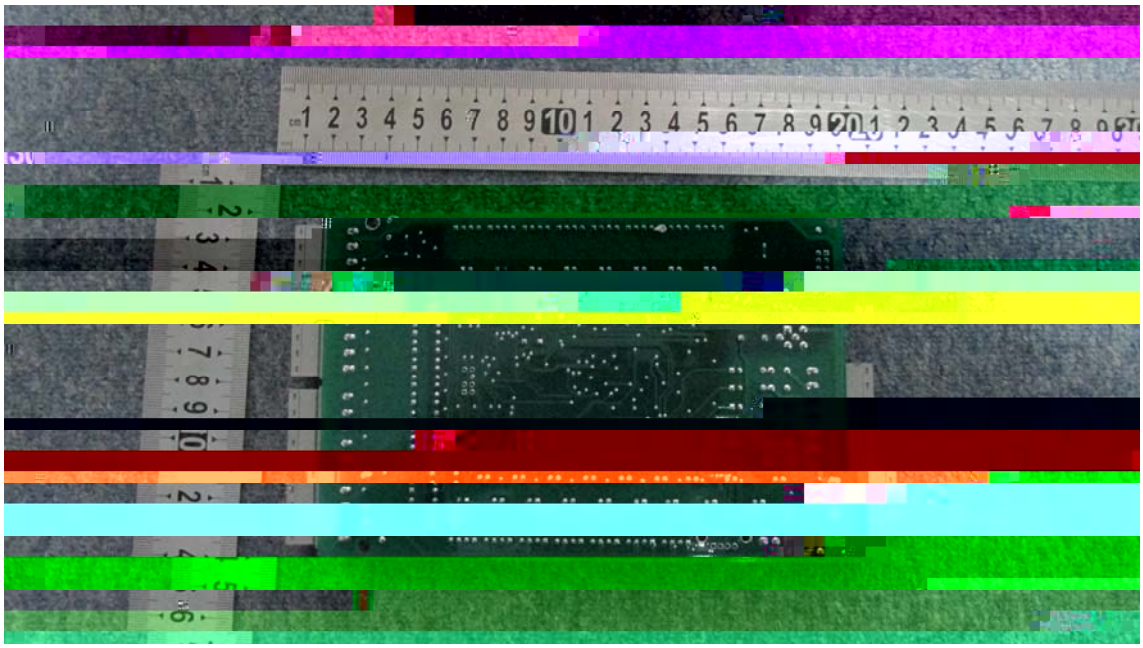
4.8 Power Frequency Magnetic Field Immunity Test

