CE

EMC TEST REPORT

For

LIAOCHENG SUNSMILE MUSICAL INSTRUMENT INC.

GUITAR AMPLIFIER

Model No: AG-15

LH-380, LATE-3, GA1, GA-5, CD-G10, G10C, G10CT, PG-10, GL-10, GA-10, GA-10T, GA-10TZ, G10, UNCLE-G10, G15, GF-15, GX-15, GF-15CG20, GX20R, GF-20MC, PGA-20, UNCLE-G20, G30R, GA-3, GX-30, PG-30T, GA40R, GF-40, GX60R, GX80R, UNCLE-B10C, GB-15, GB-30.

Prepared for	:	**LIAOCHENG SUNSMILE MUSICAL INSTRUMENT INC.**
Address	:	NO.38 Huayuan North Road Liaocheng, Shandong, China
Prepared by	:	**Shenzhen BCTC Technology Co., Ltd**
Address	:	B Building Room 8518, Multiple Use Building of Economic Cooperative, Team one, Anle country, No. 44 of Xin'an Block, Bao'an Area, Shenzhen

Report Number	:	**BCTC2011009450-SZJR**
Date of Test	:	**Aug. 10 - Aug. 17, 2011**
Date of Report	:	**Aug. 17, 2011**

TABLE OF CONTENT

TEST REPORT DECLARATION

Applicant:**LIAOCHENG SUNSMILE MUSICAL INSTRUMENT INC.**

Manufacturer **: LIAOCHENG SUNSMILE MUSICAL INSTRUMENT INC.**

EUT Description **:** **GUITAR AMPLIFIER**

(A) MODEL No. : **AG-15**

(B) SERIAL No. : **BCTC2011009450-SZJR**

(C) INPUT : **AC230V**

Test Procedure Used:

EMI : EN55013:2001+A1:2003+A2:2006

EN 61000-3-2 (2006+A1:2009+A2:2009); EN 61000-3-3 (2008)

EMS : EN55020:2007:

IEC 61000-4-2: 2009, IEC 61000-4-3: 2006

IEC 61000-4-4: 2004+A1:2010, IEC 61000-4-5: 2006

IEC 61000-4-6: 2009

IEC 61000-4-8: 2005, IEC 61000-4-11: 2004

The device described above is tested by Shenzhen BCTC Technology Co., Ltd. to determine the maximum emission levels emanating from the device, the severe levels which the device can endure and EUT is performance criterion. The test results are contained in this test report. BCTC Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests. Also, this report shows that the EUT is technically compliant with the EN55013, EN61000-3-2, EN61000-3-3 and EN55020.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen BCTC Technology Co., Ltd

Date of Test: Jun. 25 - Jun. 02, 2011

Prepared by(Engineer) : Yoyo Mo

Reviewer(Quality Manager) : Sophie Lu

Approved&Authorized Signer(Manager) : Randy Zhang

1. NERAL INFORMATION

1.1 Description of Device (EUT)

EUT	:	**GUITAR AMPLIFIER**
Model Number	:	**AG-15**
Power Supply	:	**AC230V**
Applicant	:	**LIAOCHENG SUNSMILE MUSICAL INSTRUMENT INC.**
Address	:	NO.38 Huayuan North Road Liaocheng, Shandong, China
Manufacturer	:	**LIAOCHENG SUNSMILE MUSICAL INSTRUMENT INC.**
Address	:	NO.38 Huayuan North Road Liaocheng, Shandong, China
Date of report	:	**Aug. 17, 2011**
Date of Test	:	**Aug. 10 - Aug. 17, 2011**

1.2 Test Facility

Site Description

Chamber &Shielded room : Certificated by FCC
Registration Number: 248337
December 07, 2006
Certificated by VCCI
Registration Number: R-2482
February 9, 2004
Certificated by TUV Rheinland
Registration Number: N/A
January 16, 2007
Certificated by IC
Registration Number: 117715
November 07, 2006
Certificated by Intertek
Registration Number: TMPSHA031
November 10, 2006

Name of Firm : Asia Institute Technology(Shen Zhen) limited

Site Location : B Building Room 8518, Multiple Use Building of Economic Cooperative, Team one, Anle country, No. 44 of Xin'an Block, Bao'an Area, Shenzhen

1.3 Tested System Details

Host Personal Computer	:	HP	Monitor	:	SONY
M/N	:	A1580TW	M/N	:	MNT1
Printer	:	EPSON STYLUS	Keyboard (USB)	:	Genuine
M/N	:	P320A	M/N	:	N/A
Modem	:	ACEEX	Mouse	:	DETROIS
M/N	:	DM-1414	M/N	:	CM309

