

Application for FCC Certificate  
On Behalf of  
Fujian Joinluck Electronic Enterprise Co., Ltd.

Electronic Energy Saving Lamp

Model No.: JLC 7-18 Globe 11W  
JLC 7-18 Reflector 15W  
JLC 7-18 23W

FCC ID : N6AFJEE0107

Prepared For : Fujian Joinluck Electronic Enterprise Co., Ltd.  
Cangshan Industrial Area, Cangshan District,  
Fuzhou, Fujian, China

Prepared By : Audix Technology (Shanghai) Co., Ltd.  
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Report No. : ACI-F01050  
Date of Test : Aug 11, 2001  
Date of Report : Aug 23, 2001

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## TEST REPORT FOR FCC CERTIFICATE

Applicant : Fujian Joinluck Electronic Enterprise Co., Ltd.  
Manufacturer : Fujian Joinluck Electronic Enterprise Co., Ltd.  
EUT Description : Electronic Energy Saving Lamp  
(A) Model No.: (B) Serial No.:  
JLC 7-18 Globe 11W E072307  
JLC 7-18 Reflector 15W E072306  
JLC 7-18 23W E072308  
(C) Power Supply: 120V/60Hz

### Test Procedure Used:

*FCC RULES AND REGULATIONS PART 18 CONSUMER DEVICES (1998)  
AND MP-5/1986*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 18 RF Lighting Device limits both conducted emissions and field strength.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This report must not be used by the applicant to claim product endorsement by NVLAP or any agency of the U.S. Government.

Date of Test : Aug 11, 2001

Prepared by : *Louise Lu*  
LOUISE LU  
(Assistant)

Test Engineer : *Solon Gong*  
*For and on behalf of*  
AUDIX TECHNOLOGY (SHANGHAI) CO., LTD.  
(Engineer)

Reviewer : *Byron Kwo*  
BYRON KWO  
(Supervisor)

Approved Signatory : *Alex Chiu*  
ALEX CHIU  
(Assistant Manager)

# 1 GENERAL INFORMATION

## 1.1 Description of Equipment Under Test

Description : Electronic Energy Saving Lamp

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

Model Number : JLC 7-18 Globe 11W  
JLC 7-18 Reflector 15W  
JLC 7-18 23W

Applicant : Fujian Joinluck Electronic Enterprise Co., Ltd.  
  
Cangshan Industrial Area, Cangshan District,  
Fuzhou, Fujian, China

Manufacturer : Fujian Joinluck Electronic Enterprise Co., Ltd.  
  
Cangshan Industrial Area, Cangshan District,  
Fuzhou, Fujian, China

M/N	INPUT POWER (VA)	OUTPUT POWER (W)
JLC 7-18 11W	22.2	11.6
JLC 7-18 15W	27.2	14.4
JLC 7-18 23W	48.4	25.2

## 1.2 Description of Test Facility

Site Description (Semi-Anechoic Chamber)	:	Sept. 17, 1998 file on Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, USA
Name of Firm	:	Audix Technology (Shanghai) Co., Ltd.
Site Location	:	3 F 34 Bldg 680 Guiping Rd, Caohejing Hi-Tech Park, Shanghai, China 200233
NVLAP Lab Code	:	200371-0

## 1.3 Measurement Uncertainty

Conducted Emission Uncertainty	:	U = 2.66dB
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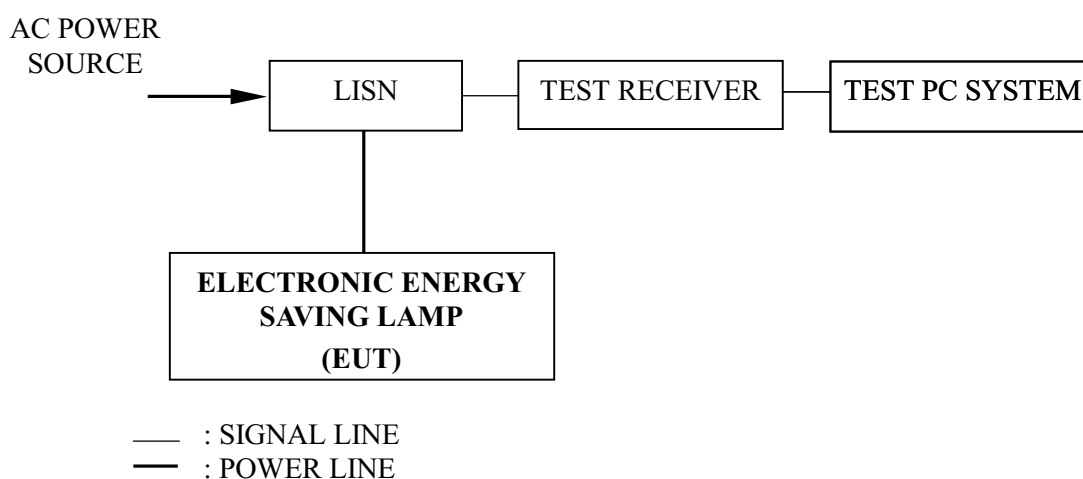
## 2 AC POWERLINE CONDUCTED EMISSION TEST

### 2.1 Test Equipment

The following test equipment are used during the powerline conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	844077/020	Apr 24, 2001	1 Year
2.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-5	May 08, 2001	1 Year

### 2.2 Block Diagram of Test Setup



### 2.3 Conducted Emission Limits

Frequency (MHz)	Maximum RF Line Voltage	
	( $\mu\text{V}$ )	$\text{dB}(\mu\text{V})$
0.45 ~ 2.51	250	48
2.51 ~ 3	3000	70
3 ~ 30	250	48
NOTE 1 – RF Line Voltage $\text{dB}(\mu\text{V}) = 20 \log \text{RF Line Voltage } (\mu\text{V})$		

## 2.4 Test Configuration

The EUT (listed in Sec. 1.1) was installed as shown on Sec. 2.2 to meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

## 2.5 Operating Condition of EUT

The EUT was connected to the power mains through a Line Impedance Stabilization Network (LISN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line were checked for maximum conducted interference. 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 conducted emission test.

