CCIC Southern Electronic Product Testing (Shenzhen) Co.,Ltd.

CERTIFICATE OF EMC

CERTIFICATE NO.: SET2015-01567

Product: Main board

Model: BL2000-STB-V* (*=9-9.99, 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. **SET2015-01567**, 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

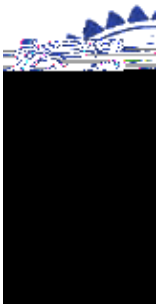
Signed for and on behalf of
CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd.

Wu Li An, Vice Director

Date of Issue: Feb. 06, 2015

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查询码：6PA7ZR5b

Report No.



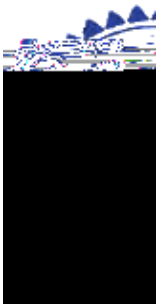




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1 General Information

1.1 Description of EUT

	Main board
	BL2000-STB-V9.0
	/
	/
Input	5V DC, 24V DC
	/

NOTE:

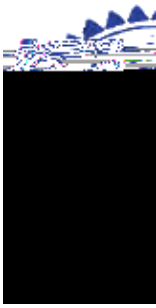
1. For more detailed features description about the EUT, please refer to User's Manual.
2. Application model is BL2000-STB-V* (*=9-9.99, indicate the different customer or and Software function number). Models differences do not affect the performance of EMC. All tests

2.3 Test Standards and Results

The EUT has been tested according to the following specifications

EMISSION		
Standard	**Test Type**	**Result**
EN61000-6-4:2007+A1:2011	Radiated disturbance	PASS
IMMUNITY (EN61000-6-2:2005)		
Basic Standard	**Test Type**	**Result**
IEC 61000-4-2	Electrostatic discharge immunity	PASS
IEC 61000-4-3	Radiated, radio frequency, electromagnetic field immunity	PASS
IEC 61000-4-4	Electrical fast transient/burst immunity	PASS
IEC 61000-4-5	Surge immunity	PASS
IEC 61000-4-6	Immunity to conducted disturbances, induced by RF fields	PASS
IEC 61000-4-8	Power frequency magnetic field immunity	PASS





3 Emission Test

3.1 EUT Setup and Operating Conditions

The EUT was powered by 5V DC and 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

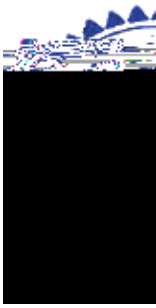
Notes:

(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

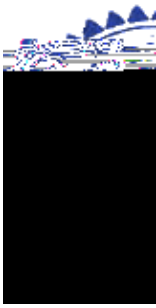
Criterion A	The apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended.
Criterion B	The apparatus shall continue to operate as intended after the test. 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 Ω / 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



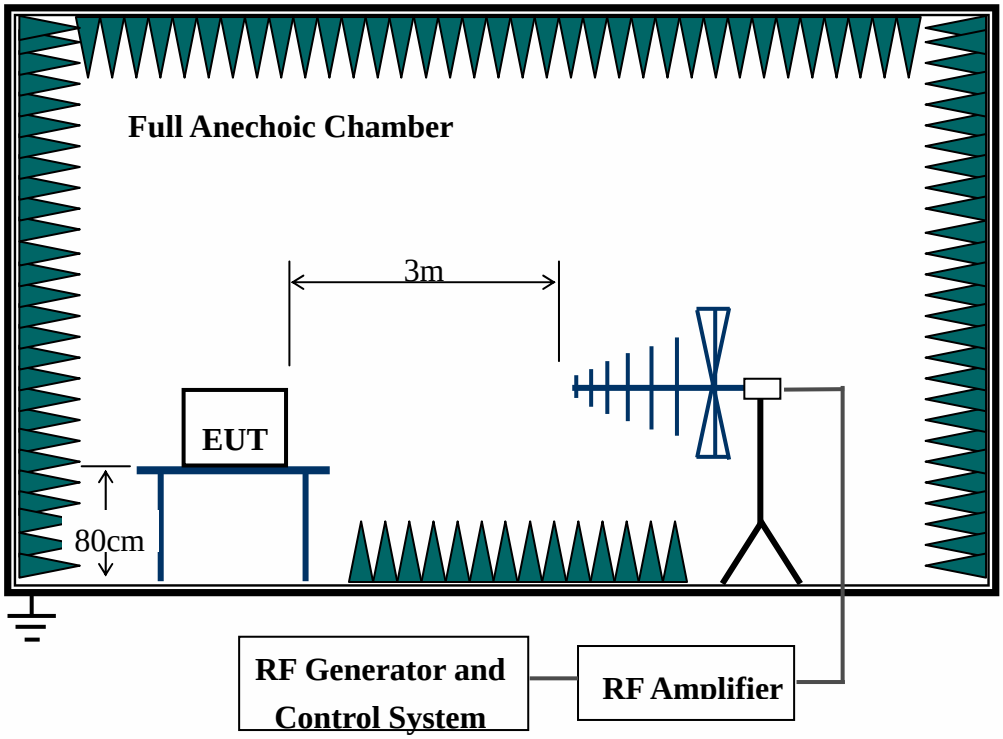


4.4 Radiated, Radio Frequency Electromagnetic Field Immunity Test

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

NOTE:

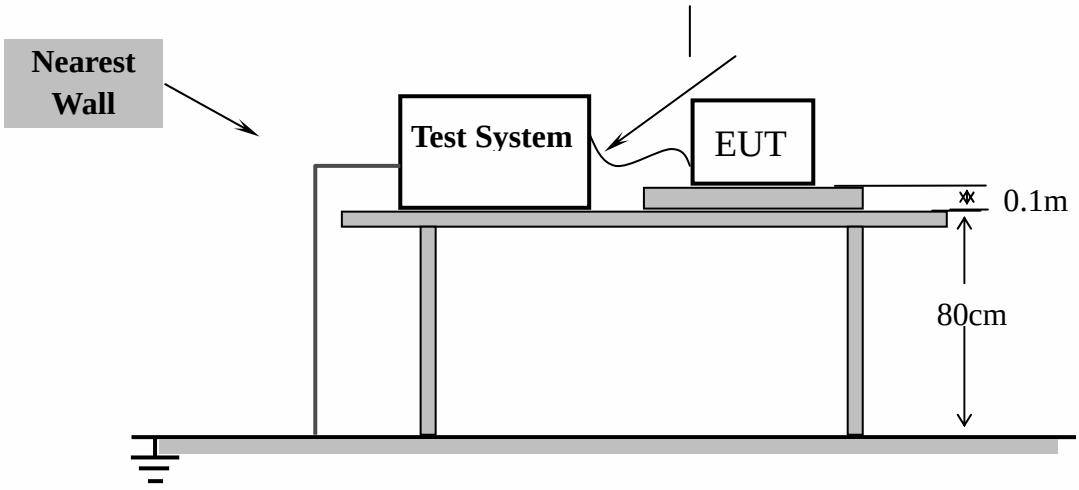
(1). The EUT continued to operate as intended. No degradation of performance was observed.

4.5 Electrical Fast Transient/Burst Immunity Test

4.5.1 Test Specification

Basic Standard:	IEC 61000-4-4
Test Voltage:	DC. Power port 2 kV, Signal port 1 kV
Polarity:	Positive/Negative
Impulse Frequency:	5kHz
Impulse wave shape:	5/50ns
Burst Duration:	15ms
Burst Period:	300ms
Test Duration:	Not less than 1 min.
Criterion:	B

4.5.2 Test Setup



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:

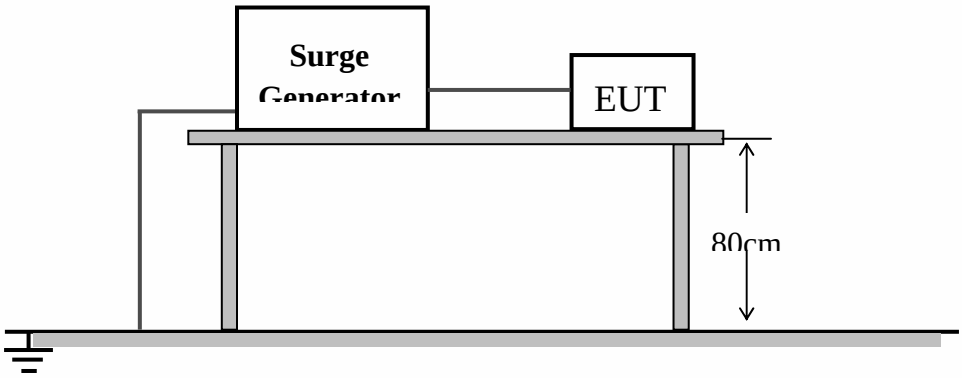
(1). The EUT continued to operate as intended. No degradation of peformance as observed.

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)	A

NOTE:

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

4.7 Immunity to Conducted Disturbances Induced by RF Fields

4.7.1 Test Specification

Basic Standard:	IEC 61000-4-6

4.8 Power Frequency Magnetic Field Immunity Test

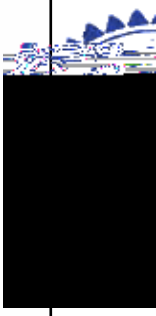
4.8.1 Test Specification

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

Appendix I ÖPhotographs of the EUT

Appendix II ÖPhotographs of EMC Test Configuration





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. **The test report is invalid without stamp of laboratory.**
3. **The test report is invalid without signature of person(s) testing and authorizing.**
4. **The test report is invalid if erased and corrected.**
5. **Test results of the report is valid to the test samples if sampling by client.**
6. **¿ item cannot be Accredited by CNAS.**
7. **The test report shall not be reproduced except in full, without written approval of the laboratory.**
8. **If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.**

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