



**CENTRE OF TESTING SERVICE  
INTERNATIONAL**

**OPERATE ACCORDING TO ISO/IEC 17025**

# **FCC TEST REPORT**

**TEST REPORT NUMBER : CGZ3110426-00238-E**



**CENTRE OF TESTING SERVICE CO., LTD.**

Building F, Dachuang industrial park, No.379, Zhongshan Dadao,  
Guangzhou, China.



## TEST REPORT FOR FCC ID

## 47 CFR PART 18

Industrial, Scientific, and Medical Equipment

Report Reference No. .... : CGZ3110426-00238-E

Date of issue ..... : 10 May 2011

Testing Laboratory Name..... : CENTRE OF TESTING SERVICE CO., LTD.

Address ..... : Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China.

Testing location/ procedure..... : Full application of Harmonised standards  Partial application of Harmonised standards  Other standard testing method 

Applicant's name ..... : ZHONGSHAN LIGHT-SPEED ELECTRIC APPLIANCES CO., LTD.

Address ..... : NO.1 QINGZHENG RD.,4-5th BLDG., TANBEI, DONGSHENG TOWN, ZHONGSHAN CITY, GUANGDONG PROVINCE, P.E.CHINA

## Test specification:

Standard..... : 47 CFR PART 18

Test Report Form No. .... : CTSEMC-1.0

TRF Originator ..... : CENTRE OF TESTING SERVICE CO., LTD.

Master TRF ..... : Dated 2009-01

## CENTRE OF TESTING SERVICE CO., LTD. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the CENTRE OF TESTING SERVICE CO., LTD. is acknowledged as copyright owner and source of the material. CENTRE OF TESTING SERVICE CO., LTD. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description..... : PORTABLE LUMINAIRES(T4/T5 FLUORESCENT FIXTURE)

Trade Mark ..... : E-BRIGHT

Manufacturer ..... : ZHONGSHAN LIGHT-SPEED ELECTRIC APPLIANCES CO., LTD.

Model/Type reference ..... : LS-35X

Ratings ..... : AC 120V,60HZ,35W

Result ..... : Positive

Compiled by:

Violet Lee / File administrators

Supervised by:

Vincent Yao / Technique principal

Approved by:

Mike Hoe / Manager

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

## CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**FCC ID -- TEST REPORT****Test Report No. :** CGZ3110426-00238-E**10 May 2011**  
Date of issue

Type / Model.....	LS-35X
EUT.....	PORTABLE LUMINAIRES(T4/T5 FLUORESCENT FIXTURE)
<b>Applicant</b> .....	ZHONGSHAN LIGHT-SPEED ELECTRIC APPLIANCES CO., LTD.
Address.....	NO.1 QINGZHENG RD.,4-5th BLDG., TANBEI, DONGSHENG TOWN, ZHONGSHAN CITY, GUANGDONG PROVINCE, P.E.CHINA
Telephone.....	+86-760-88503220
Fax.....	+86-760-88503709
Contact.....	Mr. ZHAO
<b>Manufacturer</b> .....	ZHONGSHAN LIGHT-SPEED ELECTRIC APPLIANCES CO., LTD.
Address.....	NO.1 QINGZHENG RD.,4-5th BLDG., TANBEI, DONGSHENG TOWN, ZHONGSHAN CITY, GUANGDONG PROVINCE, P.E.CHINA
Telephone.....	+86-760-88503220
Fax.....	+86-760-88503709
Contact.....	Mr. ZHAO
<b>Test report holder</b> .....	ZHONGSHAN LIGHT-SPEED ELECTRIC APPLIANCES CO., LTD.
Address.....	NO.1 QINGZHENG RD.,4-5th BLDG., TANBEI, DONGSHENG TOWN, ZHONGSHAN CITY, GUANGDONG PROVINCE, P.E.CHINA
Telephone.....	+86-760-88503220
Fax.....	+86-760-88503709
Contact.....	Mr. ZHAO

