

EMC TEST REPORT  
for  
Shenzhen Jeway Technology Co., Ltd.

Keyboard  
Model No.: JK-8226, JK-8806, JK-8660, JK-8222, JK-8427,  
JK-8223, JK-8228, JK-8803, JK-8225, JK-8101

Prepared for : Shenzhen Jeway Technology Co., Ltd.  
Address : Jeway Technology Park, Xueziwei Industrial Zone, Shajin,  
Bao'an Area, Shenzhen  
Tel: 0755-29761496  
Fax: 0755-29761496  
Prepared by : Anbotek Compliance Laboratory Limited  
Address : 1/F, 1/Building, SEC Industrial Park, No.4 Qianhai Road,  
Nanshan District, Shenzhen, 518054, China  
Tel: (86) 755-26066544  
Fax: (86) 755-26014772

Report Number : 201211751E  
Date of Test : Nov. 16~21, 2012  
Date of Report : Nov. 21, 2012




## TABLE OF CONTENT

Description	Page
Test Report Verification	
<b>1. GENERAL INFORMATION .....</b>	<b>4</b>
1.1. Description of Device (EUT).....	4
1.2. Description of Test Facility .....	5
1.3. Measurement Uncertainty .....	5
1.4. Test Summary .....	6
<b>2. POWER LINE CONDUCTED EMISSION TEST .....</b>	<b>7</b>
2.1. Block Diagram of Test Setup .....	7
2.2. Measuring Standard .....	7
2.3. Power Line Conducted Emission Limits .....	7
2.4. EUT Configuration on Measurement .....	7
2.5. Operating Condition of EUT .....	8
2.6. Test Procedure .....	8
2.7. Test Equipment.....	8
2.8. Measuring Results .....	8
<b>3. RADIATED EMISSION TEST .....</b>	<b>11</b>
3.1. Block Diagram of Test.....	11
3.2. Measuring Standard .....	11
3.3. Radiated Emission Limits .....	11
3.4. EUT Configuration on Test .....	12
3.5. Operating Condition of EUT .....	12
3.6. Test Procedure .....	12
3.7. Test Equipment.....	12
3.8. Measuring Results .....	12
<b>4. ELECTROSTATIC DISCHARGE IMMUNITY TEST .....</b>	<b>15</b>
4.1. Block Diagram of Test Setup .....	15
4.2. Measuring Standard .....	15
4.3. Severity Levels and Performance Criterion.....	15
4.4. EUT Configuration .....	15
4.5. Operating Condition of EUT .....	16
4.6. Test Procedure .....	16
4.7. Test Equipment.....	16
4.8. Measuring Results .....	16
<b>5. RF FIELD STRENGTH SUSCEPTIBILITY TEST .....</b>	<b>18</b>
5.1. Block Diagram of Test.....	18
5.2. Measuring Standard .....	18
5.3. Severity Levels and Performance Criterion.....	18
5.4. EUT Configuration on Test .....	19
5.5. Operating Condition of EUT .....	19
5.6. Test Procedure .....	19
5.7. Test Equipment.....	19
5.8. Measuring Results .....	19
<b>6. PHOTOGRAPHS .....</b>	<b>21</b>
6.1. Photo of Power Line Conducted Emission Test .....	21
6.2. Photo of Radiated Emission Test.....	21
6.3. Photo of Electrostatic Discharge Test.....	22
6.4. Photo of RF Field Strength susceptibility Test.....	22
APPENDIX I (Photos of the EUT) (3 Pages)	
APPENDIX II (CE Label) (1 Page)	



## TEST REPORT VERIFICATION

Applicant : Shenzhen Jeway Technology Co., Ltd.  
 Manufacturer : Shenzhen Jeway Technology Co., Ltd.  
 EUT : Keyboard  
 Model No. : JK-8226, JK-8806, JK-8660, JK-8222, JK-8427, JK-8223,  
 JK-8228, JK-8803, JK-8225, JK-8101  
 Rating : DC 5V  
 Trade Mark : 

### Measurement Procedure Used:

EN 55022: 2010;

EN 55024: 2010;

(IEC 61000-4-2: 2008; IEC 61000-4-3: 2006+A1: 2007+A2: 2010)

The device described above is tested by Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the EN 55022 and EN 55024 requirements. The Project in IEC 61000-4-3 was tested in Shenshen EMTEK Co., Ltd.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Anbotek Compliance Laboratory Limited.

Date of Test :

Nov. 16~21, 2012

*Barak Ban*

Prepared by :

( Engineer/ Barak Ban )

*Amy Ding*

Reviewer :

( Project Manager/ Amy Ding )

Approved & Authorized Signer :

*Tom. Chen*

( Manager/ Tom Chen )



# 1. GENERAL INFORMATION

## 1.1. Description of Device (EUT)

EUT	: Keyboard
Model Number	: JK-8226, JK-8806, JK-8660, JK-8222, JK-8427, JK-8223, JK-8228, JK-8803, JK-8225, JK-8101 (Note: All samples are the same except the model number & Shape of appliances, so we prepare “JK-8226” for EMC test only.)
Test Power Supply	: DC 5V via USB Port
Applicant	: Shenzhen Jeway Technology Co., Ltd.
Address	: Jeway Technology Park,Xueziwei Industrial Zone, Shajin, Bao'an Area, Shenzhen
Manufacturer	: Shenzhen Jeway Technology Co., Ltd.
Address	: Jeway Technology Park,Xueziwei Industrial Zone, Shajin, Bao'an Area, Shenzhen
PC	: Manufacturer: DELL M/N: OPTIPLEX 380 S/N: 1J63X2X CE , FCC: DOC
MONITOR	: Manufacturer: DELL M/N: E170Sc S/N: CN-00V539-64180-055-0UPS CE , FCC: DOC
MOUSE	: Manufacturer: DELL M/N: M-UARDEL7 S/N: N/A CE , FCC: DOC Cable: 1m, unshielded
Date of Receipt	: Nov. 16, 2012
Date of Test	: Nov. 16~21, 2012



## 1.2. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

### **FCC-Registration No.: 752021**

Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, August 20, 2010.

### **IC-Registration No.: 8058A-1**

Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A-1, August 30, 2010.

### **CNAS - LAB Code: L3503**

Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

### **Test Location**

All Emissions tests were performed  
Anbotek Compliance Laboratory Limited. at 1/F, 1/Building, SEC Industrial Park, No.4 Qianhai Road, Nanshan District, Shenzhen, 518054, China

## 1.3. Measurement Uncertainty

Radiation Uncertainty : Ur = 4.3dB

Conduction Uncertainty : Uc = 3.4dB



## 1.4. Test Summary

For the EUT described above. The standards used were EN 55022 for Emissions & EN 55024 for Immunity.

Table 1 : Tests Carried Out Under EN 55022: 2010

Standard	Test Items	Status
EN 55022: 2010	Power Line Conducted Emission Test (150KHz To 30MHz)	√
EN 55022: 2010	Radiated Emission Test (30MHz To 1000MHz)	√

Table 2 : Tests Carried Out Under EN 55024: 2010

Standard	Test Items	Status
EN 55024: 2010	Electrostatic Discharge immunity Test	√
EN 55024: 2010	RF Field Strength susceptibility Test	√
EN 55024: 2010	Electrical Fast Transient/Burst Immunity Test	×
EN 55024: 2010	Surge Immunity Test	×
EN 55024: 2010	Injected Currents Susceptibility Test	×
EN 55024: 2010	Magnetic Field Susceptibility Test	×
EN 55024: 2010	Voltage Dips and Interruptions Test	×

√ Indicates that the test is applicable

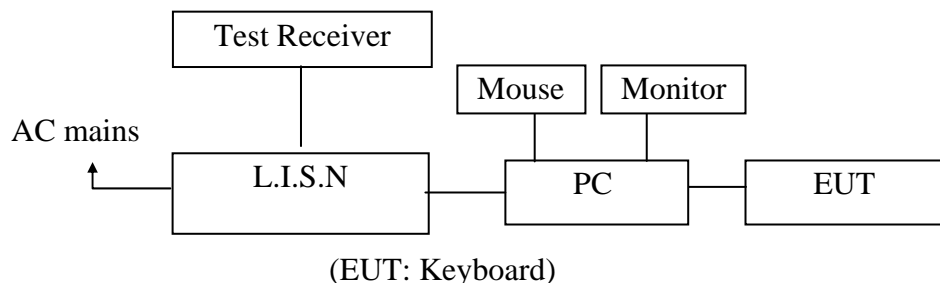
×

 Indicates that the test is not applicable



## 2. POWER LINE CONDUCTED EMISSION TEST

### 2.1. Block Diagram of Test Setup



### 2.2. Measuring Standard

EN 55022: 2010

### 2.3. Power Line Conducted Emission Limits

Frequency (MHz)	Limit (dB $\mu$ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0
NOTE1-The lower limit shall apply at the transition frequencies. NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

### 2.4. EUT Configuration on Measurement

The following equipments are installed on Conducted Emission Measurement to meet EN 55022 requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

#### 2.4.1. Keyboard

Model Number : JK-8226  
 Serial Number : N/A  
 Applicant : Shenzhen Jeway Technology Co., Ltd.



