Shenzhen Lapin Lighting Technology Co., Ltd.

Energy Saving Lamp

Model Number: I61S-7W/I61S-9W/ I61S-11W/ I61S-13W I61S-15W

Prepared for : Shenzhen Lapin Lighting Technology Co., Ltd.
Rongxiangda Industrial Park
Huilongpu New Industrial Area,
Central Town, Longgang, Shenzhen

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block,
Shenzhen Science & Industrial Park,
Nantou, Shenzhen, Guangdong, China

Tel: (0755) 6639496

Report Number : ACS-F02042
Date of Test : Mar.22~23, 2002
Date of Report : Mar.29, 2002

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TEST REPORT DECLARATION

Applicant : Shenzhen Lapin Lighting Technology Co., Ltd.

Manufacturer : Shenzhen Lapin Lighting Technology Co., Ltd.

EUT Description : Energy Saving Lamp

(A) MODEL NO. : I61S-7W/I61S-9W/ I61S-11W/ I61S-13W/I61S-15W

(B)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 Audix Technology (Shenzhen) 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 Audix Technology (Shenzhen) 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 Audix Technology (Shenzhen) 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 : Jan.26~30, 2002

Prepared by : Sunny Sang / Assistant

Reviewer : Lake Wang / Supervisor

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

Approved & Authorized Signer : Alex Deng / Assistant Manager

Authorized Signature(s)

Name of the Representative of the Responsible Party : _____

Signature : _____

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Energy Saving Lamp
Model Number	:	I61S-7W/I61S-9W/ I61S-11W/ I61S-13W/I61S-15W
Applicant	:	Shenzhen Lapin Lighting Technology Co., Ltd. Rongxiangda Industrial Park Huilongpu New Industrial Area, Central Town, Longgang, Shenzhen
Manufacturer	:	Shenzhen Lapin Lighting Technology Co., Ltd. Rongxiangda Industrial Park Huilongpu New Industrial Area, Central Town, Longgang, Shenzhen
Date of Test	:	Mar.22~23, 2002

1.2. Test Facility

Site Description

3m Anechoic Chamber	:	Certificated by FCC, USA Aug. 24, 2000
3m & 10m Open Site	:	Certificated by FCC, USA Jan. 29, 2001
EMC Lab.	:	Certificated by VCCI, Japan Oct. 29, 1998
		certificated by DATech, German Feb. 02, 1999
		certificated by NVLAP, USA 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, China

1.3. Test Uncertainty

Conducted Emission Uncertainty = ± 2.66dB

Radiated Emission Uncertainty = ± 4.26dB

2. POWER LINE CONDUCTED EMISSION TEST

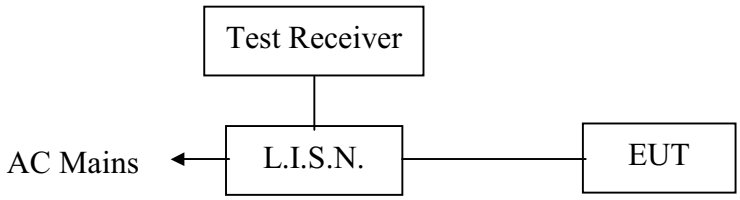
2.1.Test Equipment

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. 03, 01	1 Year
2.	L.I.S.N.	Kyoritsu	KNW-407	8-541-4	Jun. 03, 01	1 Year
3.	Terminator	EMCO	50Ω	No. 1	Jun. 03, 01	1 Year
4.	Terminator	EMCO	50Ω	No. 2	Jun. 03, 01	1 Year
5.	RF Cable	FUJIKURA	RG-55/U	LISN Cable	Feb.25, 02	1/2 Year
6.	Coaxial Switch	Anritsu	MP59B	M73989	Dec.01, 01	1/2 Year

2.2.Block Diagram of Test Setup

2.2.1.Block diagram of connection between the EUT and simulators



(EUT: Energy Saving Lamp)

2.3.Power Line Conducted Emission Test Limits

Frequency MHz	Maximum RF Line Voltage	
	μV	dB(μV)
0.45 ~ 30	250	48

Remarks: RF Line Voltage (dB(μV)) = 20 log RF Line Voltage (μV)

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.Energy Saving Lamp (EUT)

Model Number : I61S-7W/I61S-9W/ I61S-11W/I61S-13W/I61S-15W

/

Manufacturer : Shenzhen Lapin Lighting Technology Co., Ltd.