4.8.1 Test Specification

Basic Standard:	IEC 61000-4-8
Frequency Range:	50Hz

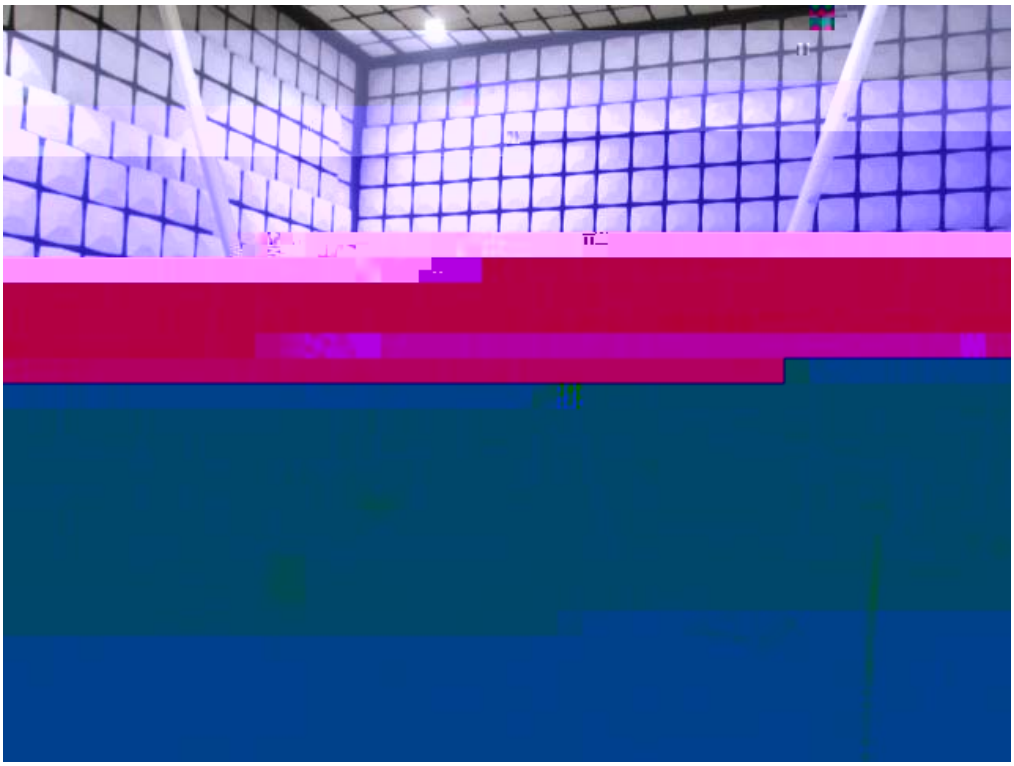
Appendix I Photographs of the EUT





Appendix II Photographs of EMC Test Configuration

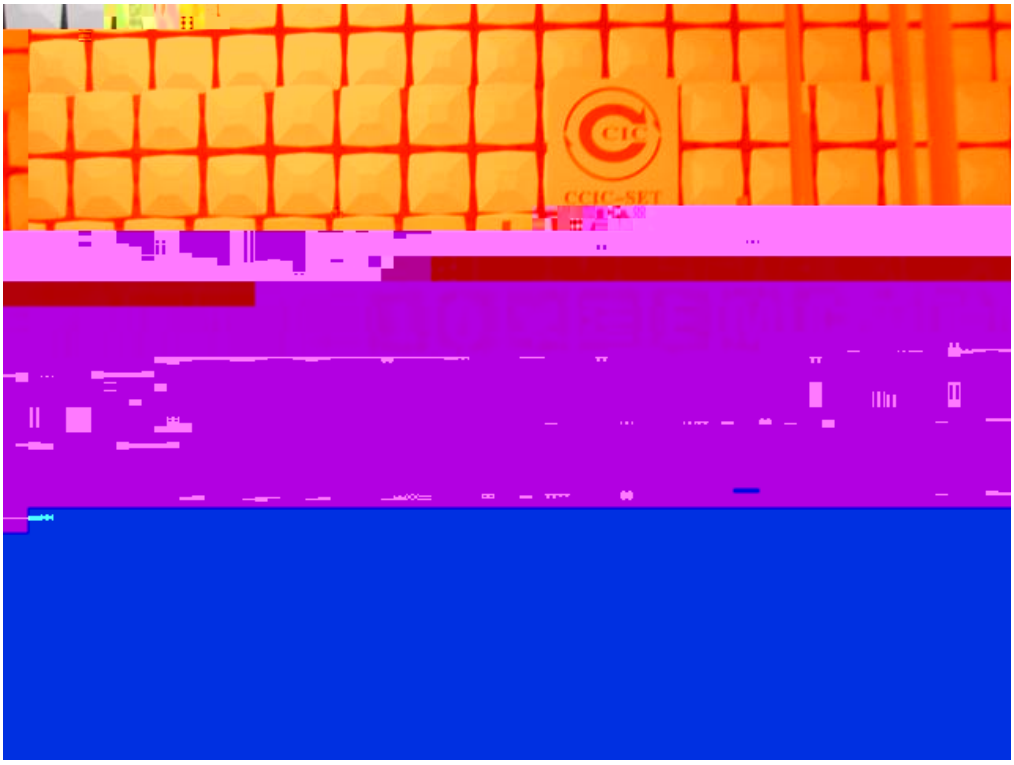