## 2.5. Operating Condition of EUT

2.5.1. Setup the EUT as shown on Section 2.1.

2.5.2. Turn on the power of all equipments.

2.5.3. Let the EUT work in measuring mode (Connect to PC) and measure it.

## 2.6. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the EN 55022 regulations during conducted emission measurement.

The bandwidth of the test receiver (ESCI) is set at 9KHz in 150KHz~30MHz.

The frequency range from 150KHz to 30MHz is investigated for AC mains.

The test results are listed in Section 2.8.

## 2.7. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2011	1 Year
2.	LISN	SchwarzBeck	NSLK 8126	8126377	May 19, 2012	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	May 19, 2012	1 Year
4.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A

## 2.8. Measuring Results

**PASS.**

The frequency range 150KHz to 30MHz is investigated

The test curves are shown in the following pages.

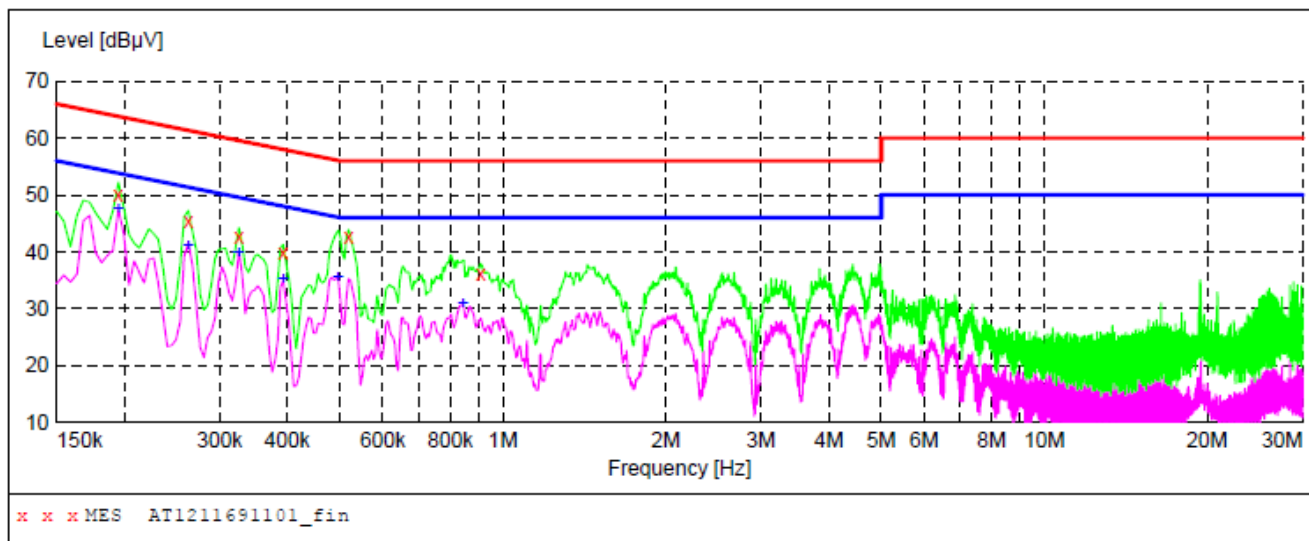


**CONDUCTED EMISSION TEST DATA**

EUT: Keyboard M/N: JK-8226  
 Operating Condition: Connect to PC  
 Test Site: 1# Shielded Room  
 Operator: Barak Ban  
 Test Specification: DC 5V via USB Port  
 Comment: N  
 Tem: 22.2°C Hum: 60%

**SCAN TABLE: "Voltage (150K~30M) FIN"**

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1211691101\_fin"**

11/19/2012 10:07AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.195000	50.00	20.1	64	13.8	QP	N	GND
0.262500	45.40	20.1	61	16.0	QP	N	GND
0.325500	42.70	20.1	60	16.9	QP	N	GND
0.393000	39.90	20.1	58	18.1	QP	N	GND
0.519000	42.50	20.1	56	13.5	QP	N	GND
0.910500	36.10	20.1	56	19.9	QP	N	GND

**MEASUREMENT RESULT: "AT1211691101\_fin2"**

11/19/2012 10:07AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.195000	47.60	20.1	54	6.2	AV	N	GND
0.262500	41.00	20.1	51	10.4	AV	N	GND
0.325500	39.80	20.1	50	9.8	AV	N	GND
0.393000	35.10	20.1	48	12.9	AV	N	GND
0.496500	35.50	20.1	46	10.6	AV	N	GND
0.843000	30.90	20.1	46	15.1	AV	N	GND

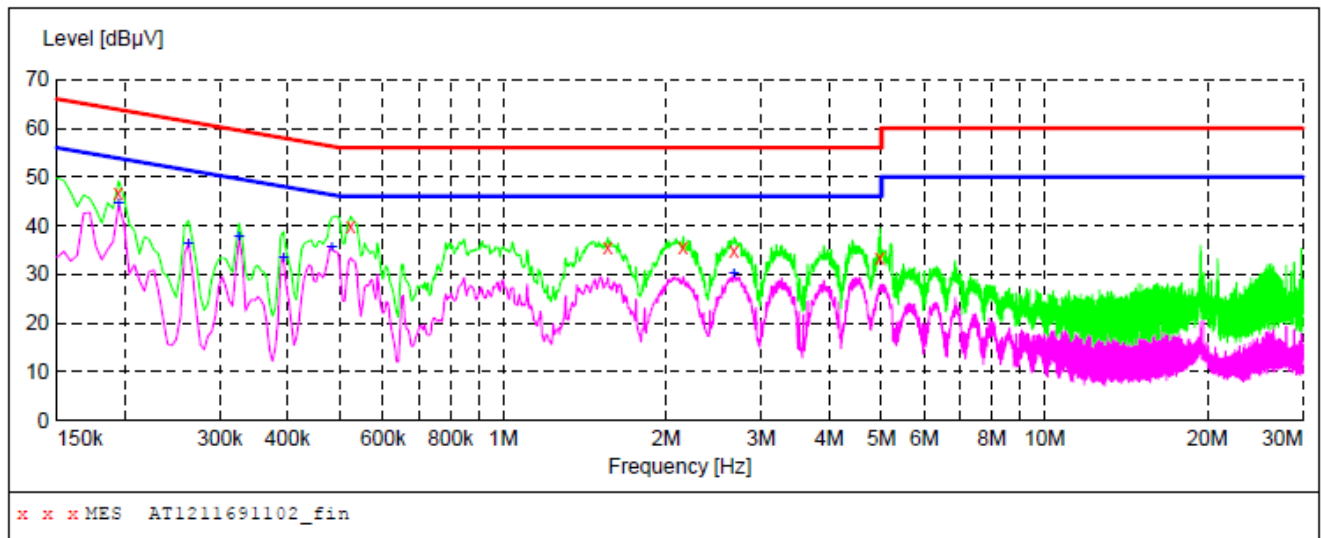


**CONDUCTED EMISSION TEST DATA**

EUT: Keyboard M/N: JK-8226  
 Operating Condition: Connect to PC  
 Test Site: 1# Shielded Room  
 Operator: Barak Ban  
 Test Specification: DC 5V via USB Port  
 Comment: L  
 Tem: 22.2°C Hum: 60%