**Test Result** according to the standards on page 3:**Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

## TABLE OF CONTENTS

<u>Description</u>	<u>Page</u>
<b>1 TEST STANDARDS.....</b>	<b>4</b>
<b>2 SUMMARY .....</b>	<b>4</b>
<b>2.1 GENERAL REMARKS .....</b>	<b>4</b>
<b>2.2 FINAL ASSESSMENT .....</b>	<b>4</b>
<b>3 EQUIPMENT UNDER TEST.....</b>	<b>5</b>
<b>3.1 Power supply system utilised.....</b>	<b>5</b>
<b>3.2 Short description of the Equipment under Test (EUT).....</b>	<b>5</b>
<b>3.3 EUT operation mode .....</b>	<b>5</b>
<b>3.4 EUT configuration .....</b>	<b>5</b>
<b>4 TEST ENVIRONMENT .....</b>	<b>6</b>
<b>4.1 Address of the test laboratory .....</b>	<b>6</b>
<b>4.2 Test facility.....</b>	<b>6</b>
<b>4.3 Environmental conditions .....</b>	<b>6</b>
<b>4.4 Definitions of symbols used in this test report.....</b>	<b>6</b>
<b>4.5 Statement of the measurement uncertainty .....</b>	<b>6</b>
<b>4.6 Measurement Uncertainty .....</b>	<b>7</b>
<b>4.7 Test Description .....</b>	<b>7</b>
<b>5 TEST CONDITIONS AND RESULTS .....</b>	<b>8</b>
<b>5.1 Conducted disturbance .....</b>	<b>8</b>
<b>5.2 Radiated disturbance.....</b>	<b>11</b>
<b>6 DEVIATION TO TEST SPECIFICATIONS.....</b>	<b>16</b>
<b>7 USED TEST EQUIPMENT.....</b>	<b>17</b>
<b>10 Manufacturer/ Approval holder Declaration .....</b>	<b>18</b>

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

### CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

## 1 TEST STANDARDS

The tests were performed according to following standards:

47 CFR PART 18 Industrial, Scientific, and Medical Equipment

## 2 SUMMARY

### 2.1 GENERAL REMARKS

Date of receipt of test sample	26 April 2011
Testing commenced on	10 May 2011
Testing concluded on	10 May 2011

### 2.2 FINAL ASSESSMENT

The FCC requirements pertaining to the technical standards and tested operation modes are

- fulfilled.
- **not** fulfilled.

The equipment under test

- fulfills the FCC requirements cited on page 3.
- **does not** fulfil the FCC requirements cited on page 3.

### 3 EQUIPMENT UNDER TEST

#### 3.1 Power supply system utilised

Power supply voltage:  AC 120V,60HZ,35W  
 12 V DC  24 V DC

#### 3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: 1

Serial number: Prototype

#### 3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

- Standby
- Test programme (H - Pattern)
- Test programme (colour bar)
- Operating mode 2500 U/min. (1 cylinder)
- Operating mode 1500 U/min. (> 1 cylinder)
- Ignition on , Motor off
- Speed 50 km/h
- Test program (customer specific)

Operating Mode: ON

Emissions tests: According to 47 CFR PART 18 searching for the highest disturbance.

#### 3.4 EUT configuration

(The CDF filled by the applicant can be viewed at the test laboratory.)

The following peripheral devices and interface cables were connected during the measurement:

Name:	/
M/N:	/
S/N:	/
Manufacturer:	/
Power Cord:	/
Certificate:	/

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

## 4 TEST ENVIRONMENT

### 4.1 Address of the test laboratory

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

### 4.2 Test facility

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

#### CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD. has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

#### IC-Registration No.: 8374

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374 on June 24, 2009 .

#### FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD., 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 No.971995, July 21, 2009.

### 4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

### 4.4 Definitions of symbols used in this test report

- - The black square indicates that the listed condition, standard or equipment is applicable for this report.
- - The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

### 4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

## 4.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	30MHz~300MHz	±1.38dB	(1)
Radiation emission (3m)	30MHz~300MHz	±3.14dB	(1)
	300MHz~1000MHz	±3.18dB	(1)

(1)This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 4.7 Test Description

### 4.7.1 Description of Standards and Results

EMISSION		
Description of Test Item	Standard	Results
Conducted Emission Test	47 CFR Part 18 ANSI C63.4: 2009	PASSED
Radiated Emission Test	47 CFR Part 18 ANSI C63.4: 2009	PASSED

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

## 5 TEST CONDITIONS AND RESULTS

### 5.1 Conducted disturbance

For test instruments and accessories used see section 7 part 7.2.

