CERTIFICATE OF EMC

CERTIFICATE NO.: SET2015-01559

Product:	Landing call and display board
Model:	BL2000-HBH-C* (*=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. **SET2015-01559**, 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. !	SET2015-01559
Product !	Landing call and display board
Model No !	BL2000-HBH-C* (*=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
Issued by !	CCIC Southern Electronic Product Testing (Shenzhen)CO., Ltd.
Lab location !	Building 28/29, Shigudong, Xili Industrial Area, Xili Street, Nanshan District, Shenzhen, Guangdong, China
Tel !	86 755 26627338 Fax: 86 755 26627238

This test report consists of 23 pages in total. It may be duplicated completely for legal use with the

Report

Product. .....:	Landing call and display board
Model No. ……..……..:	BL2000-HBH-C* (*=9-9.99, 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

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1 General Information

1.1 Description of EUT

Product:	Landing call and display board
Model No.:	BL2000-HBH-C9
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-HBH-C* (*=9-9.99, 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-HBH-C9 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:

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

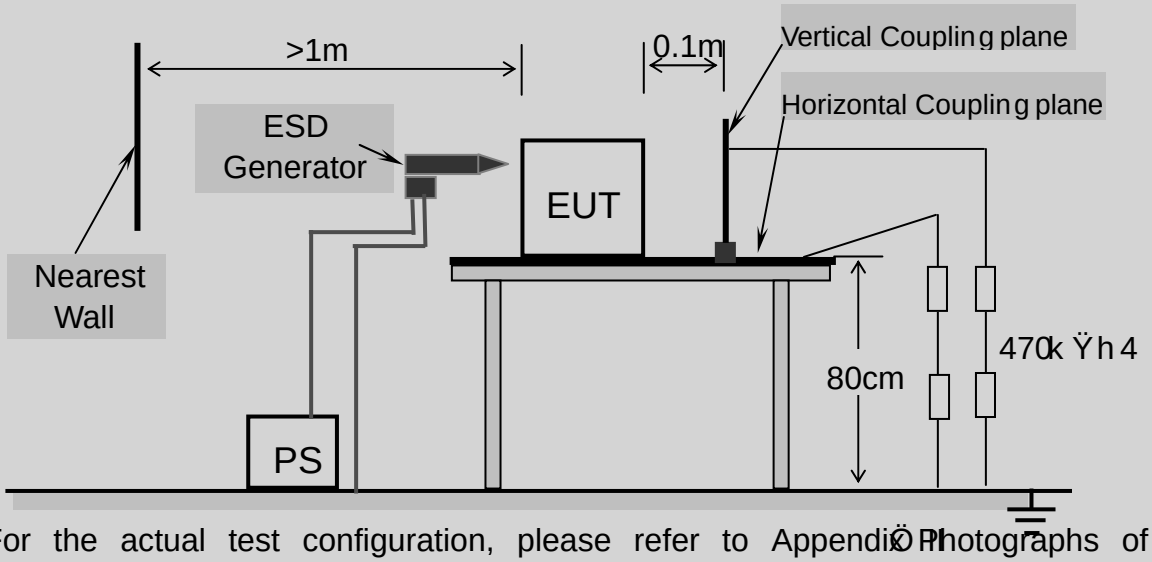
Criterion A	The apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended.
Criterion B	The apparatus shall continue to operate as intended after the test.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

4.3.2 Test Setup



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

4.3.3 Test Result

Test Points	Discharge Level (kV)	Discharge Mode	Observation	Comply with Criterion
Screen	±2, 4, 6, 8	Air	Note(1)	A
HCP	± 2, 4	Contact	Note(1)	A
VCP	± 2, 4	Contact	Note(1)	A