**SCAN TABLE: "Voltage (150K~30M) FIN"**

Short Description: 150K-30M Disturbance Voltages

**MEASUREMENT RESULT: "AT1211691102\_fin"**

11/19/2012 10:10AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.195000	46.80	20.1	64	17.0	QP	L1	GND
0.523500	39.90	20.1	56	16.1	QP	L1	GND
1.562500	35.40	20.3	56	20.6	QP	L1	GND
2.152000	35.50	20.3	56	20.5	QP	L1	GND
2.674000	34.80	20.4	56	21.2	QP	L1	GND
4.969000	33.40	20.5	56	22.6	QP	L1	GND

**MEASUREMENT RESULT: "AT1211691102\_fin2"**

11/19/2012 10:10AM

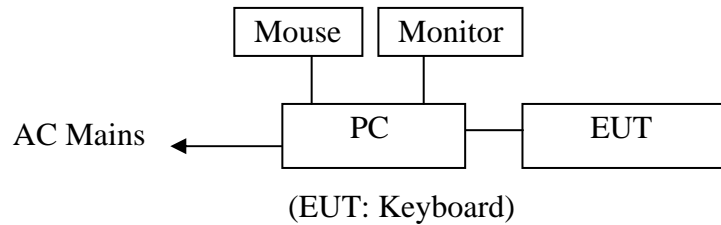
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.195000	44.40	20.1	54	9.4	AV	L1	GND
0.262500	36.10	20.1	51	15.3	AV	L1	GND
0.325500	37.70	20.1	50	11.9	AV	L1	GND
0.393000	33.50	20.1	48	14.5	AV	L1	GND
0.483000	35.60	20.1	46	10.7	AV	L1	GND
2.669500	30.10	20.4	46	15.9	AV	L1	GND



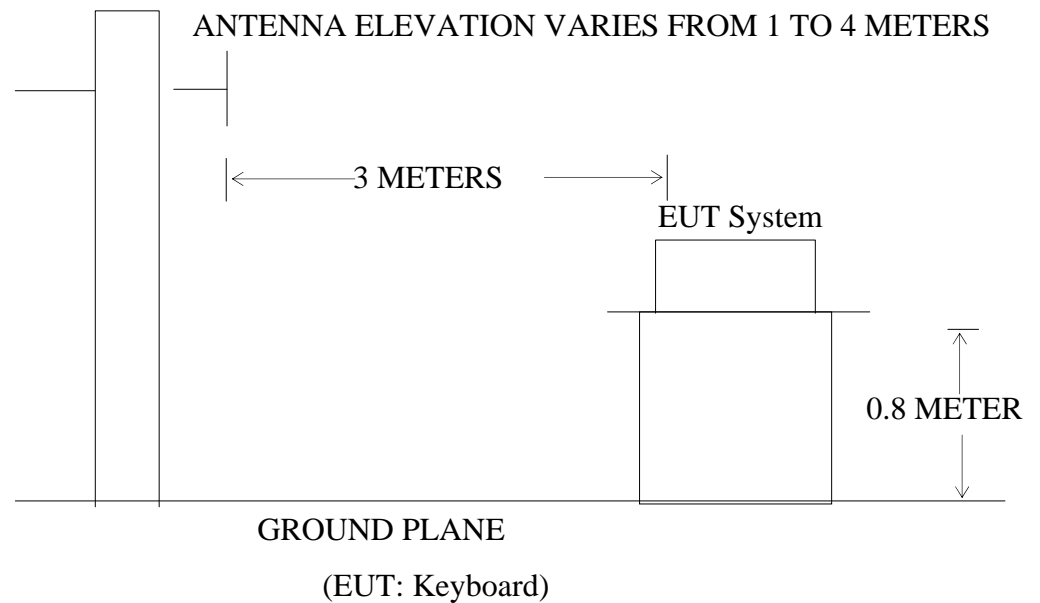
### 3. RADIATED EMISSION TEST

#### 3.1. Block Diagram of Test

##### 3.1.1. Block diagram of connection between the EUT and simulators



##### 3.1.2. Block diagram of test setup (In chamber)



#### 3.2. Measuring Standard

EN 55022: 2010

#### 3.3. Radiated Emission Limits

##### 3.3.1. EN 55022: 2010

##### Radiated Emission Limits

All emanations from an EN 55022 device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT (dB $\mu$ V/m)
30 ~ 230	3	40



230 ~ 1000	3	47
------------	---	----

- Note:
- (1) The smaller limit shall apply at the combination point between two frequency bands.
  - (2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

### 3.4. EUT Configuration on Test

The EN 55022 regulations test method must be used to find the maximum emission during radiated emission measurement.

### 3.5. Operating Condition of EUT

3.5.1. Turn on the power.

3.5.2. Let the EUT work in test mode (Connect to PC) and measure it.

### 3.6. Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the Receiver (ESCI) is set at 120kHz.

The EUT is tested in 9\*6\*6 Chamber.

The test results are listed in Section 3.8.

### 3.7. Test Equipment

The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2011	1 Year
2.	Trilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	May 17, 2012	1 Year
3.	Pre-amplifier	Compliance Direction	PAP-0203	22008	May 19, 2012	1 Year
4.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

### 3.8. Measuring Results

**PASS.**

The frequency range from 30MHz to 1000MHz is investigated.

The test curves are shown in the following pages.

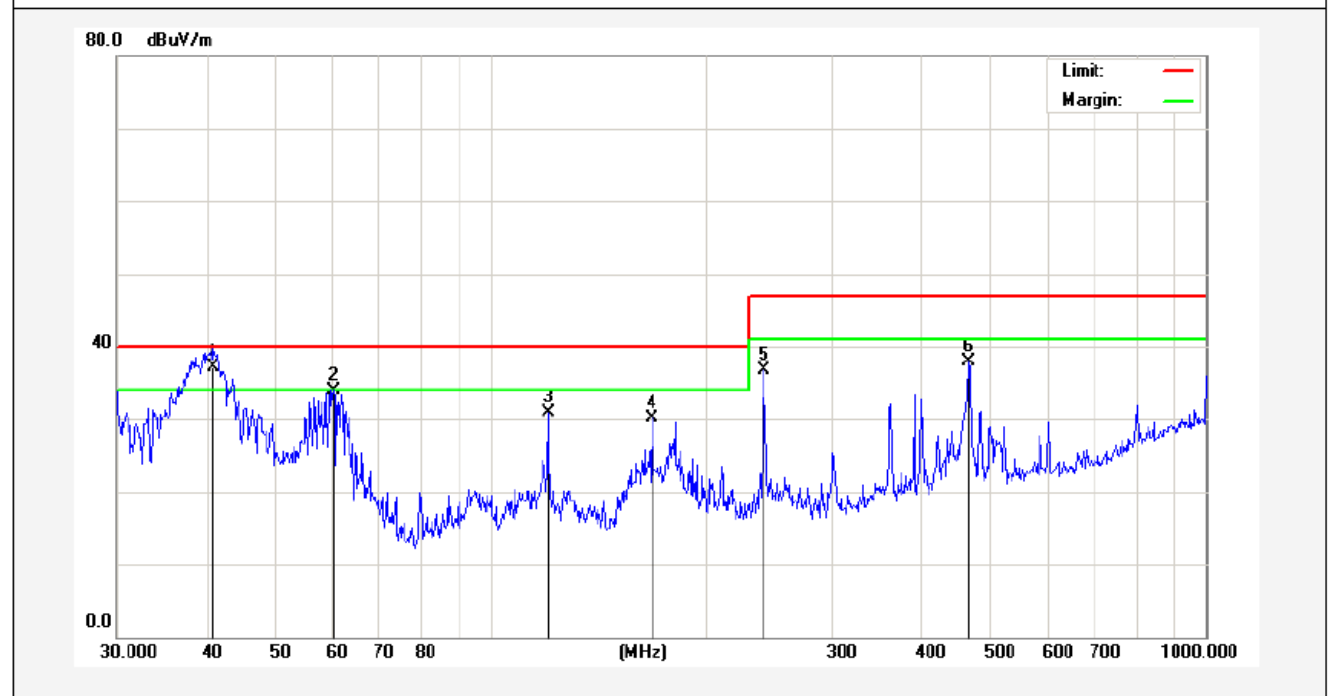



**Anbotek Compliance Laboratory Limited**

1/F, 1/Building, SEC Industrial Park, No.4 Qianhai Road,  
Nanshan District, Shenzhen, 518054, China

