

# **EXHIBIT 4**

## **Test Report**

## APPLICATION FOR CERTIFICATION

On Behalf of

**Zhongshan OKES Lighting Appliance Co., Ltd.**

Energy Saving Lamp

Model Number : HY2U-7W(9W), HY2U-11W(13W), HY2U-15W  
HY3U-15W(13W), HY3U-20W(18W), HY3U-23W(26W)  
NK4A-15W(13W), NK4A -20W(18W), NK4A -23W(26W)  
HY4U-20W, HY4U-26W, HY4U-30W

Prepared for : Zhongshan OKES Lighting Appliance Co., Ltd.  
Gangdong Industry Zone, Guzhen Town, Zhongshan City,  
Guangdong China

Prepared by : Shenzhen Most Technology Co., Ltd  
C-13B, Shennan Garden Nanshan Zone Shenzhen  
Guangdong China

Telephone : (0755)-26506933

Report Number : SMT-F82002

Date of Test : August 2, 2002

Date of Report : August 20-27, 2002

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APPENDIX I (12 pages)

### TEST REPORT DECLARATION

Applicant : Zhongshan OKES Lighting Appliance Co., Ltd.  
 Manufacturer : Zhongshan OKES Lighting Appliance Co., Ltd.  
 EUT Description : Energy Saving Lamps  
 (A) MODEL NO. : HY2U-7W(9W), HY2U-11W(13W), HY2U-15W  
 HY3U-15W(13W), HY3U-20W(18W), HY3U-23W(26W)  
 NK4A-15W(13W), NK4A -20W(18W), NK4A -23W(26W)  
 HY4U-20W, HY4U-26W, HY4U-30W  
 (B) SERIAL NO. : F20020807  
 (C) POWER SUPPLY : 120V / 60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 18 SUBPART C RF LIGHTING DEVICES CONSUMER (1998) AND MP-5/1986

The device described above is tested by Shenzhen Most Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 18 Subpart C limits for radiation and conduction emissions.

The test results are contained in this test report and Shenzhen Most Technology Co., Ltd is assumed of full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT is technically compliant with FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Most Technology 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. 2-4, 2002

Prepared by : Totty Su  
Totty Su/ Assistant

Reviewer : Amy Zhu  
Amy Zhu / Assistant Manager  
For and on behalf of  
SHENZHEN MOST TECHNOLOGY CO., LTD.

Approved & Authorized Signer : Mark Wen  
Mark Wen / Manager  
Authorized Signature(s)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

Description : Energy Saving Lamp

Model Number : HY2U-7W(9W), HY2U-11W(13W), HY2U-15W  
HY3U-15W(13W), HY3U-20W(18W), HY3U-23W(26W)  
NK4A-15W(13W), NK4A -20W(18W), NK4A -23W(26W)  
HY4U-20W, HY4U-26W, HY4U-30W

Applicant : Zhongshan OKES Lighting Appliance Co., Ltd.  
Gangdong Industray Zone, Guzhen Town, Zhongshan City,  
Guangdong China

Manufacturer : Zhongshan OKES Lighting Appliance Co., Ltd.  
Gangdong Industray Zone, Guzhen Town, Zhongshan City,  
Guangdong China

Date of Test : August 2, 2002

## Test Facility

### Site Description

3m Anechoic Chamber : Certificated by FCC, USA  
Aug. 24, 2000

3m & 10m Open Site : Certificated by FCC, USA  
Feb. 13, 1998

EMC Lab. : Certificated by VCCI, Japan  
Oct. 29, 1998

Certificated by DATech, German  
Feb. 02, 1999

Certificated by NVLAP, USA  
until Mar. 03, 2001

NVLAP Code: 200372-0  
Certificated by DNV, Norway  
May 26, 1999

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.

Site Location : No. 6, Ke Feng Rd., 52 Block,  
Shenzhen Science & Industrial Park,  
Nantou, Shenzhen, Guangdong, P.R China

### 1.3. Test Uncertainty

Conducted Emission Uncertainty =  $\pm 2.66\text{dB}$

Radiated Emission Uncertainty =  $\pm 4.26\text{dB}$

:

## 2. POWER LINE CONDUCTED EMISSION TEST

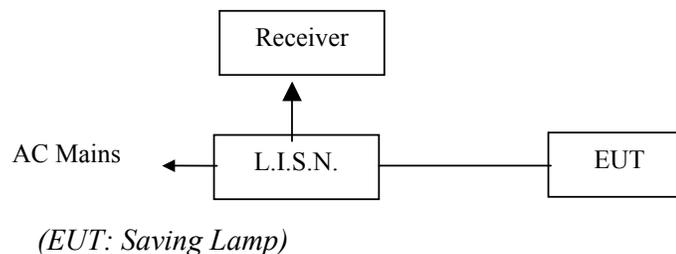
### 2.1 Test Equipment

The following test equipments are used during the power line conducted emission test:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS20	836600/006	Jun. 04, 02	1 Year
2.	L.I.S.N.	Kyoritsu	KNW-407	8-541-4	Jun. 04, 02	1 Year
3.	Terminator	EMCO	50Ω	No. 1	Jun. 04, 02	1 Year
4.	Terminator	EMCO	50Ω	No. 2	Jun. 04, 02	1 Year
5.	RF Cable	FUJIKURA	RG-55/U	LISN Cable	Feb 28, 02	1/2 Year
6.	Passive Probe	Rohde & Schwarz	ESH-Z3	299.7810.52	Jun. 04, 02	1 Year
7.	Coaxial Switch	Anritsu	MP59B	M73989	Feb.28, 02	1/2 Year

### 2.2 Block Diagram of Test Setup

Block diagram of connection between the EUT and simulators



### 2.3 Power Line Conducted Emission Test Limits

Frequency MHz	Maximum RF Line Voltage
	dB(μV)
0.45 ~ 2.51	48
2.51 ~ 3.0	70
3.0 ~ 30	48

### 2.4 Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

#### 2.4.1 Saving Lamp (EUT)

Model Number : HY2U-7W(9W), HY2U-11W(13W), HY2U-15W,  
HY3U-15W(13W), HY3U-20W(18W), HY3U-23W(26W),  
NK4A-15W(13W), NK4A -20W(18W), NK4A -23W(26W),  
HY4U-20W, HY4U-26W, HY4U-30W

Manufacturer : Zhongshan OKES Lighting Appliance Co., Ltd.  
Gangdong Industray Zone, Guzhen Town, Zhongshan City,  
Guangdong China

## 2.5 Operating Condition of EUT

- 2.5.1 Setup the EUT and simulator as shown as Section 2.2.
- 2.5.2 Turn on the power of all equipment.
- 2.5.3 Let the EUT work in test mode (ON) and test it.

## 2.6 Test Procedure

The EUT is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission levels. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4-2000 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESHS20) is set at 10KHz.

The frequency range from 450KHz to 30MHz is checked.

The test result are reported on Section 2.7., all the scanning waveforms for Conducted Emission Test are attached in Appendix I.