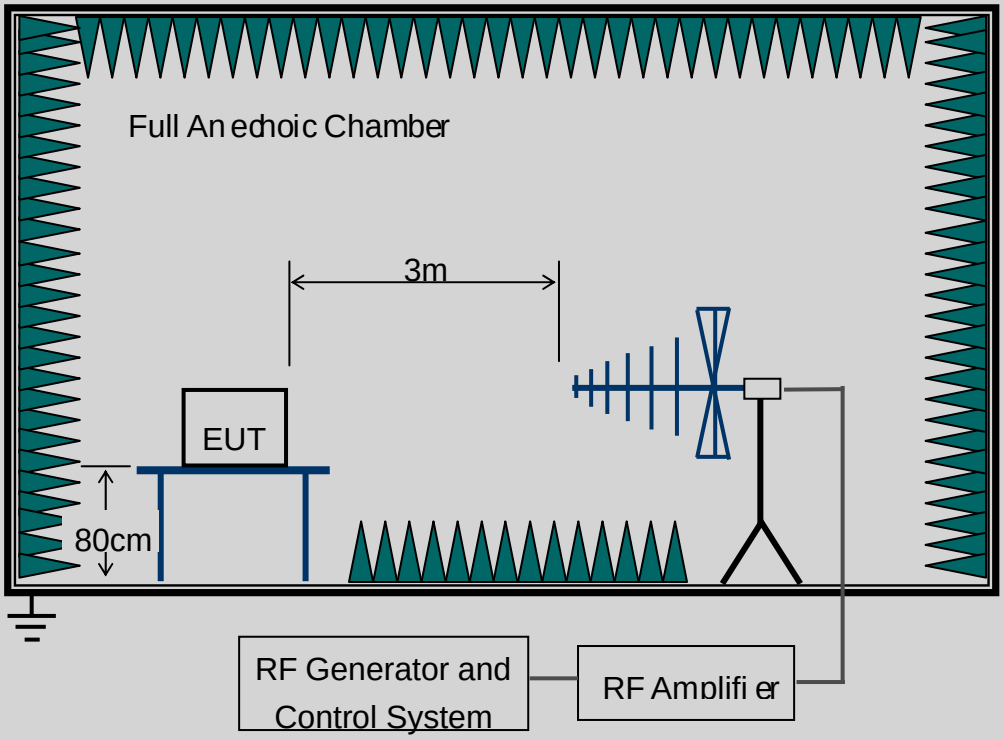
NOTE:
(1). The EUT continued to operate as intended. No degradation of performance was observed.

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 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:

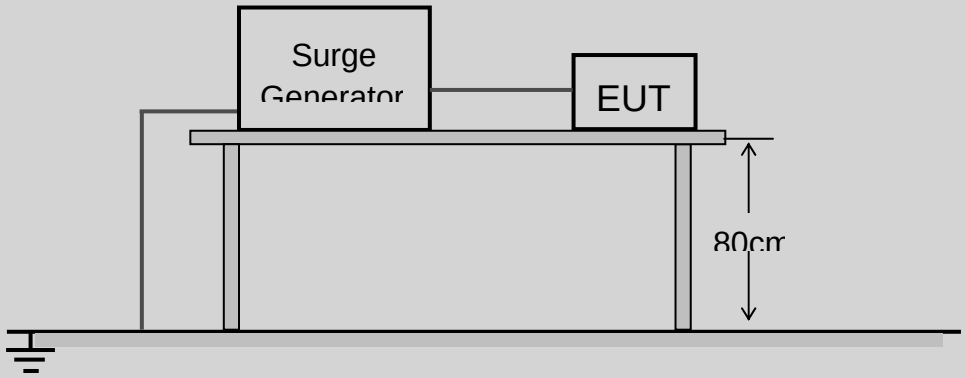
(1). The EUT continued to operate as intended. No degradation of performance was observed.

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.

