

**SGS-CSTC Standards
Technical Services
(Shanghai)Co., Ltd.**

No.588 West Jindu Road,Songjiang District,Shanghai,China

Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5655
ee.shanghai@sgs.com

Report No.: SHEM111000132001
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EMC TEST REPORT

Application No.: SHEM111000132001

Applicant: CHANGZHOU KIRLIN ELECTRONIC CO.,LTD.

Equipment Under Test (EUT):

NOTE: The following sample submitted was identified on behalf of the client as

EUT Name: MUSIC CABLE

Model No.: FG,IM,IW,IP,IPC

Serial No.: N/A

Standards: EN55013: 2001+A1:2003+A2:2006
EN55020: 2007

Date of Receipt: October 08, 2011

Date of Test: October 17, 2011

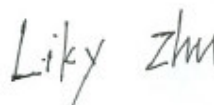
Date of Issue: October 25, 2011

Test Result :	PASS
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The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives.



Tony Wu
E&E Section Manager
SGS-CSTC(Shanghai) Co., Ltd.



Lily Zhu
E&E Project Engineer
SGS-CSTC(Shanghai)Co.,Ltd

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2 Test Summary

Test	Test Requirement	Test Method	Class Severity	Result
Disturbance Voltage at Mains Terminals	EN55013: 2001+A1:2003+A2:2006	EN55013: 2001+A1:2003+A2:2006	Table 1	N/A
Disturbance Voltage at Antenna Terminals	EN55013: 2001+A1:2003+A2:2006	EN55013: 2001+A1:2003+A2:2006	Table 2	N/A
Disturbance Power	EN55013: 2001+A1:2003+A2:2006	EN55013: 2001+A1:2003+A2:2006	Table 4	PASS
Radiated Disturbances (30MHz to 1GHz)	EN55013: 2001+A1:2003+A2:2006	EN55013: 2001+A1:2003+A2:2006	Table 2	N/A
Input immunity	EN55020: 2007	EN55020: 2007	Table 3 ,4,5,7	N/A
RF Voltage Common mode AM modulated	EN55020: 2007	EN55020: 2007	Table 8	N/A
Screening Effectiveness	EN55020: 2007	EN55020: 2007	Table 8a	N/A
RF Voltages of audio input and output terminals (common mode)	EN55020: 2007	EN55020: 2007	Table 13	N/A
RF Voltages Of mains supply terminal ,headphone and loudspeaker	EN55020: 2007	EN55020: 2007	Table 12	N/A
Electrical Fast Transient common mode	EN55020: 2007	EN 61000-4-4 : 2004+A1:2010	N/A	N/A
Immunity to ambient electromagnetic field	EN55020: 2007	EN55020: 2007	Table 16-20	N/A
RF e.m. field keyed carrier	EN55020: 2007	EN 61000-4-3: 2006+A1:2008+A2:2010	Table 15	N/A
ESD	EN55020: 2007	EN 61000-4-2:2009	Contact:±4KV Air :±8KV	PASS

Note: There are five models mentioned in this report, and they are the same in electrical and electronic characters. So we just have the model FG tested.

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8.2 ESD6

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4 General Information

4.1 Client Information

Applicant: CHANGZHOU KIRLIN ELECTRONIC CO.,LTD.
Address of Applicant: #5 HEXIANG RD.,WUJIN ECONOMIC DEVELOPMENT DISTRICT,JIANGSU
Manufacturer : CHANGZHOU KIRLIN ELECTRONIC CO.,LTD.
Address of Manufacturer: #5 HEXIANG RD.,WUJIN ECONOMIC DEVELOPMENT DISTRICT,JIANGSU

4.2 General Description of E.U.T.

EUT Name: MUSIC CABLE
Model No.: FG,IM,IW,IP,IPC
Brand Name: Not supplied by client

4.3 Details of E.U.T.

Power Supply: Rated voltage: $\leq 50V$
Power Cord: N/A

4.4 Description of Support Units

Name / Function	Model No.	Remark
Lenovo PC	7440-FW4	N/A
AMPLIFIER	G(B)A-15W	Power:15W

4.5 Standards Applicable for Testing

Table 1 : Emission Tests Carried Out Under EN55013: 2001+A1:2003+A2:2006

Emission	Status
EN55013:2001+A1:2003+A2:2006 Disturbance Voltage at mains terminals	×
EN55013:2001+A1:2003+A2:2006 Disturbance Voltage at antenna terminals	×
EN55013:2001+A1:2003+A2:2006 Disturbance Power	√
EN55013:2001+A1:2003+A2:2006 Radiated Disturbances	×

× Indicates that the test is not applicable.

