

# CERTIFICATE OF EMC

CERTIFICATE NO.: SET2015-01563

Product: Group control landing call board  
Model: BL2000-HQK-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. SET2015-01563, 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.

# EMC TEST REPORT

**Report No.:** SET2015-01563

**Product:** Component landing all board

**Model No:** BL2000-HQK-V\* (\*=9-9.99, indicate the different corner of and some machine number)

**Applicant:** Shen Yang Blahat Automatic Technology Co., Ltd.

**Address:** No. 37 Shijie Road, Humnan New District, Shenyang China

**Issued by:** CCIC Shenzhen Electronic Product Testing (Shenzhen) CO., Ltd.

**Lab location:** Building 28/29, Shijong Xili Industrial Area, Xili Street, Nanshan District, Shenzhen, Guangdong, China

**Tel:** 86 755 26627338      **Fax:** 86 755 26627238



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查询码: 6PA7ZR5b

# Report

Product.....: Group control landing call board

Model No.....: BL2000-HQK-V\* (\*=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:** Gopont1 landingall board  
**Model No.:** BL2000-HQK-V9  
**Brand Name:** /  
**Serial No.:** /  
**Rating:** Inp24V DC  
**Accessories:** /

### NOTE:

1. For more detailed easdesp n about the EUT, please refer to the User Manual.
2. The applicable model is BL2000-HQK-V\* (\*=9-9.99, indicate the different customer or brand. Some model numbers. Model differences do not affect the performance of EMC. All tests were performed on Model BL2000-HQK-V9 and are representative of the models.
3. The highest frequency of the internal noise of the EUT is below 108 MHz. The added 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 following ranges:

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

## 2.2 Measurement Uncertainty

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

- Uncertainty to Radiated Emission,  $U_c = \pm 7\text{dB}$

## 2.3 Test Standards and Results

The EUT has been tested according to the following standards



## 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 Chamber	ROHDE&SCHWARZ	VULB 09160	Jun .10, 2015	A0805560

### 3 Emission Test

#### 3.1 EUT Setup and Operating Conditions

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

#### 3.2 Radiated Disturbance Measurement

##### 3.2.1 Limits of Radiated Disturbance

Frequency range (MHz)	Quasi peak limits(dB $\mu$ V/m), at 10m measurement distance
30 -230	40
230 - 1000	47

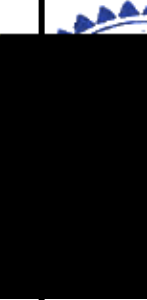
**Notes:**

- (1) The lower limit shall apply at the emission frequency.
- (2) Additional points may be added if or as interference occurs.

##### 3.2.2 Test Setup



1. Electromagnetic interference



## 4 Immunity Test

### 4.1 EUT Setup and Operating Conditions

Same as 3.1.

### 4.2 Performance Criteria

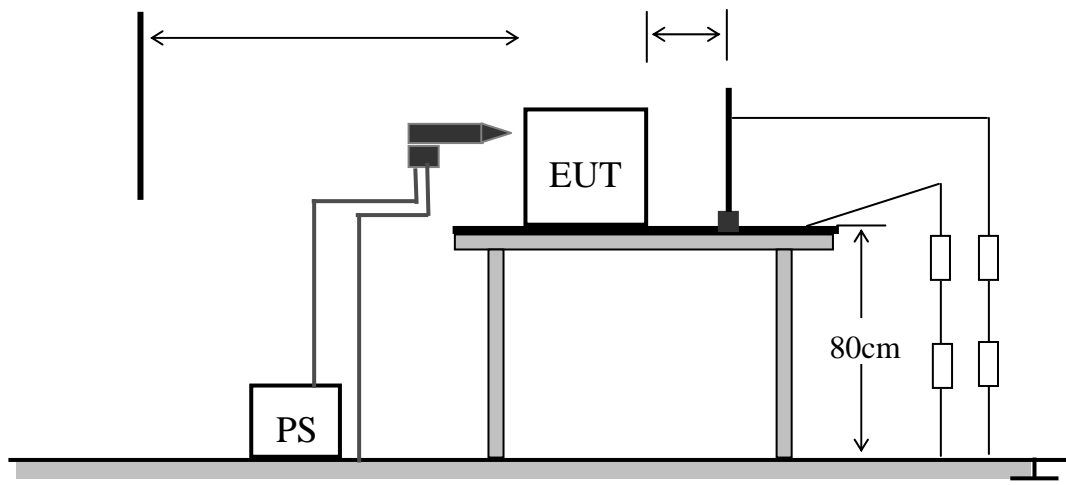
<b>Criterion A</b>	The apparatus shall continue to operate as intended. No degradation of performance or loss of function shall occur below performance level specified by the manufacturer when the apparatus is intended.
<b>Criterion B</b>	The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function shall occur below performance level specified by the manufacturer when the apparatus is intended.
<b>Criterion C</b>	Temporary loss of function shall occur, provided the function is self-recoverable or can be restored by the operator in one of the controls.