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 put on a table which is 0.8m above the ground , it 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 C63.4-1992 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.

As the peak value is too low against the limit, so the VA value and VB value have been omitted, the scanning waveforms are put in Appendix I.

3. MAGNETIC FIELD EMISSION TEST

3.1.Test Equipment

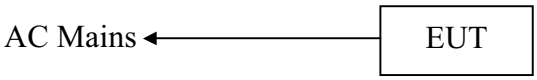
The following test equipments are used during the radiated emission test:

3.1.1.For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Loop Antenna	Chase	HLA6120	1062	Jun. 04, 01	1 Year
2.	Test Receiver	Rohde & Schwarz	ESHS20	836600/006	Jun. 03, 01	1 Year

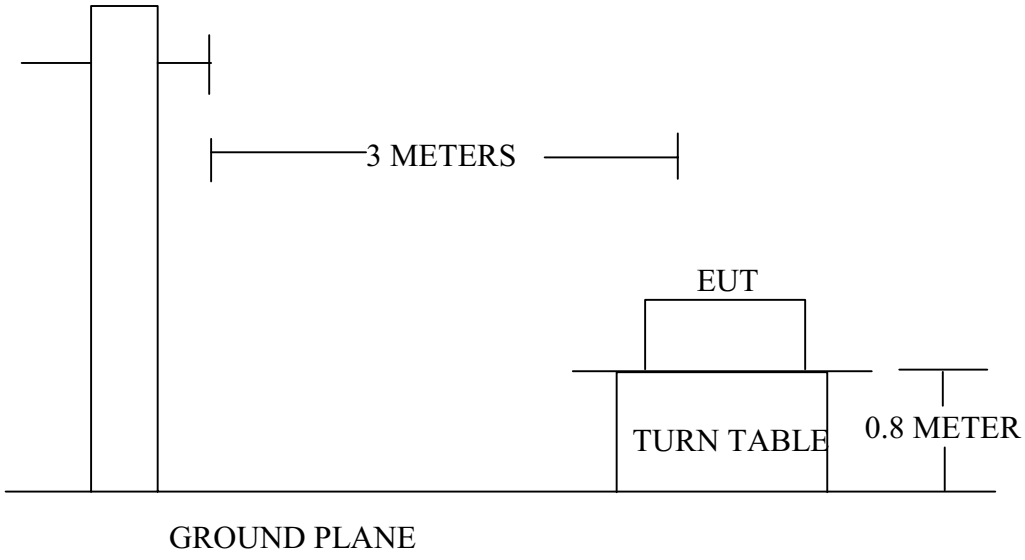
3.2.Block Diagram of Test Setup

3.2.1.Block Diagram of connection between EUT and simulators



(EUT: Energy Saving Lamp)

3.2.2.In Anechoic Chamber Test Setup Diagram



3.3.Magnetic Field Emission Limit

All emanations from Non-ISM devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

Frequency band MHz	Quasi-peak Electric Field Test Distance 3m dB(μV/m)
0.009 - 30	63.5

Note: (1) The limit shall decreasing linearly with logarithm of frequency.
(2) Distance refers to the distance in meters between the test instrument antenna and the closed point of any part of the E.U.T.

3.4.EUT Configuration on Test

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

3.4.1.Energy Saving Lamp (EUT)

Model Number : I61S-7W/I61S-9W/ I61S-11W/I61S-13W/I61S-15W

/

Manufacturer : Shenzhen Lapin Lighting Technology Co., Ltd.

3.5.Operating Condition of EUT

3.5.1.Setup the EUT and the simulators as shown on Section 5.1.

3.5.2.Turn on the power of all equipments.

3.5.3.Let the EUT work in test mode (On) and test it.

3.6.Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. Measurements are performed at 3m distance with a 0.6m loop antenna as described in 15.2.1 of CISPR 16-1. The antenna shall be vertically installed, with the lower edge of the loop at 1m height above the floor.
The bandwidth setting on the test receiver (R&S TEST RECEIVER ESVS20) is 10 KHz.The EUT is tested in Chamber. All the scanning waveform are attached within Appendix Ⅲ.