1.4 Test Uncertainty

Conducted Emission Uncertainty : ±2.66dB

Radiated Emission Uncertainty : ±4.26dB

2. TEST INSTRUMENT USED

2.1 For Conducted Emission Test

Conducted Emission Test (A --- site)					
Equipment	**Manufacturer**	**MODEL#**	**SERIAL#**	**LASTCAL.**	**NEXT CAL.**
EMI Receiver	Schwarzbeck	PCKL1528	1528-194	Jan. 17,2011	Jan. 17,2012
LISN	Kyoritsu	KNW407	8-1789-4	Jan. 17,2011	Jan. 17,2012
Spectrum Analyzer	ADVANTENT	R3132	160400093	Jan. 17,2011	Jan. 17,2012
50Ω coaxial switch	Anritsu	MP59B	6200264417	Jan. 17,2011	Jan. 17,2012
Pulse Limiter	R&S	ESH3-Z2	100681	Jan. 17,2011	Jan. 17,2012

2.2 For Radiated Emission Test

Radiation Emission Test (966 chamber)					
Equipment	**Manufacturer**	**MODEL#**	**SERIAL#**	**LASTCAL.**	**NEXT CAL.**
Spectrum Analyzer	ADVANTENT	R3132	160400005	Jan. 17,2011	Jan. 17,2012
Amplifier	Tsj	MLA-10K-B01-27	1205323	Jan. 17,2011	Jan. 17,2012
Antenna	Schwarzbeck	VULB9160	9160-3206	Jan. 17,2011	Jan. 17,2012
EMI Receiver	Schaffner	SCR3501	235	Jan. 17,2011	Jan. 17,2012
Regulated Power supply	Schaffner	NT41	16216	Jan. 17,2011	Jan. 17,2012
50Ω coaxial switch	Anritsu	MP59B	6200264416	Jan. 17,2011	Jan. 17,2012

2.3 For Harmonic & Flicker Test

For Harmonic / Flicker Test (A --- site)					
Equipment	**Manufacturer**	**MODEL#**	**SERIAL#**	**LASTCAL.**	**NEXT CAL.**
Harmonic / Flicker Tester	Schaffner	CCN 1000-1	72472	Jan. 17,2011	Jan. 17,2012
Power source	Schaffner	NSG 1007-5-208-413	57227	Jan. 17,2011	Jan. 17,2012

2.4 For Electrostatic Discharge Immunity Test

For Electrostatic Discharge Immunity Test (A --- site)					
Equipment	**Manufacturer**	**MODEL#**	**SERIAL#**	**LASTCAL.**	**NEXT CAL.**
ESD Simulator	SCHAFFNER	NSG 435	5866	Jan. 17,2011	Jan. 17,2012

2.5 For RF Field Strength Susceptibility Test

For RF Field Strength Susceptibility Test (A --- site)					
Equipment	**Manufacturer**	**MODEL#**	**SERIAL#**	**LASTCAL.**	**NEXT CAL.**
Signal Generator	HP	8648A	3625U00573	Jan. 17,2011	Jan. 17,2012
Amplifier	A&R	500A100	17034	NCR	NCR
Amplifier	A&R	100W/1000M1	17028	NCR	NCR
Audio Analyzer (20Hz~1000KHz)	Panasonic	2023B	202301/428	Jan. 17,2011	Jan. 17,2012
Isotropic Field Probe	A&R	FP2000	16755	Jan. 17,2011	Jan. 17,2012
Antenna	EMCO	3108	9507-2534	NCR	NCR
Log-periodic Antenna	A&R	AT1080	16812	NCR	NCR

2.6 For Electrical Fast Transient /Burst Immunity Test

For Electrical Fast Transient/Burst Immunity Test (A --- site)					
Equipment	**Manufacturer**	**MODEL#**	**SERIAL#**	**LASTCAL.**	**NEXT CAL.**
Modula Generator	Schaffner	MODULA 6150	34475	Jan. 17,2011	Jan. 17,2012
INS6501 Stetransformer	Schaffner	INA6501	136	Jan. 17,2011	Jan. 17,2012

2.7 For Surge Test

For Surge Test (A --- site)					
Equipment	**Manufacturer**	**MODEL#**	**SERIAL#**	**LASTCAL.**	**NEXT CAL.**
Modula Generator	Schaffner	MODULA 6150	34475	Jan. 17,2011	Jan. 17,2012
INS6501 Stetransformer	Schaffner	INA6501	136	Jan. 17,2011	Jan. 17,2012

2.8 For Injected Currents Susceptibility Test

For Injected Currents Susceptibility Test (A --- site)					
Equipment	**Manufacturer**	**MODEL#**	**SERIAL#**	**LASTCAL.**	**NEXT CAL.**
Signal Generator	SCHAFFNER	NSG 2070	1086	Jan. 17,2011	Jan. 17,2012
CDN	SCHAFFNER	M016	20812	Jan. 17,2011	Jan. 17,2012

2.9 For Magnetic Field Immunity Test

For Magnetic Field Immunity Test (A --- site)					
Equipment	**Manufacturer**	**MODEL#**	**SERIAL#**	**LASTCAL.**	**NEXT CAL.**