Tel: (86)755-26066544  
Fax: (86)755-26014772  
Http://www.anbotek.com

<b>Job No.:</b>	AT1211691E	<b>Polarization:</b>	Vertical
<b>Standard:</b>	(RE)EN 55022_class B_3m	<b>Power Source:</b>	DC 5V via USB Port
<b>Test item:</b>	Radiation Test	<b>Date:</b>	2012/11/19
<b>Temp.(C)/Hum.(%RH):</b>	24.3( C)/55%RH	<b>Time:</b>	16:48:49
<b>EUT:</b>	Keyboard	<b>Test By:</b>	Barak Ban
<b>Model:</b>	JK-8226	<b>Distance:</b>	3m
<b>Note:</b>	Connect to PC		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	40.9881	47.79	-10.77	37.02	40.00	-2.98	QP	100	360	
2	60.2801	49.46	-15.51	33.95	40.00	-6.05	peak			
3	120.2766	47.34	-16.37	30.97	40.00	-9.03	peak			
4	167.8243	47.77	-17.63	30.14	40.00	-9.86	peak			
5	240.8304	50.76	-14.09	36.67	47.00	-10.33	peak			
6	465.5994	49.87	-11.94	37.93	47.00	-9.07	peak			

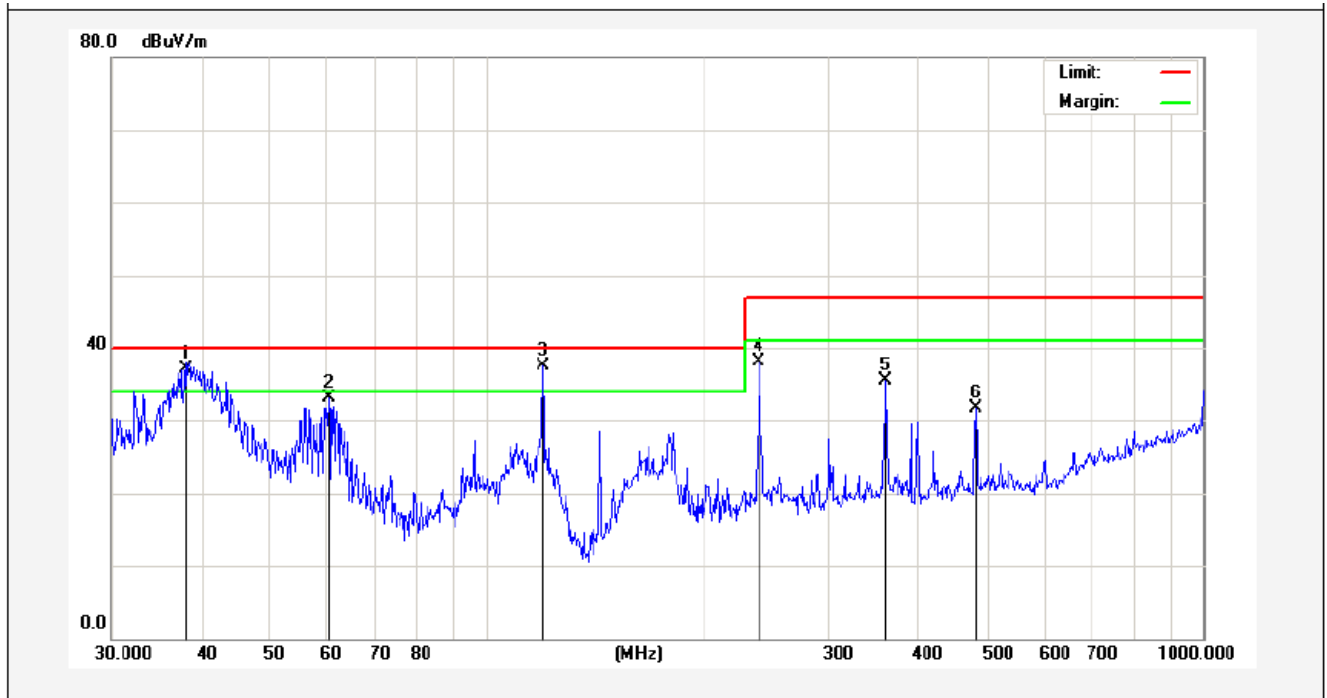




**Anbotek Compliance Laboratory Limite**  
 1/F, 1/Building, SEC Industrial Park, No.4 Qianhai Road,  
 Nanshan District, Shenzhen, 518054, China

Tel: (86)755-26066544  
 Fax: (86)755-26014772  
 Http://www.anbotek.com

<b>Job No.:</b>	<b>AT1211691E</b>	<b>Polarziation:</b>	<b>Horizontal</b>
<b>Standard:</b>	<b>(RE)EN 55022_class B_3m</b>	<b>Power Source:</b>	<b>DC 5V via USB Port</b>
<b>Test item:</b>	<b>Radiation Test</b>	<b>Date:</b>	<b>2012/11/19</b>
<b>Temp.(C)/Hum.(%RH):</b>	<b>24.3( C)/55%RH</b>	<b>Time:</b>	<b>16:53:04</b>
<b>EUT:</b>	<b>Keyboard</b>	<b>Test By:</b>	<b>Barak Ban</b>
<b>Model:</b>	<b>JK-8226</b>	<b>Distance:</b>	<b>3m</b>
<b>Note: Connect to PC</b>			



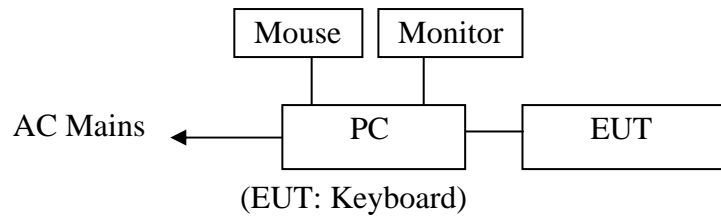
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	38.0782	48.94	-11.88	37.06	40.00	-2.94	QP	300	0	
2	60.2801	48.56	-15.51	33.05	40.00	-6.95	peak			
3	119.8556	58.76	-21.32	37.44	40.00	-2.56	peak			
4	239.9874	56.11	-18.09	38.02	47.00	-8.98	peak			
5	360.4476	49.07	-13.65	35.42	47.00	-11.58	peak			
6	480.5276	43.19	-11.53	31.66	47.00	-15.34	peak			



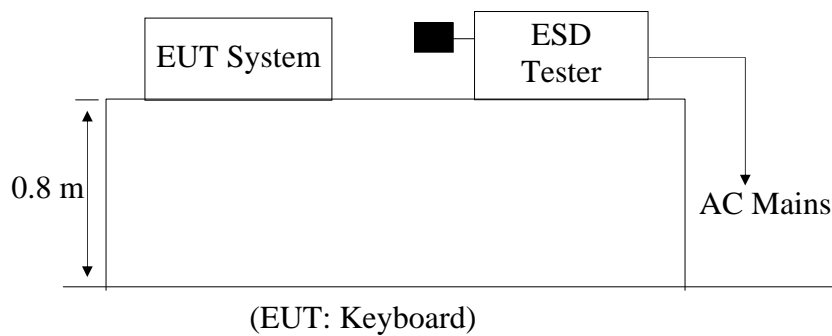
## 4. ELECTROSTATIC DISCHARGE IMMUNITY TEST

### 4.1. Block Diagram of Test Setup

#### 4.1.1. Block diagram of connection between the EUT and simulators



#### 4.1.2. Block diagram of test setup



### 4.2. Measuring Standard

EN 55024: 2010

IEC 61000-4-2: 2008

Severity Level: 3 / Air Discharge:  $\pm 8\text{kV}$  Level: 2 / Contact Discharge:  $\pm 4\text{kV}$

### 4.3. Severity Levels and Performance Criterion

#### 4.3.1. Severity level

Level	Test Voltage Contact Discharge (kV)	Test Voltage Air Discharge (kV)
1.	$\pm 2$	$\pm 2$
2.	$\pm 4$	$\pm 4$
3.	$\pm 6$	$\pm 8$
4.	$\pm 8$	$\pm 15$
X	Special	Special

#### 4.3.2. Performance criterion: **B**

### 4.4. EUT Configuration

The configuration of EUT are listed in Section 2.4.



