Application for FCC Certificate
On Behalf of
Ningbo Ledeshi Electrical Equipment Co., Ltd.

Electronic Energy Saving Lamp

Model No.: DEP2H/15W DEP2H/18W DEP2H/20W
DEG/15W DEG/18W DEG/20W

FCC ID : NOG6G09

Prepared For : Ningbo Ledeshi Electrical Equipment Co., Ltd.
438# Youngor Rd., Ningbo City, Zhejiang, China

Prepared By : Audix Technology (Shanghai) Co., Ltd.
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Report No. : ACI-F01073
Date of Test : Aug 20-21, 2001
Date of Report : Sept 13, 2001

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Ningbo Ledeshi Electrical Equipment Co., Ltd.

Manufacturer : Ningbo Ledeshi Electrical Equipment Co., Ltd.

EUT Description : Electronic Energy Saving Lamp

(A) Model No.:

DEP2H/15W	DEP2H/18W	DEP2H/20W
DEG/15W	DEG/18W	DEG/20W

(B) Serial No.:

E081006	E081007	E081008
E081009	E081010	E081011

(C) Power Supply: 120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 18 CONSUMER DEVICES (2000) 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 20 ~ 21, 2001

Prepared by : Yulisa Wang 9/12,2001
YULISA WANG
(Assistant)

Test Engineer : Rain Liang
RAIN LIANG
(Engineer)

For and on behalf of
AUDIX TECHNOLOGY (SHANGHAI) CO.,LTD.

Reviewer : Byron Kwo
BYRON KWO
(Supervisor)

Approved Signatory : Alex Chiu
ALEX CHIU
(Assistant Manager)
Authorized Signature(s)

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 : DEP2H/15W, DEP2H/18W, DEP2H/20W
DEG/15W, DEG/18W, DEG/20W
(The models of DEP2H and DEG series are similar except the lampshades, only the models of DEP2H series are tested and reported.)

Applicant : Ningbo Ledeshi Electrical Equipment Co., Ltd.

438# Youngor Rd., Ningbo City, Zhejiang, China

Manufacturer : Ningbo Ledeshi Electrical Equipment Co., Ltd.

438# Youngor Rd., Ningbo City, Zhejiang, China

M/N	INPUT POWER (VA)	OUTPUT POWER (W)
DEP2H/15W	12.8	11.5
DEP2H/18W	15.4	13.9
DEP2H/20W	17.1	15.7

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

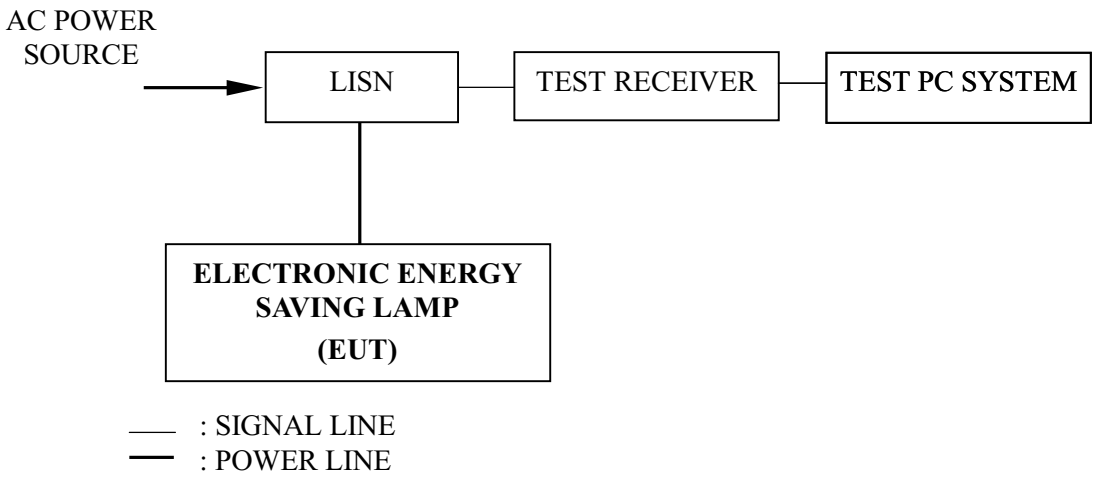
2 AC POWERLINE CONDUCTED EMISSION TEST

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	
	(μV)	dB(μV)
0.45 ~ 2.51	250	48
2.51 ~ 3	3000	70
3 ~ 30	250	48
NOTE 1 – RF Line Voltage dB(μV) = 20 log RF Line Voltage (μV)		