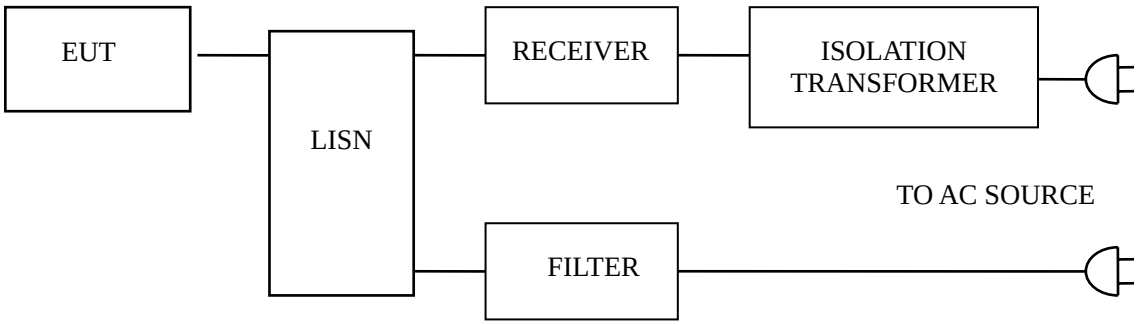
Magnetic field generator	Schaffner	MFO6501	34299	Jan. 17,2011	Jan. 17,2012
Magnetic field loop antenna	Schaffner	INA702	148	Jan. 17,2011	Jan. 17,2012
MC2630	EM Test	MC2630	N/A	Jan. 17,2011	Jan. 17,2012
Magnetic	Coils EM Test	MS100	0500-19	Jan. 17,2011	Jan. 17,2012

2.10 For Voltage Dips Interruptions Test

For Voltage Dips Interruptions Test (A --- site)					
Equipment	**Manufacturer**	**MODEL#**	**SERIAL#**	**LASTCAL.**	**NEXT CAL.**
Modula Generator	Schaffner	MODULA 6150	34475	Jan. 17,2011	Jan. 17,2012
INS6501 Stetransformer	Schaffner	INA6501	136	Jan. 17,2011	Jan. 17,2012

3. POWER LINE CONDUCTED EMISSION TEST

3.1 Block Diagram of Test Setup



3.2 Test Standard

EN55013:2001+A1:2003+A2:2006

3.3 Power Line Conducted Emission Limit

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

3.4 EUT Configuration on Test

The following equipments are installed on conducted emission test to meet EN55013 requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.4.1 GUITAR AMPLIFIER (EUT)

Model Number : **AG-15**

Serial Number : **BCTC2011009450-SZJR**

Manufacturer : **LIAOCHENG SUNSMILE MUSICAL INSTRUMENT INC.**

3.5 Operating Condition of EUT

3.5.1 Setup the EUT and simulators as shown in Section 3.1.
3.5.2 Turn on the power of all equipments.
3.5.3 Let the EUT work in test modes (On) and test it.

3.6 Test Procedure

The EUT is put on the ground and connected to the AC mains through a Artificial Mains Network (AMN). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission levels according to the **EN55013** regulations during conducted emission test.

The bandwidth of the test receiver (Schwarzbeck Test Receiver PCKL1528) is set at 10KHz.

The frequency range from 150 KHz to 30 MHz is investigated.
The test data and the scanning waveform are listed in Section 3.7 .

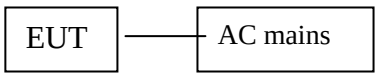
3.7 Test Result

PASSED The test curve please refer to the 25th page

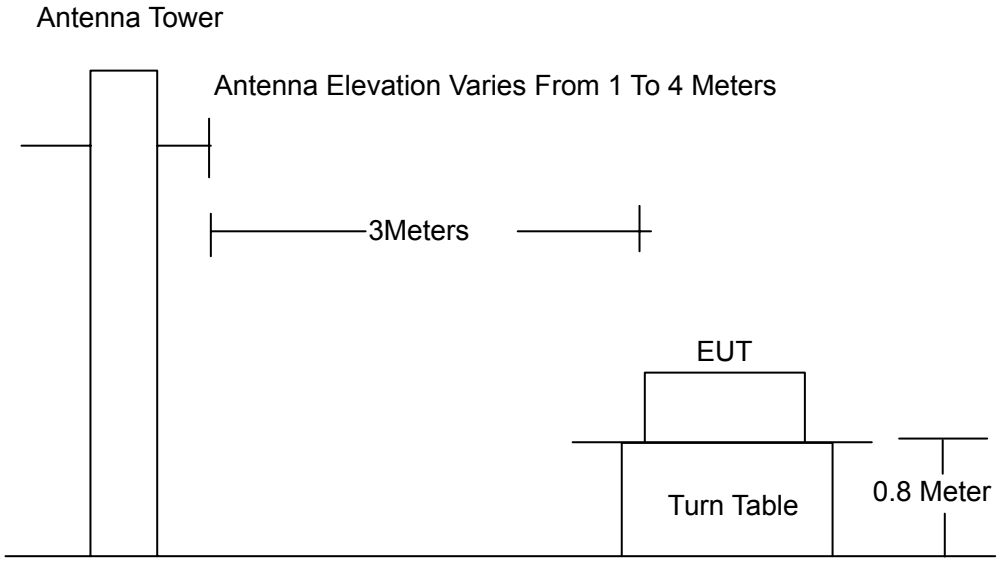
4. RADIATION EMISSION TEST

4.1 Block Diagr m of Test Setup

4.1.1.Block Diagram of EUT Test Setup



4.1.2.**Anechoic Chamber Setup Diagram**



Ground Plane

4.2 Test Standard

EN55013:2001+A1:2003+A2:2006

4.3 Radiation Limit

Frequency MHz	Distance (Meters)	Field Strengths Limits dB(μV)/m
30 ～ 230	3	40.0
230 ～ 1000	3	47.0

Remark:

(1) Emission level (dB(μV)/m) = 20 log Emission level (μV/m)

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance refers to the distance in meters between the measuring instrument, antenna and the closed point of any part of the device or system.