## 2.7 Power Line Conducted Emission Test Results

**PASS.**

The frequency range from 450KHz to 30 MHz is investigated. All emissions not reported below are too low against the prescribed limits

And the Test Data, Please see Appendix I

### **3. MODIFICATION TO TEST SPECIFICATIONS**

[ NONE ]

## 4. PHOTOGRAPH

### 4.1. Photo of Power Line Conducted Emission Test



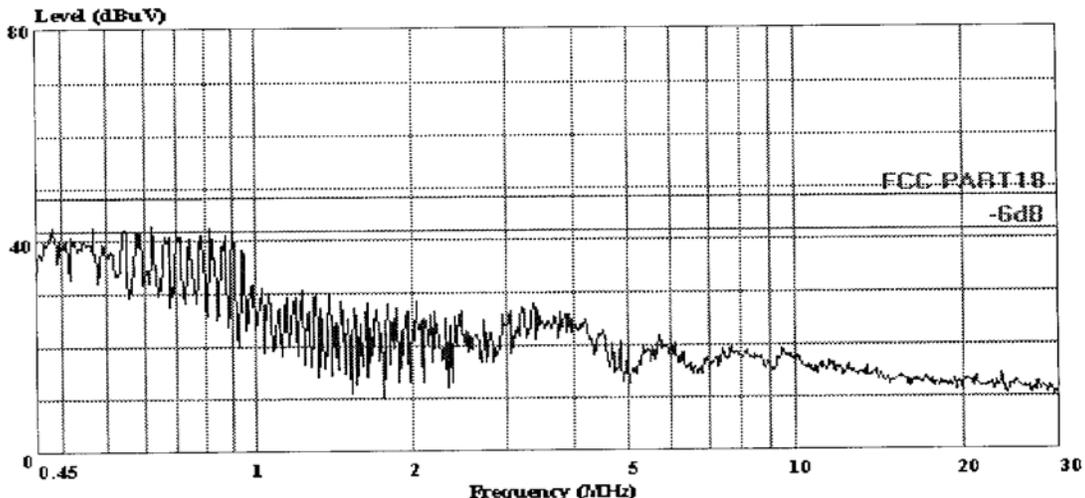
# **APPENDIX 1**

## **Conduction Test Data**

**AUDIX**<sup>®</sup>  
AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Shenzhen Science & Ind Park  
Nantou, Guangdong, China  
Tel:0755-26639495~7  
Fax:0755-26632877

Data#: 2      File#: okes.EMI      Date: 2001-07-31      Time: 09:33:02



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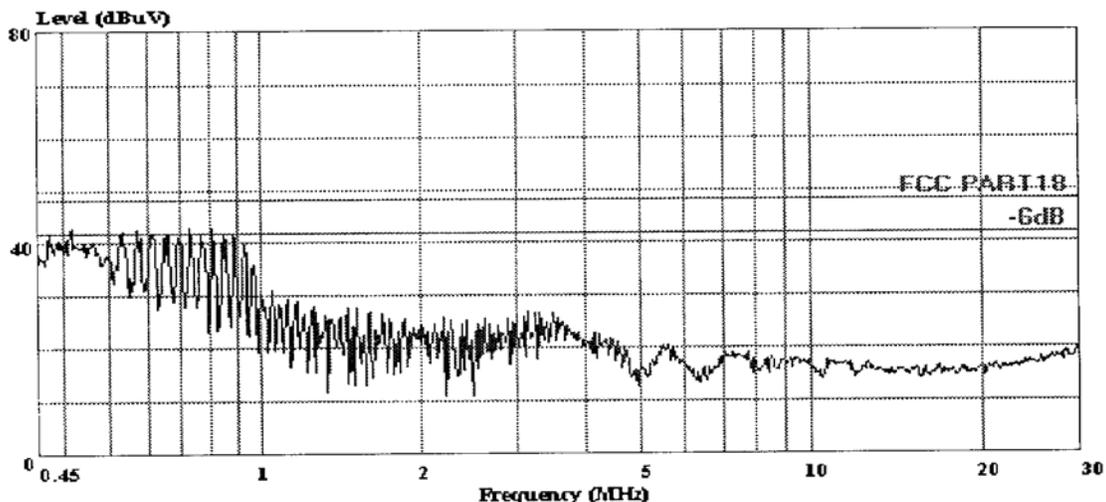
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Condition: FCC PART18 VB(KNW-407)  
EUT: : Energy Saving Lamp  
M/N: : HY2U-7W  
POWER: : AC 120V/60Hz  
Of Cond:: Lighting

**AUDIX**<sup>®</sup>  
AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Shenzhen Science & Ind Park  
Nantou, Guangdong, China  
Tel:0755-26639495~7  
Fax:0755-26632877

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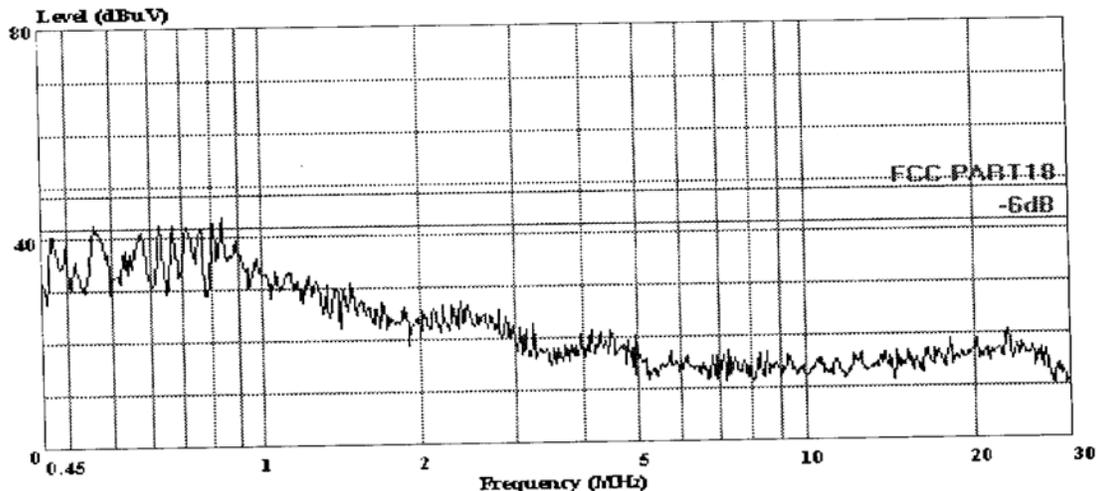
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EUT: : Energy Saving Lamp  
M/N: : HY2U-7W  
POWER: : AC 120V/60Hz  
Of Cond:: Lighting

**AUDIX**<sup>®</sup>  
AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Shenzhen Science & Ind Park  
Nantou, Guangdong, China  
Tel:0755-26639495~7  
Fax:0755-26632877

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Date: 2001-07-31 Time: 10:15:48