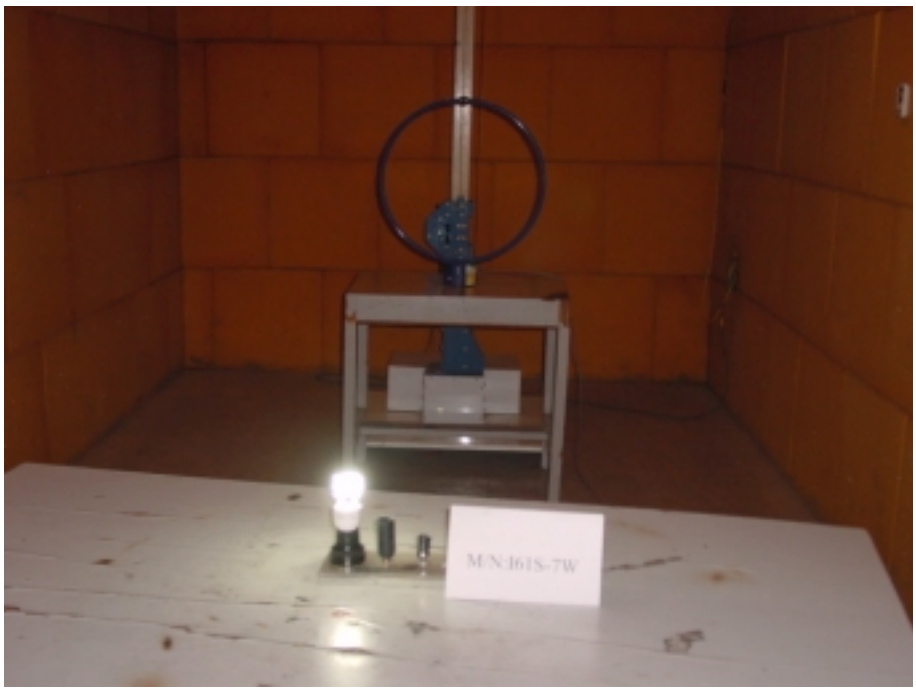
4. MODIFICATION TO TEST SPECIFICATIONS

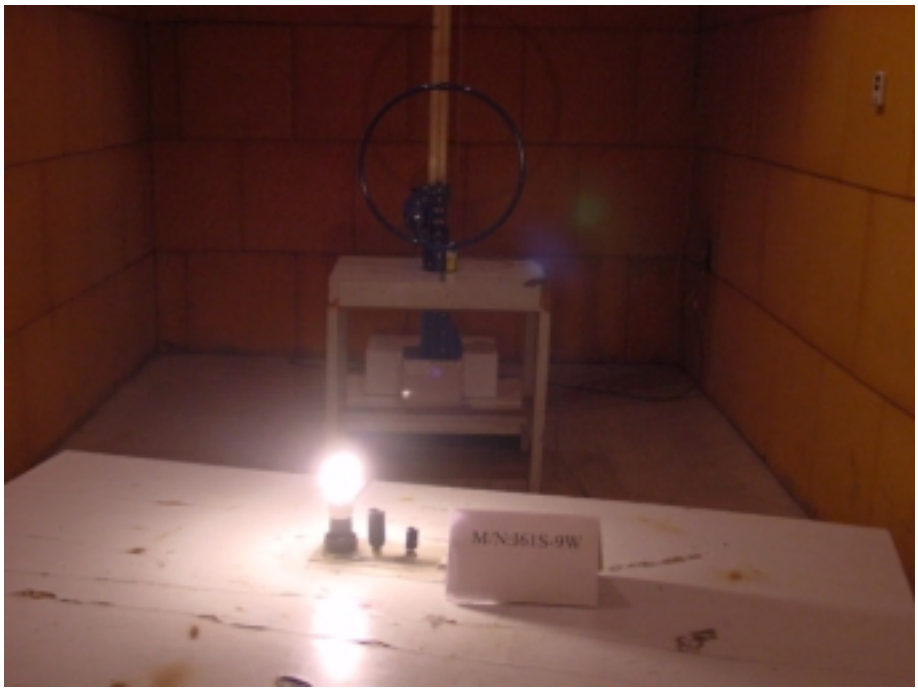
[NONE]

