APPLICATION OF CERTIFICATION For

BEHRINGER MACAO COMMERCIAL OFFSHORE LIMITED

Digital Piano

Model Number: CDP2400USB; EG8280USB; EG2280USB

FCC ID: XJVF09131

Prepared for: BEHRINGER MACAO COMMERCIAL OFFSHORE

LIMITED

Rua de Pequim, No 202-A Macau Finance Centre 9/J,

MACAU

Prepared By: Audix Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Rd., 52 Block,

Shenzhen Science & Industrial Park, Nantou, Shenzhen, Guangdong, China

Tel: (0755) 26639496 Fax: (0755) 26632877

Report Number : ACS-F09131

Date of Test : Jul.01~02, 2009

Date of Report : Jul.28, 2009

TABLE OF CONTENTS

<u>De</u>	script	cion	Page
1.	CTIN	MMARY OF STANDARDS AND RESULTS	1 1
1.			
	1.1.	Description of Standards and Results	
2.	GEN	NERAL INFORMATION	
	2.1.	Description of Device (EUT)	
	2.2.	Tested Supporting System Details	
	2.3.	Test Facility	
	2.4.	Measurement Uncertainty (95% confidence levels, k=2)	
3.	POV	WER LINE CONDUCTED EMISSION TEST	3-1
	3.1.	Test Equipment	3-1
	3.2.	Block Diagram of Test Setup	3-1
	3.3.	Power Line Conducted Emission Test Limits	
	3.4.	Configuration of EUT on Test	
	3.5.	Operating Condition of EUT	
	3.6.	Test Procedure	
	3.7.	Conducted Disturbance at Mains Terminals Test Results	
4.	RAI	DIATED EMISSION TEST	4-1
	4.1.	Test Equipment	4-1
	4.2.	Block Diagram of Test Setup	
	4.3.	Radiated Emission Limit	
	4.4.	EUT Configuration on Test	
	4.5.	Operating Condition of EUT	
	4.6.	Test Procedure	
	4.7.	Radiated Disturbance Test Results	
5.	DEV	VIATION TO TEST SPECIFICATIONS	5-1
6.	PHO	OTOGRAPH	6-1
	6.1.	Photos of Power Line Conducted Emission Test	6-1
	6.2.	Photos of Radiated Emission Test (In Anechoic Chamber)	6-2
7.	PHO	OTOS OF THE EUT	7-1

TEST REPORT CERTIFICATION

Applicant : BEHRINGER MACAO COMMERCIAL OFFSHORE LIMITED

Manufacturer : Zhongshan Eurotec Electronics Ltd

EUT Description : Digital Piano

FCC ID : XJVF09131

(A) MODEL NO. : CDP2400USB; EG8280USB; EG2280USB

(B) SERIAL NO. : N/A

(C) TEST VOLTAGE: AC 120V/60Hz

Measurement Standard Used: ;

FCC Rules and Regulations Part 15 Subpart B Class B 2008, ANSI C63.4-2003 CISPR 22: 1997

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits for radiated and conducted emissions. The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of tests. Also, this report shows that EUT is technically compliant with FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

1. SUMMARY OF STANDARDS AND RESULTS

1.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION							
Description of Test Item	Standard	Limits	Results				
	FCC Part 15: 2008						
Power Line Conducted Emission Test	ANSI C63.4: 2003	Class B	PASS				
	CISPR 22: 1997						
	FCC Part 15: 2008						
Radiated Emission Test	ANSI C63.4: 2003	Class B	PASS				
	CISPR 22: 1997						

2. GENERAL INFORMATION

2.1.Description of Device (EUT)

Description : Digital Piano

Model Number : CDP2400USB; EG8280USB; EG2280USB

The model name and construction dimension are different

Test model : CDP2400USB

FCC ID : XJVF09131

Applicant : BEHRINGER MACAO COMMERCIAL OFFSHORE LIMITED

Rua de Pequim, No 202-A Macau Finance Centre 9/J, MACAU

Manufacturer : Zhongshan Eurotec Electronics Ltd

Eurotec Industrial Park, #1 Junjing Road, Min Zhong Town,

Zhongshan, Guangdong, China

Power Cord : Unshielded, Detachable, 1.7m

Date of Test : Jul.01~02, 2009

Date of Receipt : Jul.01, 2009

Sample Type : Prototype production

2.2.Tested Supporting System Details

2.2.1.PC

EMC CODE : Test PC O

M/N : Studio 540

S/N : H14XK2X

Manufacturer : DELL

Power cord : Unshielded, Detachabled, 1.8m

FCC ID : By DoC
BSMI ID : R33002
Display Card : HD3650

(Display port+DVI+HDMI)