#### 4.5. Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section 2.5 except the test set up replaced by Section 4.1.

#### 4.6. Test Procedure

##### 4.6.1. Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 100 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

##### 4.6.2. Contact Discharge:

All the procedure shall be same as Section 4.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

##### 4.6.3. Indirect discharge for horizontal coupling plane

At least 50 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

##### 4.6.4. Indirect discharge for vertical coupling plane

At least 50 single discharge shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

#### 4.7. Test Equipment

The following test equipments are used during the electrostatic discharge immunity measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	ESD Simulators	KIKUSUI	KES4021	LJ003477	May 25, 2012	1 Year

#### 4.8. Measuring Results

**PASS**

Please refer to the following page



# Electrostatic Discharge Test Results

Anbotek Compliance Laboratory Limited

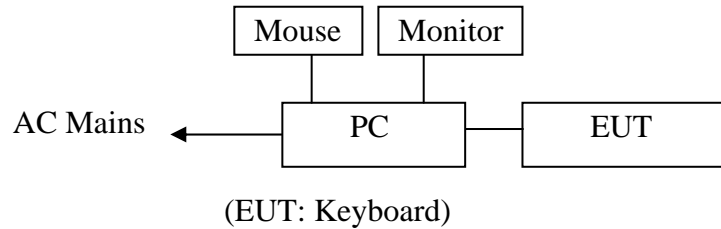
Applicant	: Shenzhen Jeway Technology Co., Ltd.	Test Date	: Nov. 20, 2012
EUT	: Keyboard	Temperature	: 25°C
M/N	: JK-8226	Humidity	: 54%
Air discharge	: $\pm 8.0\text{kV}$	Criterion	: B
Contact discharge:	$\pm 4.0\text{kV}$	Test Engineer:	Barak Ban
Test Mode	: Connect to PC		
Location		Kind A-Air Discharge C-Contact Discharge	Result
Slot of the EUT	8 points	A	PASS
Others	8 points	A	PASS
Function Keys	8 points	A	PASS
HCP	6 points	C	PASS
VCP of front	4 points	C	PASS
VCP of rear	4 points	C	PASS
VCP of left	4 points	C	PASS
VCP of right	4 points	C	PASS
Note:			



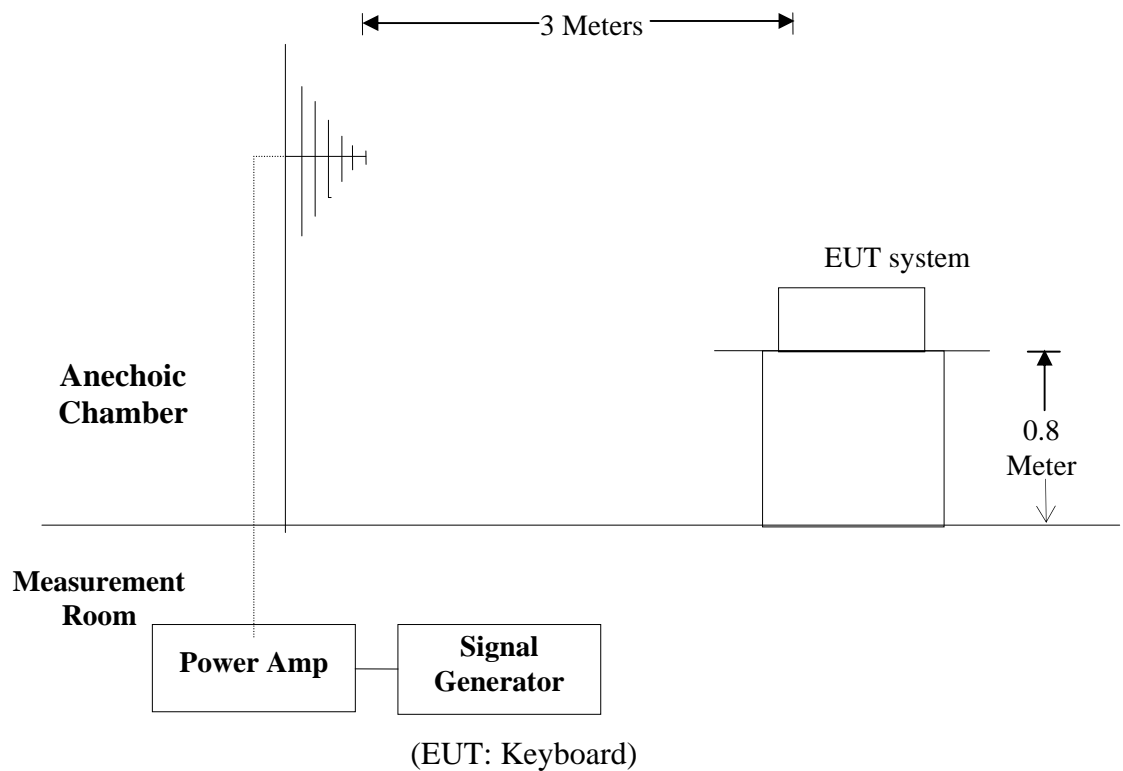
## 5. RF FIELD STRENGTH SUSCEPTIBILITY TEST

### 5.1. Block Diagram of Test

#### 5.1.1. Block diagram of connection between the EUT and simulators



#### 5.1.2. Block diagram of RS test setup



### 5.2. Measuring Standard

EN 55024: 2010

IEC 61000-4-3: 2006+A1: 2007+A2: 2010

Severity Level: 2, 3V / m

### 5.3. Severity Levels and Performance Criterion

#### 5.3.1. Severity Levels

Level	Field Strength V/m
1.	1
2.	3
3.	10



X	Special
---	---------

#### 5.3.2. Performance Criterion: A

#### 5.4. EUT Configuration on Test

The configuration of the EUT is same as Section 2.4.

#### 5.5. Operating Condition of EUT

Same as conducted emission measurement which is listed in Section 2.5. except the test setup replaced as Section 5.1.

#### 5.6. Test Procedure

The EUT are placed on a table which is 0.8 meter high above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of the EUT must be faced this transmitting antenna and measured individually.

In order to judge the EUT performance, a CCD camera is used to monitor its screen. All the scanning conditions are as following:

Condition of Test	Remark
-----	-----
1. Fielded Strength	3V/m (Severity Level 2)
2. Radiated Signal	Unmodulated
3. Scanning Frequency	80-1000MHz
4. Sweep time of radiated	0.0015 Decade/s
5. Dwell Time	1 Sec.

#### 5.7. Test Equipment

The following test equipments are used during the RF Field Strength susceptibility measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	RF Power Meter. Dual Channel	BOONTON	4232A	10539	May 29, 2012	1 year
2.	50ohm Diode Power Sensor	BOONTON	51011EMC	34236/34238	May 29, 2012	1 year
3.	Broad-Band Horn Antenna	SCHWARZBECK	BBHA9120 L3F	332	May 29, 2012	1 year
4.	Power Amplifier	PRANA	AP32MT215	N/A	May 29, 2012	1 year
5.	Power Amplifier	MILMEGA	AS0102-55	N/A	May 29, 2012	1 year
6.	Signal Generator	AEROFLEX	2023B	N/A	May 29, 2012	1 year
7.	Field Strength Meter	HOLADAY	HI-6005	N/A	May 29, 2012	1 year
8.	RS232 Fiber Optic Modem	HOLADAY	HI-4413P	N/A	May 29, 2012	1 year
9.	Log.-Per. Antenna	SCHWARZBECK	VULP 9118E	N/A	May 29, 2012	1 year

#### 5.8. Measuring Results

**PASS.**

Please refer to the following page.



