



**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 <input checked="" type="checkbox"/> Partial application of Harmonised standards <input type="checkbox"/> Other standard testing method <input type="checkbox"/>
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
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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

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FCC ID -- TEST REPORT

Test Report No. :	CGZ3110426-00238-E	<u>10 May 2011</u> Date of issue
--------------------------	---------------------------	-------------------------------------

Type / Model.....	LS-35X
EUT.....	PORTABLE LUMINAIRES(T4/T5 FLUORESCENT FIXTURE)
Applicant.....	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
Manufacturer.....	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 report holder.....	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.

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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

☒ - fulfils 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:	/



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.

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4.6 Measurement Uncertainty

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

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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

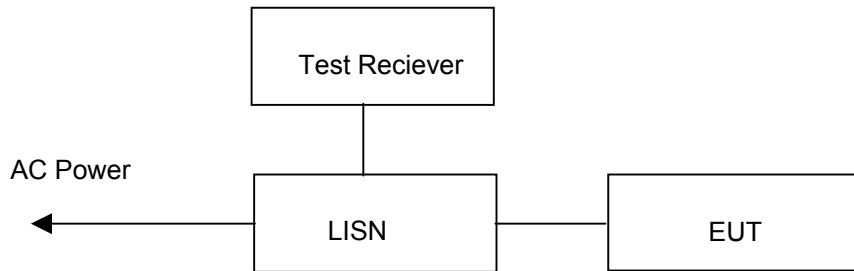
Test location: Shielded room

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 μ 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.