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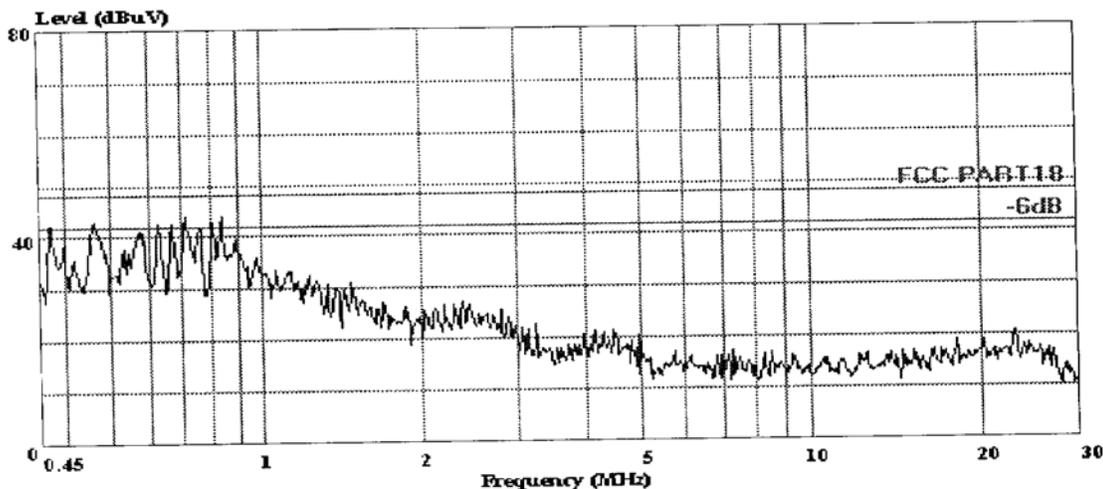
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EUT: : Energy Saving Lamp  
M/N: : HY2U-11W  
POWER: : AC 120V/60Hz  
Of Cond:: Lighting

**AUDIX**<sup>®</sup>  
AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

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Nantou, Guangdong, China  
Tel:0755-26639495~7  
Fax:0755-26632877

Data#: 5 File#: okes.EMI

Date: 2001-07-31 Time: 10:19:48



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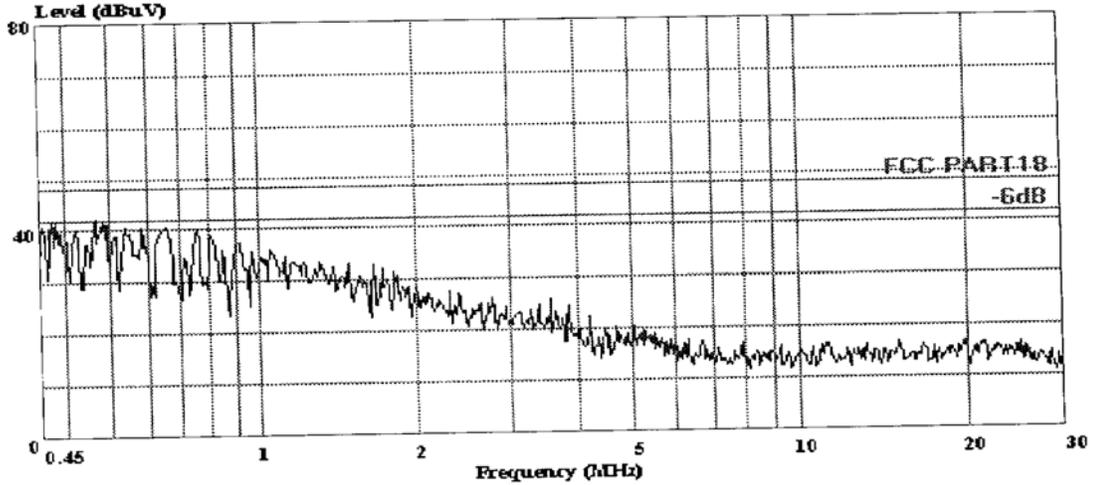
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EUT: : Energy Saving Lamp  
M/N: : HY2U-11W  
POWER: : AC 120V/60Hz  
Of Cond:: Lighting

**AUDIX**<sup>®</sup>  
AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Shenzhen Science & Ind Park  
Nantou, Guangdong, China  
Tel: 0755-26639495~7  
Fax: 0755-26632877

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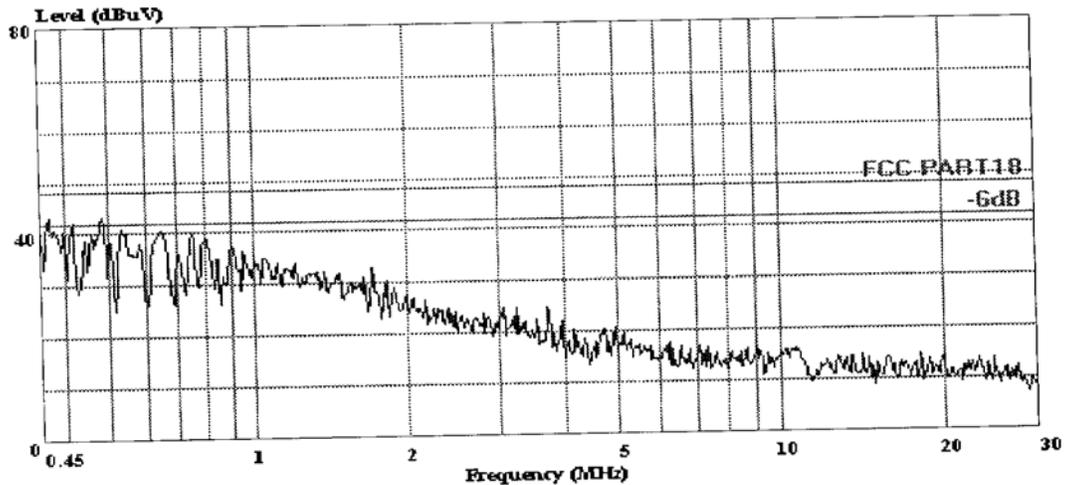
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EUT: : Energy Saving Lamp  
M/N: : HY2U-15W  
POWER: : AC 120V/60Hz  
Of Cond: : Lighting

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Nantou, Guangdong, China  
Tel: 0755-26639495~7  
Fax: 0755-26632877

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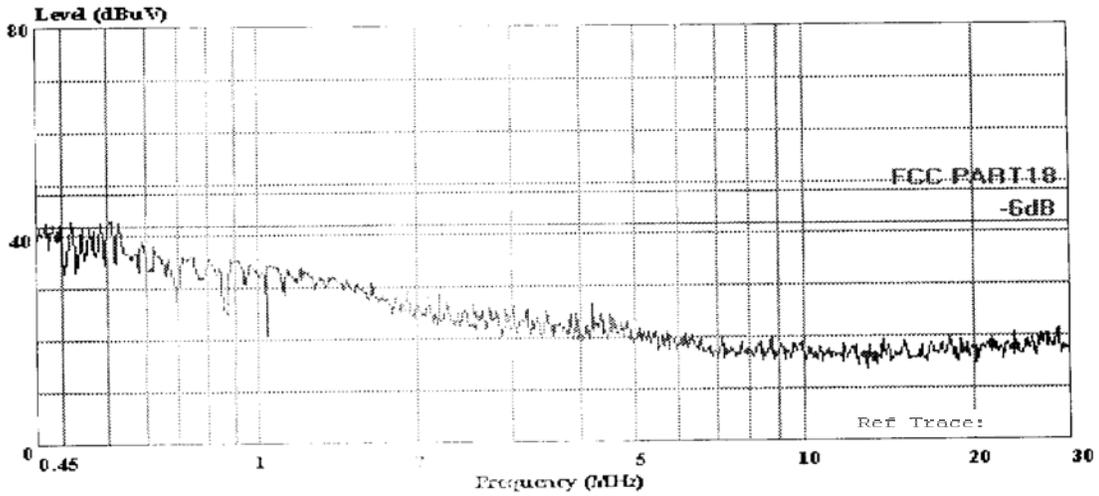
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M/N: : HY2U-15W  
POWER: : AC 120V/60Hz  
Of Cond: : Lighting