#### 5.1.1 Description of the test location

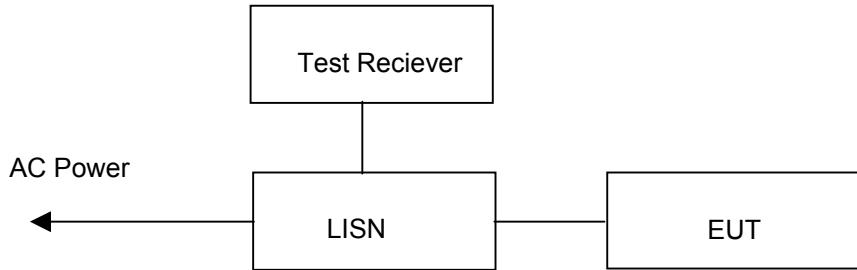
Test location: Shielded room

#### 5.1.2 Description of the test set-up

##### 5.1.2.1 Operating Condition

The EUT is engraving during the test, and the results of the maximum emanation are recorded

##### 5.1.2.2 Block Diagram of Test Setup



#### 5.1.3 Limits disturbance( FCC Class C)

Frequency	Maximum RF Line Voltage (dB $\mu$ V)	
	Quasi-peak Level	
450 k Hz ~ 2.51 M Hz		48
2.51 M Hz ~ 3 M Hz		69.5
3 M Hz ~ 30MHz		48