4.4 EUT Configuration on Test

The EN55013 regulations test method must be used to find the maximum emission during radiated emission test.
The configuration of EUT is the same as used in conducted emission test.
Please refer to Section 3.4.

4.5 Operating Condition of EUT

Same as conducted emission test, which is listed in Section 3.5 except the test set up replaced as Section 4.1.

4.6 Test Procedure

The EUT and its simulators are placed on a turned table that is 0.8 meter above the ground. The turned 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 that is mounted on the antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on test. In order to find the maximum emission levels, the interface cable must be manipulated according to EN55013 on radiated emission test.
The bandwidth setting on the field strength meter (Schaffner Test Receiver SCR3501) is set at 120KHz.
The frequency range from 30MHz to 1000MHz is checked.

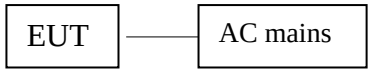
4.7 Test Result

PASSED The test curve please refer to the 26th page

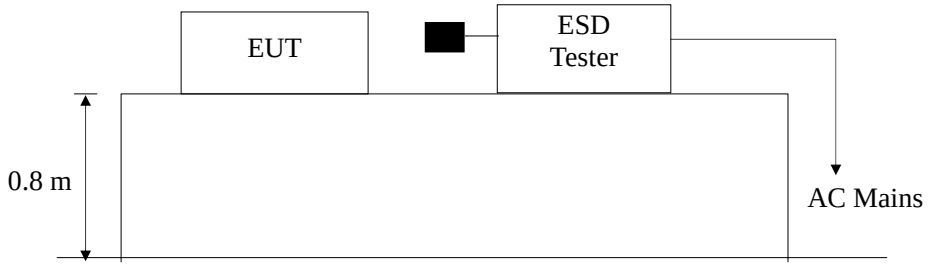
5. ELECTROSTATIC DISCHARGE IMMUNITY TEST

5.1 Block Diagram of Test Setup

5.1.1.Block Diagram of the EUT and the simulators



5.1.2. Test Setup



5.2 Test Standard

EN55020: 2007, (IEC 61000-4-2: 2009)

Severity Level: 3 / Air Discharge:±8KV
Level: 2 / Contact Discharge:±4KV

5.3 Severity Levels and Performance Criterion

5.3.1 Severity level

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.	±2	±2
2.	±4	±4
3.	±6	±8
4.	±8	±15
X	Special	Special

5.3.2Performance criterion **: A**

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

B. The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed BCTCow a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.

C. Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

5.4 EUT Configuration

The following equipments are installed on Electrostatic Discharge Immunity test to meet EN55020:2007, (IEC 61000-4-2: 2009), requirement and operating in a manner which tends to maximize its emission characteristics in a normal application
The configuration of EUT is the same as used in conducted emission test.
Please refer to Section 3.4.

5.5 Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section3.5 except the test set up replaced by Section 7.1.

5.6 Test Procedure

5.6.1 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 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

5.6.2 Contact Discharge**:**

All the procedure shall be same as Section 7.6.1. Except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

5.6.3 Indirect discharge for horizontal coupling plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

5.6.4 Indirect discharge for vertical coupling plane

At least 10 single discharges (in the most sensitive polarity) 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.

5.7 Test Results

PASSED.
Please refer to the following pages.

Electrostatic Discharge Test Results

Shenzhen BCTC Technology Co., Ltd

Applicant :	LIAOCHENG SUNSMILE MUSICAL INSTRUMENT INC.	Test Date :	Aug. 17, 2011
EUT :	GUITAR AMPLIFIER	Temperature:	26℃
M/N :	AG-15	Humidity :	50％
Power Supply :	AC230V		
Test Engineer :	Andy		

Air Discharge: ± 8KV

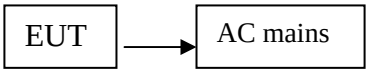
Contact Discharge: ± 4KV # For each point positive 25 times and negative 25 times discharge

Test Points	Air Discharge	Contact Discharge	Performance Criterion	Result
Others Slot of the EUT	±2,4,8KV	N/A	A	PASSED
Kneading board	N/A	±2,4KV	A	PASSED
Line	±2,4,8KV	N/A	A	PASSED
Port	N/A	±2,4KV	A	PASSED
Screw	N/A	±2,4KV	A	PASSED
VCP	N/A	±2,4 KV	A	PASSED
HCP	N/A	±2,4 KV	A	PASSED