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

4.8 Power Frequency Magnetic Field Immunity Test

4.8.1 Test Specification

Basic Standard:	IEC 61000-4-8
Frequency Range:	50Hz
Field Strength:	30A/m
Observation Time:	2 minute
Inductance Coil:	Rectangular type, 1m×1m
Criterion:	A

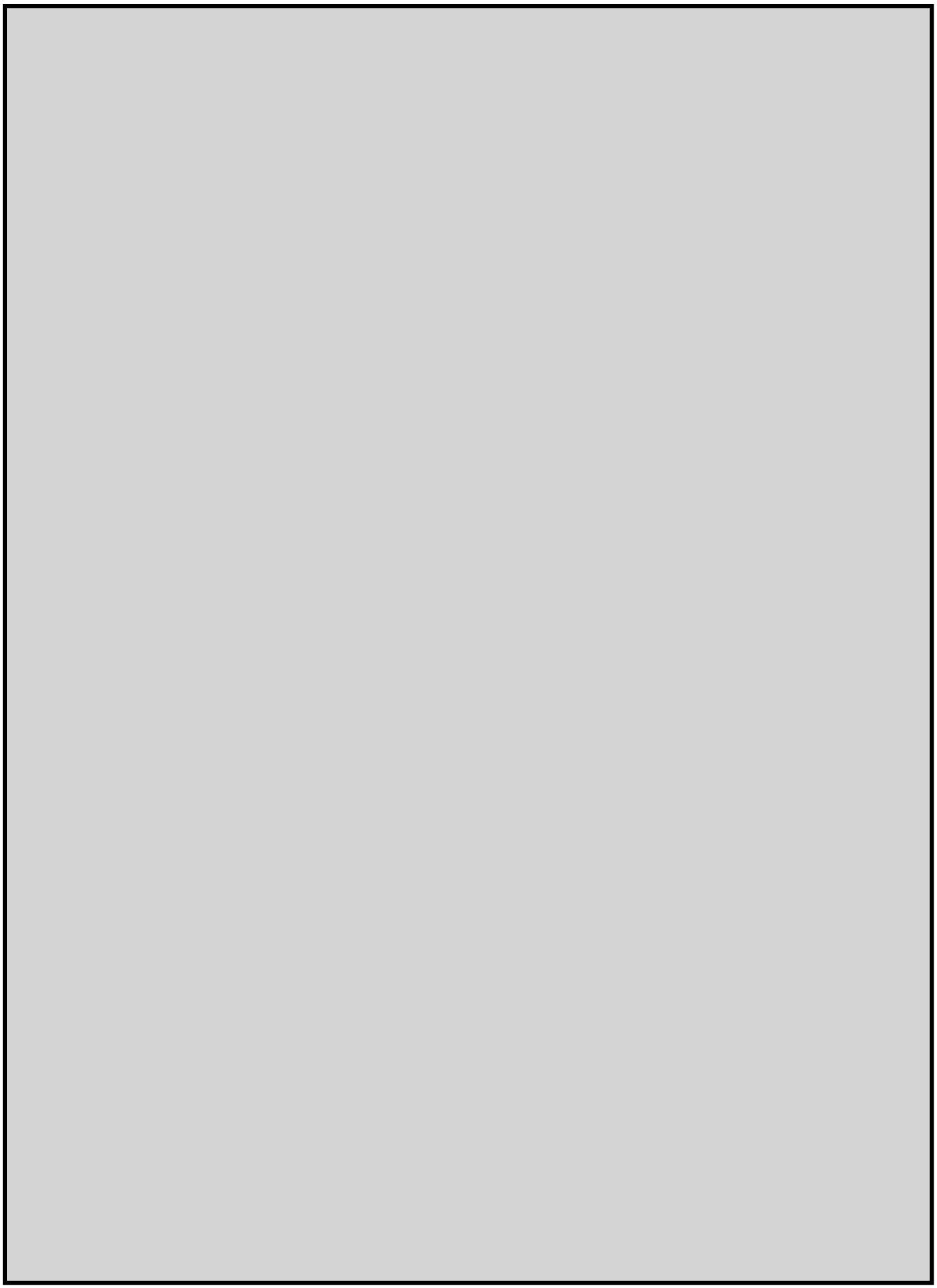
4.8.2 Test Setup

4.8.3 Test Result

Direction	Field Strength(A/m)	Observation	Comply with Criterion
X	30	Note(1)	A
Y	30	Note(1)	A
Z	30	Note(1)	A

NOTE:

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



Appendix II ÖPhotographs of EMC Test Configuration

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 byCNAS, Accreditation Certificate No.L1659.

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