√ Indicates that the test is applicable.

Table 2 : Immunity Tests Carried Out Under EN55020: 2007

Immunity	Status
EN55020: 2007 Input Immunity	×
EN55020: 2007 RF Voltage Common mode AM modulated	×
EN55020: 2007 Screening Effectiveness	×
EN55020: 2007 RF Voltage of audio input and output terminals	×
EN55020: 2007 RF Voltages Of mains supply terminal ,headphone and loudspeaker	×
EN55020: 2007 Electrical Fast Transient common mode	×
EN55020: 2007 Immunity to abient electromagnetic field	×
EN55020: 2007 RF e.m. field keyed carrier	×
EN55020: 2007 Electrostatic Discharge	√

× Indicates that the test is not applicable

√ Indicates that the test is applicable

4.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

Tel: +86 21 6191 5666 Fax: +86 21 6191 5655

4.7 Test Facility

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

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. 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 in the field of testing. Date of expiry: 2011-07-29.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2012-03-17.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2011-09-29.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3172 and C-3514 respectively. Date of Registration: 2009-11-30. Date of Expiry: 2012-03-17.

4.8 Measurement Uncertainty

According to CISPR 16-4-2.

Test Item	Frequency Range	Measurement Uncertainty
Conducted Emission	9KHz – 150KHz	3.9dB
	150KHz – 30MHz	3.5dB
Radiated Emission	30MHz – 1000MHz	4.0dB

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5 Equipments Used during Test

Radiated Power

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Cal. Due date
1	Absorbing clamp	LUTHI	MDS-21	3583	2007-06-27	2012-06-26
2	EMI test receiver	Rohde & Schwarz	ESCS 30	100086	2011-06-04	2012-06-03

Electrostatic Discharge Test

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Cal. Due date
1	ESD Simulator	TESEQ	NSG 437	468	2011-08-05	2012-08-04

General Equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	Digital pressure meter	YONGZHI	DYM3-01	101012	2010-11-19	2011-11-18
2	Digital Multimeter	FLUKE	17B	10560713	2011-09-07	2012-09-06
3	Temperature& humidity recorder	ShangHai weather meter work	ZJ 1-2B	0805126	2011-07-29	2012-07-28

6 Emission Test Results

6.1 Radiated Power

Test Requirement: EN55013: 2001+A1:2003+A2:2006
Test Method: EN55013: 2001+A1:2003+A2:2006
Test Date: October 17, 2011
Frequency Range: 30 MHz to 300MHz
Class: N/A
Detector: Peak for pre-scan
(120kHz resolution bandwidth for frequency range 30-1000MHz)
Quasi-Peak if maximised peak within 6dB of limit
Result: **PASS**

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 21.0 °C Humidity: 49% RH Atmospheric Pressure: 1004 mbar

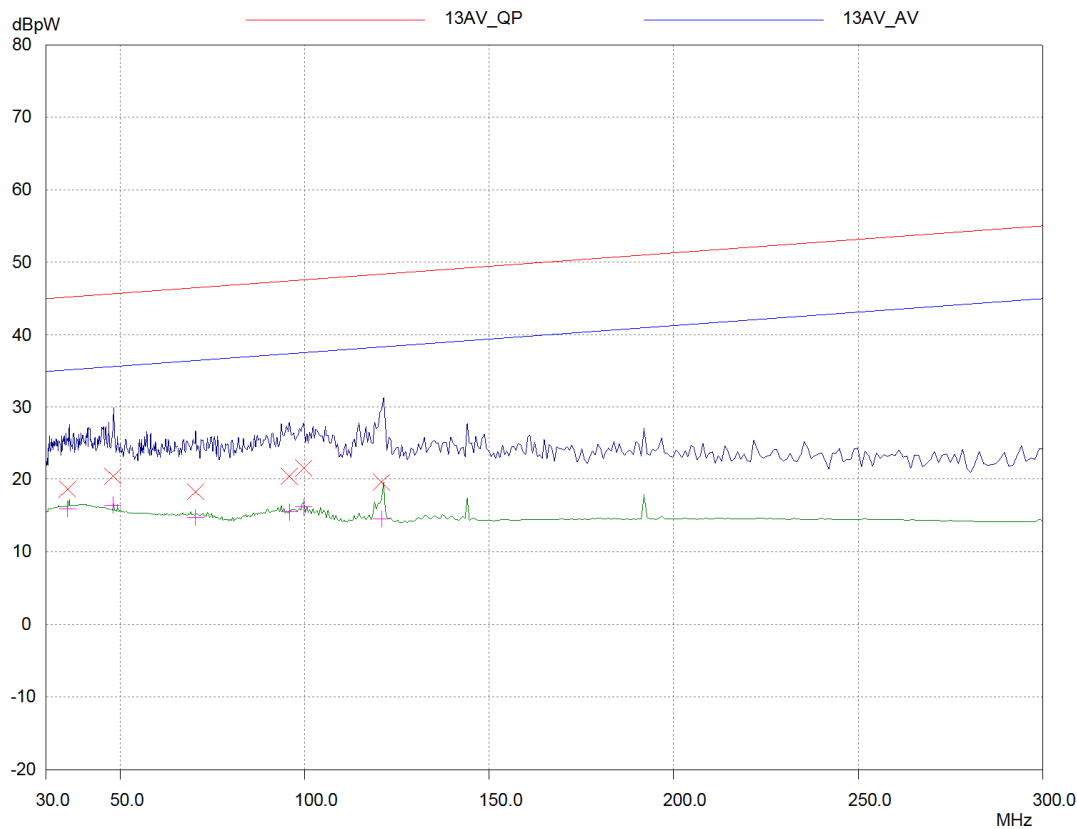
EUT Test the EUT with full function according to standard.