1. Radiated Field Strength Measurement



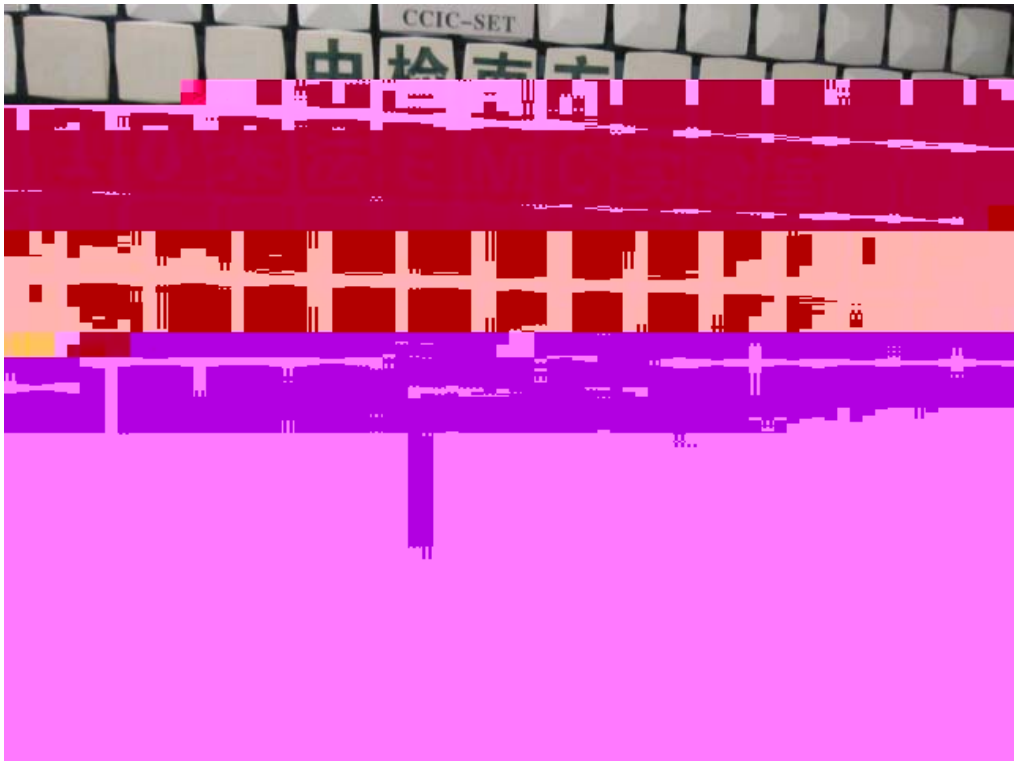
2. Electrostatic Discharge Immunity Test



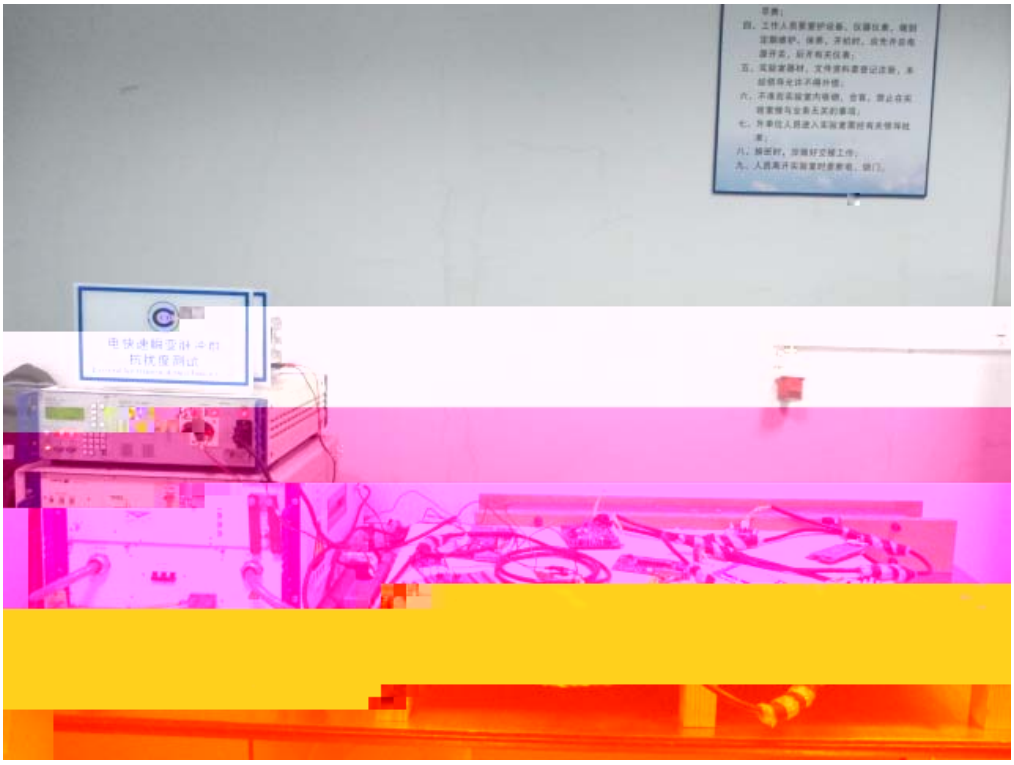
3. Radiated, Radio Frequency Electromagnetic Field Immunity Test (below 1GHz)