### 4.3 Electrostatic Discharge Immunity Test

#### 4.3.1 Test Specification

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

### 4.3.2 Test Setup



For the actual test condition, please refer to Appendix II  
 Condition.

Photographs of the Test

### 4.3.3 Test Result

Test Points	Discharge Level (kV)	Discharge Mode	Observation	Comply with Criterion
Scæen	2, 4, 6, 8	Air	Not(1)	A
HCP	f 2, 4	Contact	Not(1)	A
VCP	f 2, 4	Contact	Not(1)	A

**NOTE:**

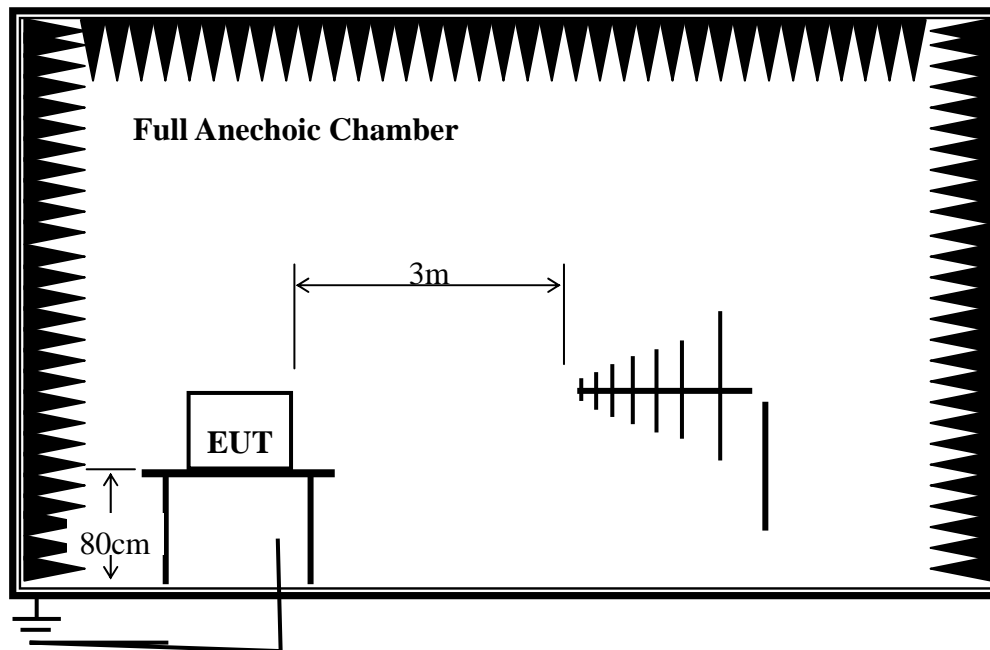
(1). The EUT continued to operate as intended. No degradation of performance was observed.

## 4.4 Radiated, Radio Frequency Electromagnetic Field Immunity Test

### 4.4.1 Test Specification

<b>Basic Standard:</b>	EN 61000-4-3		
<b>Frequency Range:</b>	80 MHz-1000MHz	1.4GHz-2.0GHz	2.0GHz-2.7GHz
<b>Field Strength:</b>	10V/m	3V/m	1V/m
<b>Modulation:</b>	1 kHz sine wave, 80%, AM modulation		
<b>Frequency Step:</b>	1% of fundamental		
<b>Polarity of Antenna:</b>	Horizontal and Vertical		
<b>Test Distance:</b>	3m		
<b>Antenna Height:</b>	1.5m		
<b>Dwell Time:</b>	3 seconds		
<b>Criterion:</b>	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	Not(1)	A
1.4-2.0GHz	V&H	0,90, 80, 270	3	Not(1)	A
2.0-2.7GHz	V&H	0,90, 80, 270	1	Not(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

<b>Basic Standard:</b>	IEC 61000-4-4
<b>Test Voltage:</b>	DC. Power pt 2 kV, Signal pt 1 kV
<b>Polarity:</b>	Pos/Neg
<b>Impulse Frequency:</b>	5 kHz
<b>Impulse wave shape:</b>	5/50 ns
<b>Burst Duration:</b>	15ms
<b>Burst Period:</b>	300ms

For the actual test condition, please refer to Appendix II  
 Condition.