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 (ON) was done on conducted 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 :	22℃
Model No.	:	DEP2H/15W	Humidity :	53%
Test Mode	:	ON	Date of Test :	Aug 21, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.464	0.33	29.30	29.63	48.00	18.37
	0.597	0.30	36.70	37.00	48.00	11.00
	0.617	**0.30**	**37.60**	**37.90**	**48.00**	**10.10**
	0.665	0.29	36.40	36.69	48.00	11.31
	0.720	0.29	37.50	37.79	48.00	10.21
	0.767	0.28	36.70	36.98	48.00	11.02
VB	0.462	0.33	35.80	36.13	48.00	11.87
	0.516	0.31	32.50	32.81	48.00	15.19
	0.614	0.30	36.40	36.70	48.00	11.30
	0.711	0.29	34.40	34.69	48.00	13.31
	0.868	0.28	30.30	30.58	48.00	17.42
	1.080	0.27	27.90	28.17	48.00	19.83

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 0.617 MHz with corrected signal level of 37.90 dB(μV) (limit is 48.00 dB(μV)), when the VA of the EUT is connected to LISN.

TEST ENGINEER: Rain Liang
(RAIN LIANG)

EUT	:	Electronic Energy Saving Lamp	Temperature :	22℃
Model No.	:	DEP2H/18W	Humidity :	53%
Test Mode	:	ON	Date of Test :	Aug 21, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.456	0.33	32.70	33.03	48.00	14.97
	0.503	**0.31**	**38.70**	**39.01**	**48.00**	**8.99**
	0.559	0.30	31.90	32.20	48.00	15.80
	0.611	0.30	36.50	36.80	48.00	11.20
	0.705	0.29	35.20	35.49	48.00	12.51
	0.757	0.29	34.20	34.49	48.00	13.51
VB	0.453	0.33	35.40	35.73	48.00	12.27
	0.504	0.31	36.00	36.31	48.00	11.69
	0.550	0.30	34.50	34.80	48.00	13.20
	0.609	0.30	36.80	37.10	48.00	10.90
	0.660	0.29	35.10	35.39	48.00	12.61
	0.757	0.29	34.60	34.89	48.00	13.11

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 0.503 MHz with corrected signal level of 39.01 dB(μV) (limit is 48.00 dB(μV)), when the VA of the EUT is connected to LISN.

TEST ENGINEER: Rain Liang
(RAIN LIANG)

EUT	:	Electronic Energy Saving Lamp	Temperature :	22℃
Model No.	:	DEP2H/20W	Humidity :	53%
Test Mode	:	ON	Date of Test :	Aug 20, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.494	0.31	38.30	38.61	48.00	9.39
	0.544	0.31	32.70	33.01	48.00	14.99
	0.594	0.30	39.20	39.50	48.00	8.50
	0.685	**0.29**	**39.40**	**39.69**	**48.00**	**8.31**
	0.783	0.28	36.40	36.68	48.00	11.32
	0.877	0.28	36.50	36.78	48.00	11.22
VB	0.529	0.31	36.50	36.81	48.00	11.19
	0.591	0.30	38.60	38.90	48.00	9.10
	0.594	0.30	35.80	36.10	48.00	11.90
	0.685	0.29	37.50	37.79	48.00	10.21
	0.780	0.28	35.50	35.78	48.00	12.22
	0.881	0.28	35.60	35.88	48.00	12.12

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 0.685 MHz with corrected signal level of 39.69 dB(μV) (limit is 48.00 dB(μV)), when the VA of the EUT is connected to LISN.

TEST ENGINEER: Rain Liang
(RAIN LIANG)