The bandwidth of Test Receiver ESHS10 was set at 10 kHz.

The frequency range from 450 kHz to 30 MHz was checked. The test mode (Lighting) was done on conducted emission test and the test results of the highest emissions are listed in Sec. 2.7.

## 2.6 Test Procedures

2.6.1 Setup the EUT as shown in Sec. 2.2.

2.6.2 Turn on the power of all equipment.

2.6.3 The EUT will be operated normally.

## 2.7 Test Results

< PASS >

The frequency and amplitude of the highest AC powerline conducted emissions relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

EUT	:	Electronic Energy Saving Lamp	Temperature :	21.8°C
Model No.	:	JLC 7-18 Globe 11W	Humidity :	53%
Test Mode	:	Lighting	Date of Test :	Aug 11, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.479	0.32	37.20	37.20	48.00	10.48
	0.562	0.30	38.90	38.90	48.00	8.80
	0.599	0.30	38.10	38.10	48.00	9.60
	0.679	0.29	35.50	35.50	48.00	12.21
	0.720	0.29	39.70	39.70	48.00	8.01
	<b>0.761</b>	<b>0.29</b>	<b>39.90</b>	<b>39.90</b>	<b>48.00</b>	<b>7.81</b>
VB	0.523	0.31	35.20	35.20	48.00	12.49
	0.720	0.29	35.20	35.20	48.00	12.51
	0.761	0.29	32.90	32.90	48.00	14.81
	0.803	0.28	33.50	33.50	48.00	14.22
	0.885	0.28	32.30	32.30	48.00	15.42
	0.966	0.27	31.00	31.00	48.00	16.73
NOTE 1 – Emission Level = Meter Reading + Factor NOTE 2 – Factor = Insertion Loss + Cable Loss NOTE 3 – All reading are Quasi-Peak Values. NOTE 4 – The worst emission is detected at 0.761 MHz with corrected signal level of 39.90 dB(μV) (limit is 48.00 dB(μV)), when the VA of the EUT is connected to LISN.						

TEST ENGINEER: Solon Gong  
(SOLON GONG)



EUT : Electronic Energy Saving Lamp Temperature : 21.8°C

Model No. : JLC 7-18 Reflector 15W Humidity : 53%

Test Mode : Lighting Date of Test : Aug 11, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	<b>0.463</b>	<b>0.33</b>	<b>39.70</b>	<b>40.03</b>	<b>48.00</b>	<b>7.97</b>
	0.530	0.31	39.30	39.61	48.00	8.39
	0.729	0.29	38.40	38.69	48.00	9.31
	1.200	0.27	37.10	37.37	48.00	10.63
	1.380	0.27	37.90	38.17	48.00	9.83
	1.660	0.27	34.20	34.47	48.00	13.53
VB	0.548	0.30	39.60	39.90	48.00	8.10
	0.742	0.29	39.00	39.29	48.00	8.71
	0.803	0.28	37.40	37.68	48.00	10.32
	1.190	0.26	37.90	38.16	48.00	9.84
	1.380	0.26	37.60	37.86	48.00	10.14
	1.570	0.25	37.30	37.55	48.00	10.45
<p>NOTE 1 – Emission Level = Meter Reading + Factor</p> <p>NOTE 2 – Factor = Insertion Loss + Cable Loss</p> <p>NOTE 3 – All reading are Quasi-Peak Values.</p> <p>NOTE 4 – The worst emission is detected at 0.463 MHz with corrected signal level of 40.03 dB(μV) (limit is 48.00 dB(μV)), when the VA of the EUT is connected to LISN.</p>						

TEST ENGINEER: Solon Gong  
(SOLON GONG)

EUT : Electronic Energy Saving Lamp Temperature : 21.8°C

Model No. : JLC 7-18 23W Humidity : 53%

Test Mode : Lighting Date of Test : Aug 11, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	<b>0.506</b>	<b>0.31</b>	<b>42.40</b>	<b>42.71</b>	<b>48.00</b>	<b>5.29</b>
	0.548	0.30	38.80	39.10	48.00	8.90
	0.824	0.28	39.70	39.98	48.00	8.02
	0.900	0.28	36.50	36.78	48.00	11.22
	0.975	0.27	37.20	37.47	48.00	10.53
	1.060	0.27	39.70	39.97	48.00	8.03
VB	0.467	0.32	36.60	36.92	48.00	11.08
	0.506	0.31	35.40	35.71	48.00	12.29
	0.544	0.31	37.20	37.51	48.00	10.49
	0.622	0.30	36.50	36.80	48.00	11.20
	0.702	0.29	34.00	34.29	48.00	13.71
	0.817	0.28	35.10	35.38	48.00	12.62
<p>NOTE 1 – Emission Level = Meter Reading + Factor</p> <p>NOTE 2 – Factor = Insertion Loss + Cable Loss</p> <p>NOTE 3 – All reading are Quasi-Peak Values.</p> <p>NOTE 4 – The worst emission is detected at 0.506 MHz with corrected signal level of 42.71 dB(μV) (limit is 48.00 dB(μV)), when the VA of the EUT is connected to LISN.</p>						