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

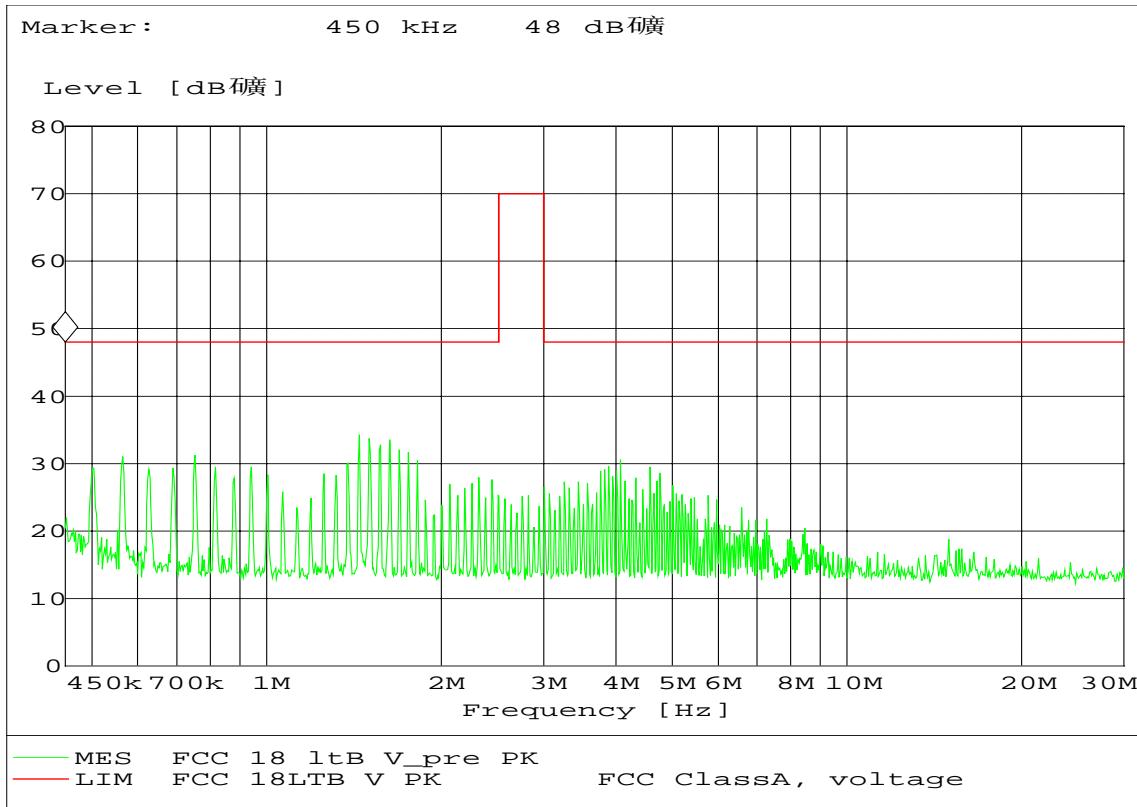
## 5.1.4 Test result

The requirements are	<b>Fulfilled</b>
Band width	9kHz
Frequency range	0.45 MHz - 30 MHz
Min. limit margin	>6.0 dB at 0.45 - 30 MHz

**Remarks:** The limits are kept. For detailed results, please see the following page(s).

## 5.1.5 Test protocol

Test point	Va	Result:	<input checked="" type="checkbox"/> - passed <input type="checkbox"/> - not passed
Operation mode			
Remarks:			
EUT	PORATABLE LUMINAIRES(T4/T5 FLUORESCENT FIXTURE)		
Operating Condition	AC 120V,60Hz,35W		
Test Condition	Ambient Temperature: 24°C Humidity: 56%		
Operator	Peter		
MODEL NO.	LS-35X		



Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

## CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

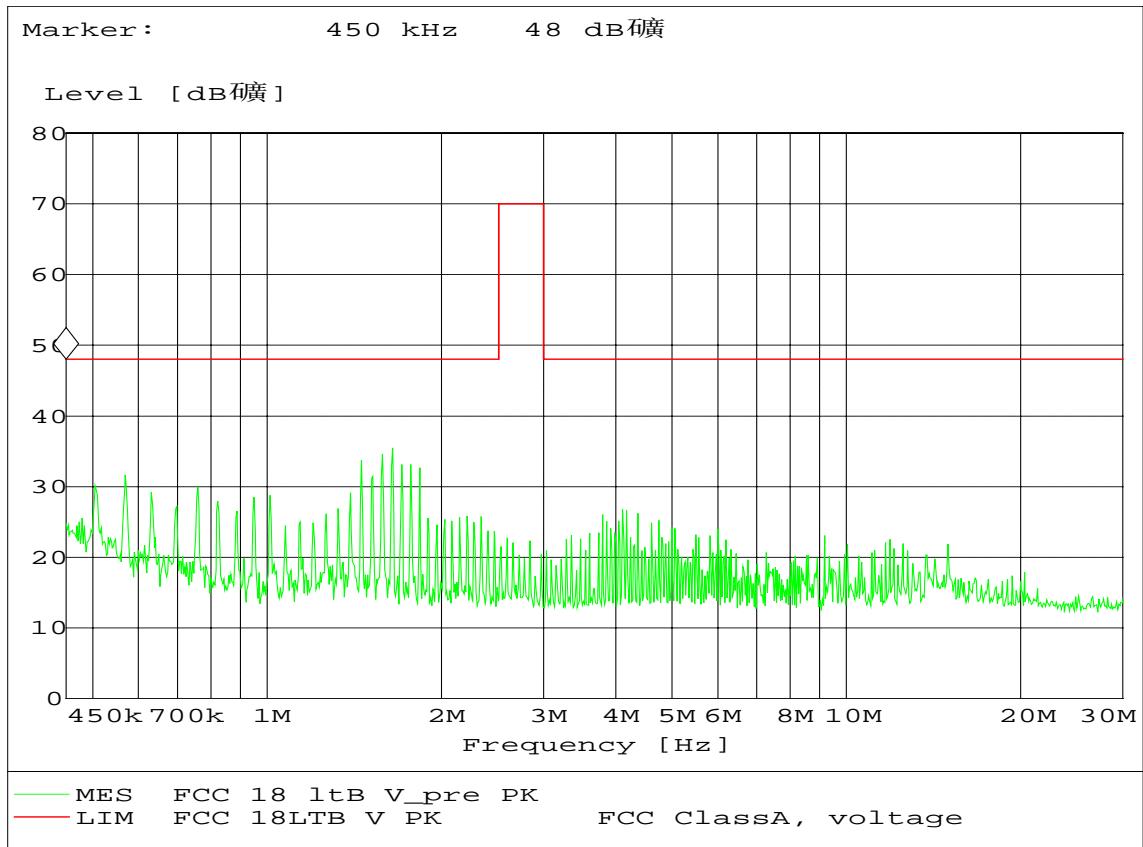
Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