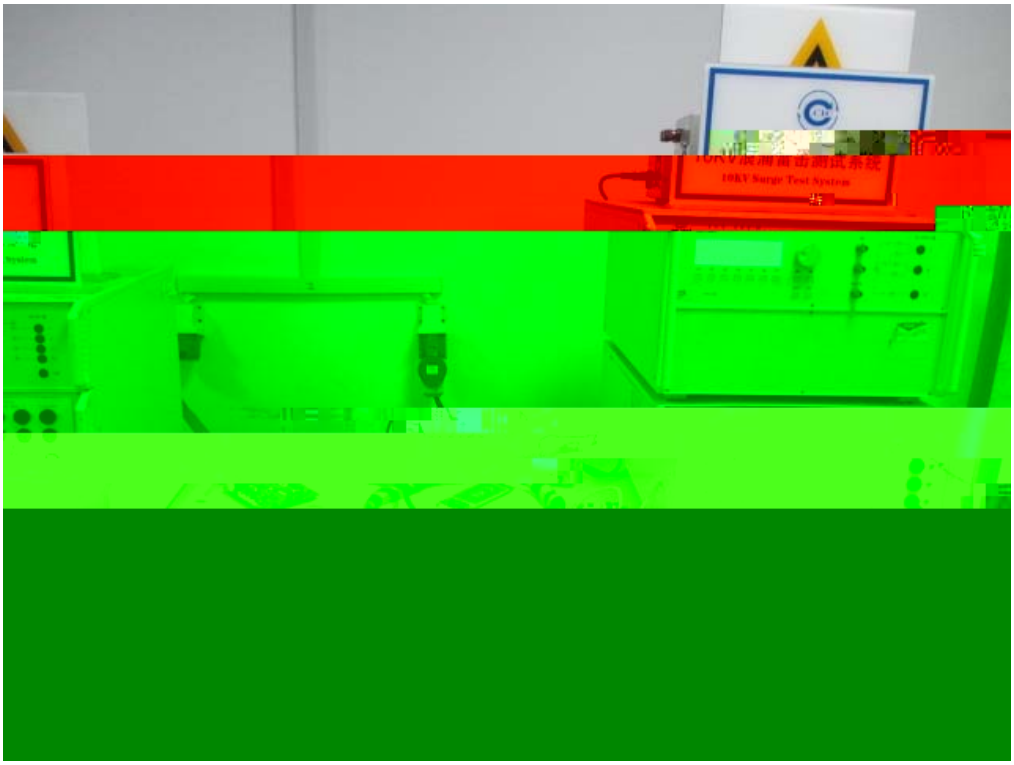
4. Radiated, Radio Frequency Electromagnetic Field Immunity Test (above 1GHz)