TEST ENGINEER: Solon Gong  
(SOLON GONG)

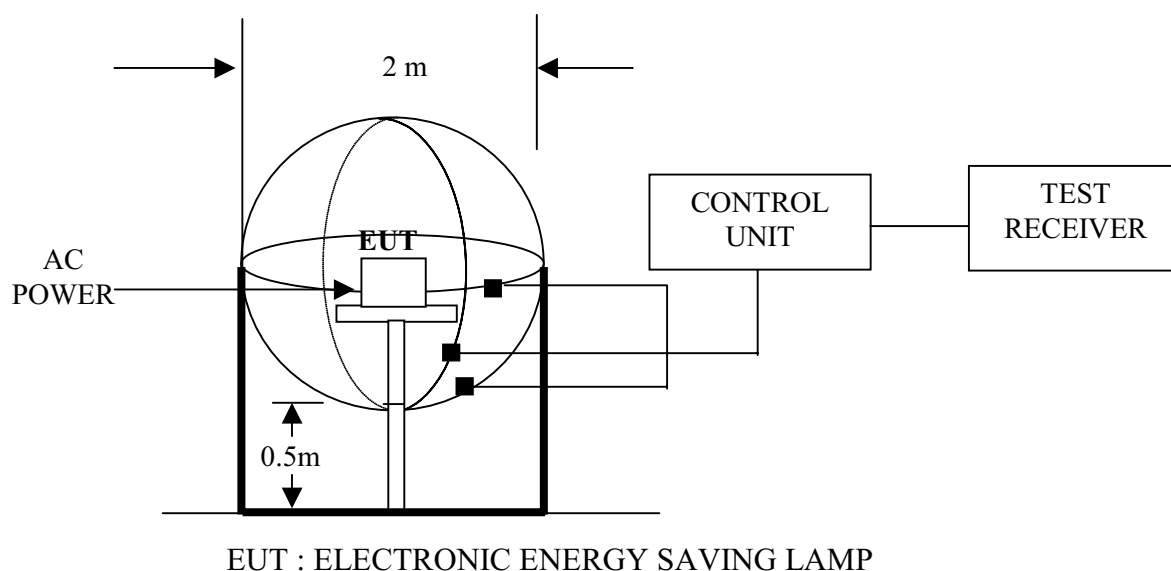
### 3 FIELD STRENGTH TEST

#### 3.1 Test Equipment

The following test equipment are used during the field strength test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Loop Antenna	Laplace	RF300	5001	May 05, 2001	1/2 Year
2.	Test Receiver	Rohde & Schwarz	ESHS10	844077/020	Apr 24, 2001	1 Year

#### 3.2 Block Diagram of Test Setup



#### 3.3 Test Configuration

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

Refer to Sec. 2.4.

#### 3.4 Operating Condition of EUT

Same as conducted emission test which is listed in Sec. 2.5, except the test setup replaced by Sec. 3.2.

### 3.5 Test Procedure

The EUT was placed on a wooden table, which is in the center of the loop antenna. The loop antenna is 0.5 meters above the ground. Each side had one sensor. The three sensors were through the control unit to connect the Test receiver, which receiving the emission and find out the maximum emission of each side of the loop antenna.

The bandwidth of R&S Test Receiver ESHS10 was set at 200 Hz from 9kHz to 150kHz and 10kHz from 150 kHz to 30 MHz.

The frequency range from 9 kHz to 30 MHz was checked.

The “ON” mode was done on field strength test and all the test results are listed in Sec. 3.6.

### 3.6 Test Result

**<PASS>**

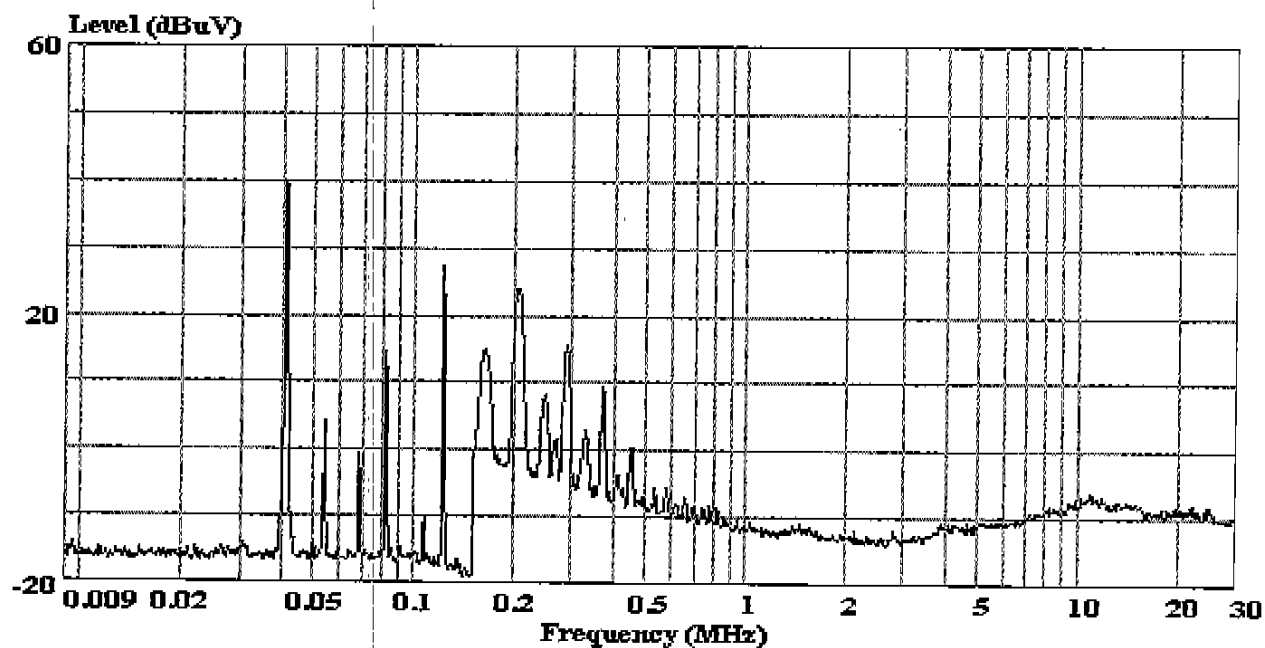
Refer to the following pages.