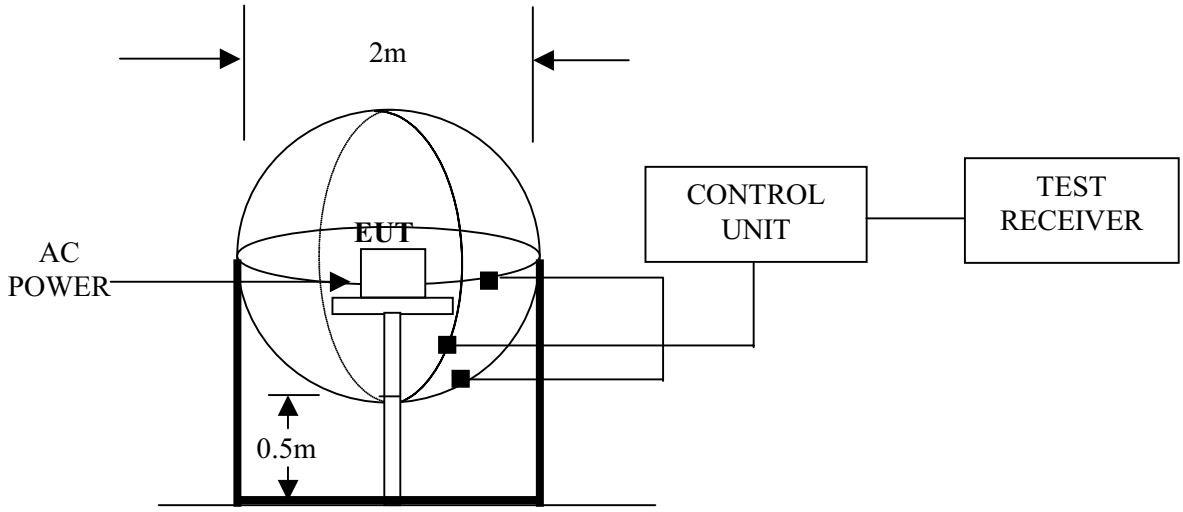
3 FIELD STRENGTH TEST

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 5, 2001	1/2 Year
2.	Test Receiver	Rohde & Schwarz	ESHS10	844077/020	Apr 24, 2001	1 Year

3.2 Block Diagram of Test Setup



EUT : ELECTRONIC ENERGY SAVING LAMP

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 DEP2H/15W:

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audixaci@8848.net

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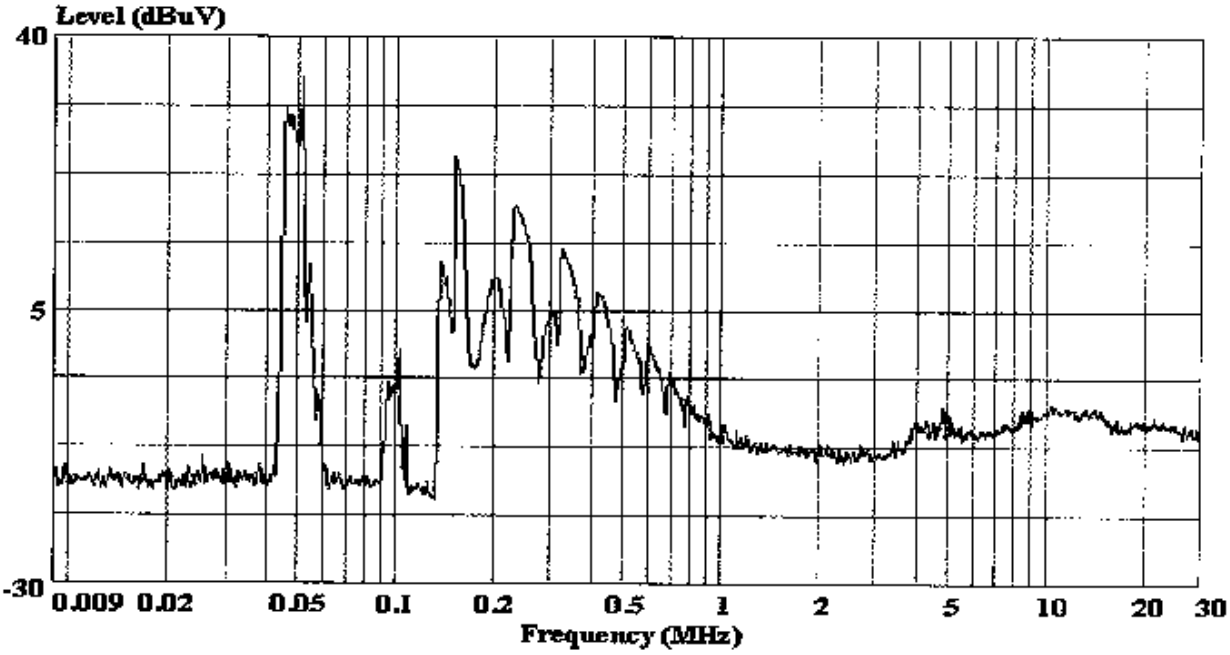

Site : audix-aci
Condition :
Project No. : AQE-000095
Applicant : NINGBO LEDESHI ELECTRICAL
: EQUIPMENT CO., LTD.
EUT : Electronic energy saving lamp
M/N : DEP2H 15W
S/N : E081006
Power Supply : 120V/60Hz
Ambient : 22'C 53%
Test Line : A
Test Mode : ON
Test Engineer: Rain