Photographs of the Test

### 4.5.3 Test Result

Test Point	Polarity	Test Level (kV)	Observation	Comply with Criterion
DC. per	+/-	2	Not (1)	A
Signal pt	+/-	1	Not (1)	A

**NOTE:**

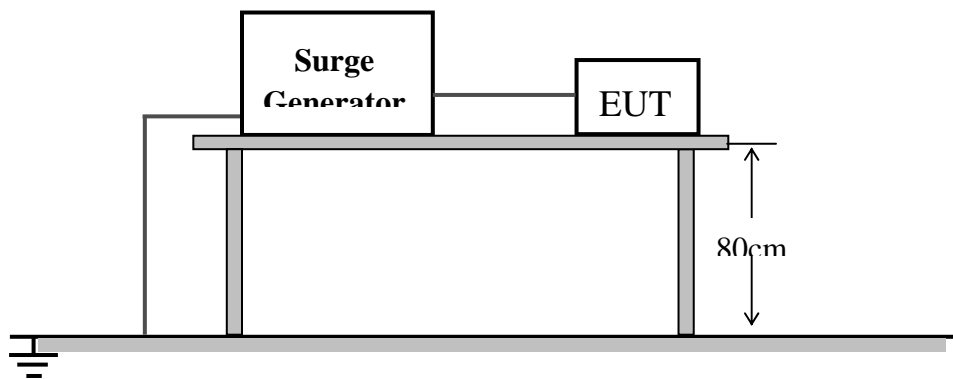
(1). The EUT continued to operate as intended. No degradation of performance was observed.

### 4.6 Surge Immunity Test

#### 4.6.1 Test Specification

<b>Basic Standard:</b>	IEC 61000-4-5
<b>Waveform:</b>	Voltage 1.2/50 $\mu$ s, Current 8/20 $\mu$ s
<b>Test Voltage:</b>	DC port line to line 0.5 kV, line to earth 0.5 kV
<b>Polarity:</b>	Pos/Neg
<b>Repetition Rate:</b>	60sc
<b>Times:</b>	5 ime/each condition.
<b>Criterion:</b>	B

#### 4.6.2 Test Setup



#### 4.6.3 Test Result

Coupling Line	Polarity	Voltage (kV)	Observation	Comply with Criterion
DC per Line-Line	+/-	0.5	Not (1)	B

**NOTE:**

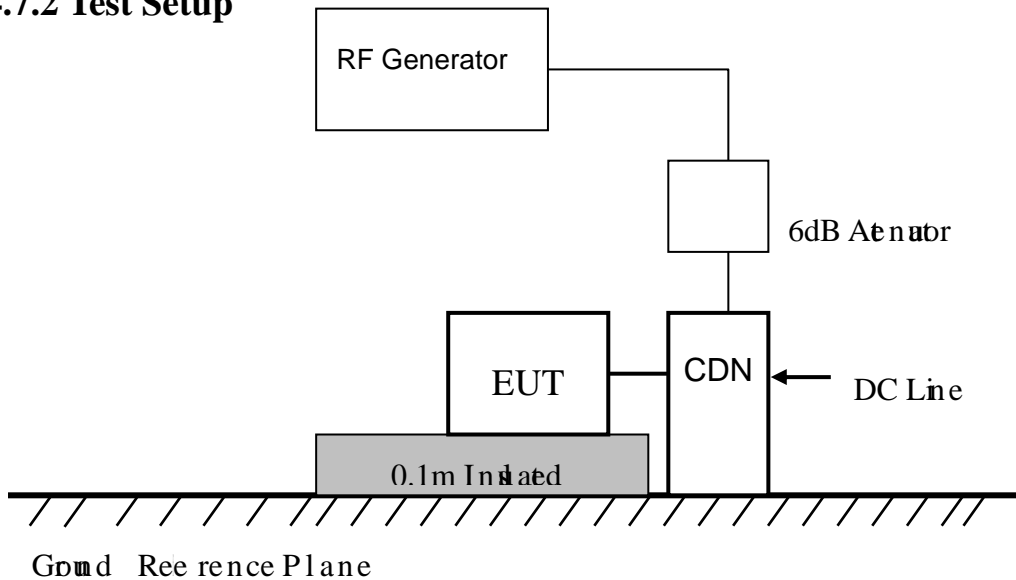
(1). The EUT continued to operate as intended. No degradation of performance was observed.