Shenzhen Science & Ind Park  
Nantou, Guangdong, China  
Tel: 0755-26639495~7  
Fax: 0755-26632877

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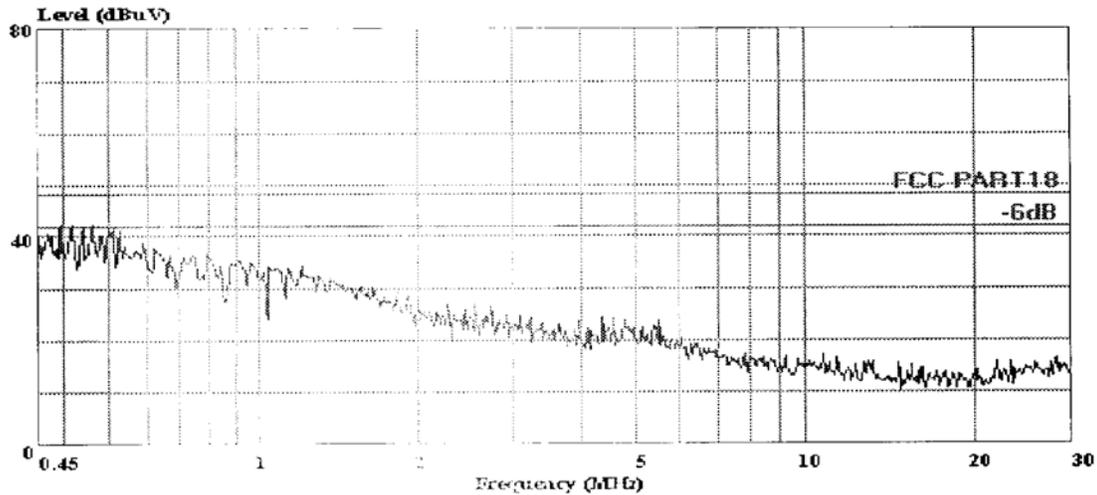


AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)  
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Ref Trace:

Condition: FCC PART18 VA(KEM-40W)  
EUT: : Energy Saving Lamp  
M/N: : HY3U-11W  
POWER: : AC 120V/60Hz  
Of Cond: : Lighting

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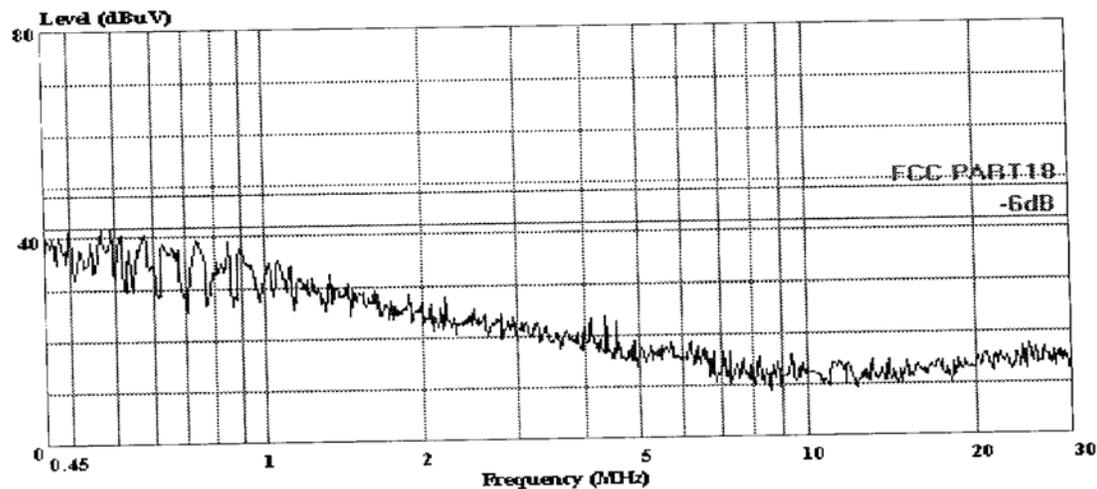
Zhongshan OKES Lighting Appliance Co., Ltd.

Energy Saving Lamp

FCC ID: QK4OKES

M/N: : HY3U-20W  
 POWER: : AC 120V/60Hz  
 Of Cond: : Lighting

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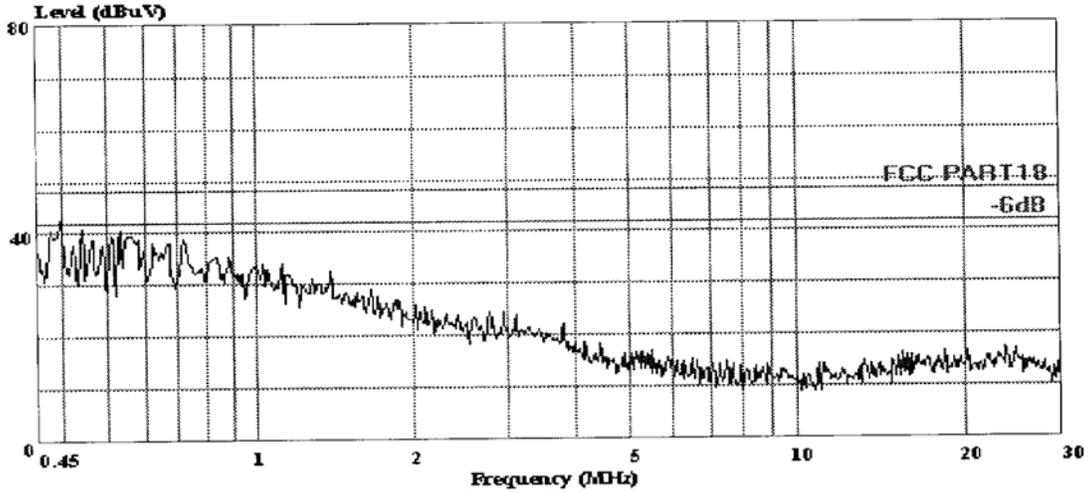


AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)  
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Condition: FCC PART18 VA(KNW-407)  
 EUT: : Energy Saving Lamp  
 M/N: : HY3U-20W  
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 Of Cond: : Lighting