For JLC 7-18 Globe 11W:

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audixaci@8848.net

Data#: 800 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2001-08-11 Time: 17:17:03



Site : audix-aci  
Condition :  
Project No. : AQE-000069  
Applicant : Fujian Joinluck Electronic enterprise  
: Co.,Ltd  
EUT : Electronic Energy Saving Lamp  
M/N : JLC7-18 Globe 11W  
Power Supply : 120V/60Hz  
Ambient : 21.8'C 53%  
Test Line : A  
Test Mode : Lighting  
Test Engineer: solon

Solon

S/N : E072307

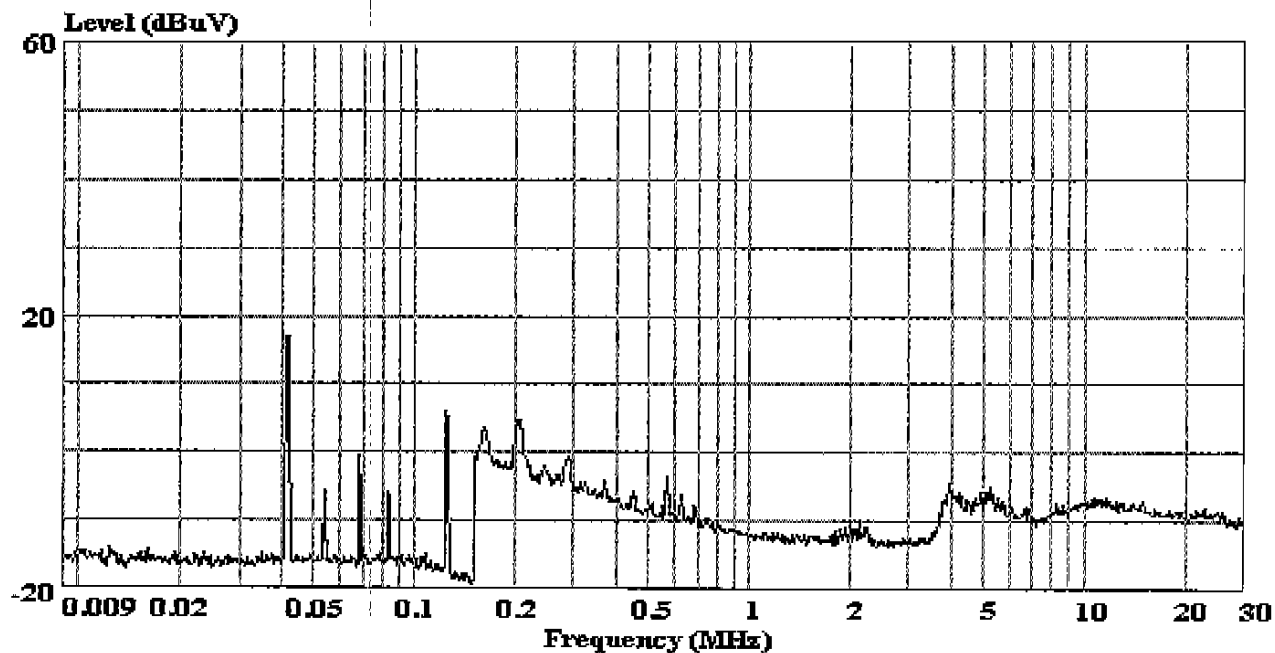


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Date: 2001-08-11 Time: 17:24:07



Site : audix-aci  
Condition :  
Project No. : AQE-000069  
Applicant : Fujian Joinluck Electronic enterprise  
Co.,Ltd  
EUT : Electronic Energy Saving Lamp  
M/N : JLC7-18 Globe 11W  
Power Supply : 120V/60Hz  
Ambient : 21.8'C 53%  
Test Line : B  
Test Mode : Lighting  
Test Engineer: solon