5. PHOTOGRAPH

5.1.Photos of Power Line Conducted Emission Test

5.2.Photos of Radiated Emission Test (In Anechoic Chamber)

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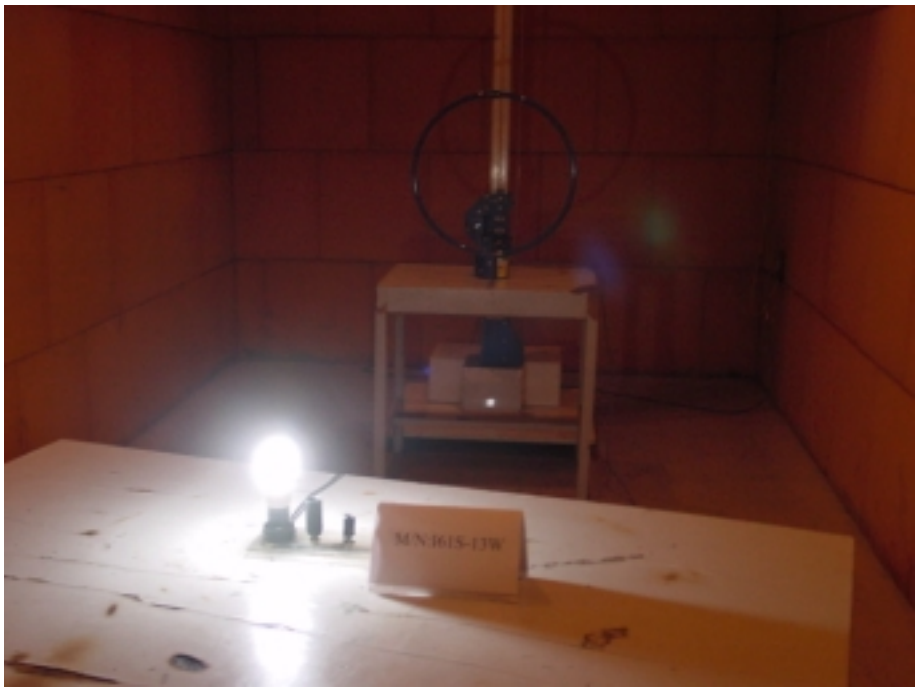
M/N:161S-11W


M.N.861S-13W

M.N.861S-15W

APPENDIX I

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.
Shenzhen Science & Ind Park
Nantou,Guangdong,China
Tel:0755-6639495~7
Fax:0755-6632877

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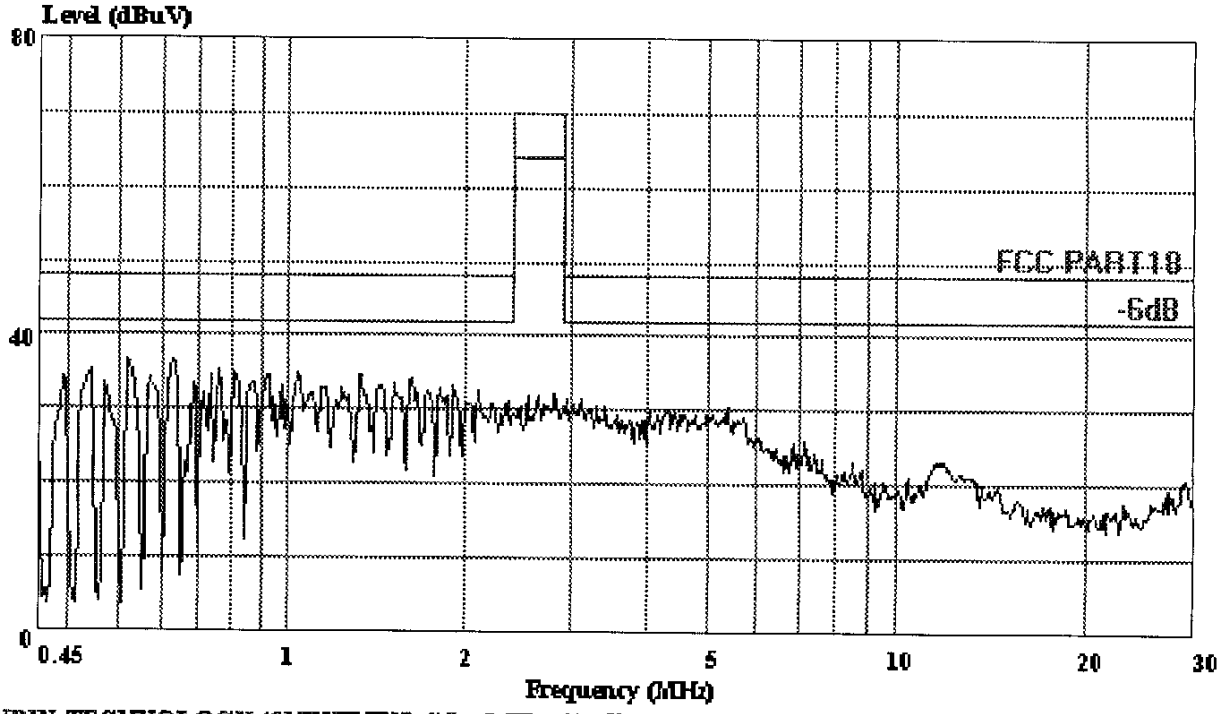