# RF Field Strength Susceptibility Test Results

Anbotek Compliance Laboratory Limited

Applicant : Shenzhen Jeway Technology Co., Ltd.	Test Date : Nov. 20, 2012
EUT : Keyboard	Temperature : 25°C
M/N : JK-8226	Humidity : 54%
Field Strength : 3 V/m	Criterion : A
Test Mode : Connect to PC	Test Engineer : Barak Ban
Frequency Range: 80 MHz to 1000 MHz	

Modulation:	<input type="checkbox"/> None	<input type="checkbox"/> Pulse	<input checked="" type="checkbox"/> AM 1KHz 80%
-------------	-------------------------------	--------------------------------	---

	Frequency Rang 1: 80~ 1000MHz		Frequency Rang 2:			
Steps	#	/	%	#	/	%
	Horizontal		Vertical	Horizontal		Vertical
Front	PASS		PASS			
Right	PASS		PASS			
Rear	PASS		PASS			
Left	PASS		PASS			

Test Equipment :

Note: Tested by EMTEK.

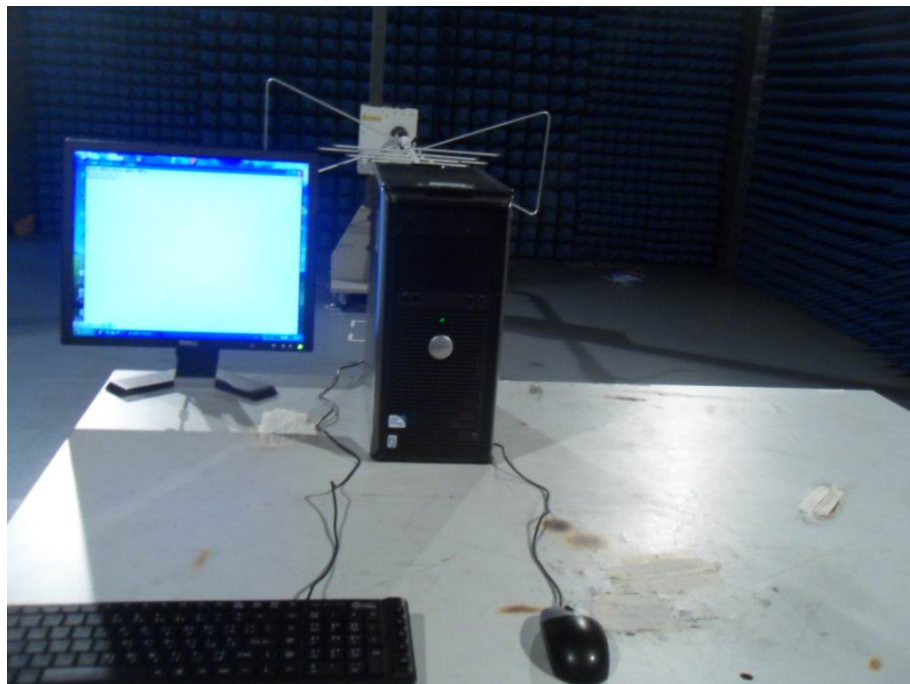


## 6. PHOTOGRAPHS

### 6.1. Photo of Power Line Conducted Emission Test



### 6.2. Photo of Radiated Emission Test





### 6.3. Photo of Electrostatic Discharge Test



### 6.4 Photo of RF Field Strength susceptibility Test





# APPENDIX I

## (Photos of EUT)



Figure 1  
The EUT- Front View



Figure 2  
The EUT- Back View





Figure 3  
The EUT- Inside View



Figure 4  
The EUT- Inside View





Figure 5  
PCB of the EUT- Front View

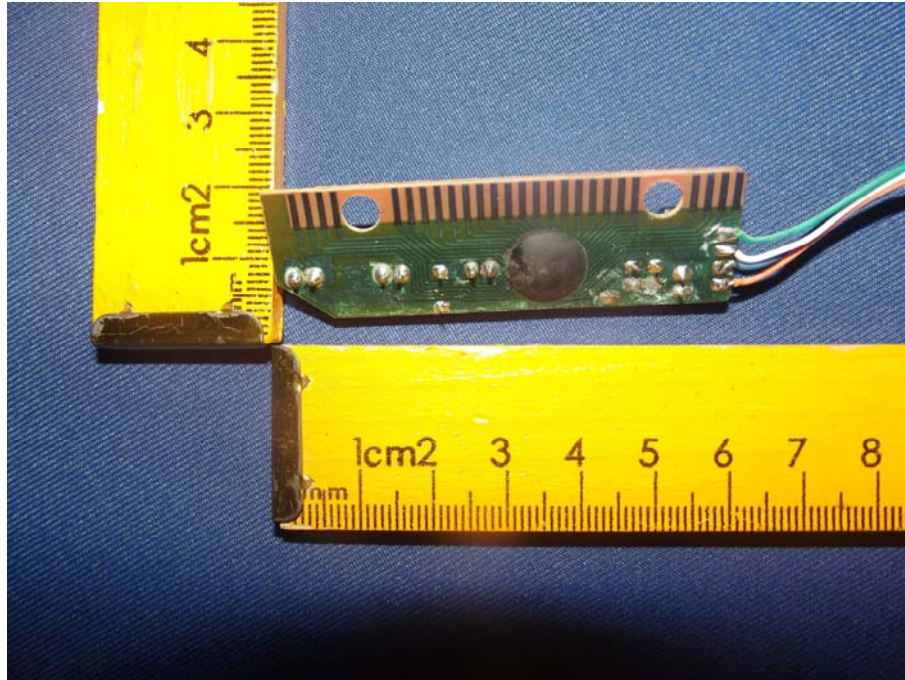
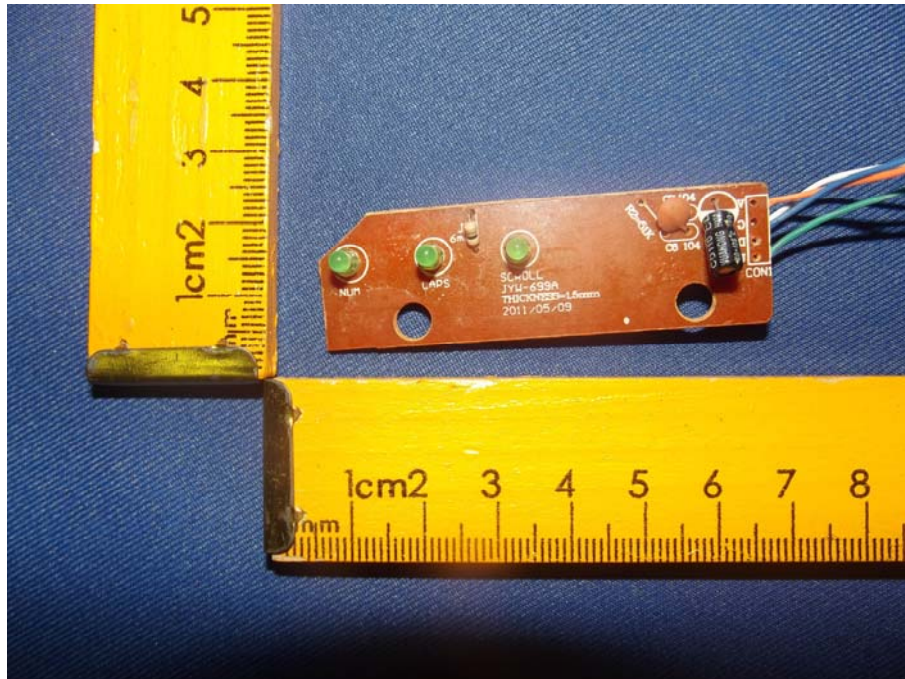