Solon

S/N : E072307

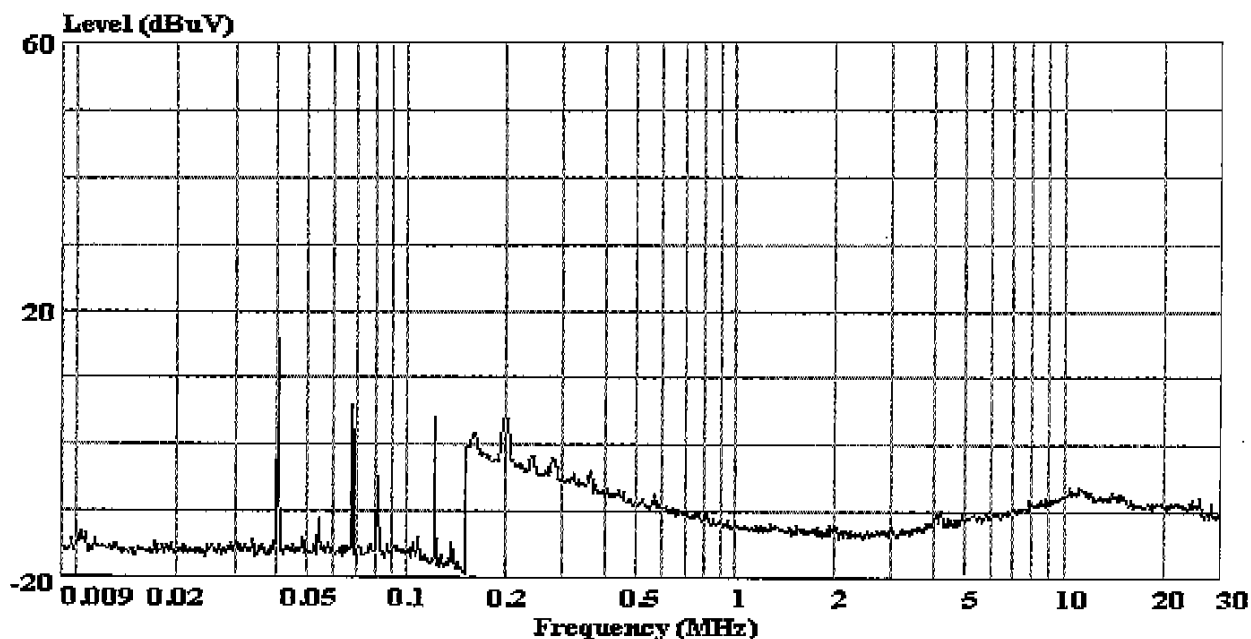


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Date: 2001-08-11 Time: 18:49:46



Site : audix-aci  
Condition :  
Project No. : AQE-000069  
Applicant : Fujian Joinluck Electronic enterprise  
: Co., Ltd  
EUT : Electronic Energy Saving Lamp  
M/N : JLC7-18 Globe 11W  
Power Supply : 120V/60Hz  
Ambient : 21.8'C 53%  
Test Line : C  
Test Mode : Lighting  
Test Engineer: solon

Solon

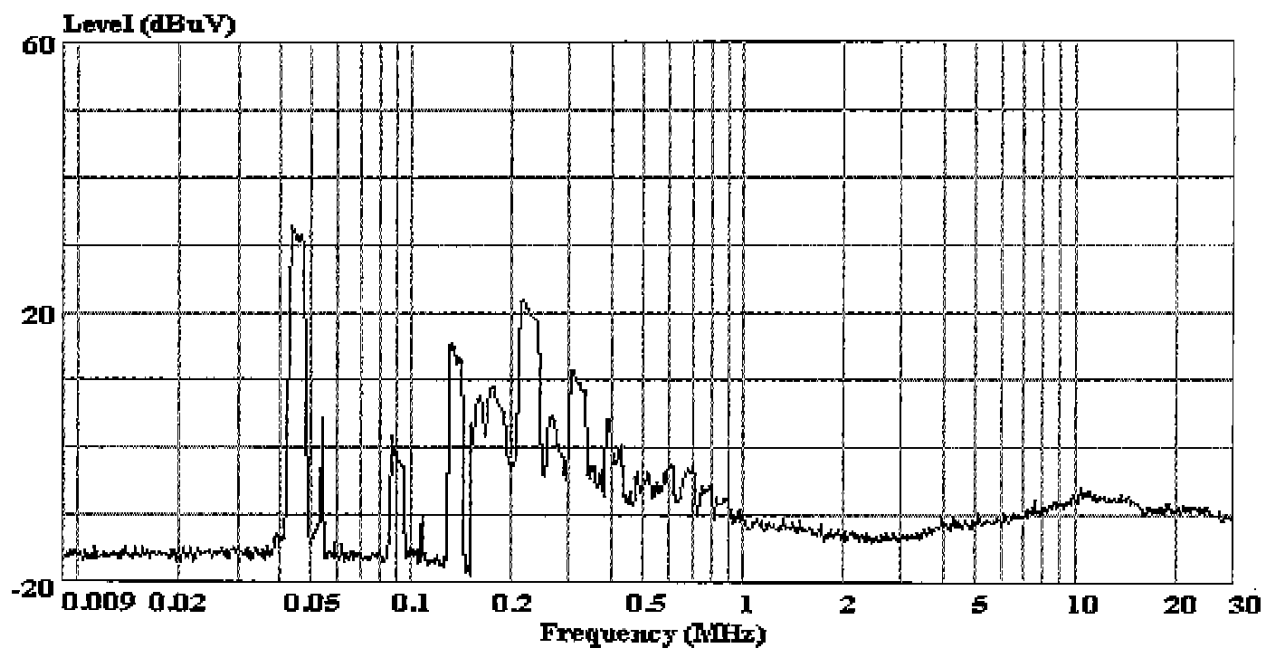
S/N : E072307

For JLC 7-18 Reflector 15W:

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Date: 2001-08-11 Time: 18:56:23



