

Application for FCC Identifier
On Behalf of

Yangzhou Green Lighting & Electronic Co., Ltd.

(FCC ID P9D-GRNYZ20)

Summary

The equipment comply with the requirements according to the following standard(s):

47CFR Part 18: Industrial, Scientific, and Medical Equipment

FCC/OET MP-5 (1986): FCC Methods of Measurements of Radio Noise Emissions From Industrial, Scientific, and Medical Equipment

ANSI C63.4 (2000): Interim Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz.

Description

The appliances were tested by *Shanghai Institute of Process Automation Instr.* and found compliance with relevant requirements described in FCC Part 18 RF Lighting Device.

Test results are contained in this test report and Intertek Testing Services ETL SEMKO Shanghai Limited is assumed full responsibility for the accuracy and completeness of these measurements.

The test report applies to tested sample s only and shall not be reproduced in part without written approval of Intertek Testing Services ETL SEMKO Shanghai Limited.

Date of Test: February 3, 2002

Date of Issue: May 7, 2003

Prepared by:

Report Approved by:



Tino Pan (*Engineer*)



Ole Stiling (*Chief Engineer*)

Description of Test Facility

Name of Firm : AUDIX Technology (Shanghai) Co., Ltd.

Site Location : 3F #34 Bldg. No.680 Guiping Rd., Caohejing Hi-Tech Park,
Shanghai, P.R.China

Name of contact : Mr. Alex (first name) Chiu (last name)

Phone : 86-21-64955500

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NVLAP Code : 200371-0

CONTENTS

Summary	1
Description	1
Description of Test Facility	2
1.Applicant Information	4
2.Information of Equipment Under Test (EUT).....	4
2.1 Identification of the EUT.....	4
2.2 Additional information about the EUT	4
2.3 Peripheral equipment.....	4
3. Conducted Powerline Measurement	5
3.1 Conduction Limit.....	5
3.2 Instruments List.....	5
3.3 Test Setup	6
3.4 Test Configuration.....	6
3.5 Test Procedure	7
3.6 Test Results.....	7
3.7 Measurement Uncertainty	9
4. Conducted Powerline Calculation.....	10

1.Applicant Information

Applicant : Yangzhou Green Lighting & Electronic Co., Ltd.
No.2 Fenghuaqiao, Yangzhou, Jiangsu, China

Manufacturer: Yangzhou Green Lighting & Electronic Co., Ltd.
No.2 Fenghuaqiao, Yangzhou, Jiangsu, China

Country of origin: P.R. China

Name of contact: Mr. Weishen (first name) Hua (last name)

Telephone: 86-514-7361887

Telefax: 86-514-7337270

2.Information of Equipment Under Test (EUT)

2.1 Identification of the EUT

Equipment: Compact Fluorescent Lamp

Type of EUT: ☒ Production ☐ Pre-product ☐ Pro-type

Type/model:

Serial number: 02*0046-001, 02*0046-002, 02*0046-003, 02*0046-004

Date of sample receipt 2001-10-9

Date of test 2001-10-23

Rating: 120V~, 60Hz
15W for SEL-15, 20W for SEL-20, 23W for SEL-23
26W for SEL-26

2.2 Additional information about the EUT

The family of product contains 8 models, which were described above. They are the same in schematic diagram, difference between them are their appearance and rating.

Internal clock frequencies or other used frequencies: None

The tests have been performed on the EUT provided with the following modification: None

2.3 Peripheral equipment

None

3. Conducted Powerline Measurement

3.1 Conduction Limit

For Consumer Equipment

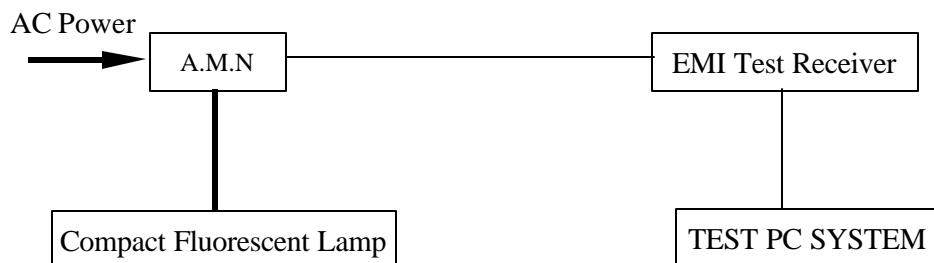
Frequency (MHz)	Maximum RF line voltage measured with a 50uH/50 ohm LISN	
	(μV)	dB(μV)
0.45 – 2.51	250	48
2.51 – 3.0	3000	69.5
3.0 – 30	250	48
RF Line Voltage dB(μV) = 20 lg RF Line Voltage (μV)		



3.2 Instruments List

The following instruments were used during the measurement of RF voltage conducted back into the power lines.

Item	Equipment	Manu.	Type	Serials no.	Last Cal.	Cal. Interval
1	EMI Test Receiver	Rohde & Schwarz	ESHS10	844077/020	Apr 24, 01	1 Year
2	L.I.S.N.	Kyoritsu	KNW-407	8-1280-4	May 08, 01	1 Year

3.3 Test Setup



Note:  means "power line"
 means "signal line"

3.4 Test Configuration

The Conducted Powerline Measurement was proceeded in a shielded room.

