CERTIFICATE OF EMC

CERTIFICATE NO.: SET2015-01562

Product:	Landing call and segment LCD display board
Model:	BL2000-HEH-N* (*=2-2.99, 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. **SET2015-01562**, 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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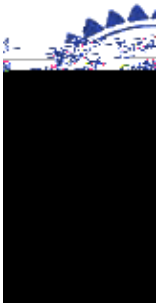




查询码：6PA7ZR5b

Report

Product. .....:	Landing call and segment LCD display board
Model No. ……..:	BL2000-HEH-N* (*=2-2.99, 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……..:	EN61000-6-4:2007+A1:2011 Electromagnetic compatibility (EMC) -- Part 6-4: Generic standards - Emission standard for industrial environments EN61000-6-2:2005 Electromagnetic compatibility (EMC) -- Part 6-2: Generic standards - Immunity for industrial environments
Test Result……..:	Pass
Tested by ……..:	Feb. 06. 2015 Signature, Date
Reviewed by……..:	Feb. 06. 2015 Signature, Date
Approved by……..:	Feb. 06. 2015 Signature, Date

Table of Contents

Report 2

1 General Information 5

1.1 Description of EUT 5

1.2 Objective 5

2 Test Facilities and Configuration 5

2.1 Environmental Conditions 5

2.2 Measurement Uncertainty 5

2.3 Test Standards and Results 6

2.4 List of Equipments Used 7

3 Emission Test 8

3.1 EUT Setup and Operating Conditions 8

3.2 Radiated Disturbance Measurement 8

3.2.1 Limits of Radiated Disturbance 8

3.2.2Test Setup 8

3.2.3 Test Result 9

4 Immunity Test 11

4.1 EUT Setup and Operating Conditions 11

4.2 Performance Criteria 11

4.3 Electrostatic Discharge Immunity Test 11

4.3.1 Test Specification 11

4.3.2 Test Setup 12

4.3.3 Test Result 12

4.4 Radiated, Radio Frequency Electromagnetic Field Immunity Test 13

4.4.1 Test Specification 13

4.4.2 Test Setup 13

4.4.3 Test Result 14

4.5 Electrical Fast Transient/Burst Immunity Test 14
4.5.1 Test Specification 14
4.5.2 Test Setup 14
4.5.3 Test Result 15
4.6 Surge Immunity Test 15
4.6.1 Test Specification 15
4.6.2 Test Setup 15
4.6.3 Test Result 15
4.7 Immunity to Conducted Disturbances Induced by RF Fields 16
4.7.1 Test Specification 16
4.7.2 Test Setup 16
4.7.3 Test Result 16
4.8 Power Frequency Magnetic Field Immunity Test 17
4.8.1 Test Specification 17
4.8.2 Test Setup 17
4.8.3 Test Result 17
Appendix I ÖPhotographs of the EUT 18
Appendix II ÖPhotographs of EMC Test Configuration 19

1 General Information

1.1 Description of EUT

Product:	Landing call and segment LCD display board
Model No.:	BL2000-HEH-N2
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-HEH-N* (*=2-2.99, indicate the different customer or/and Software function number). Models differences do not affect the performance of EMC. All tests were performed on Model BL2000-HEH-N2 and results represented other models.
3. The highest frequency of the internal source of the EUT is below 108 MHz, so the radiated emission measurement shall be made up to 1GHz.

1.2 Objective

Perform ElectroMagnetic Interference (EMI) and ElectroMagnetic Susceptibility (EMS) tests for CE Marking.

2 Test Facilities and Configuration

2.1 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

- Temperature: 15-35ºC
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

2.2 Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

- Uncertainty of Radiated Emission, Uc = ±4.7dB

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

2.4 List of Equipments Used

Description	Manufacturer	Model No.	Calibration Date	Serial No.
Test Receiver	ROHDE&SCHWARZ	ESCI	Jun.10, 2015	A0902601
Broadband Ant. Anechoic Broadba5	ROHDE&SCHWARZ	VULB 09160	Jun.10, 2015	A0805560

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)

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¡ / 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

4.4.3 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 Ö 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:

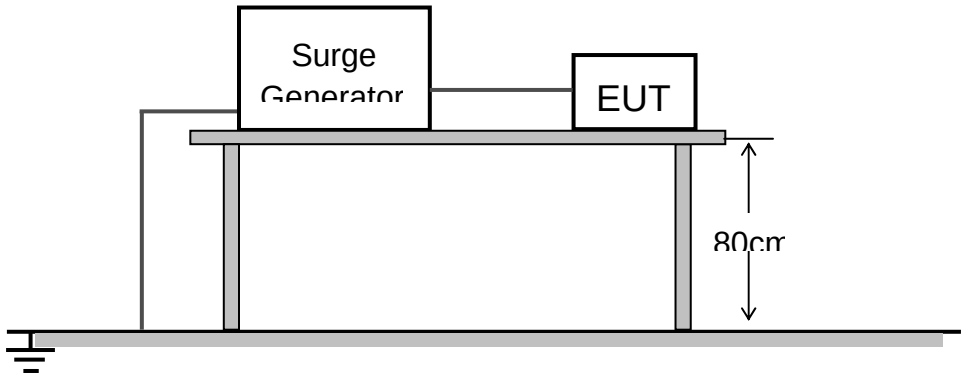
(1). The EUT continued to operate as intended. No degradation of performance was observed.

4.6 Surge Immunity Test

4.6.1 Test Specification

Basic Standard:	IEC 61000-4-5
Waveform:	Voltage 1.2/50μs; Current 8/20μs
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 intended. No degradation of performance was observhd.

Appendix I ÖPhotographs of the EUT

Appendix II ÖPhotographs of EMC Test Configuration

1. Radiated Field Strength Measurement

2. Electrostatic Discharge Immunity Test

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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