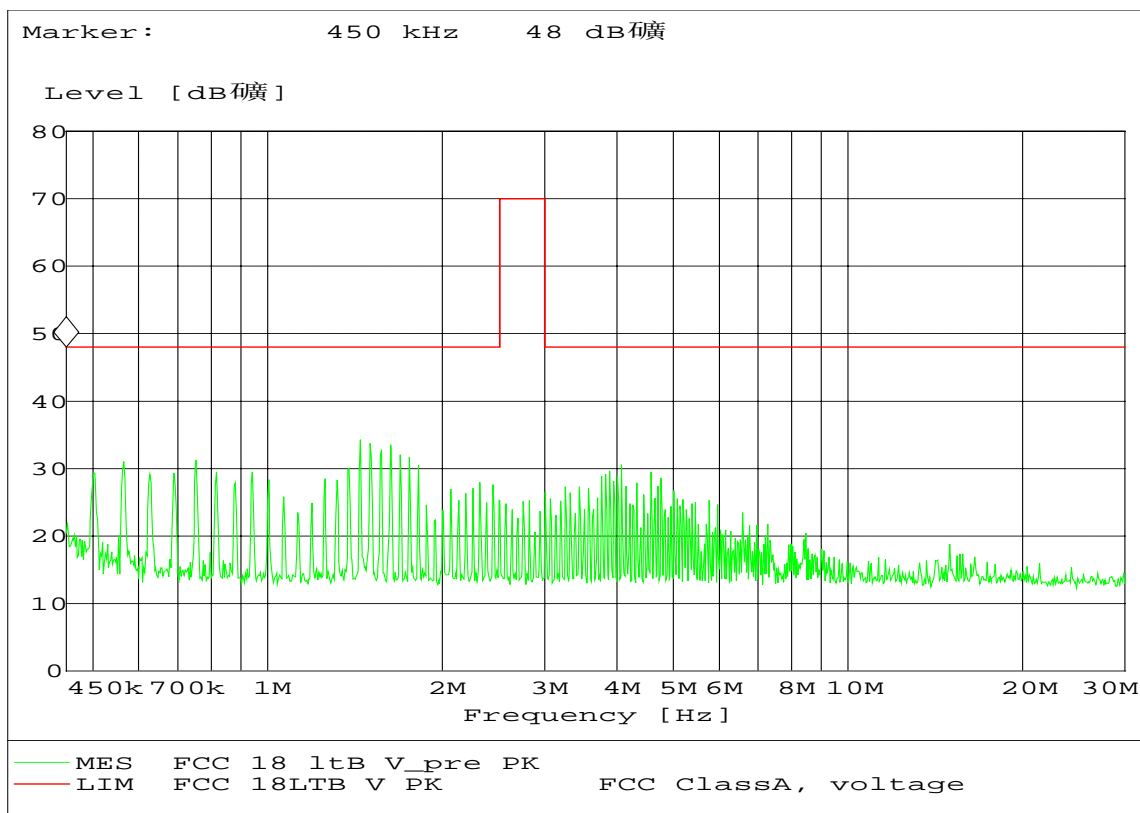
5.1.4 Test result

The requirements are	Fulfilled
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	PORTABLE 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		



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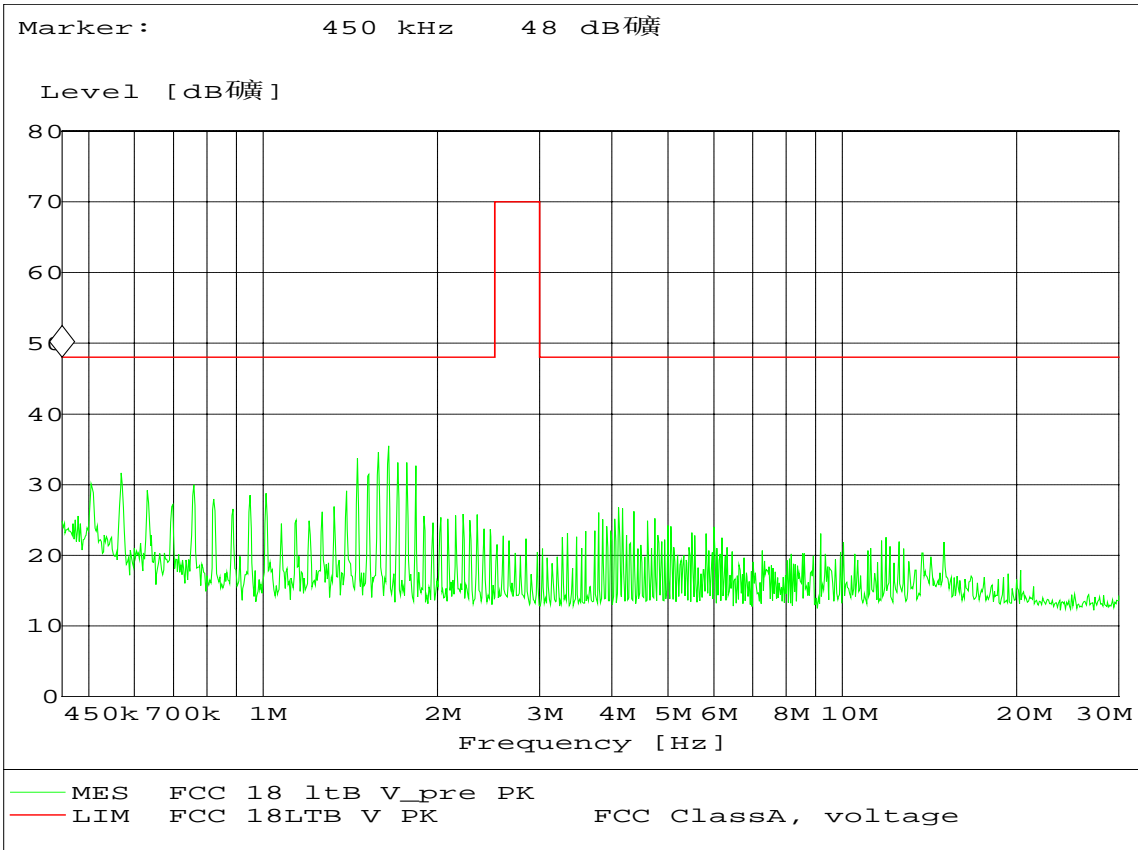
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Test point	Vb	Result:	<input checked="" type="checkbox"/> - passed
Operation mode			<input type="checkbox"/> - not passed
Remarks:			