2.2.2. Monitor

EMC CODE : ACS-EMC-LM03R

M/N : 1907FPt

S/N : CN-009759-71618-6AP-ACPP

Manufacturer : DELL

Data Cable (VGA)
Data Cable (DVI)
Shielded, Detachabled, 2.0m
Power Cord
Unshielded, Detachabled, 1.8m

FCC ID : By DoC BSMI ID : R3A002

2.2.3. USB Keyboard

EMC CODE : ACS-EMC-K03R

M/N : SK-2865

S/N : B3C770GCPNY010

Manufacturer : COMPAQ

Data Cable : Shielded, Undetachabled, 1.8m

FCC ID : By DoC : 3892A092

2.2.4. PRINTER

EMC CODE : ACS-EMC-PT04

M/N : C9079A

Manufacturer : HP

USB Cable : Shielded, Detachabled, 1.8m

Power Cord : Unshielded, Detachabled, 1.8m

FCC ID : By DoC BSMI ID : R33001

Power Adaptor : Manufacturer: HP

M/N: 0957-2119 BSMI ID: R33030

DC Cable: Unshielded, Detachabled, 1.5m

2.2.5. USB MOUSE

EMC CODE : ACS-EMC-M03R

M/N : M056UO S/N : 512023253

Manufacturer : Dell

Data Cable : Shielded, Undetachabled, 1.8m

FCC ID : By DoC BSMI ID : R41108

2.2.6. HDD

EMC CODE : ACS-EMC-HDD03

M/N: F12-UF

S/N : A0100215-5390031

Manufacturer : Terasys

Data Cable : Shielded, Detachabled, 1.8m

FCC ID : By DoC BSMI ID : 4912A022

2.2.7. Cables

USB Cable : Shielded, Detachable, 1.9m

(With one core)

Line Out : Shielded, Detachable, 1.0m

(Dummy Load $10k \Omega$)

Line In : Shielded, Detachable, 1.0m

(Dummy Load 40Ω)

MIDI In/ MIDI Out : Shielded, Detachable, 1.0m

2.3.Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Rd., 52 Block, Shenzhen

Science & Industrial Park, Nantou, Shenzhen, Guangdong, China

3m Anechoic Chamber : Mar. 31, 2009 File on Federal

Communication Commission Registration Number: 90454

3m & 10m Anechoic Chamber : Jan. 31, 2007 File on Federal

Communication Commission Registration Number: 794232

EMC Lab. : Accredited by DATech, German

Registration Number: DAT-P-091/99-01

Feb. 02, 2009

Accredited by NVLAP, USA NVLAP Code: 200372-0

Apr. 01, 2009

2.4. Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty		
Uncertainty for Conduction emission test in No. 1 Conduction	2.40dB		
Uncertainty for Radiation Emission test	4.04 dB (Distance: 10m Polarize: V)		
in 10m chamber	4.02 dB (Distance: 10m Polarize: H)		
Uncertainty for test site temperature and	0.6℃		
humidity	3%		

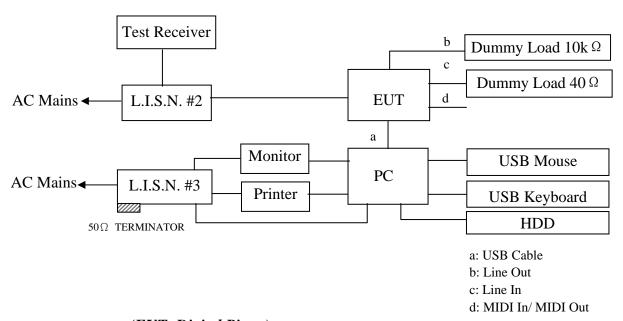
3. POWER LINE CONDUCTED EMISSION TEST

3.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	838693/001	Jan.10, 09	1 Year
2.	L.I.S.N.#2	Kyoritsu	KNW-407	8-1636-1	May.08, 09	1 Year
3.	L.I.S.N.#3	Kyoritsu	KNW-242C	8-1920-1	May.08, 09	1 Year
4.	Terminator	Hubersuhner	50Ω	No. 1	May.08, 09	1 Year
5.	RF Cable	Fujikura	3D-2W	LISN Cable 1#	May.08, 09	1Year
6.	Coaxial Switch	Anritsu	MP59B	M55367	May.08, 09	1 Year
7.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100341	May.08, 09	1 Year

3.2.Block Diagram of Test Setup

3.2.1. Block diagram of connection between the EUT and simulators



(EUT: Digital Piano)

3.3. Power Line Conducted Emission Test Limits

	Maximum RF Line Voltage			
Frequency	Quasi-Peak Level	Average Level		
	$dB(\mu V)$	$dB(\mu V)$		
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*		
500kHz ~ 5MHz	56	46		
5MHz ~ 30MHz	60	50		

Notes: 1. * Decreasing linearly with logarithm of frequency.