Audix Technology (Shanghai) Co., Ltd.
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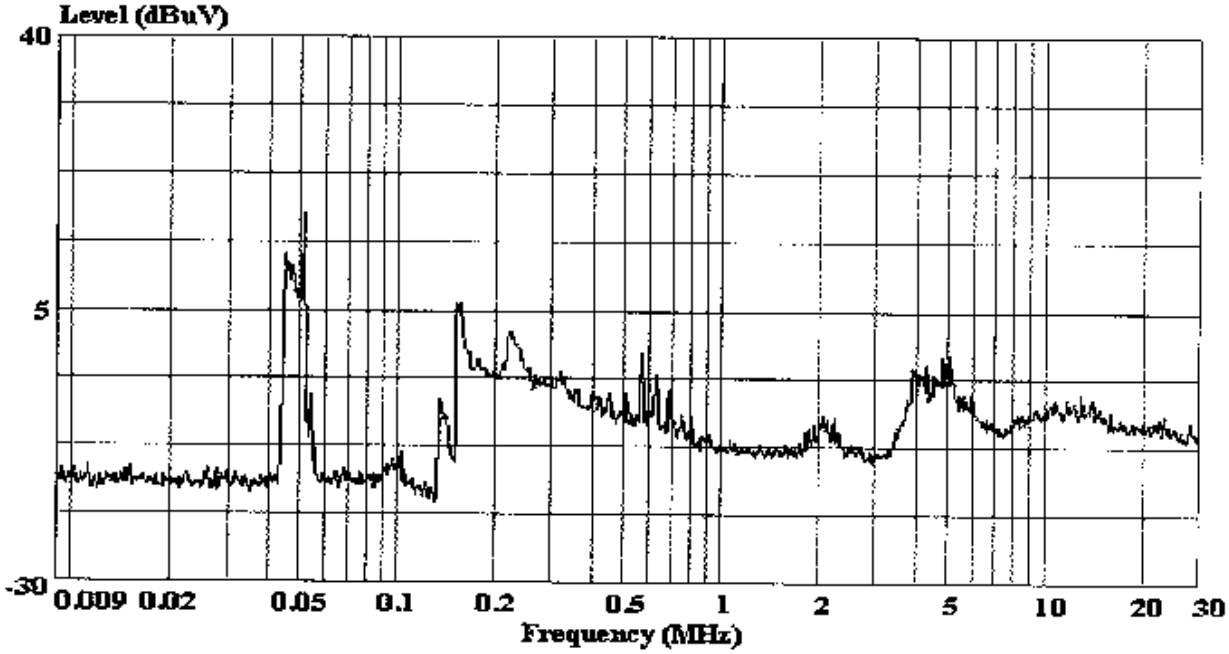

Site : audix-aci
Condition :
Project No. : AQE-000095
Applicant : NINGBO LEDESHI ELECTRICAL
: EQUIPMENT CO., LTD.
EUT : Electronic energy saving lamp
M/N : DEP2H 15W
S/N : E081007
Power Supply : 120V/60Hz
Ambient : 22'C 53%
Test Line : B
Test Mode : ON
Test Engineer: Kevin

Audix Technology (Shanghai) Co., Ltd.
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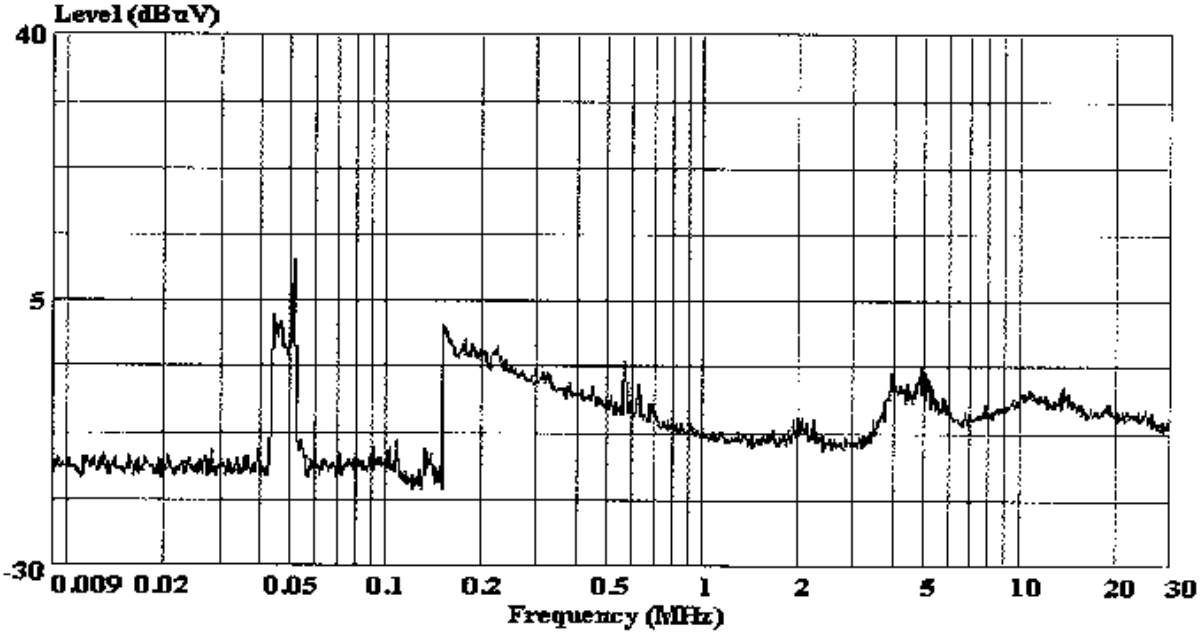