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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

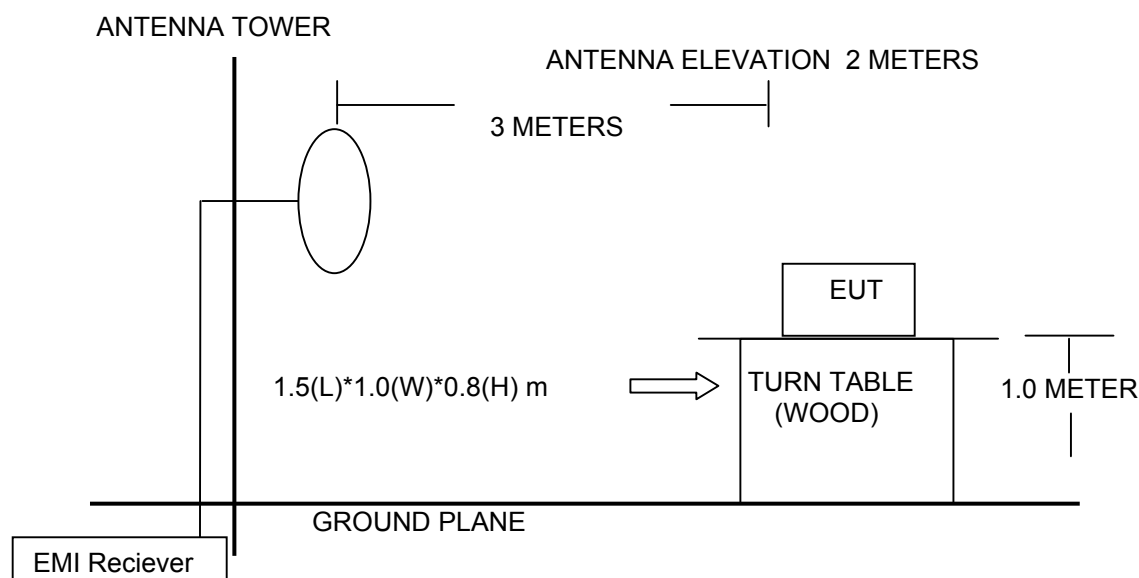
Test disturbance: 3 Meter

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 μ V/m)
30~88	3	40
88~216	3	43.5
216~1000	3	46

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5.2.4 Test result

The requirements are	Fulfilled
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	Peter

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Ant. H/V
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.

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The requirements are	Fulfilled
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	Peter

No.	Frequency	Detector	Result	Limit	Margin	Ant. H/V
	(KHz)		(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.