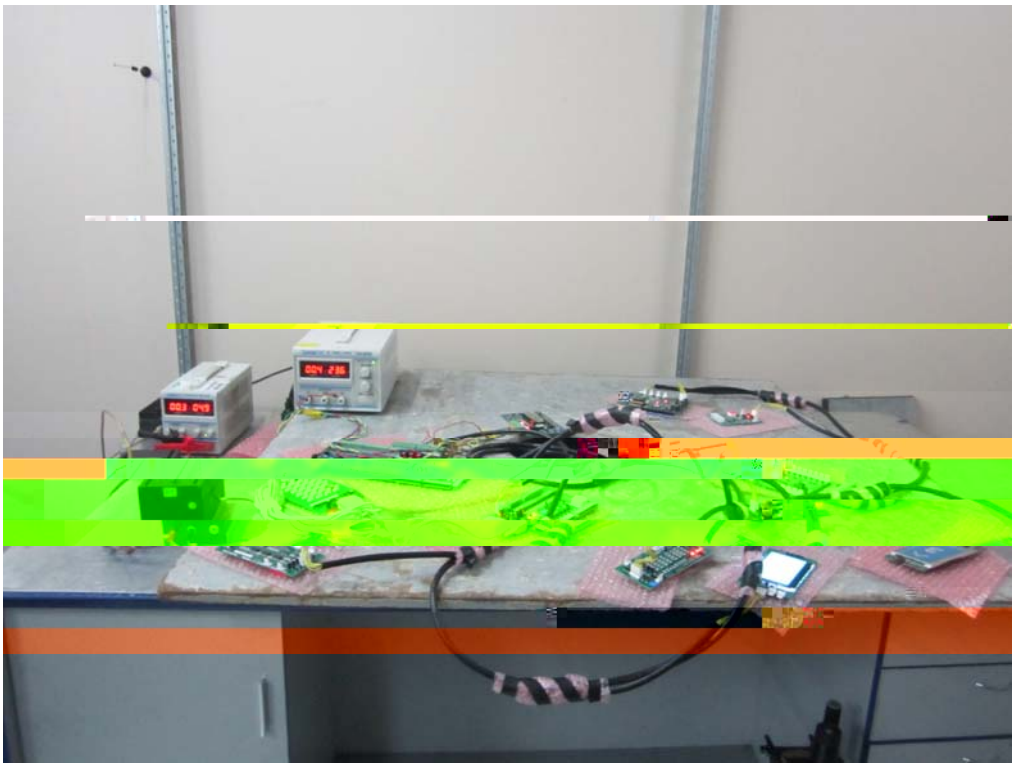
5. Electrical Fast Transient/Burst Immunity Test



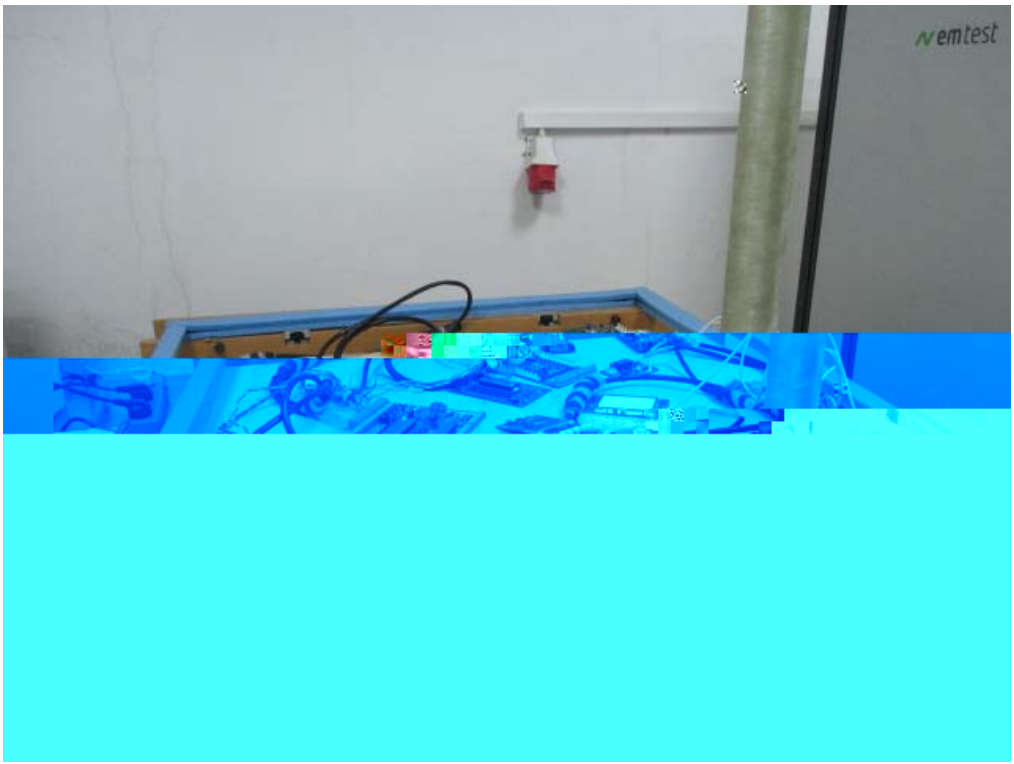
6. Surge Immunity Test



7. Immunity to Conducted Disturbances Induced by RF Fields



8. Power Frequency magnetic Field Immunity



STATEMENT

This test laboratory is accredited by CNAS, Accreditation Certificate No.L1659.

2.