Site : audix-aci  
Condition :  
Project No. : AQE-000069  
Applicant : Fujian Joinluck Electronic enterprise  
: Co.,Ltd  
EUT : Electronic Energy Saving Lamp  
M/N : JLC7-18 Reflector 15W  
Power Supply : 120V/60Hz  
Ambient : 21.8'C 53%  
Test Line : A  
Test Mode : Lighting  
Test Engineer: solon

S/N : E072306



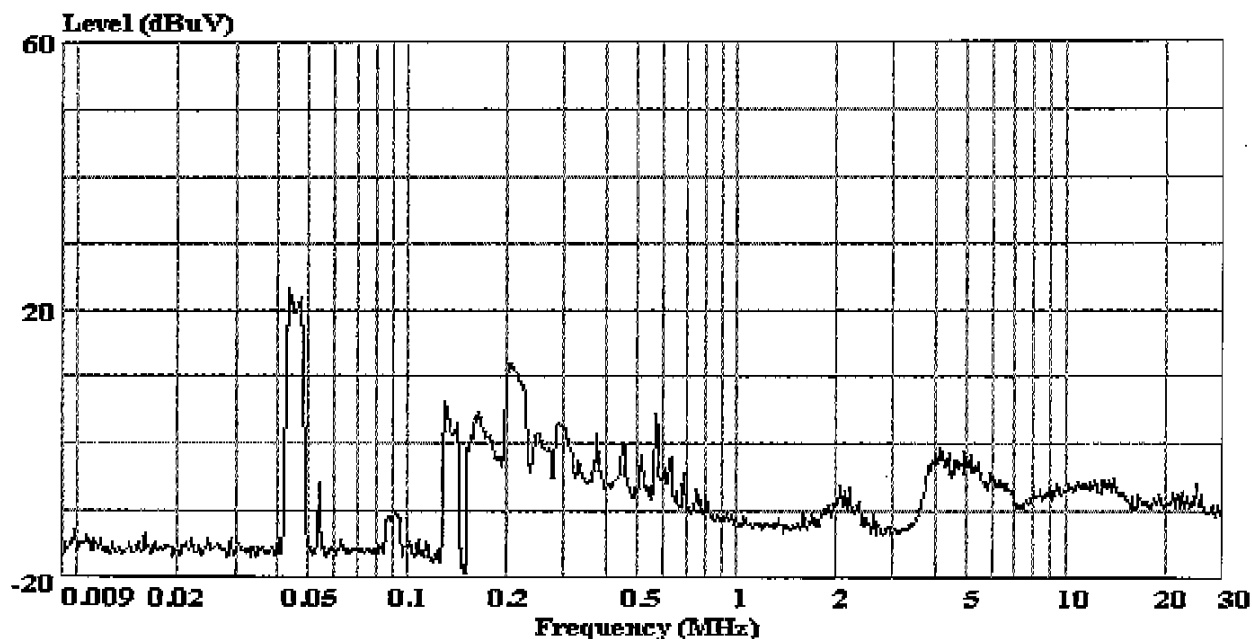


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Date: 2001-08-13 Time: 08:01:19



Site : audix-aci  
Condition :  
Project No. : AQE-000069  
Applicant : Fujian Joinluck Electronic enterprise  
: Co., Ltd  
EUT : Electronic Energy Saving Lamp  
M/N : JLC7-18 Reflector 15W  
Power Supply : 120V/60Hz  
Ambient : 21.8'C 53%  
Test Line : B  
Test Mode : Lighting  
Test Engineer: solon  
solon