^{2.} The lower limit shall apply at the transition frequencies.

3.4. Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4.1. Digital Piano (EUT)

Model Number : CDP2400USB

Serial Number : N/A

3.4.2. Support Equipment: As Tested Supporting System Detail, in Section 2.2.

3.5. Operating Condition of EUT

- 3.5.1. Setup the EUT and simulator as shown as Section 3.2.
- 3.5.2. Turn on the power of all equipment.
- 3.5.3. Let the EUT work in test mode (Playing and Recording) and measure it.

3.6. Test Procedure

The EUT was placed on the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 2#). This provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#3). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2003 on conducted Emission test.

The bandwidth of test receiver (R&S TEST RECEIVER ESHS10) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked. The test result are reported on Section 3.7.

3.7. Conducted Disturbance at Mains Terminals Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

The EUT with the following test mode was tested and selected (mode 1) to read Q.P values and Average values, all the test results are listed in next pages.

EUT: Digital Piano Model No. : CDP2400USB

Test Date: Jul.01, 2009 Temperature: 23°C Humidity: 54%

The details of test mode are as follows:

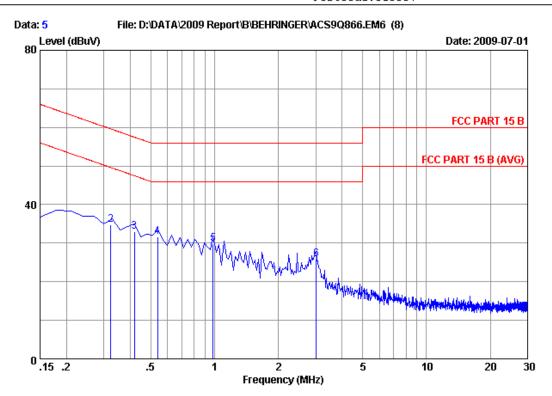
NO.	Test Mode	Reference Test Data No.		
		VA	VB	
1.	Playing and Recording	#5	#6	



NO.6 Ke Feng Road, Block 52, Shenzhen Science&Industry Park Nantou, Shenzhen, Guang dong, China.

Tel:+86-755-26639495 Fax:+86-755-26632877 Postcode:518057

Engineer : Tom Zhang



Site no :Audix No.1 Conduction Data no :5

Dis./Ant. :** 2009 KNW407 VA

Limit :FCC PART 15 B

Env./Ins. :Temp:23'C Humi:54%

EUT :Digital Piano M/N: CDP2400USB

Power Rating : AC 120V/60Hz

Test Mode :Playing And Recording

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emissior Level (dBuV)	n Limits (dBuV)	Margin (dB)	Remark
1	0.15000	0.47	9.88	24.35	34.70	66.00	31.30	QP
2	0.32400	0.37	9.89	24.60	34.86	59.60	24.74	QP
3	0.41865	0.35	9.89	22.77	33.01	57.47	24.46	QP
4	0.53805	0.34	9.89	21.38	31.61	56.00	24.39	QP
5	0.98580	0.33	9.89	19.72	29.94	56.00	26.06	QP
6	3.016	0.36	9.91	15.67	25.94	56.00	30.06	QP

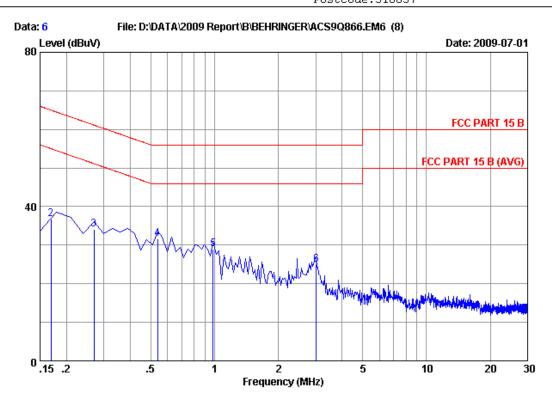
Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading 2.If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



NO.6 Ke Feng Road, Block 52, Shenzhen Science&Industry Park Nantou, Shenzhen, Guang dong, China.