## 4.7 Immunity to Conducted Disturbances Induced by RF Fields

### 4.7.1 Test Specification

<b>Basic Standard:</b>	IEC 61000-4-6
<b>Frequency Range:</b>	0.15 MHz-80 MHz
<b>Field Strength:</b>	10V
<b>Modulation:</b>	1 kHz Sine Wave, 80%, AM Modulation
<b>Frequency Step:</b>	1% of fundamental
<b>Coupled Cable:</b>	DC. power line
<b>Coupling Device:</b>	Capacitor clamp
<b>Criterion:</b>	A

### 4.7.2 Test Setup



### 4.7.3 Test Result

Test Point	Frequency	Field Strength (Vrms)	Observation	Comply with criterion
DC Power Line	0.15 -80 MHz	10	Note(1)	A
Signal pt	0.15 -80 MHz	10	Note (1)	A

**NOTE:**

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

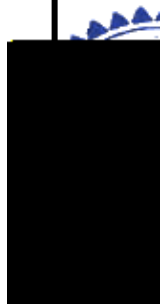
## 4.8 Power Frequency Magnetic Field Immunity Test

### 4.8.1 Test Specification

<b>Basic Standard:</b>	IEC 61000-4-8
<b>Frequency Range:</b>	50Hz



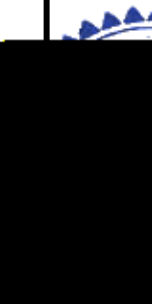
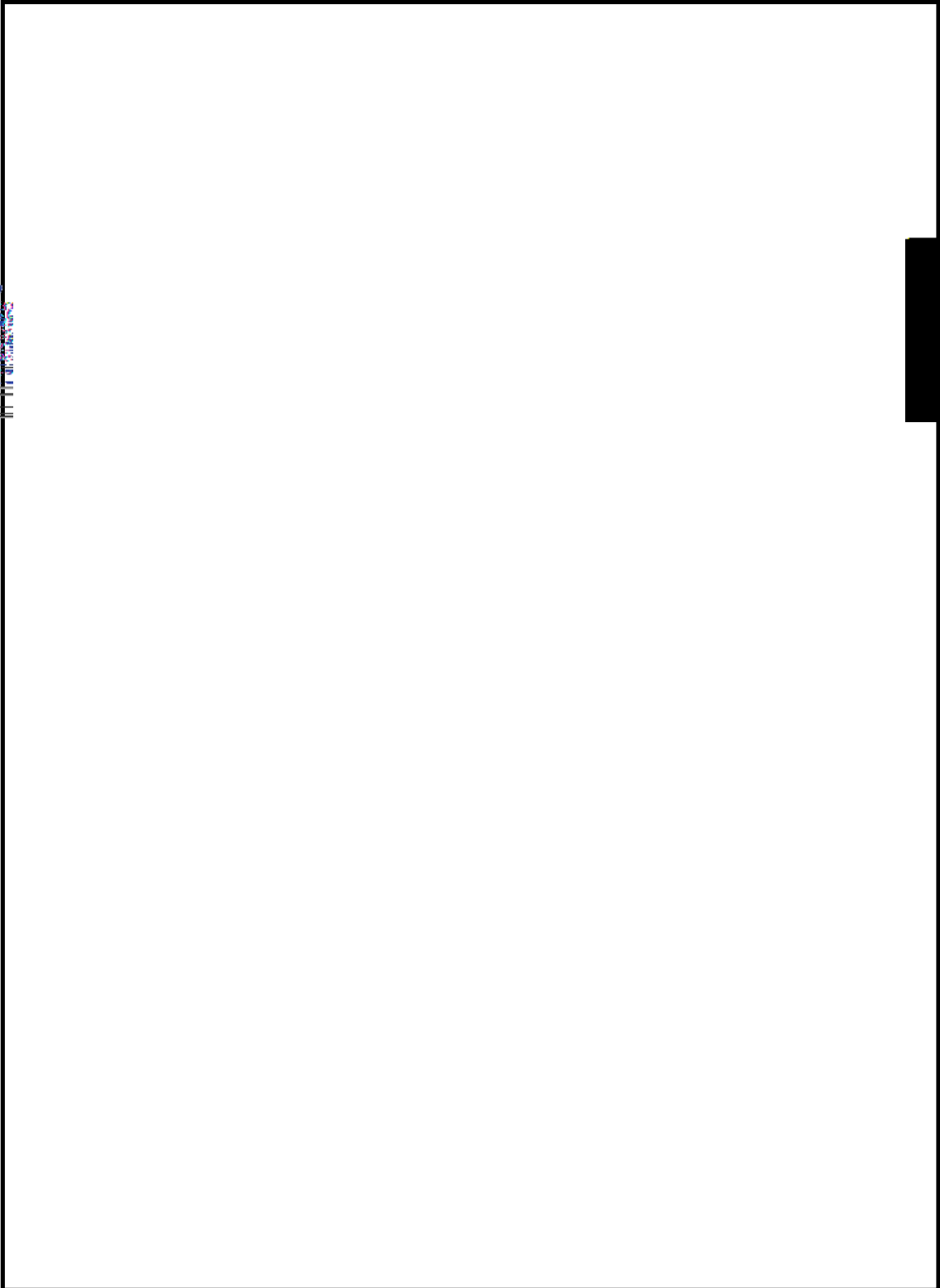
## Appendix I ÖPhotographs of the EUT



## **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

# STATEMENT