Site : audix-aci
Condition :
Project No. : AQE-000095
Applicant : NINGBO LEDESHI ELECTRICAL
: EQUIPMENT CO., LTD.
EUT : Electronic energy saving lamp
M/N : DEP2H 15W
S/N : E081000
Power Supply : 120V/60Hz
Ambient : 22'C 53%
Test Line : C
Test Mode : ON
Test Engineer:

For DEP2H/18W:

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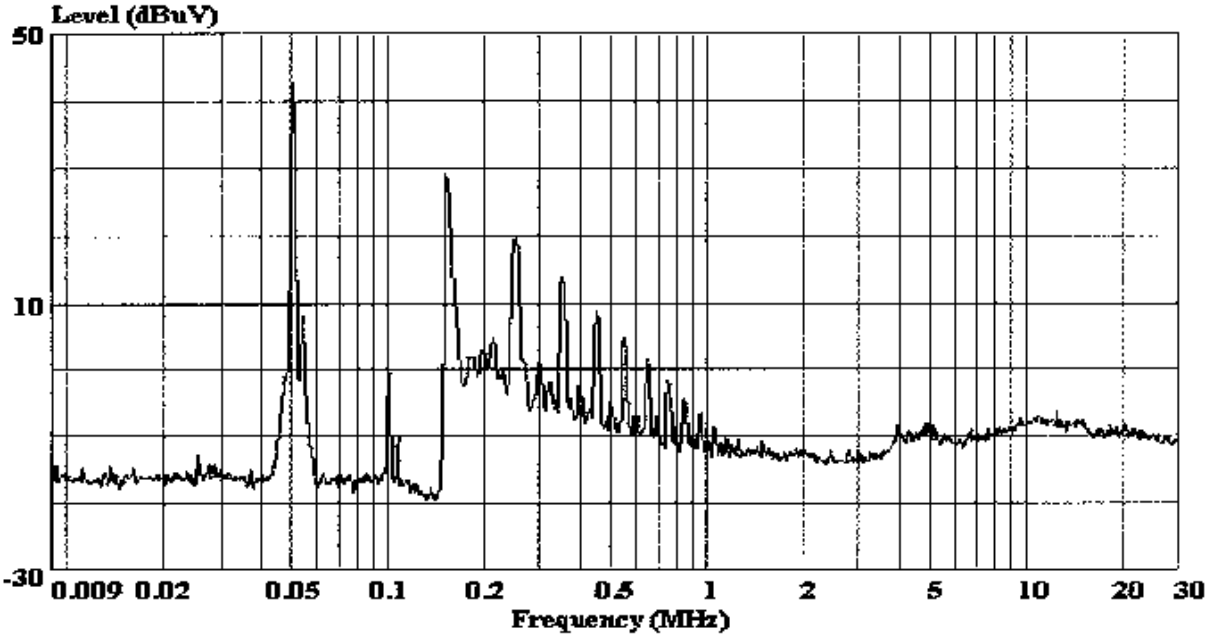

Site : audix-aci
Condition :
Project No. : AQE-000095
Applicant : NINGBO LEDESHI ELECTRICAL
: EQUIPMENT CO., LTD.
EUT : Electronic energy saving lamp
M/N : DEP2H 18W
S/N : E081007
Power Supply : 120V/60Hz
Ambient : 22'C 53%
Test Line : A
Test Mode : ON
Test Engineer: Rin