Figure 6  
PCB of the EUT- Back View





## APPENDIX II (CE Label)

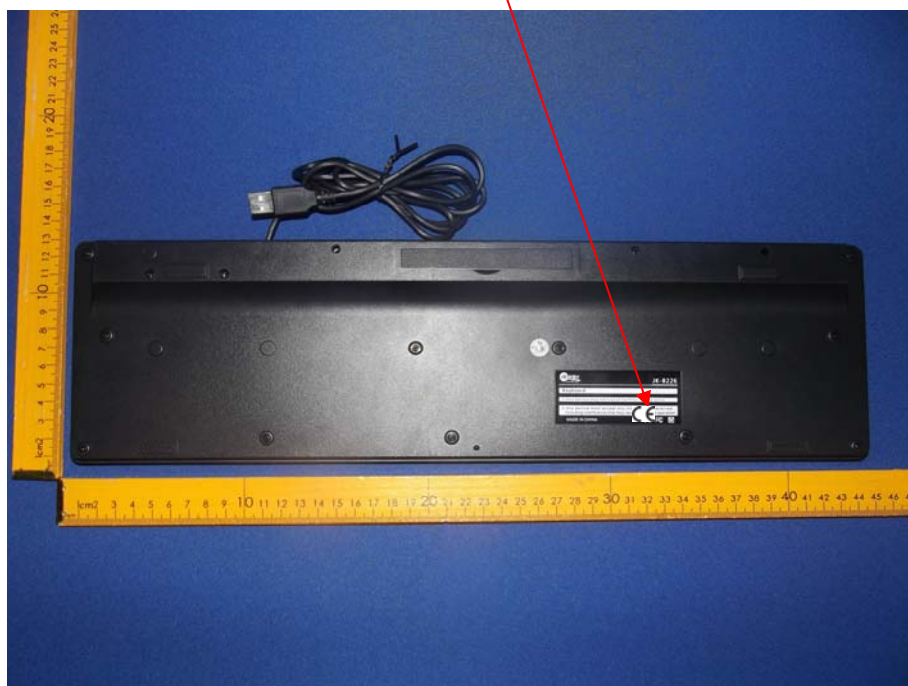


## CE Label

1. The CE conformity marking must consist of the initials 'CE' taking the following form:  
If the CE marking is reduced or enlarged, the proportions given in the above graduated drawing must be respected.
2. The CE marking must have a height of at least 5 mm except where this is not possible on account of the nature of the apparatus.
3. The CE marking must be affixed to the product or to its data plate. Additionally it must be affixed to the packaging, if any, and to the accompanying documents.
4. The CE marking must be affixed visibly, legibly and indelibly.  
It must have the same height as the initials 'CE'

### Proposed Label Location on EUT

#### EUT Back View/proposed CE Mark Location







# 中国合格评定国家认可委员会 实验室认可证书

(注册号: CNAS L3503)

兹证明:

**深圳市安博技术服务有限公司**

广东省深圳市南山区港湾大道东内环路南能源工业小区一栋一楼, 518054

符合 ISO/IEC 17025: 2005 《检测和校准实验室能力的通用要求》  
(CNAS-CL01 《检测和校准实验室能力认可准则》) 的要求, 具备承担  
本证书附件所列检测服务的能力, 予以认可。

获认可的能力范围见标有相同认可注册号的证书附件, 证书附件是  
本证书组成部分。

签发日期: 2011-06-24

有效期至: 2014-06-23

初次认可: 2008-05-19

更新日期: 2011-06-24



中国合格评定国家认可委员会授权人

中国合格评定国家认可委员会 (CNAS) 经国家认证认可监督管理委员会 (CNCA) 授权, 负责实施合格评定国家认可制度。CNAS 是国际实验室认可合作组织 (ILAC) 和亚太实验室认可合作组织 (APLAC) 的多边互认协议成员。





**China National Accreditation Service for Conformity Assessment**

## **LABORATORY ACCREDITATION CERTIFICATE**

**(Registration No. CNAS L3503 )**

**Shenzhen Anbotek Compliance Laboratory Limited**

1/F., Building 1, SEC Industrial Park, South of Neihuan Road &

East of Gangwan Road, Nanshan District, Shenzhen, Guangdong, China

***is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence of testing.***

***The scope of accreditation is detailed in the attached appendices bearing the same registration number as above. The appendices form an integral part of this certificate.***

**Date of Issue: 2011-06-24**

**Date of Expiry: 2014-06-23**

**Date of Initial Accreditation: 2008-05-19**

**Date of Update: 2011-06-24**

**Signed on behalf of China National Accreditation Service  
for Conformity Assessment**

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is the signatory to International Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (ILAC MRA) and Asia Pacific Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (APLAC MRA).



# **FEDERAL COMMUNICATIONS COMMISSION**

**Laboratory Division  
7435 Oakland Mills Road  
Columbia, MD 21046**

August 20, 2010

Registration Number: 752021

Anbotek Compliance Laboratory Limited  
1/F, 1 /Build, SEC Industrial Park,,  
No. 4 Qianhai Road, Nanshan District,,  
Shenzhen, 518054  
China

Attention: Daniel zhu

Re: Measurement facility located at Nanshan District, Shenzhen, China  
Anechoic chamber (3 meter)  
Date of Listing: August 20, 2010

Dear Sir or Madam:

Your request for registration of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC rules. The information has, therefore, been placed on file and the name of your organization added to the list of facilities whose measurement data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Please note that the file must be updated for any changes made to the facility and the registration must be renewed at least every three years. Please also note that this registration does not recognize the measurement facility to perform testing for products authorized under the Declaration of Conformity (DoC) process. In order to test products subject to DoC authorization process, a measurement facility must be accredited and recognized by the FCC.

Measurement facilities that have indicated that they are available to the public to perform measurement services on a fee basis may be found on the FCC website [www.fcc.gov](http://www.fcc.gov) under E-Filing, OET Equipment Authorization Electronic Filing, Test Firms.

Sincerely,

Katie Hawkins  
Electronics Engineer



August 30, 2010

OUR FILE: 46405-8058

Submission No: 141927

**Anbotek Compliance Laboratory Limited**

1/F, 1 /Building, SEC Industrial Park  
No. 4 Qianhai Road, Nanshan District, 518054  
Shenzhen, China

**Attention:** Daniel Zhu

Dear Sir/Madame:

The Bureau has received your application for the renewal of a 3m alternative test site. Be advised that the information received was satisfactory to Industry Canada. The following number(s) is now associated to the site(s) for which registration / renewal was sought (**8058A-1**). Please reference the appropriate site number in the body of test reports containing measurements performed on the site. In addition, please keep for your records the following information;

- The company address code associated to the site(s) located at the above address is: **8058A**

Furthermore, to obtain or renew a unique site number, the applicant shall demonstrate that the site has been accredited to ANSI C63.4-2003 or later. A scope of accreditation indicating the accreditation by a recognized accreditation body to ANSI C63.4-2003 or later shall be accepted. Please indicate in a letter the previous assigned site number if applicable and the type of site (example: 3 metre OATS or 3 metre chamber). If the test facility is not accredited to ANSI C63.4-2003 or later, the test facility shall submit test data demonstrating full compliance with the ANSI standard. The Bureau will evaluate the filing to determine if recognition shall be granted.

The frequency for re-validation of the test site and the information that is required to be filed or retained by the testing party shall comply with the requirements established by the accrediting organization. However, in all cases, test site re-validation shall occur on an interval not to exceed two years. There is no fee or form associated with an OATS filing. OATS submissions are encouraged to be submitted electronically to the Bureau using the following URL;

[http://strategis.ic.gc.ca/epic/internet/inceb-bhst.nsf/en/h\\_tt00052e.html](http://strategis.ic.gc.ca/epic/internet/inceb-bhst.nsf/en/h_tt00052e.html).

If you have any questions, you may contact the Bureau by e-mail at [certification.bureau@ic.gc.ca](mailto:certification.bureau@ic.gc.ca) Please reference our file and submission number above for all correspondence.

Yours sincerely,



Dalwinder Gill  
For: Wireless Laboratory Manager  
**Certification and Engineering Bureau**  
3701 Carling Ave., Building 94  
P.O. Box 11490, Station "H"  
Ottawa, Ontario K2H 8S2  
Email: [dalwinder.gill@ic.gc.ca](mailto:dalwinder.gill@ic.gc.ca)  
Tel. No. (613) 998-8363  
Fax. No. (613) 990-4752



# ATTESTATION



Product Service

This is to confirm that

## **Anbotek Compliance Laboratory Limited**

1/F, 1/Building, SEC Industrial Park, Qianhai Road, Nanshan District, Shenzhen 518054, Guangdong, P.R.China  
has been accepted by

**TÜV SÜD China Shenzhen Branch – 6<sup>th</sup> Floor, H Hall,  
Century Craftwork Culture Square, No. 4001, Fuqiang  
Road, Futian District, 518048, Shenzhen, P. R. China**

for cooperating in on-site witness projects according to the standards  
in attachment

This document states that the above named company is included in  
the TÜV SÜD PRODUCT SERVICE GROUP (TÜV SÜD) Listing of  
Recognized Laboratories and is qualified in compliance with the  
TÜV SÜD External Test Laboratory (ETL) program for the mutually  
agreed product categories and/ or standards.