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Condition: FCC PART18
Eut: : Energy Saving Lamp M/N:I61S-7W
Manuf: : Lapin
OP Cond: : On
Operator: : Ling
Test Spec:: 120V/60Hz Va
Comment: : Temp:24'C
: Humi:56%

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.
Shenzhen Science & Ind Park
Nantou,Guangdong,China
Tel:0755-6639495~7
Fax:0755-6632877

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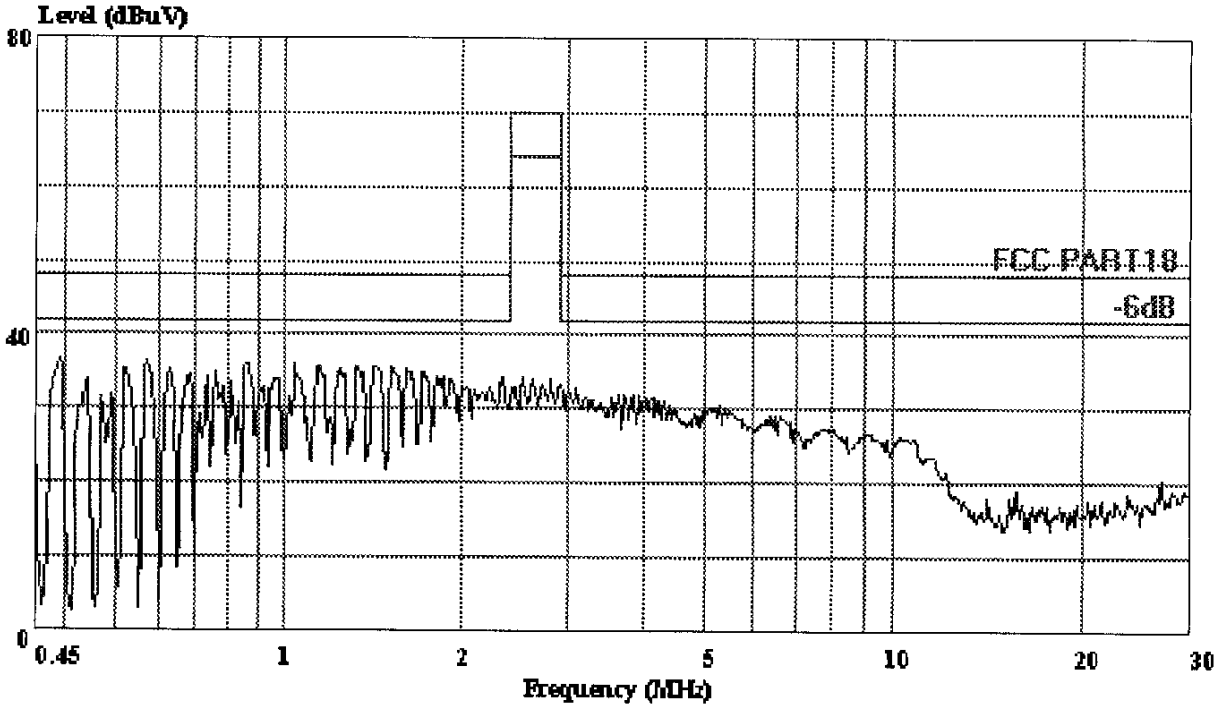