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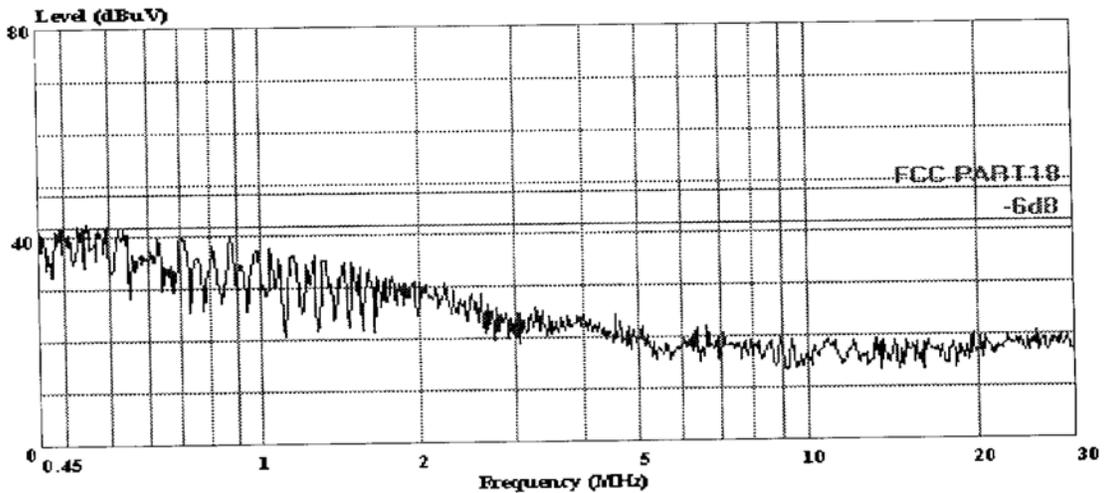
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Condition: FCC PART18 VB(KNW-407)  
EUT: : Energy Saving Lamp  
M/N: :  
P  
C Zhongshan OKES Lighting Appliance Co., Ltd.

Energy Saving Lamp

Page 17  
FCC ID: QK4OKES

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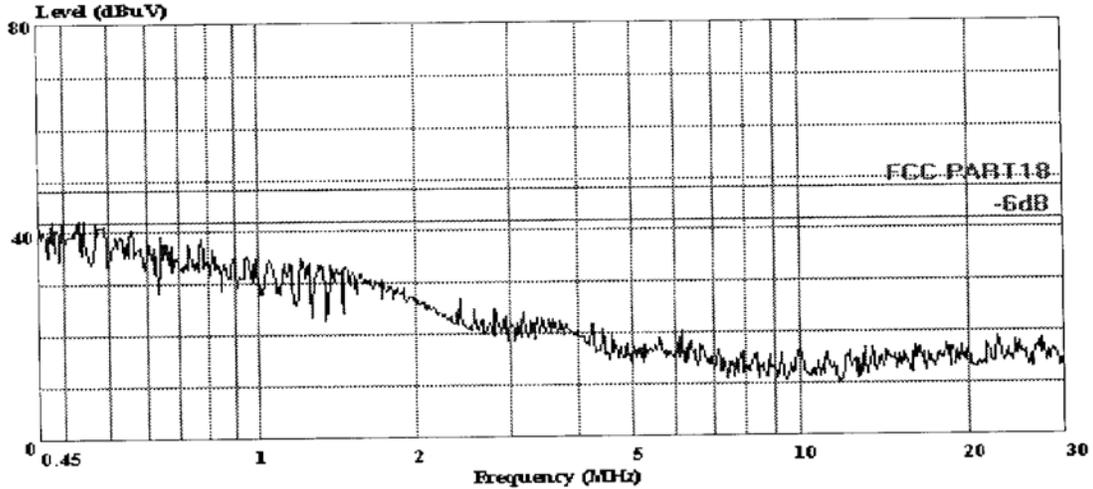
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Condition: FCC PART18 VA(KNW-407)  
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M/N: : HY3U-23W  
POWER: : AC 120V/60Hz  
Of Cond: : Lighting

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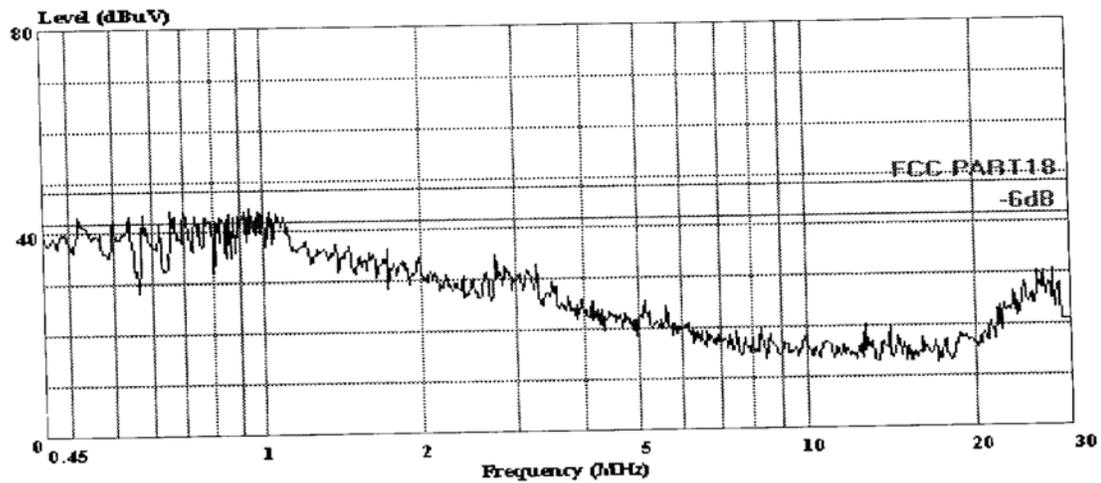
Zhongshan OKES Lighting Appliance Co., Ltd.

Energy Saving Lamp

FCC ID: QK4OKES

POWER: : AC 120V/60Hz  
Of Cond:: Lighting

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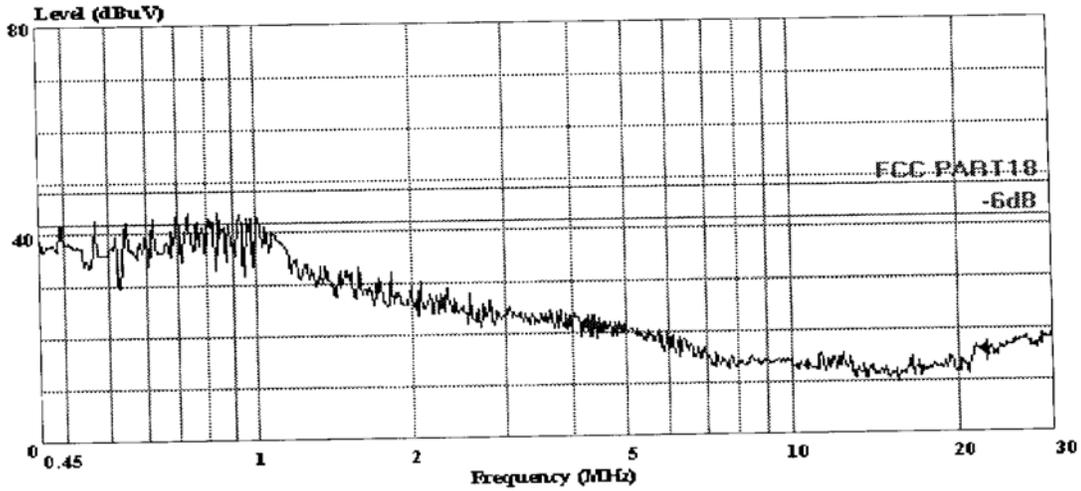


AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)  
Trace:

Ref Trace:

Condition: FCC PART18 VA(KNW-407)  
EUT: : Energy Saving Lamp  
M/N: : HY4U-20W  
POWER: : AC 120V/60Hz  
Of Cond:: Lighting

Data#: 30 File#: okes.EMI Date: 2002-07-31 Time: 11:34:32



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)  
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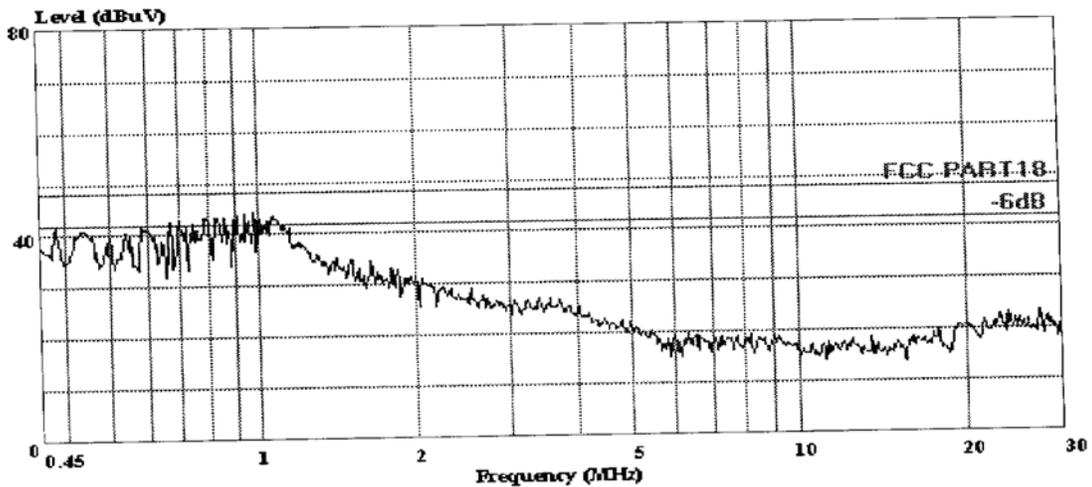
Condition: FCC PART18 VB(KNW-407)

Zhongshan OKES Lighting Appliance Co., Ltd.  
Of Cond:: Lighting

Energy Saving Lamp

FCC ID: QK4OKES

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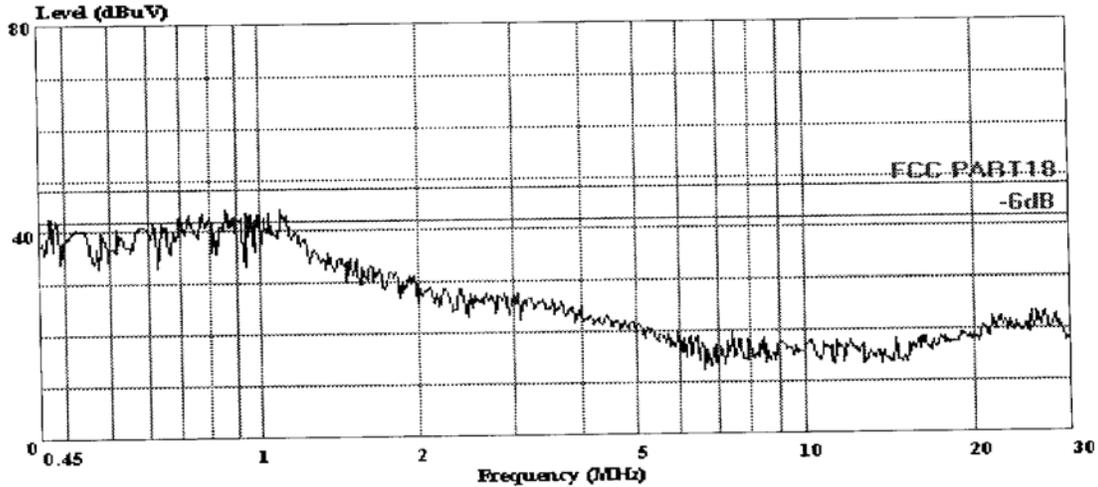


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Ref Trace:

Condition: FCC PART18 VA(KNW-407)  
EUT: : Energy Saving Lamp  
M/N: : HY4U-26W  
POWER: : AC 120V/60Hz  
Of Cond:: Lighting

Data#: 34 File#: okes.EMI Date: 2002-07-31 Time: 11:45:25



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)

Ref Trace:

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(Zhongshan OKES Lighting Appliance Co., Ltd.

Energy Saving Lamp

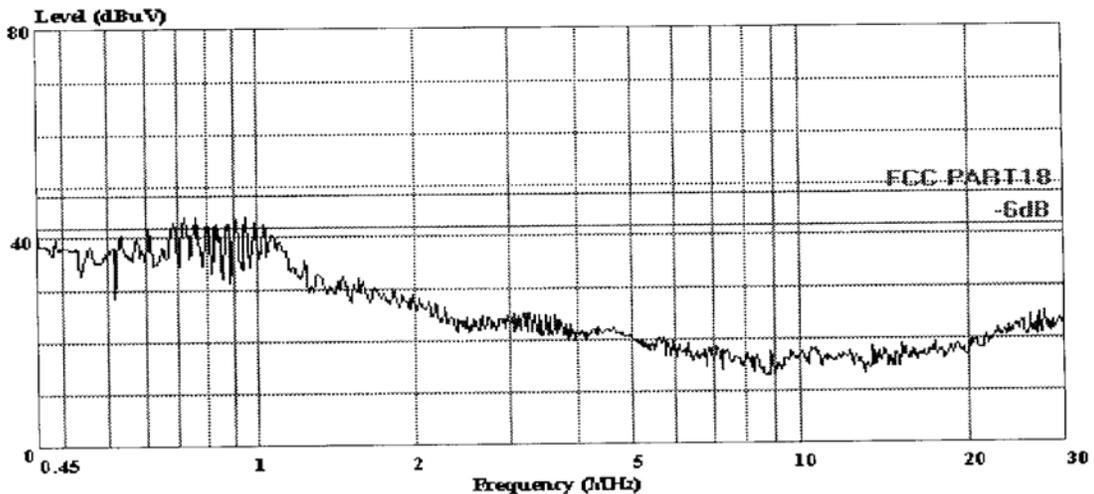
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M/N: : HY4A-26W