S/N : E072306

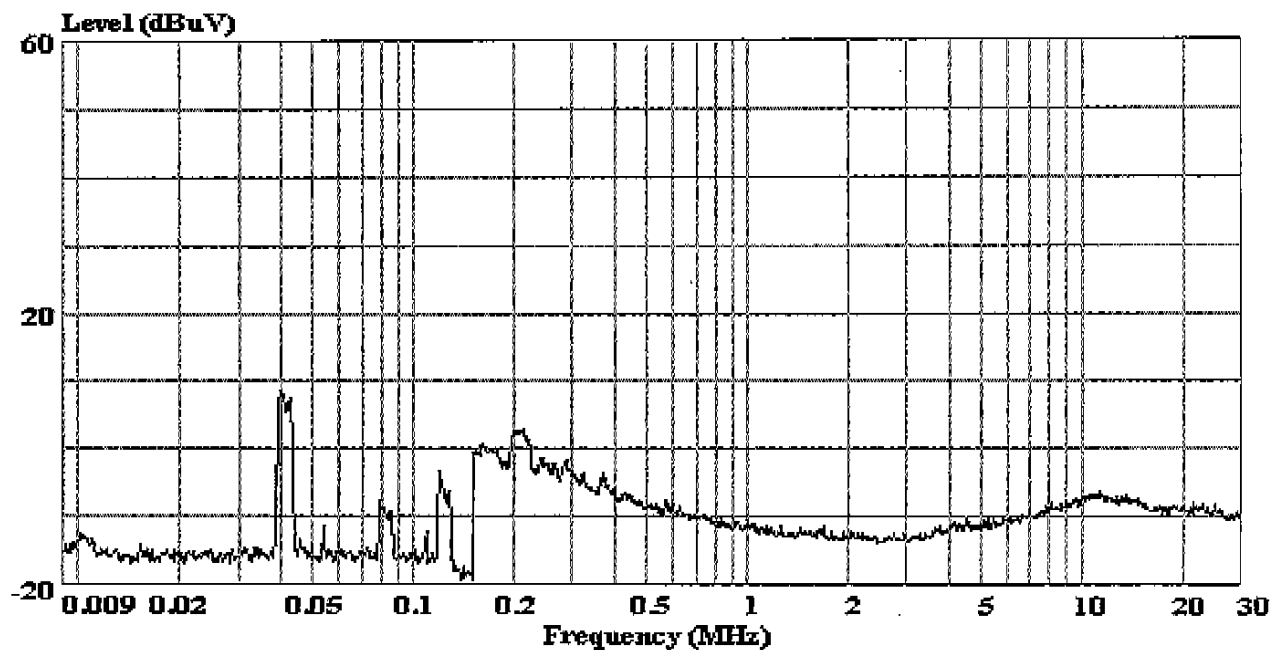


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Data#: 815 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2001-08-13 Time: 08:08:13



Site : audix-aci  
Condition :  
Project No. : AQE-000069  
Applicant : Fujian Joinluck Electronic enterprise  
: Co.,Ltd  
EUT : Electronic Energy Saving Lamp  
M/N : JLC7-18 Reflector 15W  
Power Supply : 120V/60Hz  
Ambient : 21.8'C 53%  
Test Line : C  
Test Mode : Lighting  
Test Engineer: solon

solon

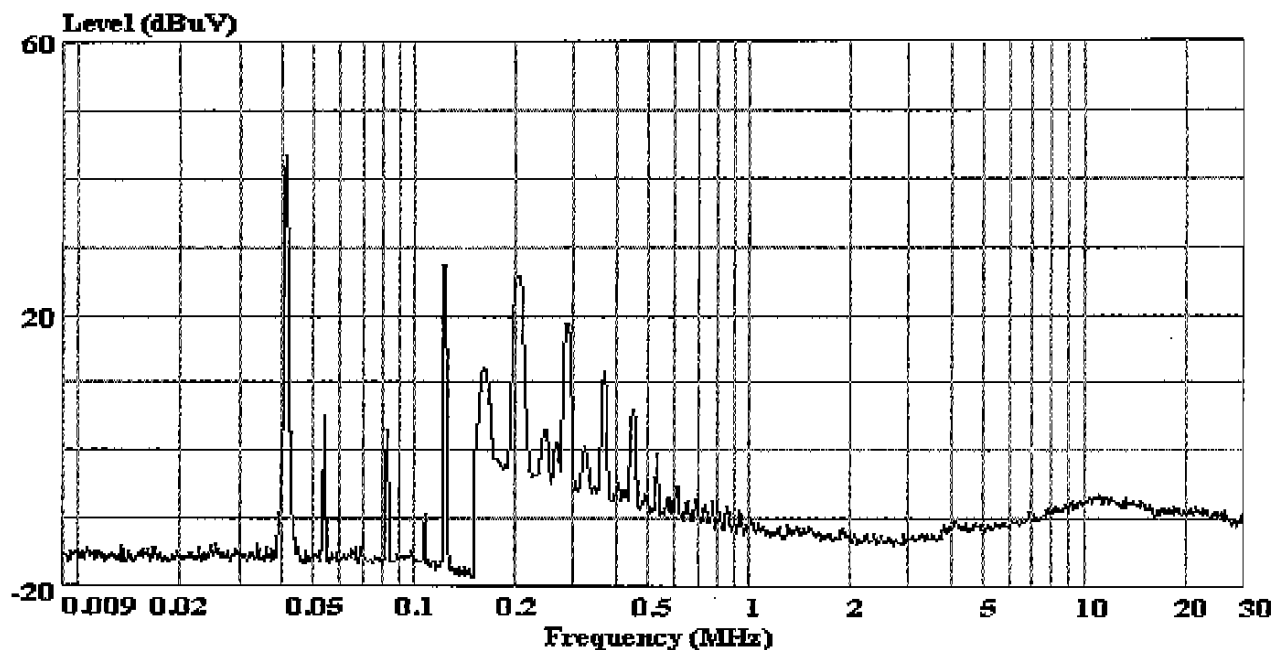
S/N : E072306

JLC 7-18 23W

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Date: 2001-08-13 Time: 08:13:57



Site : audix-aci  
Condition :  
Project No. : AQE-000069  
Applicant : Fujian Joinluck Electronic enterprise  
: Co.,Ltd  
EUT : Electronic Energy Saving Lamp  
M/N : JLC7-18 23W  
Power Supply : 120V/60Hz  
Ambient : 21.8'C 53%  
Test Line : A  
Test Mode : Lighting  
Test Engineer: solon