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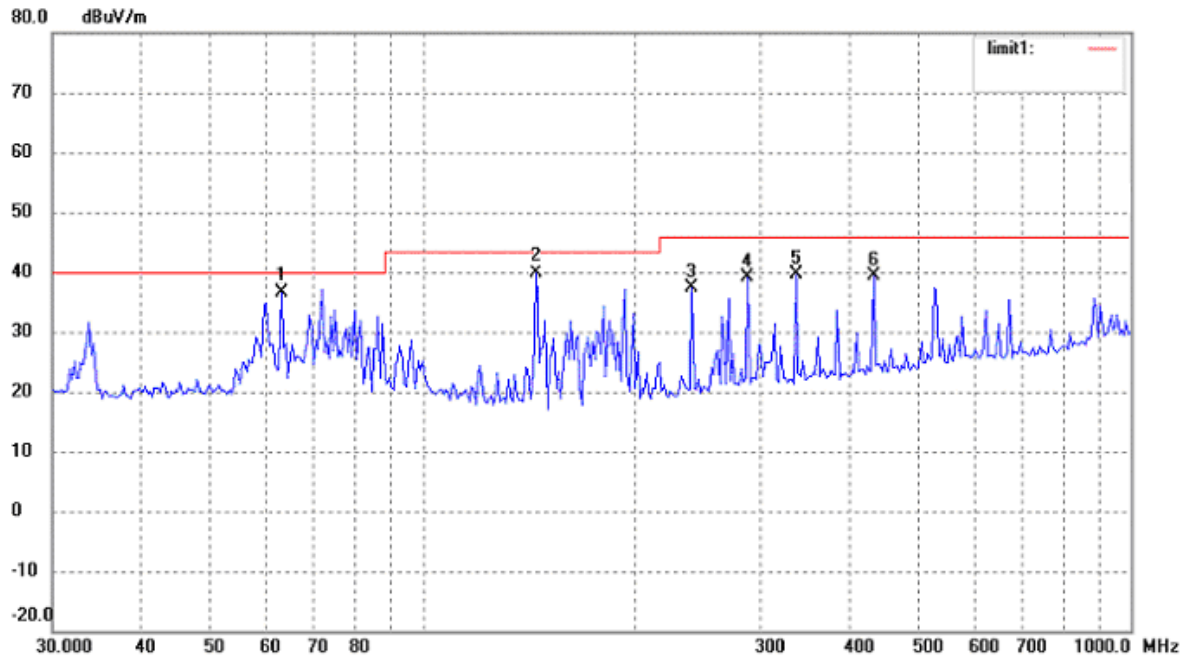
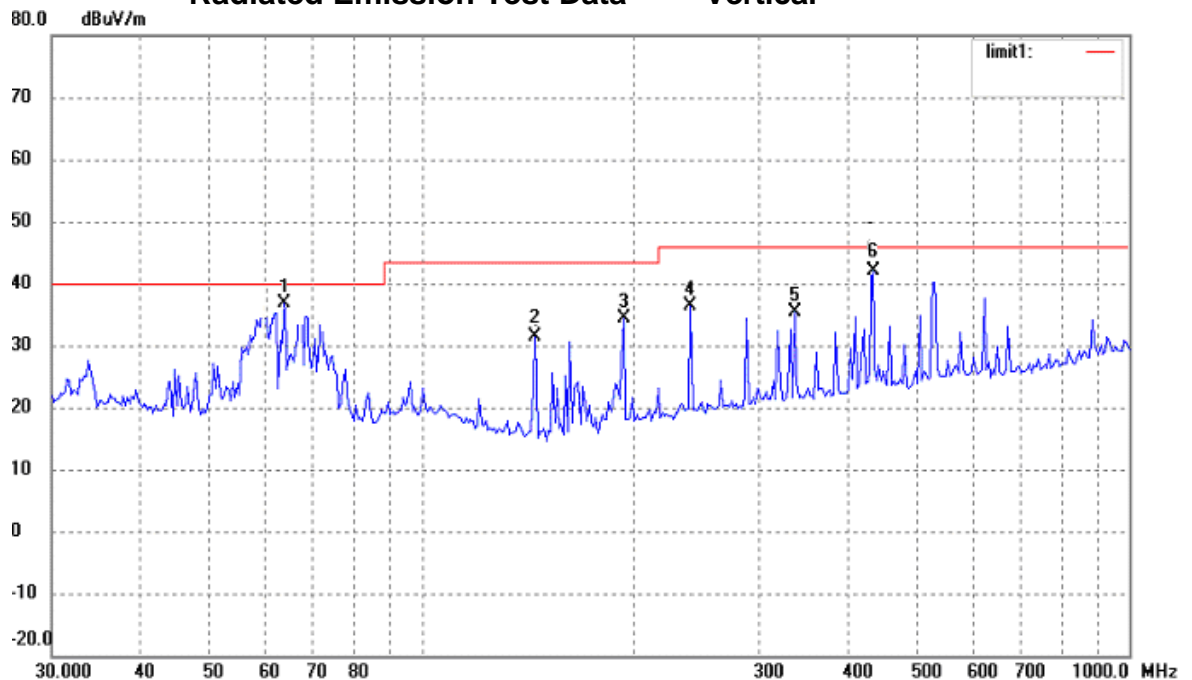
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**Radiated Emission Test Data----- Horizontal****Radiated Emission Test Data ----- Vertical**