POWER: : AC 120V/60Hz

Of Cond: : Lighting

Data#: 31 File#: okes.EMI Date: 2002-07-31 Time: 11:35:48



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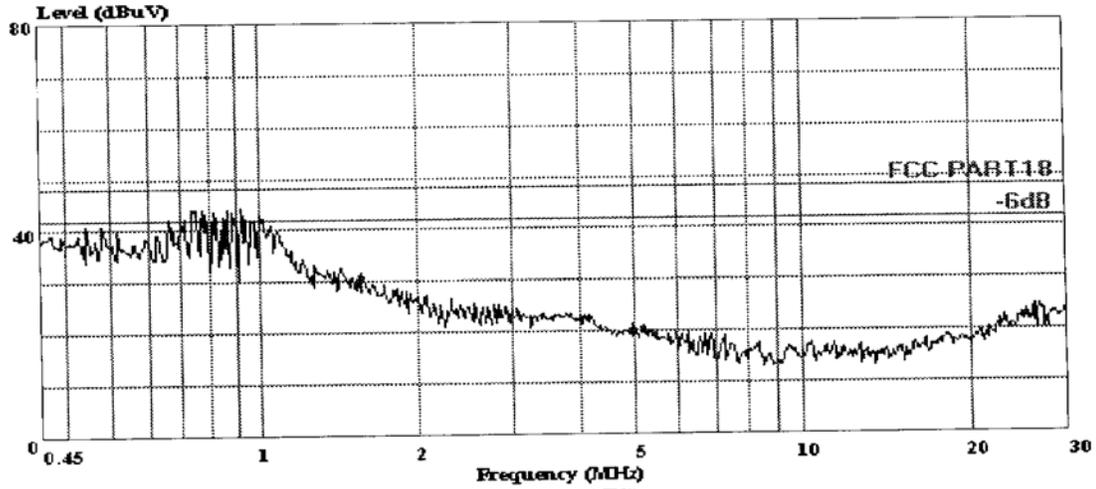
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M/N: : HY4U-30W

POWER: : AC 120V/60Hz

Of Cond: : Lighting

Data#: 32 File#: okes.EMI Date: 2002-07-31 Time: 11:40:31



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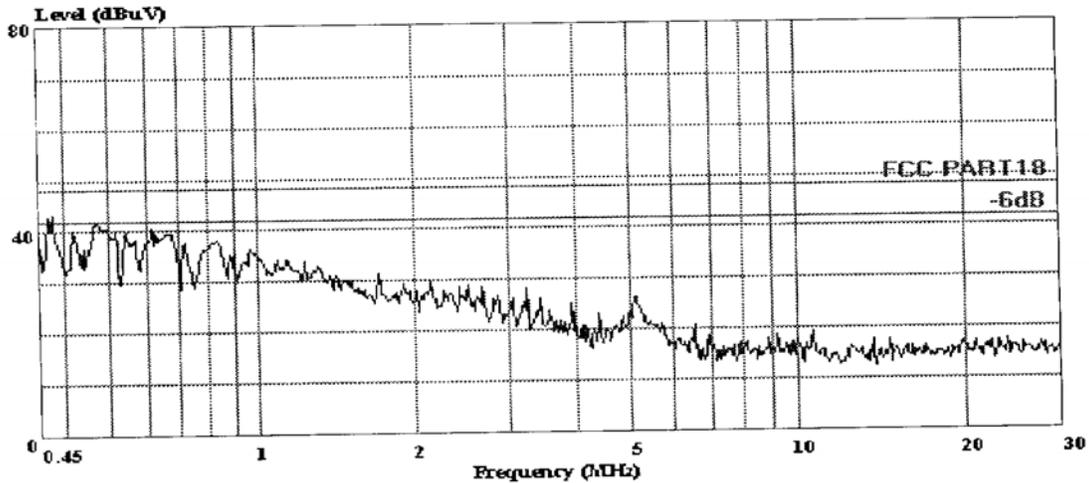
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Zhongshan OKES Lighting Appliance Co., Ltd.  
 POWER: : AC 120V/60Hz  
 Of Cond:: Lighting

Energy Saving Lamp

FCC ID: QK4OKES

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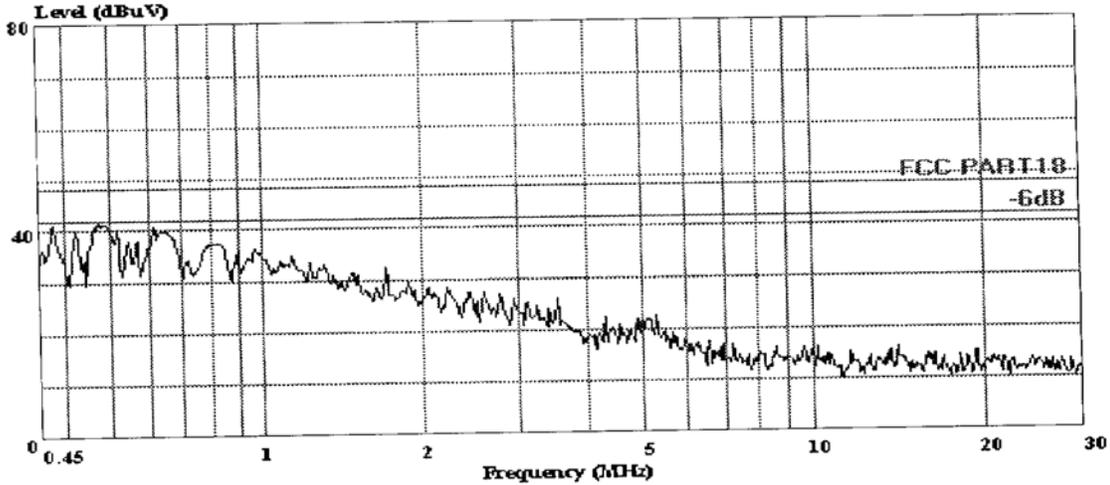
AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)  
 Trace:

Ref Trace:

Condition: FCC PART18 VA(KNW-407)  
 EUT: : Energy Saving Lamp  
 M/N: : NK4A-15W  
 POWER: : AC 120V/60Hz  
 Of Cond:: Lighting

Data#: 15 File#: okes.EMI

Date: 2001-07-31 Time: 11:09:11



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)  
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Ref Trace:

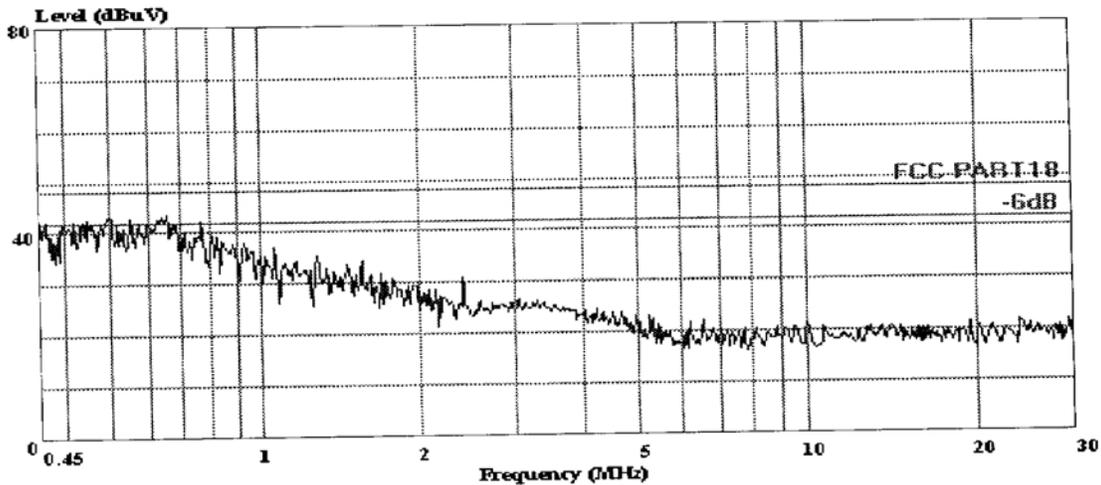
Zhongshan OKES Lighting Appliance Co., Ltd.  
M/N: : NK4A-15W  
POWER: : AC 120V/60Hz  
Of Cond:: Lighting