Operation:

6.1.2 Measurement Data

An initial pre-scan was performed in peak detection mode. Quasi-Peak was performed at the frequencies with maximized peak emission were detected.

The following quasi-peak measurements were performed on the EUT on October 17, 2011.



Final Measurement Results

Frequency MHz	QP Level dBpW	QP Limit dBpW	QP Delta dB
35.76058	18.61	45.21	26.60
48.05066	20.39	45.67	25.28
70.49134	18.22	46.50	28.28
95.85873	20.36	47.44	27.08
99.76284	21.53	47.58	26.05
120.8334	19.57	48.36	28.79

Frequency MHz	AV Level dBpW	AV Limit dBpW	AV Delta dB
35.76058	15.89	35.21	19.32
48.05066	16.37	35.67	19.30
70.49134	14.71	36.50	21.79
95.85873	15.45	37.44	21.99
99.76284	16.11	37.58	21.47
120.8334	14.51	38.36	23.85

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7 Immunity Test Results

7.1 Performance Criteria

- Performance A** The equipment shall continue to operate as intended during the test.
- No change of actual operating state (for example change of channel) is allowed as a result of the application of the test.
- Multifunction equipment shall for each function meet the relevant requirements.
- Evaluation is carried out for audio and video functions.
- The equipment is supposed to operate as intended if the criteria of 4.1.1.1 and/or 4.1.1.2 are fulfilled.
- 4.1.1.1 Evaluation of audio quality**
- Unless otherwise specified in this standard, the criterion of compliance with the requirement is a wanted to unwanted audio signal ratio of ≥ 40 dB at a wanted audio signal level of 50 mW, or at another audio signal level specified by the manufacturer.
- If the S/N ratio is less than 43 dB, the performance criterion for audio assessment is the actual S/N ratio minus 3 dB.
- In this case, at the beginning of the audio quality evaluation the actual S/N ratio is measured and noted in the test report as reference value.
- For AM sound receivers the criterion is ≥ 26 dB at 50 mW.
- For AM and FM car radios and for broadcast receiver cards for computers the criterion is ≥ 26 dB at 500 mW
- 4.1.1.2 Evaluation of picture quality**
- In the evaluation of picture interference the wanted test signal produces a standard picture (in the case of video tape equipment on the screen of the test-tv-set) and the unwanted signal produces a degradation of the picture. The degradation may be in a number of forms, such as a superposed pattern, disturbance of synchronization, geometrical distortion, loss of picture contrast, of colour, etc. The criterion of compliance with the requirement is just perceptible degradation by observation of the picture. The screen shall be observed under normal viewing conditions (brightness 15 lx to 20 lx), at a viewing distance of six times the height of the screen.
- The picture quality can also be evaluated by using objective measurement methods; one such method is described in Annex K.
- In the case of video tape equipment the test criteria relate to the picture, assessed on a test-tv-set, which is connected to the video output terminal of the equipment.
- Performance B** The equipment shall continue to operate as intended after the test. No loss of function is allowed after the test when the apparatus is used as intended, but failures which are recovered automatically but which cause temporary delay in processing, are permissible. No change of actual operating state for example change of channel or stored data and settings is allowed as a result of the application of the test. During the test, degradation of performance is allowed.