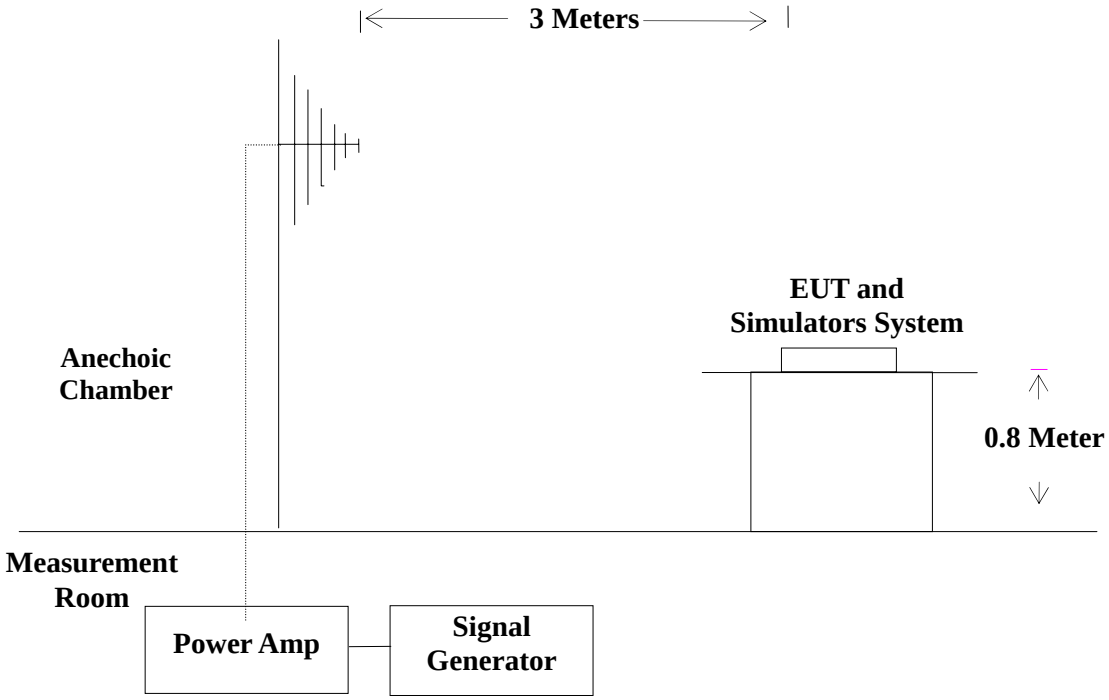
6. RF EM FIELD (KEY CARRIER) TEST

6.1 Block Diagram of Test Setup

6.1.1.Block Diagram of the EUT and the simulators



6.1.2. R/S Test Setup



6.2 Test Standard

EN55020:2007 (IEC 61000-4-3: 2006),
Severity Level2, 3V / m

6.3 Severity Levels and Performance Criterion

6.3.1.Severity level

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

6.3.2. **Performance criterion: A**

A、 The apparatus shall continue to operate as intended during and 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.

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. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.

C、 Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

6.4 Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section3.5 except the test set up replaced by Section 8.1.

6.5 Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. EUT is set 3 meter 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 EUT must be faced this transmitting antenna and measured individually.

All the scanning conditions are as follows **:**

Condition of Test	Remarks
1. Fielded Strength	3 V/m (Severity Level 2)
2. Radiated Signal	Modulated
3. Scanning Frequency	80 – 1000 MHz
4. Dwell time of radiated	0.0015 decade/s

5. Waiting Time 1 Sec.

6.6 Test Results

PASSED.

Please refer to the following page.

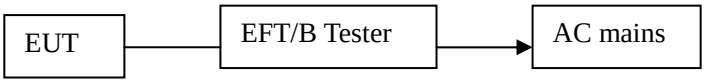
RF EM Field (Key Carrier) Test Results

Shenzhen BCTC Technology Co., Ltd

Applicant: LIAOCHENG SUNSMILE MUSICAL INSTRUMENT INC.			Test Date : Aug. 17, 2011
EUT : GUITAR AMPLIFIER			Temperature : 26℃
M/N : AG-15			Humidity : 50％
Field Strength: 3 V/m			Criterion: A
Power Supply: AC230V			Frequency Range: 80 MHz to 1000 MHz
Test Engineer: Andy			
Modulation: ☑ AM ☐ Pulse ☐none 1 KHz 80%			
Test Mode **:** On			
	Frequency Range : 80-1000MHz		
Steps	1 %		
	Horizontal	Vertical	Result
Front	A	A	Passed
Right	A	A	Passed
Rear	A	A	Passed
Left	A	A	Passed

7. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

7.1 Block Diagram of EUT Test Setup



7.2 Test Standard

EN55020: 2007, (IEC 61000-4-4: 2004+A1:2010)

7.3 Severity Levels and Performance Criterion

Severity Level 2 at 1KV, Pulse Rise time & Duration: 5 nS / 50 nS
Severity Level:

Open Circuit Output Test Voltage ±10%		
Level	On Power Supply Lines	On I/O(Input/Output) Signal data and control lines
1.	0.5KV	0.25KV
2.	1KV	0.5KV
3.	2KV	1KV
4.	4KV	2KV
X.	Special	Special

Performance criterion: B

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

B. The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed BCTCow a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.

C. Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

7.4 EUT Configuration on Test

The following equipments are installed on Electrical Fast Transient/Burst Immunity test

to meet EN55020:2007, (IEC 61000-4-4: 2004+A1:2010), requirement and operating in a manner which tends to maximize its emission characteristics in a normal application

The configuration of EUT is the same as used in conducted emission test.

Please refer to Section 3.4.

7.5 Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section3.5 except the test set up replaced by Section 9.1.

7.6 Test Procedure

EUT shall be placed 0.8m high above the ground reference plane which is a min.1m*1m metallic sheet with 0.65mm minimum thickness. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m

9.6.1. For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 minutes.

9.6.2. For signal lines and control lines ports:

It's unnecessary to measure.

9.6.3. For DC input and DC output power ports:

For DC ports .It's unnecessary to measure

7.7 Test Results

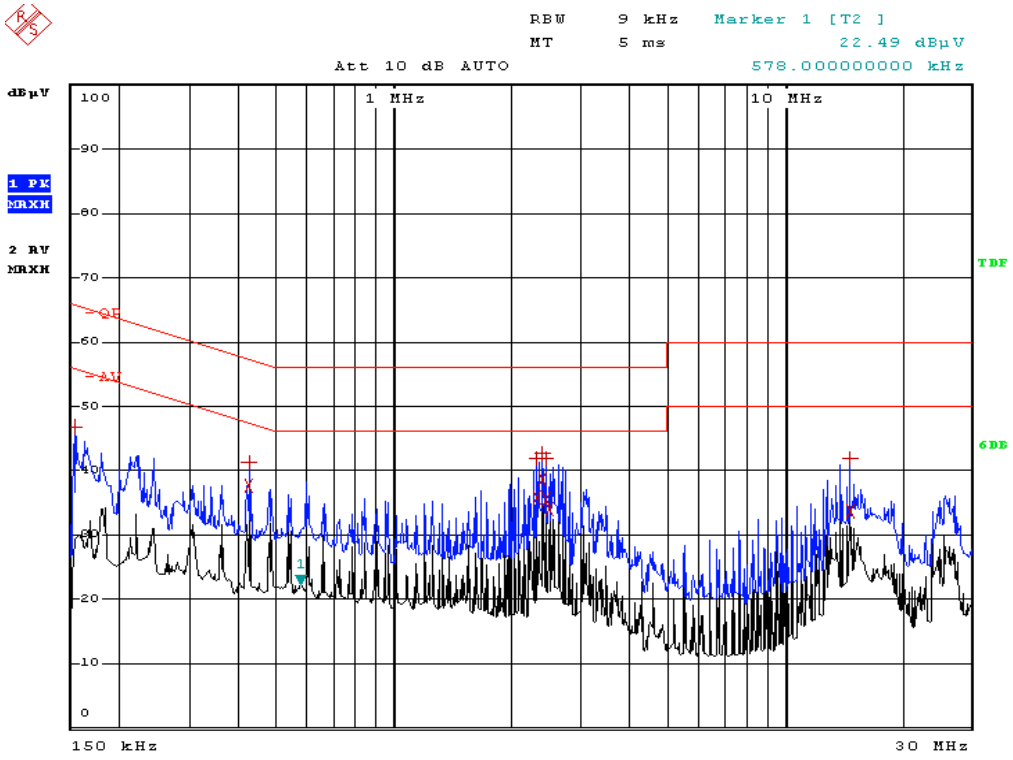
PASSED.