Test point	Vb	Result:	<input checked="" type="checkbox"/> - passed
Operation mode			<input type="checkbox"/> - not passed
Remarks:			



Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

**CENTRE OF TESTING SERVICE CO., LTD.**

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

## 5.2 Radiated disturbance

For test instruments and accessories used see section 7 part 7.1.

### 5.2.1 Description of the test location

Test location : Semi-Anechoic chamber

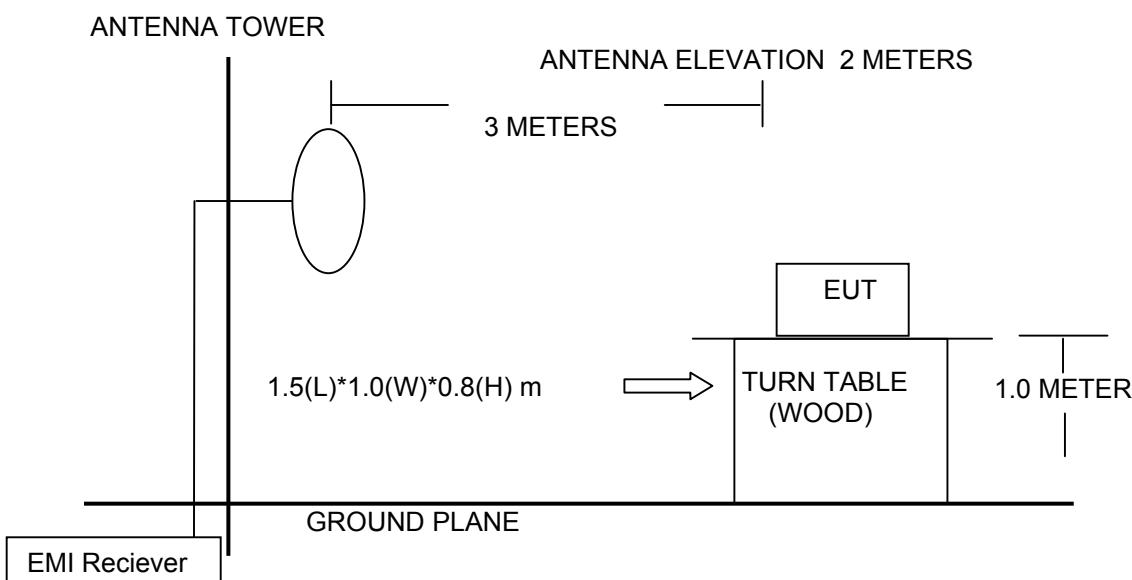
Test disturbance: 3 Meter

### 5.2.2 Description of the test set-up

#### 5.2.2.1 Operating Condition

The EUT is engraving during the test, and the results of the maximum emanation are recorded

#### 5.2.2.2 Block Diagram of Test Setup



### 5.2.3 Limits of disturbance

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dB $\mu$ V/m)
30~88	3	40
88~216	3	43.5
216~1000	3	46

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

### 5.2.4 Test result

The requirements are	<b>Fulfilled</b>
Band width	120kHz
Frequency range	30MHz – 1GHz
Min. limit margin	>3.0 dB at 30MHz – 1GHz

EUT	PORTABLE LUMINAIRES(T4/T5 FLUORESCENT FIXTURE)
MODEL NO.	LS-35X
Operating Condition	AC 120V,60Hz,35W
Test Condition	Ambient Temperature: 24°C Humidity: 56%
Operator	<b>Peter</b>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Ant. H/V
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	
1	64.0800	31.08	5.57	36.65	40.00	-3.35	V
2	144.7899	29.12	3.26	32.38	43.50	-11.12	V
3	193.1366	28.69	5.67	34.36	43.50	-9.14	V
4	240.1442	28.87	7.44	36.31	46.00	-9.69	V
5	336.4817	26.20	9.16	35.36	46.00	-10.64	V
6	432.0040	31.92	10.48	42.40	46.00	-3.60	V
7	531.2910	30.96	11.43	42.39	46.00	-3.61	V
1	63.1857	30.81	5.92	36.73	40.00	-3.27	H
2	144.7899	36.72	3.26	39.98	43.50	-3.52	H
3	240.1442	29.88	7.44	37.32	46.00	-8.68	H
4	288.2840	30.71	8.54	39.25	46.00	-6.75	H
5	336.4817	30.37	9.16	39.53	46.00	-6.47	H
6	433.3397	28.74	10.54	39.28	46.00	-6.72	H