7.2 ESD

Test Requirement: EN55020: 2007
Test Method: EN 61000-4-2 :2009
Test Date: October 17, 2011
Discharge Impedance: 330 Ω / 150 pF
Discharge Voltage: Air Discharge: ± 8 kV
Contact Discharge: ± 4 kV
Polarity: Positive & Negative
Number of Discharge: Minimum 10 times at each test point
Discharge Mode: Single Discharge
Criteria B
Discharge Period: 1 second minimum

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 24.0°C Humidity: 48% RH Atmospheric Pressure: 1032 mbar

7.2.2 Test Results

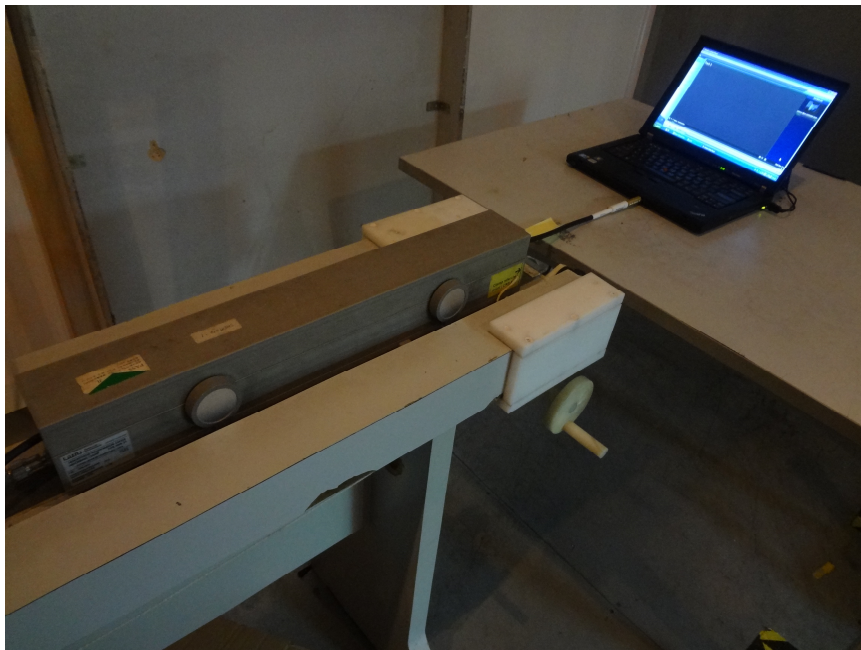
Pass

Test data

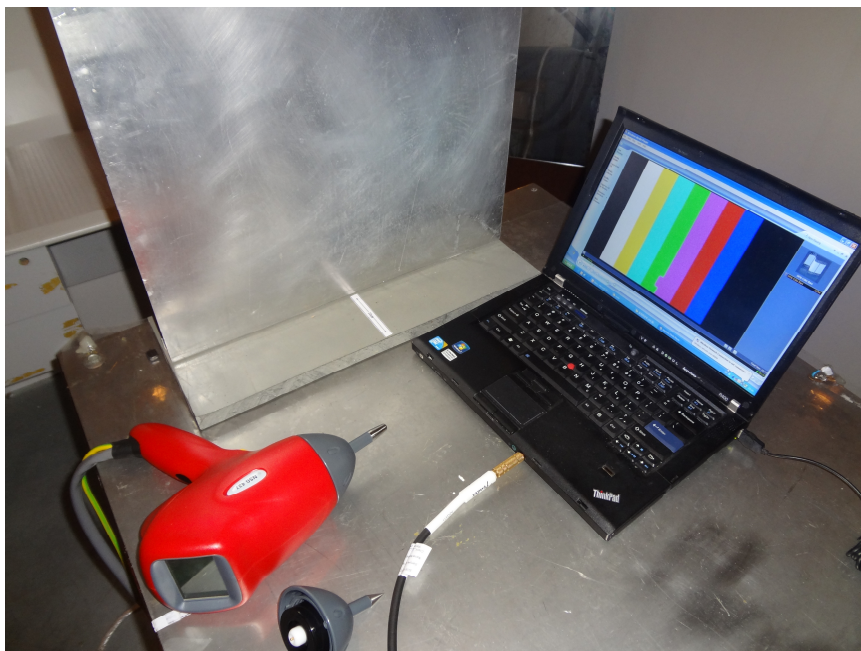
Discharge port	The method of discharge	Test voltage (kV)	The time of discharge		Criteria	Test results Pass/Fail
			Positive polarity	Negative polarity		
Metal	Direct contact discharge	4	10	10	B	PASS
HCP	Indirect contact discharge	4	10	10	B	PASS
VCP	Indirect contact discharge	4	10	10	B	PASS
Insulated	Air discharge	8	10	10	B	PASS

8 Photographs

8.1 Radiated Power Test setup



8.2 ESD



8.3 EUT Constructional Details

FG



IM



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IW



IP



IPC



THE END OF REPORT