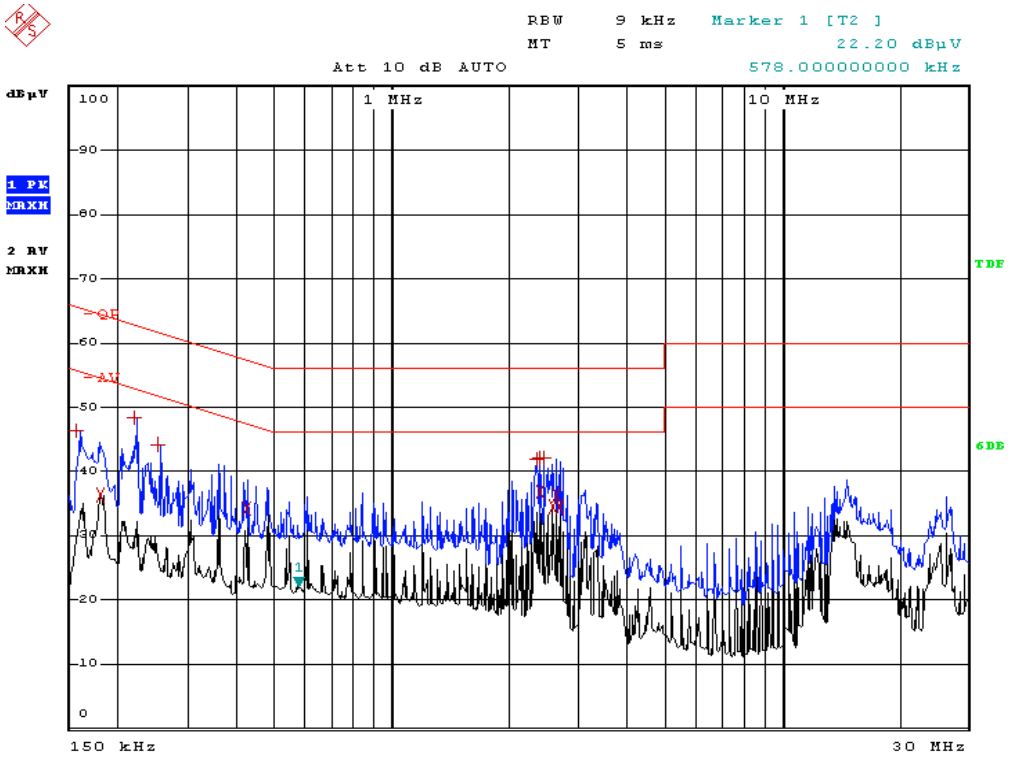
Please refer to the following pages

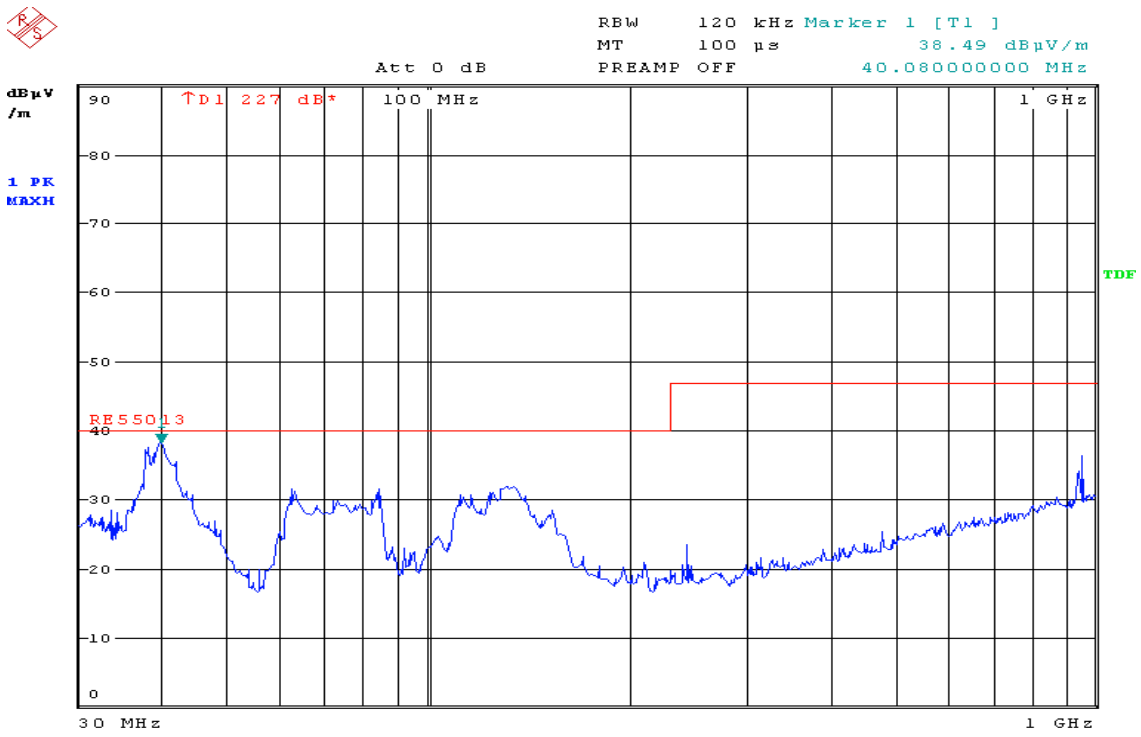
EUT**:**	GUITAR AMPLIFIER	Temperature**:**	26℃
M/N**:**	AG-15	Humidity**:**	50%
Test Mode**:**	Working Mode	Test Engineer**:**	Andy