Tel:+86-755-26639495 Fax:+86-755-26632877 Postcode:518057

Engineer : Tom Zhang



Site no :Audix No.1 Conduction Data no :6

Dis./Ant. :** 2009 KNW407 VB

Limit :FCC PART 15 B

Env./Ins. :Temp:23'C Humi:54%

EUT :Digital Piano M/N: CDP2400USB

Power Rating : AC 120V/60Hz

Test Mode :Playing And Recording

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emissior Level (dBuV)	n Limits (dBuV)	Margin (dB)	Remark
1	0.15000	0.49	9.88	21.35	31.72	66.00	34.28	QP
2	0.16900	0.47	9.88	26.40	36.75	65.01	28.26	QP
3	0.26940	0.42	9.88	23.78	34.08	61.14	27.06	QP
4	0.53805	0.35	9.89	21.38	31.62	56.00	24.38	QP
5	0.98580	0.35	9.89	18.72	28.96	56.00	27.04	QP
6	3.016	0.37	9.91	14.67	24.95	56.00	31.05	QP
_								_

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading 2.If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

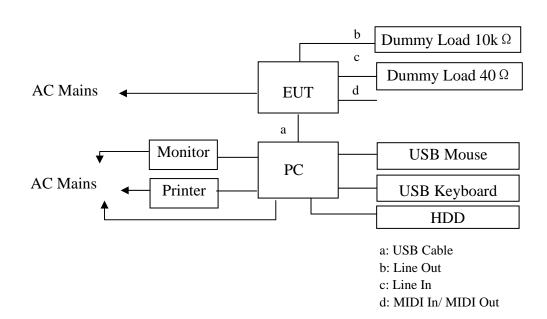
4. RADIATED EMISSION TEST

4.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	10m Chamber	AUDIX	N/A	N/A	Dec.05,08	1 Year
2	EMC Analyzer	Agilent	E7405A	MY42000131	May.08, 09	1 Year
3	EMC Analyzer	Agilent	E7405A	MY45116588	Oct.24,08	1 Year
4	Test Receiver	Rohde & Schwarz	ESCI	100842	Oct 24, 08	1 Year
5	Amplifier	Agilent	8447D	2944A10684	May.08, 09	1Year
6	Amplifier	Agilent	8447D	2944A07794	May.08, 09	1 Year
7	Bilog Antenna	Schaffner	CBL6112D	25238	Feb.12, 09	1 Year
8	Bilog Antenna	Schaffner	CBL6112D	25237	Feb.12, 09	1 Year
9	RF Cable	MIYAZAKI	8D-FB	10m Chamber No.1	May.08, 09	1 Year
10	RF Cable	MIYAZAKI	8D-FB	10m Chamber No.2	May.08, 09	1 Year
11	Coaxial Switch	Anritsu	MP59B	6200766906	May.08, 09	1 Year
12	Coaxial Switch	Anritsu	MP59B	6200766907	May.08, 09	1 Year
13	Coaxial Switch	Anritsu	MP59B	M74389	May.08, 09	1 Year

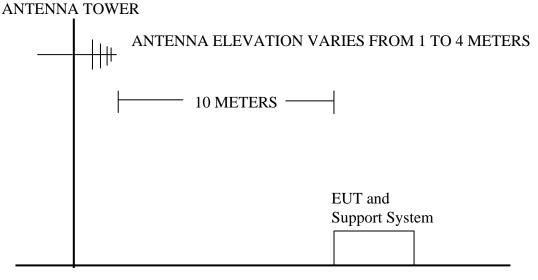
4.2.Block Diagram of Test Setup

4.2.1. Block diagram of connection between the EUT and simulators



(EUT: Digital Piano)

4.2.2. In Anechoic (10m) Chamber Test Setup Diagram for 30MHz~1000MHz



GROUND PLANE

4.3. Radiated Emission Limit

FREQUENCY	DISTANCE	FIELD STRENGTHS LIMITS
(MHz)	(Meters)	(dBµV/m)
30 ~ 230	10	30
230 ~ 1000	10	37

Remark : (1) Emission level $dB\mu V = 20 \log Emission level \mu V/m$

- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system

4.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner that tends to maximize its emission characteristics in normal application.

4.4.1. Digital Piano (EUT)

Model Number : CDP2400USB

Serial Number : N/A

4.5. Operating Condition of EUT

- 4.5.1. Setup the EUT as shown in Section 4.2.
- 4.5.2. Turn on the power of all equipment.
- 4.5.3. Let the EUT work in test mode (Playing and Recording) and test it.

4.6.Test Procedure

The EUT was placed on the ground plane inside a semi-anechoic chamber. An antenna was located 10m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2003 on Radiated Emission test.

The bandwidth setting on the test receiver (R&S TEST RECEIVER ESCI) is 120 kHz.

The frequency range from 30MHz to 1000MHz is checked. The test results are reported on Section 4.7.

4.7. Radiated Disturbance Test Results

PASS. (All emissions not reported below are too low against the prescribed limits.)