Energy Saving Lamp

FCC ID: QK4OKES

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Date: 2001-07-31 Time: 11:23:41



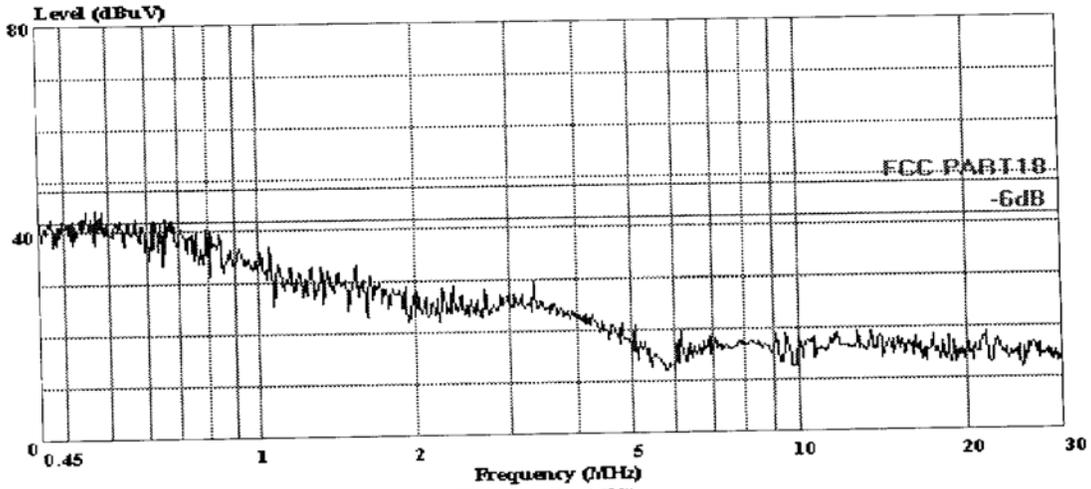
AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)  
Trace:

Ref Trace:

Condition: FCC PART18 VA(KNW-407)  
EUT: : Energy Saving Lamp  
M/N: : NK4A-20W  
POWER: : AC 120V/60Hz  
Of Cond:: Lighting

Data#: 17 File#: okes.EMI

Date: 2001-07-31 Time: 11:25:31



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)

Ref Trace:

Trace:

(  
1  
1) Zhongshan OKES Lighting Appliance Co., Ltd.  
POWER: : AC 120V/60HZ  
Of Cond:: Lighting

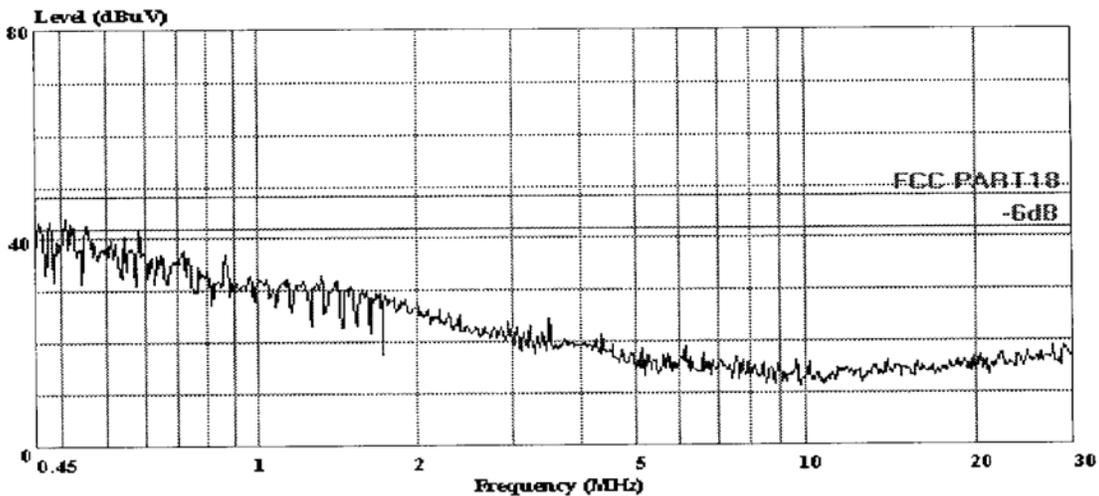
Energy Saving Lamp

FCC ID: QK4OKES

Page 23

Data#: 18 File#: okes.EMI

Date: 2001-07-31 Time: 11:27:16



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)

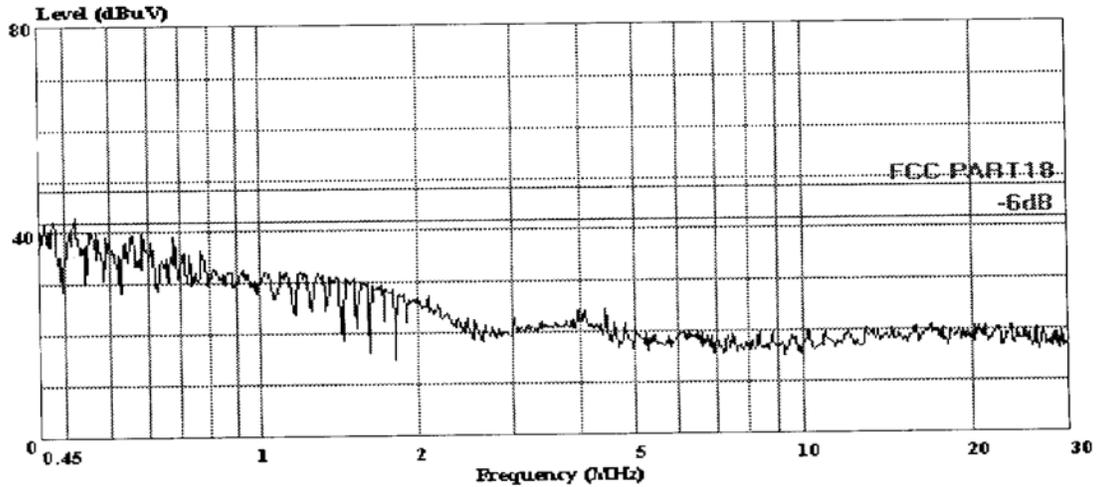
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Trace:

Condition: FCC PART18 VA(KNW-407)  
EUT: : Energy Saving Lamp  
M/N: : NK4A-23W  
POWER: : AC 120V/60Hz  
Of Cond:: Lighting

Data#: 19 File#: okes.EMI

Date: 2001-07-31 Time: 11:28:43



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)  
Trace:

Ref Trace:

Condition: FCC PART18 VB(KNW-407)  
EUT: : Energy Saving Lamp  
M/N: : NK4A-23W  
POWER: : AC 120V/60Hz  
Of Cond:: Lighting