**REMARKS:** 1. P= Peak Reading; Q= Quasi-peak Reading A= Average Reading.  
2. The other emission levels were very low against the limit.



The requirements are	<b>Fulfilled</b>
Band width	200Hz and 9KHz
Frequency range	9KHz – 30MHz

EUT	PORTABLE LUMINAIRES(T4/T5 FLUORESCENT FIXTURE)
MODEL NO.	LS-35X
Operating Condition	AC 120V,60Hz,35W
Test Condition	Ambient Temperature: 23°C Humidity: 55%
Operator	<b>Peter</b>

No.	Frequency (KHz)	Detector	Result	Limit	Margin	Ant. H/V
			(dBuA/M)	(dBuA/m)	(dB)	
1	33.12	Peak	22.38	--	--	H
2	33.12	Peak	18.12	--	--	V

**REMARKS:** 1. P= Peak Reading; Q= Quasi-peak Reading A= Average Reading.  
2. The other emission levels were very low fundamental frequency reading.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

**CENTRE OF TESTING SERVICE CO., LTD.**

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

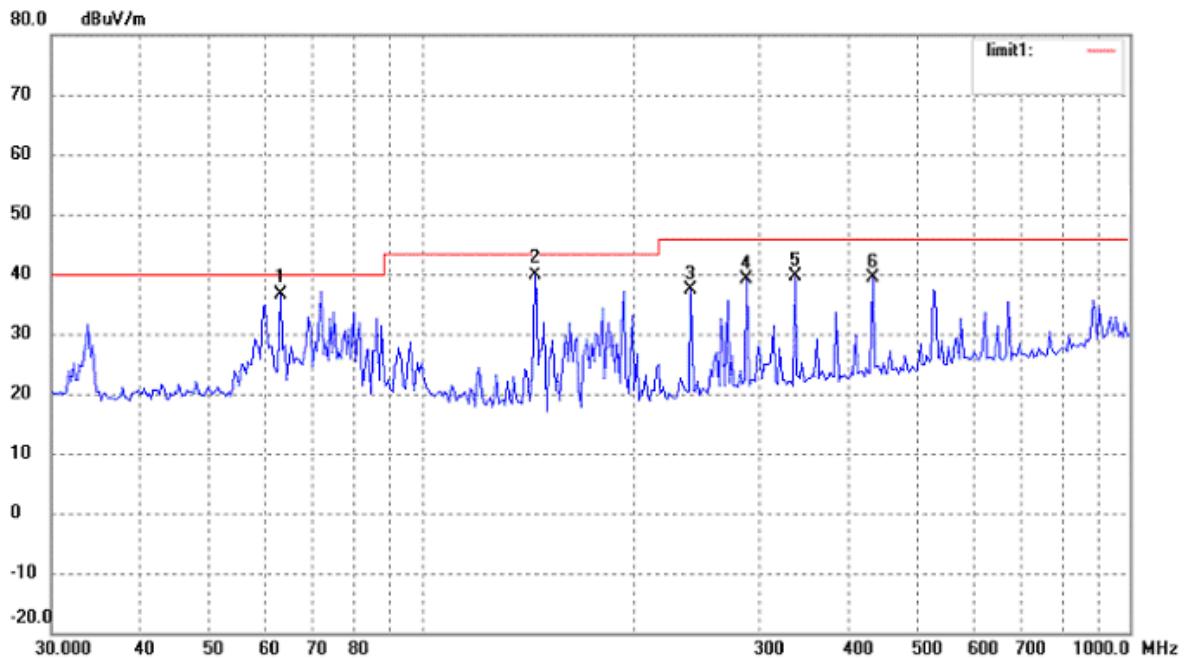
Fax: +86-20-38780406

Complaint line: +86-20-85533471

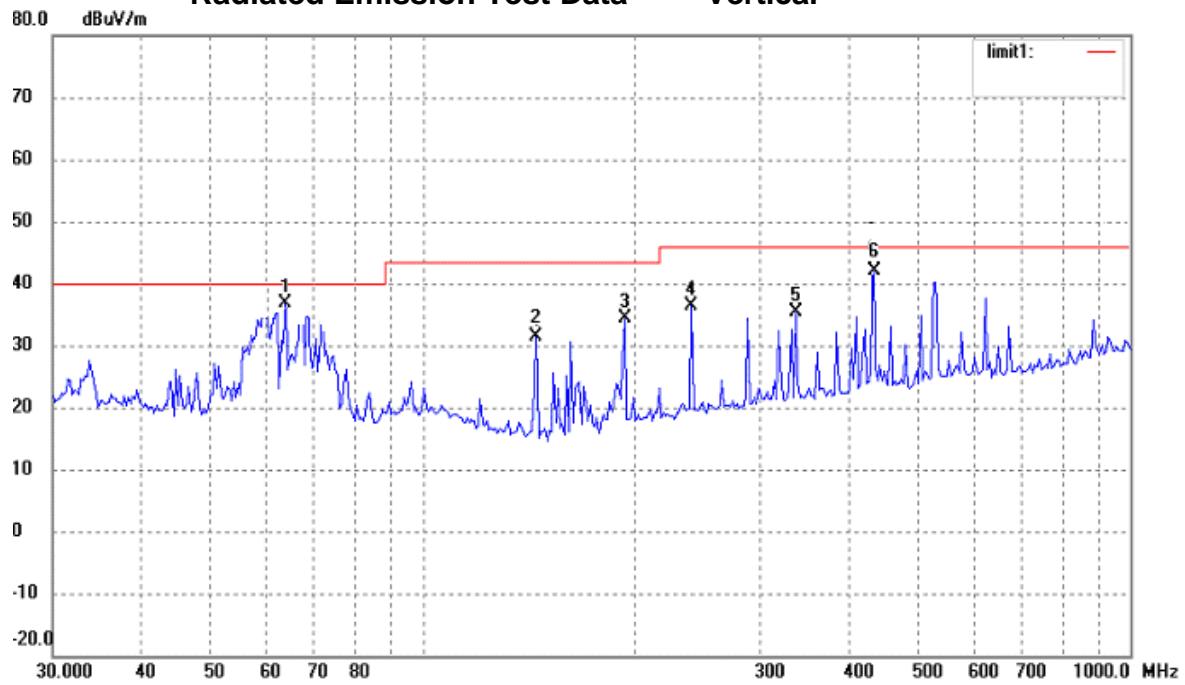
E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

### Radiated Emission Test Data----- Horizontal



### Radiated Emission Test Data ----- Vertical



Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

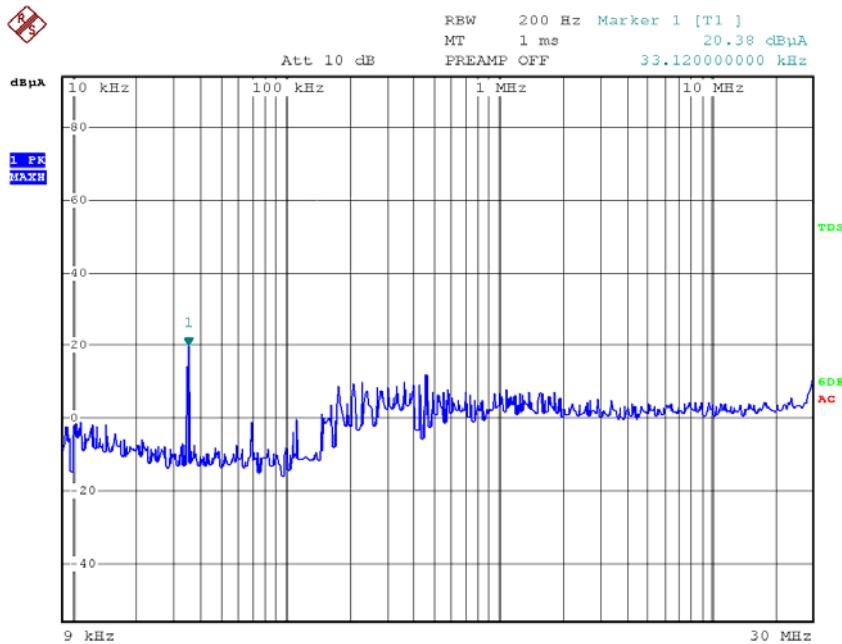
Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: [cts@cts-lab.com.cn](mailto:cts@cts-lab.com.cn)