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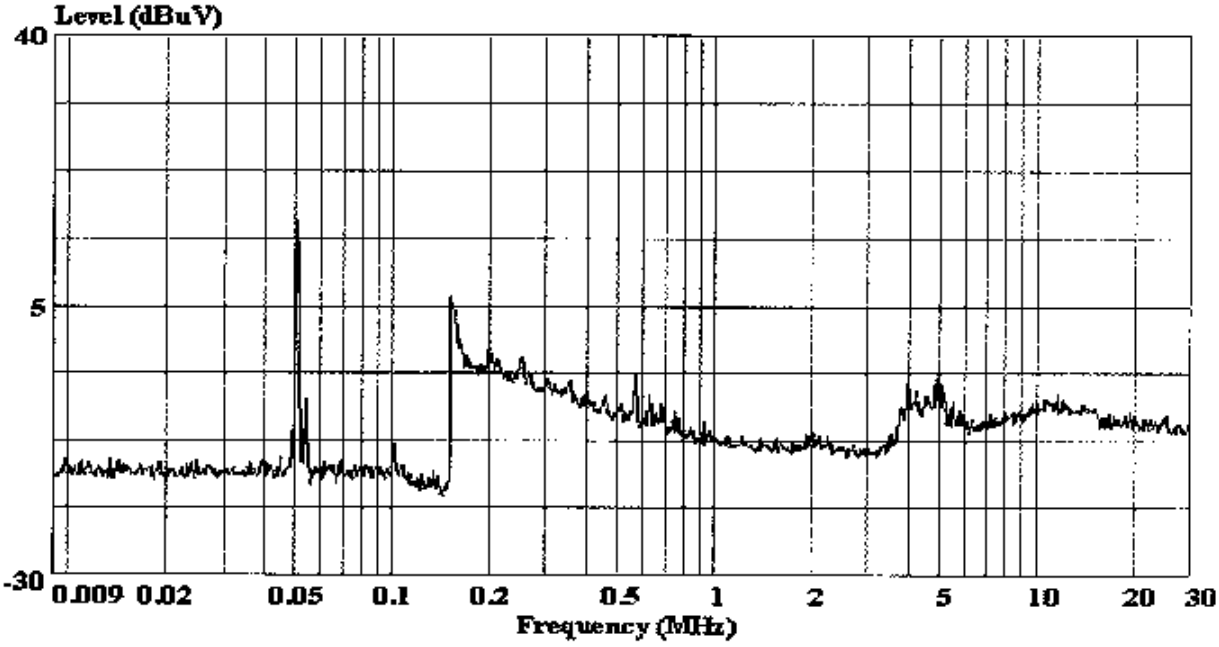

Site : audix-aci
Condition :
Project No. : AQE-000095
Applicant : NINGBO LEDESHI ELECTRICAL
: EQUIPMENT CO., LTD.
EUT : Electronic energy saving lamp
M/N : DEP2H 18W
S/N : E081007
Power Supply : 120V/60Hz
Ambient : 22'C 53%
Test Line : B
Test Mode : ON
Test Engineer: Rain

Audix Technology (Shanghai) Co., Ltd.
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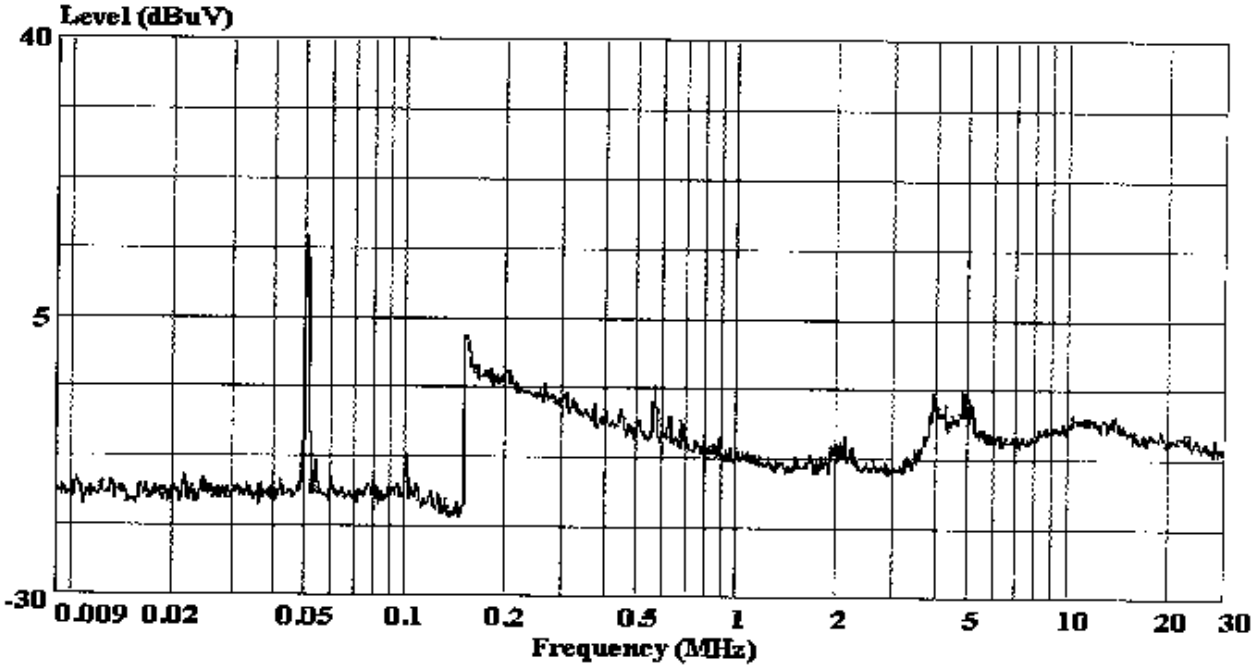