The EUT with the following test mode was tested and selected (mode 1) to read Q.P values, all the test results are listed in next pages.

EUT: Digital Piano Model No.: CDP2400USB

Test Date: Jul.02, 2009 Temperature: 24°C Humidity: 56%

The details of test mode are as follows:

NO.	Test Mode	Reference Test Data No.		
	rest Mode	Horizontal	Vertical	
1.	Playing and Recording	#4	#3	

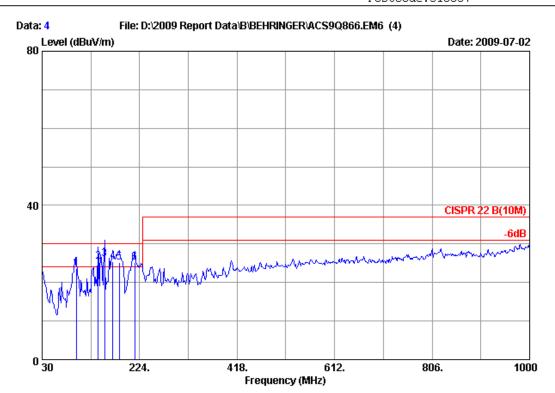
For above 1GHz frequency

Due to the EUT's highest frequency generated and the highest frequency below 108MHz, therefore the above 1GHz frequency is no need to measurement.



No.6, Ke Feng Road, Block 52, Shenzhen Science&Industry Park Nantou Shenzhen, Guangdong, China Tel:+86-755-26639495

Fax:+86-755-26632877 Postcode:518057



Site no. :] Data no. : 4

Dis. / Ant. : 10m 2009 CBL6112D 25237 Ant. pol. : HORIZONTAL

Limit : CISPR 22 B(10M)

Env. / Ins. : 24*C/56% Engineer : Chris

EUT : Digital Piano M/N:CDP2400USB

Power Rating : AC 120V/60Hz

Test Mode : Playing and Recording

		Ant.	Cable		Emission			
	Freq. (MHz)	Factor (dB/m)	Loss (dB)	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Magin (dB)	Remark
1	97.900	10.01	1.08	12.48	23.57	30.00	6.43	QP
2	141.550	10.29	1.30	13.70	25.29	30.00	4.71	QP
3	154.160	9.31	1.37	15.34	26.02	30.00	3.98	QP
4	170.650	9.57	1.46	14.32	25.35	30.00	4.65	QP
5	183.260	8.97	1.52	14.75	25.24	30.00	4.76	QP
6	214.300	8.63	1.68	14.81	25.12	30.00	4.88	QP

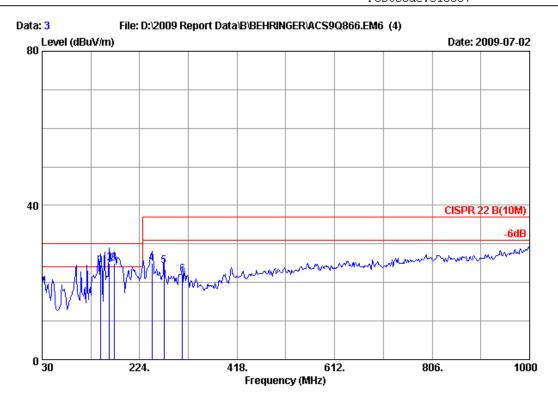
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

- 2. The emission levels that are 20dB below the official limit are not reported.
- 3. The worst emission was detected at 154.16MHz with corrected signal level of $26.02 dB\mu V/m$ (Limit is $30.00 dB\mu V/m$) when the antenna was at horizontal polarization and at 2.0m high and the turn table was at 145° .
- 4.0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.



No.6, Ke Feng Road, Block 52, Shenzhen Science&Industry Park Nantou Shenzhen, Guangdong, China Tel:+86-755-26639495

Fax:+86-755-26632877 Postcode:518057



Site no. :] Data no. : 3

Dis. / Ant. : 10m 2009 CBL6112D 25238 Ant. pol. : VERTICAL

Limit : CISPR 22 B(10M)

Env. / Ins. : 24*C/56% Engineer : Chris

EUT : Digital Piano M/N:CDP2400USB

Power Rating : AC 120V/60Hz

Test Mode : Playing and Recording

		Ant.	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Magin	Remark
	(MHz)	(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB) 	
1	146.400	9.39	1.81	13.31	24.51	30.00	5.49	QP
2	163.860	9.36	1.94	13.66	24.96	30.00	5.04	QP
3	173.560	9.17	2.02	13.75	24.94	30.00	5.06	QP
4	248.250	11.59	2.47	11.00	25.06	37.00	11.94	QP
5	272.500	12.58	2.62	9.20	24.40	37.00	12.60	QP
6	309.360	13.25	2.84	5.93	22.02	37.00	14.98	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