The EUT was connected to AC power source through an Linear Impedance Stability Network (L.I.S.N.), which provides a 50 ohm, standardized RF impedance for the measuring equipment.

The EUT was placed 40 centimeters from the wall of the earthed shielded room, which was considered as Ground Reference Plane(GRP), and kept at least 80 centimeters from any other earthed conducting surface.

The EUT was placed at a distance of 80 centimeters from the L.I.S.N.'s, and connected thereto by a unshielded lead of 1 meter in length.

In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to MP-5/1986 during measurement.

The frequency range from 450 kHz to 30 MHz was checked.

The bandwidth of Test Receiver ESCS 30 was set at 10 kHz.

During measurement, EUT was set at "LIGHTING ON" mode.

Test Results were listed in sec. 3.6.

3.5 Test Procedure

- 3.5.1 Establish the test setup as sec. 3.3.
- 3.5.2 Lighting on the EUT to its stable operation.
- 3.5.3 Proceed the measurement.

3.6 Test Results

☒ Pass ☐ Fail

3.6.1 Measurement environment

Temperature : 22.7 °C

Relative Humidity : 47 %

3.6.2 Test Personnel

Name: Alex Chiu Title: Supervisor
Tel: 86-21-64955500
Fax: 86-21-64955491
E-mail address: aciemc@8848.net

3.6.3 Data table

All emissions not listed below are too low against the prescribed limits.

Emission level = Reading level + Factor

Since the test software will automatically add factor to the reading level, only the emission level was listed in the test report. The highest six points were chose automatically through software by its compare the pre-scanned graph to the limit.

Model : SEL--15

Test Line	Frequency (MHz)	Reading Level dB(μV)	Factor dB	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.527	39.27	0.31	39.58	48.00	8.42
	0.610	42.05	0.30	42.05	48.00	5.95
	0.917	38.71	0.27	38.71	48.00	9.29
VB	0.524	43.00	0.31	43.31	48.00	4.69
	0.607	42.26	0.30	42.56	48.00	5.44
	0.849	41.59	0.28	41.87	48.00	6.13

Note:

- All data listed are Quasi-Peak value.
- The worst emission was founded at 0.524 MHz with emission level 43.31 dBμV, at line VB.
- Emission Level = Reading Level + Factor

Model : SEL-20

Test Line	Frequency (MHz)	Reading Level dB(μV)	Factor dB	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.716	37.08	0.29	37.37	48.00	10.63
	0.827	36.49	0.28	36.77	48.00	11.23
	0.870	34.91	0.28	35.19	48.00	12.81
VB	0.724	38.68	0.29	38.97	48.00	9.03
	0.932	36.63	0.27	36.90	48.00	11.10
	1.016	36.62	0.27	36.89	48.00	11.11

Note:

1. All data listed are Quasi-Peak value.
2. The worst emission was founded at 0.724 MHz with emission level 38.97 dBμV, at line VB.
3. Emission Level = Reading Level + Factor

Model : SEL-23

Test Line	Frequency (MHz)	Reading Level dB(μV)	Factor dB	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.467	46.71	0.32	47.03	48.00	0.97
	0.830	44.20	0.28	44.48	48.00	3.52
	0.880	44.38	0.28	44.66	48.00	3.34
VB	0.489	42.89	0.31	43.20	48.00	4.80
	0.758	38.64	0.29	38.93	48.00	9.07
	0.882	38.68	0.28	38.96	48.00	9.04

Note:

1. All data listed are Quasi-Peak value.
2. The worst emission was founded at 0.467 MHz with emission level 47.03 dBμV, at line VA.
3. Emission Level = Reading Level + Factor

Model : SEL-26

Test Line	Frequency (MHz)	Reading Level dB(μV)	Factor dB	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.521	44.27	0.31	44.58	48.00	3.42
	0.626	43.23	0.30	43.53	48.00	4.47
	0.852	43.70	0.28	43.98	48.00	4.02
VB	0.452	42.64	0.33	42.97	48.00	5.03
	0.621	40.48	0.30	40.78	48.00	7.22
	0.700	37.60	0.29	37.89	48.00	10.11

Note:

1. All data listed are Quasi-Peak value.
2. The worst emission was founded at 0.521 MHz with emission level 44.58 dBμV, at line VA.
2. Emission Level = Reading Level + Factor

Test Engineer: Jim Hsu
Jim Hsu

Date of test: 2002-02-03

3.7 Measurement Uncertainty

Measurement uncertainty of conducted power line test is 3.34dB
The measurement uncertainty is given with a confidence of 95%

4. Conducted Powerline Calculation

The emission level of the conducted power line is calculated by adding Factor to Reading Level. The basic equation with a sample calculation is as follows:

$EL = RL + F$
Where EL= Emission Level
RL= Reading Level
F= Factor

$$dB (\mu V) = 20\log(\mu V)$$

Example 1: @ 0.467 MHz

The limit of Part 18 RF lighting devices = 250 μV = 48 dB (μV)
Reading Level = 46.71 dB (μV)
Factor = 0.32 dB

So EL (Emission Level) = 46.71 + 0.32 = 47.03 dB (μV)
Margin = 48 - 47.03 = 0.97 dB

The Emission Level at this frequency is 0.97 dB below the limit.