As far as the testing facilities meet the relevant requirements of this  
program and the tests of the projects are conducted under the  
supervision and witness of the engineer(s) of TÜV SÜD China  
Shenzhen Branch, the test results can be used as a basis for a  
TÜV SÜD certification.

Attestation No.: SCN1069  
Expiration Date: 2013-09-12

TÜV SÜD China – South Region

Robert Ostendorf  
General Manager

Date of Issuance: 2012-09-12



\*TÜV SÜD makes no representations or warranties, express or implied, regarding any aspect of this Laboratory's business or services or that this Laboratory's services will achieve any specific results in any TÜV SÜD investigation. TÜV SÜD does not assume or undertake to discharge any liability of this Laboratory or any other party. TÜV SÜD assumes no liability which may result directly or indirectly from assessment or Certification of this Laboratory, the conduct or a failure to conduct inspections, incorrect Certification, nonconformity or failure to discover nonconformity with Program Requirements, cancellation of this Attestation or withdrawal of this Laboratory's inclusion from any TÜV SÜD PRODUCT SERVICE GROUP Listing or Directory prior to the expiration date of this Attestation. This Laboratory bears sole responsibility for its provision of services.



**California Appliance Efficiency Program  
2012 Consumer Electronics Test Laboratory Application**

This is a PDF fillable form. You may complete it on line or print it out and complete it off line. After it has been signed, you may scan and return it as an e-mail attachment to [appliances@energy.state.ca.us](mailto:appliances@energy.state.ca.us), or return it via mail to:

Appliance Efficiency Program  
2012 Consumer Electronics Lab App: <Company Name>  
California Energy Commission  
1516 Ninth Street, MS-25  
Sacramento, CA 95814-5512

PLEASE ALSO NOTE THAT:

- Applications that have been re-typed in your own format WILL NOT be accepted.
- It is not necessary to submit both an email and a mailed application
- This application must specify the physical address of the location that will be conducting testing.
- Please allow at least four weeks before contacting us regarding your application.

Contact Person Name <b>Daniel Zhu</b>	Phone 1 <b>86-755-26014771</b>
Company / Laboratory Name <b>Anbotek Compliance Laboratory Ltd.</b>	Phone 2 <b>86-755-26066365</b>
Address <b>1/F, 1/build, SEC Industrial Park, Qianhai Road,</b>	Fax <b>86-755-26014772</b>
(Address) <b>NanShan District, Shenzhen, China 518054</b>	E-mail <b>daniel.zhu@anbotek.com</b>
(Address)	Company Website (URL) <b>www.anbotek.com</b>

<b>Appliance Type(s):</b> <input checked="" type="checkbox"/> <b>Compact Audio Device</b> <input checked="" type="checkbox"/> <b>DVD Player/Recorder</b> <input checked="" type="checkbox"/> <b>Television</b> <input checked="" type="checkbox"/> <b>External Power Supply</b> <input checked="" type="checkbox"/> <b>Small Battery Charger</b>
--

<b>Test method(s):</b> <input checked="" type="checkbox"/> <b>International Electrotechnical Commission (IEC) 62087:2002(E)</b> <input checked="" type="checkbox"/> <b>Electrotechnical Commission (IEC) 62301:2005 and 62087:2008(E), as directed in Section 1604(v) of the Title 20 Appliance Efficiency Regulations</b> <input checked="" type="checkbox"/> <b>US EPA "Test Method for Calculating the Energy Efficiency of Single-Voltage External AC-DC and AC-AC Power Supplies", August 11, 2004</b> <input checked="" type="checkbox"/> <b>10 CFR 430.23(aa) - Appendix Y to Subpart B of Part 430, Uniform Test Method for Measuring the Energy Consumption of Battery Chargers</b>
---



Anbotek Compliance Laboratory Ltd. \_\_\_\_\_ states:  
Name of Laboratory

[Initial all appropriate paragraphs]

- Y It has conducted tests using the applicable test method specified above within the previous 12 months;
- Y It agrees to and does interpret and apply the applicable test method set forth in Section 1604 precisely as written;
- Y It has, and keeps properly calibrated and maintained, all equipment, material, and facilities necessary to apply the applicable test method precisely as written;
- Y It agrees to and does maintain copies of all test reports, and provides any such report to the Executive Director on request, for all basic models that are still in commercial production;
- Y It agrees to and does allow the Executive Director to witness any test of such an appliance on request, up to once per calendar year for each basic model; and
- Y It agrees to, and will follow, all applicable provisions of the California Energy Commission's Appliance Regulations (Section 1601 – 1608 of Title 20 of the California Code of Regulations), in carrying out all testing pursuant to this application.

***I declare under penalty of perjury of the laws of the State of California, that:***

***All the information in this statement is true, complete, accurate, and in compliance with all applicable provisions of Sections 1601 – 1608 of Title 20 of the California Code of Regulations; and***

***I am authorized to make this declaration, and to file this application, on behalf of***

Anbotek Compliance Laboratory Ltd. \_\_\_\_\_

Name of Laboratory

Signature: \_\_\_\_\_



Date: NOV 21 2011

Typed Name and Title: Daniel Zhu, General Manager

SPACE BELOW THIS LINE FOR CALIFORNIA ENERGY COMMISSION USE ONLY

The laboratory identified above is hereby approved for testing in compliance with the requirements of the *Appliance Efficiency Regulations* from the date shown until December 31, 2012.

12/6/11  
Date

PS  
PETER STRAIT, Program Lead  
Appliance Efficiency Compliance Program  
for the Executive Director





# **CERTIFICATE OF PARTICIPATION**

**Issued by**

**UL CCIC on behalf of  
UL**

**ANBOTEK COMPLIANCE LABORATORY LTD  
1F 1 BLDG, SEC INDUSTRIAL PARK, QIANHAI RD NANSHAN DIST,  
SHENZHEN GUANGDONG 518054, CHINA**

**has been assessed and found eligible to participate in**

**UL**

**WITNESS TEST DATA PROGRAM**

**Kenny Poon**

**Operations Manager  
UL CCIC**

**Subscriber Number: 100224-608**

**Issued: March 13, 2012**

**Expire: March 12, 2013**



## Certificate of Qualification

for testing according to

### FCC / IC / R&TTE (CE) Regulations

Issued to:

**Company Name:** Anbotek Compliance Laboratory Limited  
**Address:** 1/F, 1 /Build, SEC Industrial Park  
No. 4 Qianhai Road, Nanshan District  
**City:** Shenzhen, 518054  
**Country:** China

Teleconformity of The Netherlands, who performs assessments for Notified Body for Europe (0700), CAB for Canada IC, TCB for FCC approvals, has assessed many applications from Anbotek Compliance Laboratory Limited for Compliance with the USA FCC, CANADA IC, EUROPE R&TTE CE Rules and Regulations.

We are impressed with the quality and knowledge shown, therefore we judge that Anbotek Compliance Laboratory Limited is competent to perform and Document the relevant Tests. Particularly, for each filing Teleconformity was confident that the Equipment meets the relevant Requirements before the Authorization or Opinion was issued.

Anbotek Compliance Laboratory Limited is Qualified by the FCC as 2.948 Listed Test Firm (Site Registration Number: 752021) and by Industry Canada (O.A.T.S. Registration Number: 8058A-1) for a scope of testing covered and relevant to the application for certification sought.



Expiry date: 2013-09-05

Agency attestation: TELECONFORMITY  
Mr. M. Koop  
Position: General Manager

**Teleconformity**  
SERVING THE RADIO & TELECOM INDUSTRY  
Rietven 31 Tel. +31 53 4785267  
7534NH Enschede Fax +31 84 8362566  
The Netherlands [www.teleconformity.com](http://www.teleconformity.com)