Site : audix-aci
Condition :
Project No. : AQE-000095
Applicant : NINGBO LEDESHI ELECTRICAL
: EQUIPMENT CO., LTD.
EUT : Electronic energy saving lamp
M/N : DEP2H 18W
S/N : E081007
Power Supply : 120V/60Hz
Ambient : 22'C 53%
Test Line : C
Test Mode : ON
Test Engineer: Rain

For DEP2H/20W:

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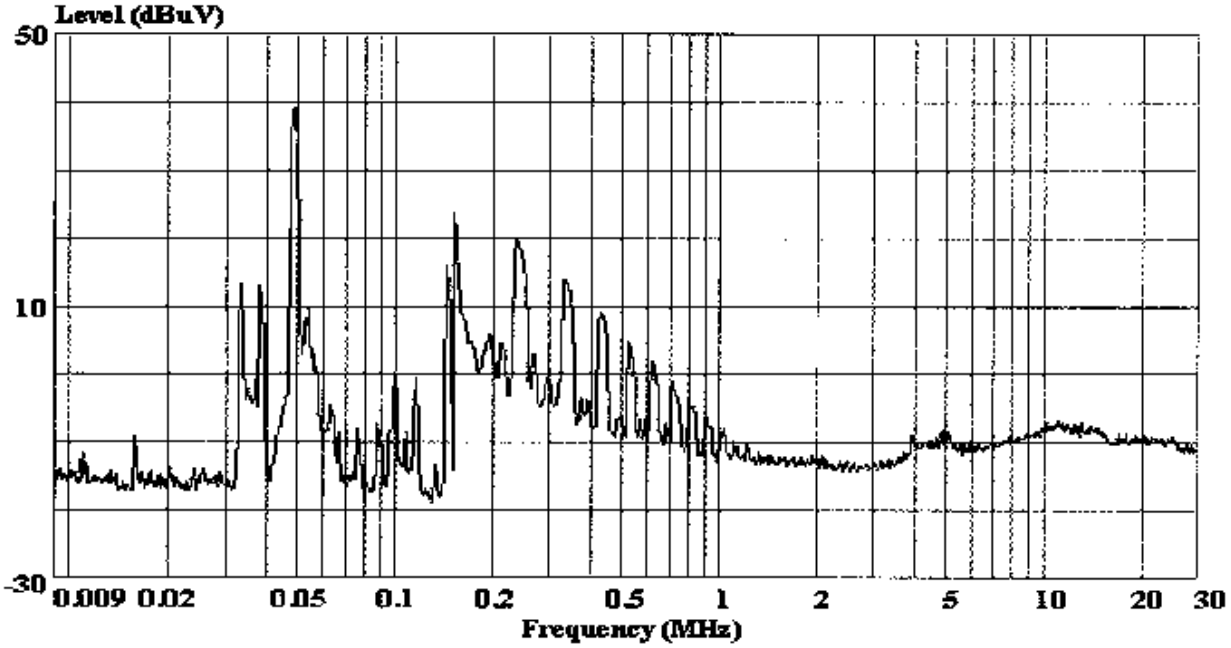

Site : audix-aci
Condition :
Project No. : AQE-000095
Applicant : NINGBO LEDESHI ELECTRICAL
: EQUIPMENT CO., LTD.
EUT : Electronic energy saving lamp
M/N : DEP2H 20W
S/N : E081008
Power Supply : 120V/60Hz
Ambient : 22'C 53%
Test Line : A
Test Mode : ON
Test Engineer: Rain

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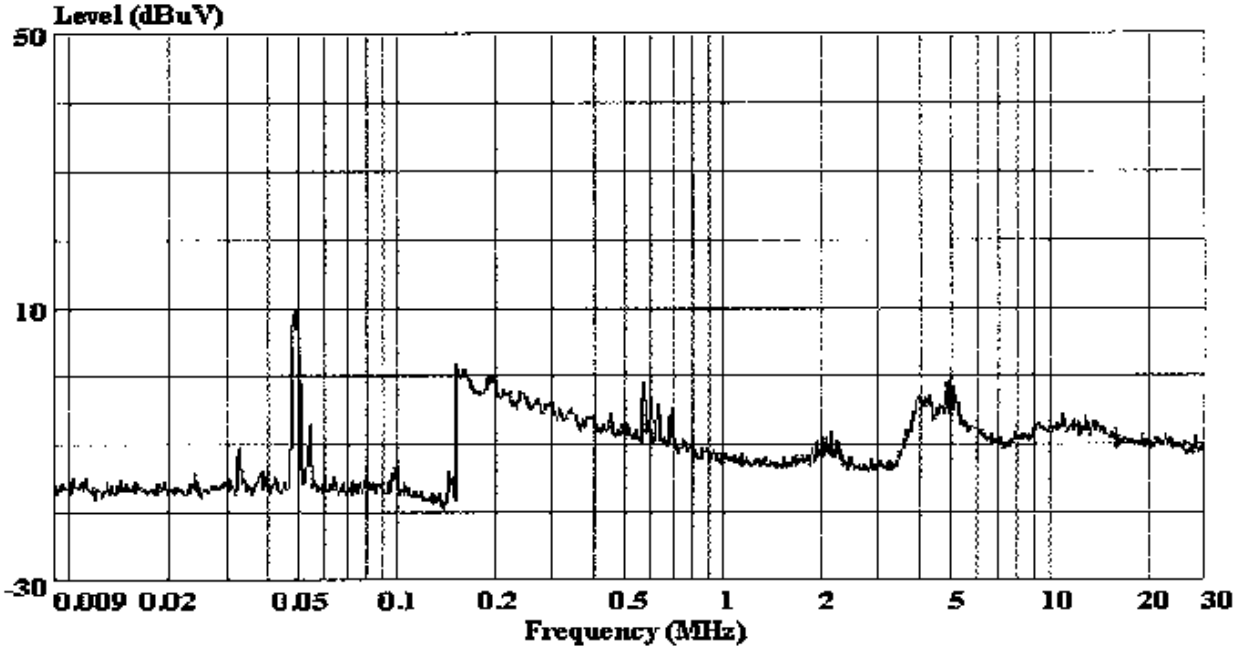