solon

SN

: E072308

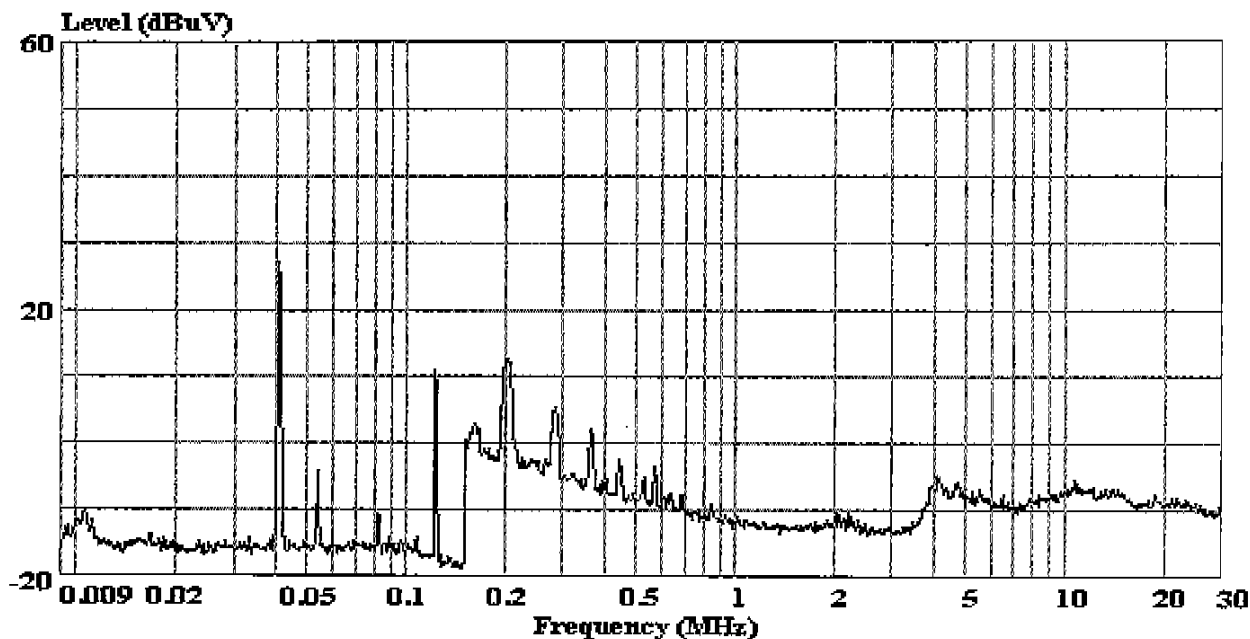


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Data#: 821 File#: D:\EMIVM\TEST\J\joinluck.emi

Date: 2001-08-13 Time: 08:18:34



Site : audix-aci  
Condition :  
Project No. : AQE-000069  
Applicant : Fujian Joinluck Electronic enterprise  
Co.,Ltd  
EUT : Electronic Energy Saving Lamp  
M/N : JLC7-18 23W  
Power Supply : 120V/60Hz  
Ambient : 21.8'C 53%  
Test Line : B  
Test Mode : Lighting  
Test Engineer: solon

solon

S/N : E072308

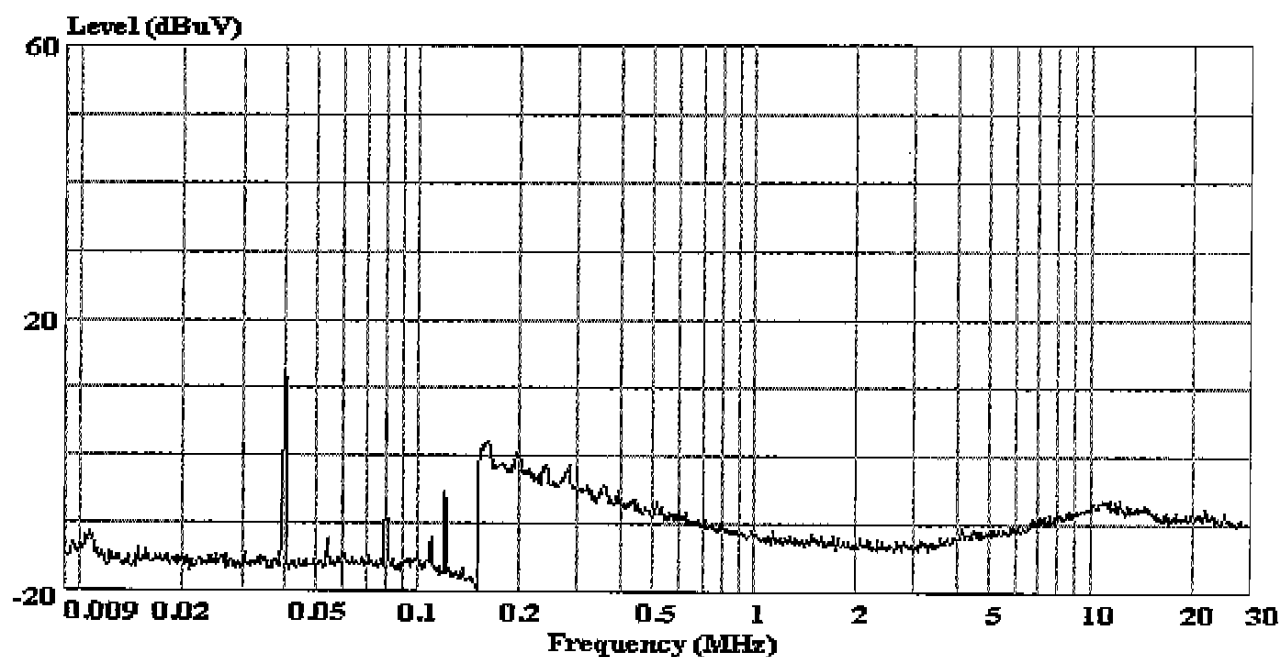


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Date: 2001-08-13 Time: 08:22:50



Site : audix-aci  
Condition :  
Project No. : AQE-000069  
Applicant : Fujian Joinluck Electronic enterprise  
: Co.,Ltd  
EUT : Electronic Energy Saving Lamp  
M/N : JLC7-18 23W  
Power Supply : 120V/60Hz  
Ambient : 21.8'C 53%  
Test Line : C  
Test Mode : Lighting  
Test Engineer: solon

S/N : E072308