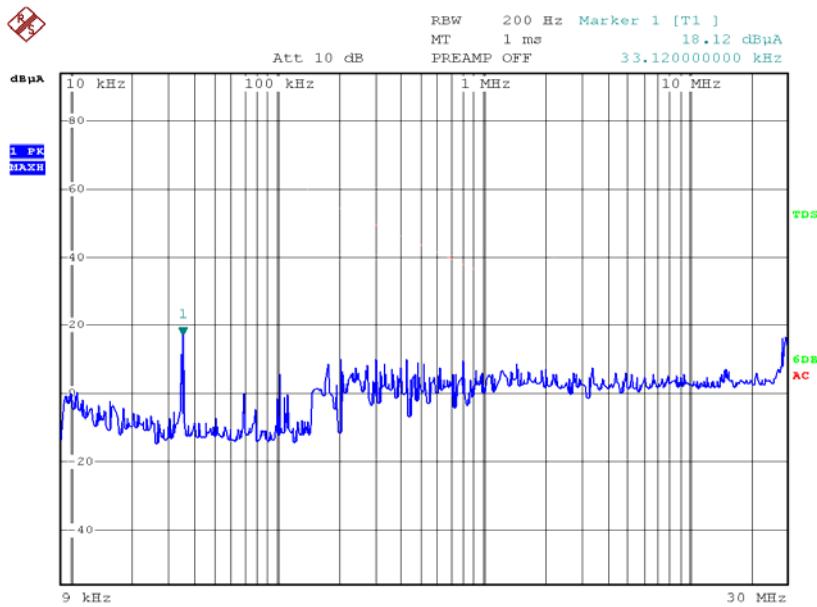
See Reverse For Terms And Conditions of Service

## 9KHz~30M Radiated Emission Test Data----- Horizontal



Date: 28.MAY.2011 09:29:34

## 9KHz~30M Radiated Emission Test Data ----- Vertical



Date: 28.MAY.2011 09:32:55

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

## CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

## 6 DEVIATION TO TEST SPECIFICATIONS

[ NONE]

### Normative references

**1. 47 CFR Part 18**

Industrial, Scientific, and Medical Equipment

**2. ANSI C63.4 : 2009**

American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

**CENTRE OF TESTING SERVICE CO., LTD.**

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: [cts@cts-lab.com.cn](mailto:cts@cts-lab.com.cn)

See Reverse For Terms And Conditions of Service

## 7 USED TEST EQUIPMENT

### 7.1

Radiated disturbance (Electric field)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2010/12
2	Loop Antenna	Chase	HLA6120	1062	2010/12

### 7.2

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESHS10	842884/012	2010/12
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2010/12
3	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100301	2010/12
4	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2010/12

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

#### CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

## 8 Manufacturer/ Approval holder Declaration

The following identical model(s):

**LS-28X, LS-26X, LS-24X, LS-22X, LS-21X, LS-20X, LS-16X, LS-14X, LS-12X, LS-8X**

Belong to the tested device:

Magnifier Lamp : **PORTABLE LUMINAIRES(T4/T5 FLUORESCENT FIXTURE)**  
Model name: **LS-35X**

**No additional models were tested.**

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

**CENTRE OF TESTING SERVICE CO., LTD.**

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: [cts@cts-lab.com.cn](mailto:cts@cts-lab.com.cn)

See Reverse For Terms And Conditions of Service