Site : audix-aci
Condition :
Project No. : AQE-000095
Applicant : NINGBO LEDESHI ELECTRICAL
: EQUIPMENT CO., LTD.
EUT : Electronic energy saving lamp
M/N : DEP2H 20W
S/N : E081008
Power Supply : 120V/60Hz
Ambient : 22'C 53%
Test Line : B
Test Mode : ON
Test Engineer: Kevin

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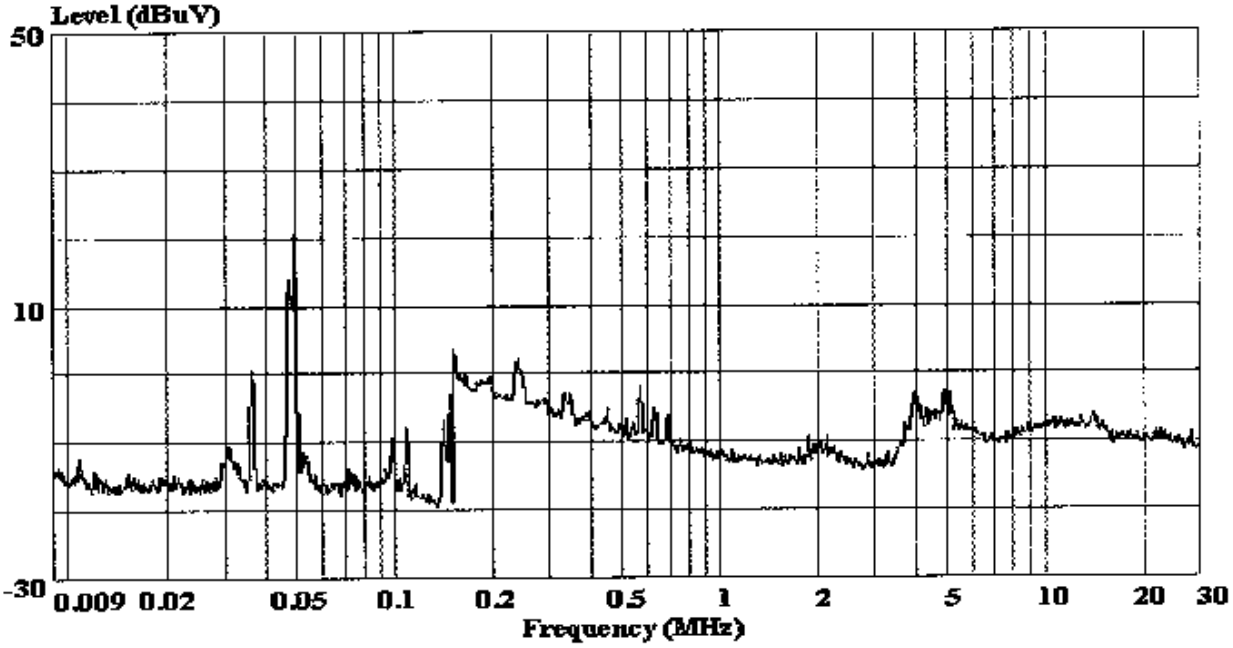

Site : audix-aci
Condition :
Project No. : AQE-000095
Applicant : NINGBO LEDESHI ELECTRICAL
: EQUIPMENT CO., LTD.
EUT : Electronic energy saving lamp
M/N : DEP2H 20W
S/N : E081008
Power Supply : 120V/60Hz
Ambient : 22'C 53%
Test Line : C
Test Mode : ON
Test Engineer: Rein