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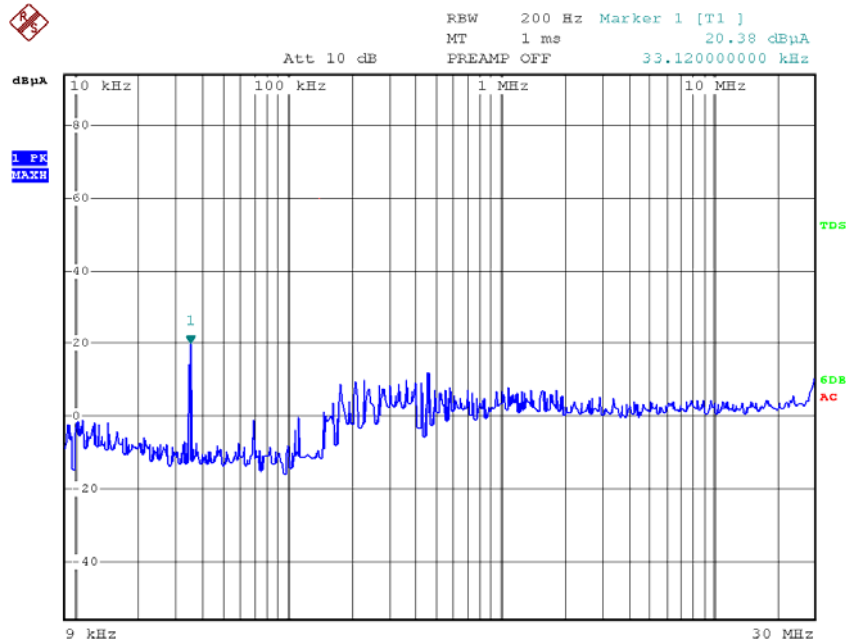
Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

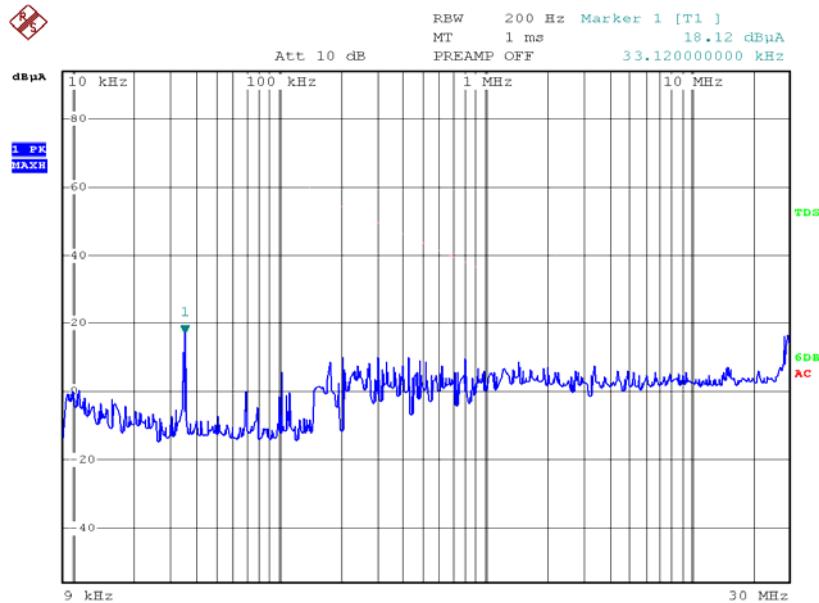
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**9KHz~30M Radiated Emission Test Data----- Horizontal**

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

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

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

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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.

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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

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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.

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