- 2. The emission levels that are 20dB below the official limit are not reported.
- 3. The worst emission was detected at 163.86MHz with corrected signal level of 24.96dB μ V/m (Limit is 30.00dB μ V/m) when the antenna was at vertical polarization and at 1.0m high and the turn table was at 310°.
- 4.0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

5. DEVIATION TO TEST SPECIFICATIONS

[NONE]

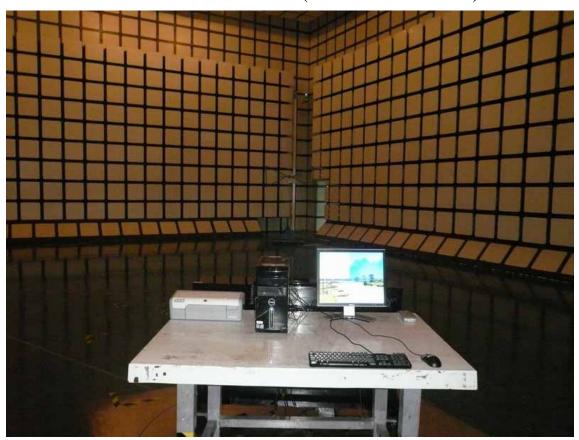
6. PHOTOGRAPH

6.1. Photos of Power Line Conducted Emission Test





6.2. Photos of Radiated Emission Test (In Anechoic Chamber)









7. PHOTOS OF THE EUT

Figure 1 General Appearance of the EUT



Figure 2
General Appearance of the EUT



Figure 3
General Appearance of the EUT



Figure 4 General Appearance of the EUT



Figure 5
General Appearance of the EUT