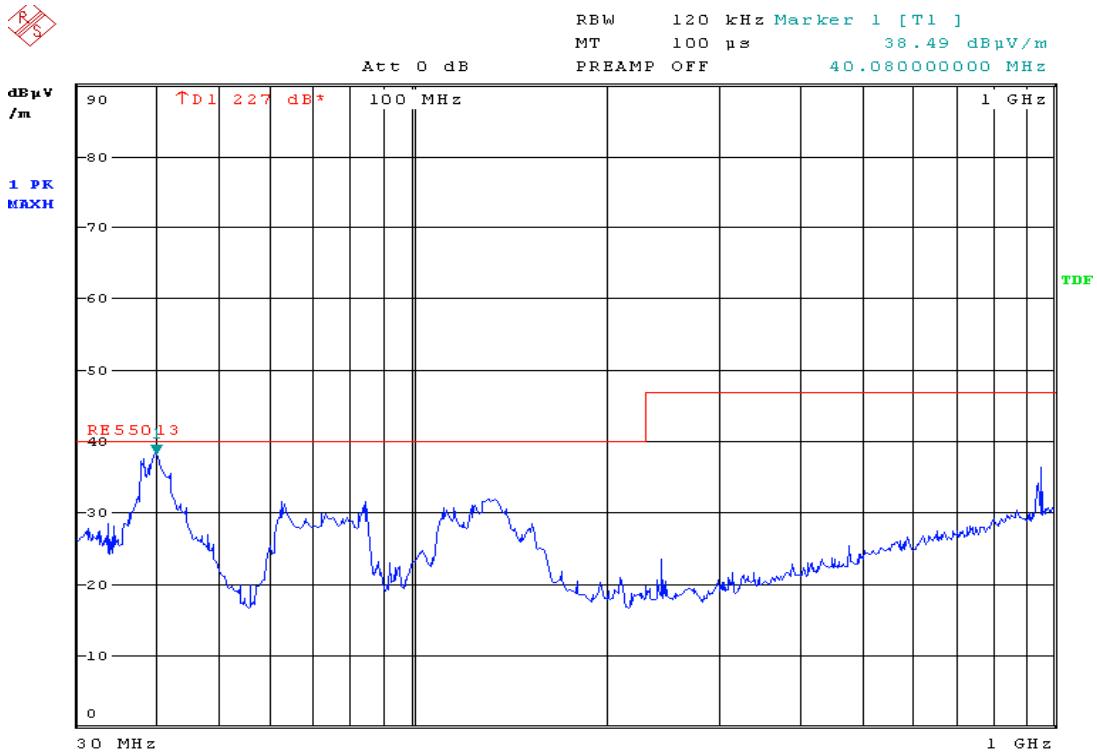
TEST VOLTAGE	L	N	L+N
±0.5KV	B	B	B
±1KV	B	B	B

8. EUT TEST GRAPH






RBW 120 kHz Marker 1 [T1]
MT 100 µs 38.49 dBµV/m
Att 0 dB PREAMP OFF 40.080000000 MHz
dBµV /m
1 PK MAXH
D1 227 dB*
100 MHz
1 GHz
TDF
RE55013
90
80
70
60
50
40
30
20
10
0
30 MHz
1 GHz


RBW 120 kHz Marker 1 [T1]
MT 100 µs 38.49 dBµV/m
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D1 227 dB*
100 MHz
1 GHz
TDF
RE55013
90
80
70
60
50
40
30
20
10
0
30 MHz
1 GHz

9. EUT PHOTOGRAPHS

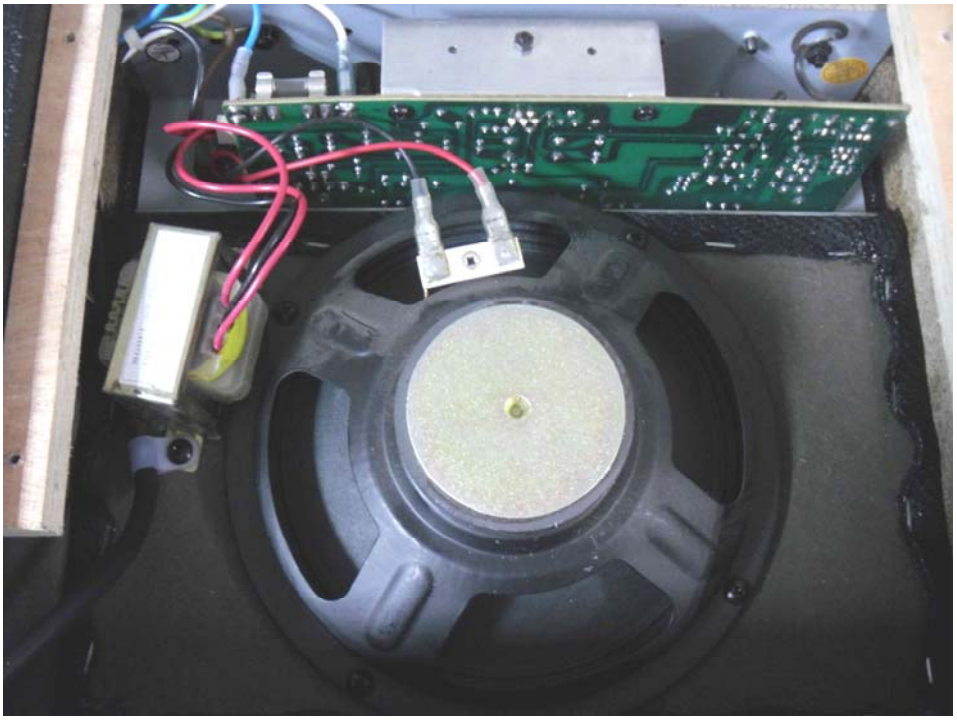
EUT Photo 1

EUT Photo 2

EUT Photo 3

EUT Photo 4

EUT Photo 5



※※※※※ **END OF REPORT** ※※※※※