Figure 6General Appearance of the EUT



Figure 7
General Appearance of the EUT



Figure 8 Inside of the EUT

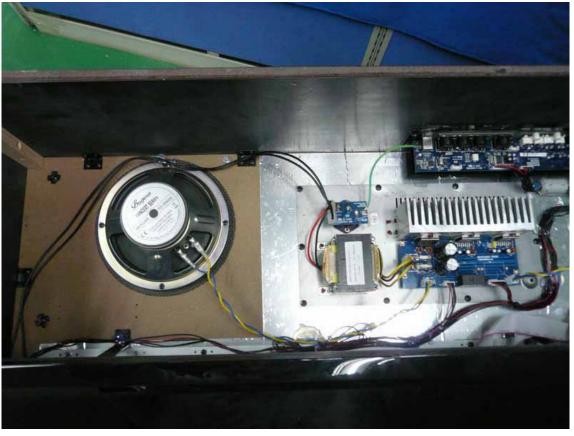


Figure 9
Inside of the EUT

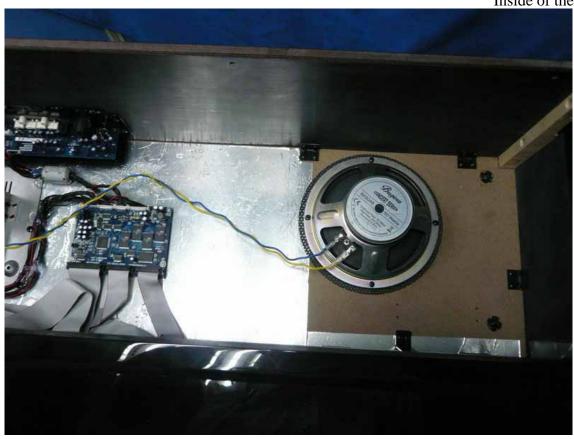


Figure 10
Inside of the EUT



Figure 11 Inside of the EUT



Figure 12
Inside of the EUT



Figure 13 Inside of the EUT



Figure 14 Inside of the EUT

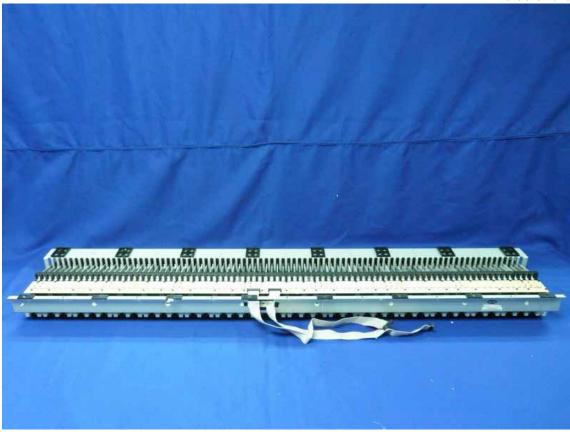


Figure 15
Inside of the EUT



Figure 16
Speaker of the EUT



Figure 17
Component Side of the PCB



Figure 18
Component Side of the PCB



Figure 19
Component Side of the PCB

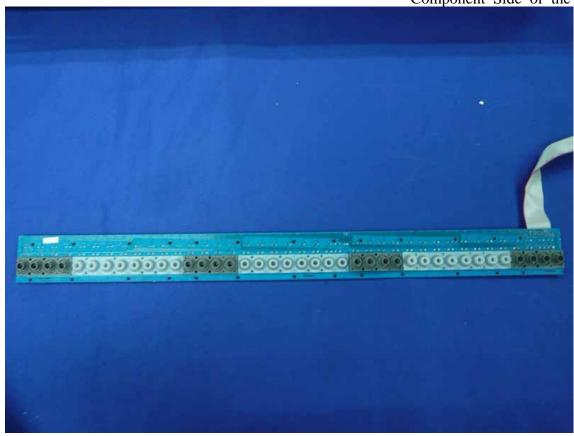


Figure 20 Component Side of the PCB

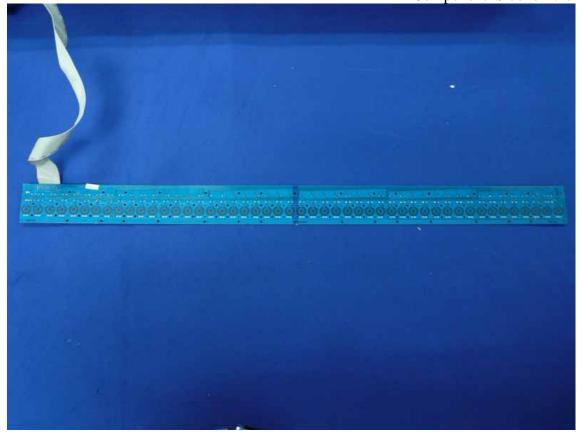


Figure 21 Component Side of the PCB

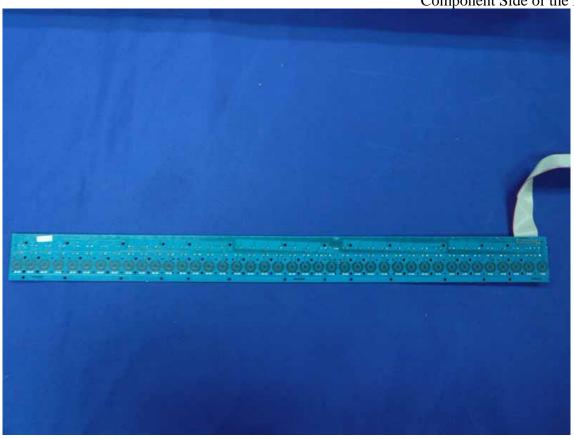


Figure 22 Component Side of the PCB



Figure 23
Component Side of the PCB

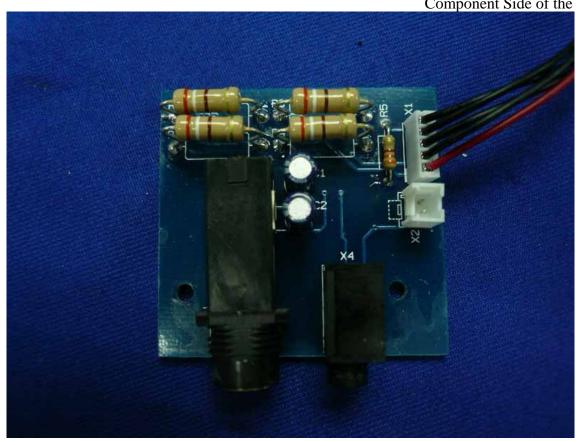


Figure 24
Component Side of the PCB

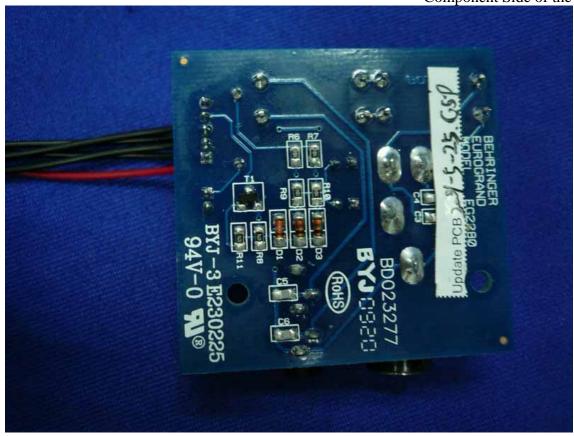


Figure 25 Component Side of the PCB



Figure 26
Component Side of the PCB

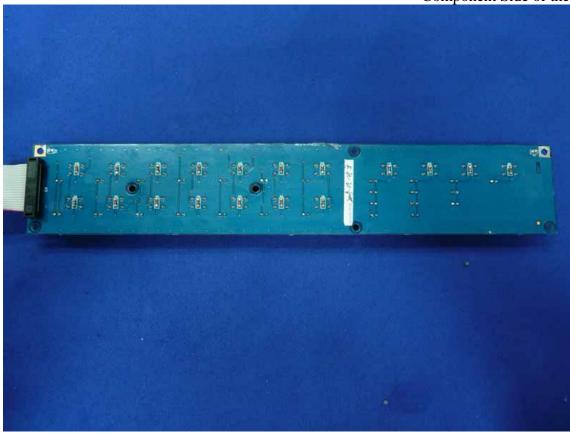


Figure 27
Component Side of the PCB



Figure 28
Component Side of the PCB

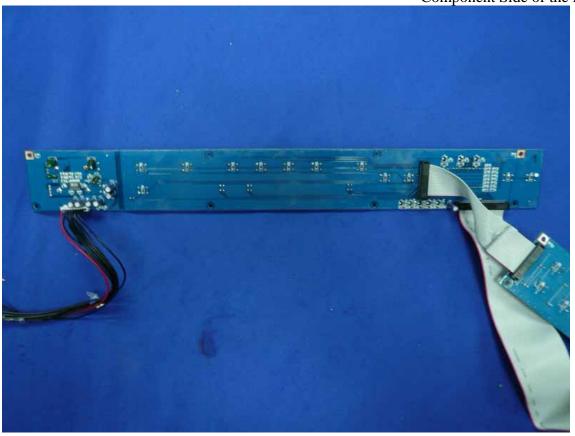


Figure 29
Component Side of the PCB

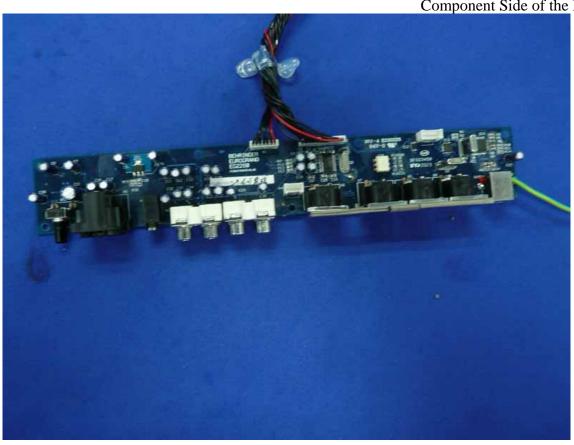


Figure 30 Component Side of the PCB

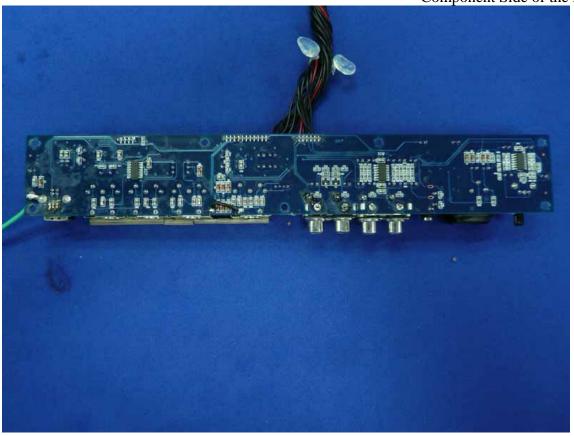


Figure 31 Component Side of the PCB



Figure 32 Component Side of the PCB



Figure 33 Component Side of the PCB

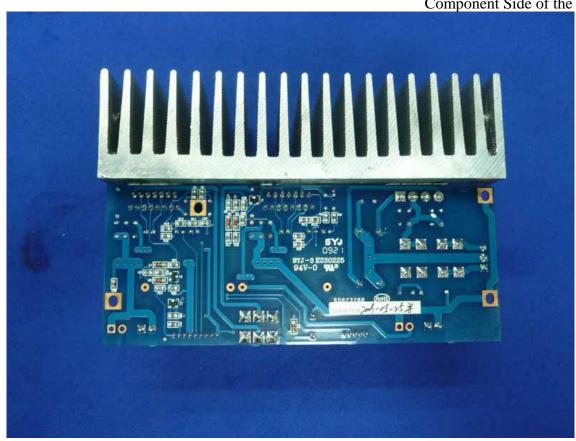


Figure 34 Component Side of the PCB



Figure 35
Component Side of the PCB