Trace: Ref Trace:

Condition: FCC PART18
Eut: : Energy Saving Lamp M/N:I61S-7W
Manuf: : Lapin
OP Cond: : On
Operator: : Ling
Test Spec:: 120V/60Hz Vb
Comment: : Temp:24'C
: Humi:56%

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Shenzhen Science & Ind Park
Nantou,Guangdong,China
Tel:0755-6639495~7
Fax:0755-6632877

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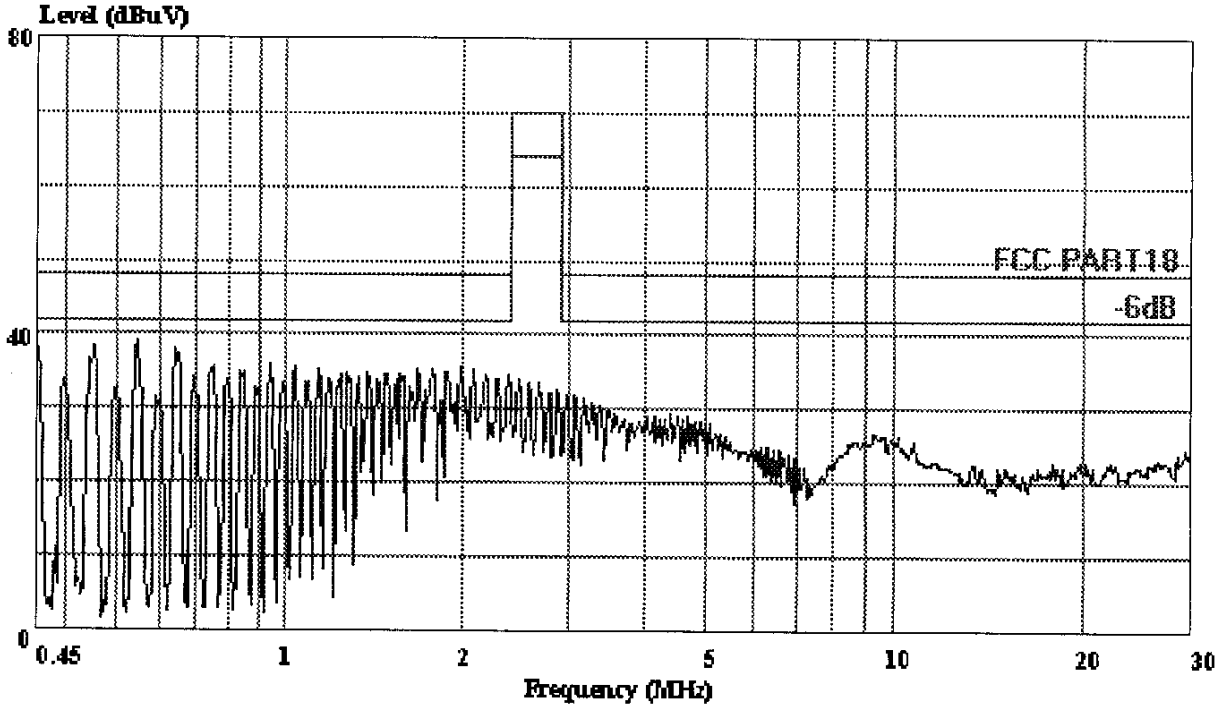

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Condition: FCC PART18
Eut: : Energy Saving Lamp M/N:I61S-9W
Manuf: : Lapin
OP Cond: : On
Operator: : Ling
Test Spec:: 120V/60Hz Va
Comment: : Temp:24'C
: Humi:56%

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.
Shenzhen Science & Ind Park
Nantou,Guangdong,China
Tel:0755-6639495~7
Fax:0755-6632877

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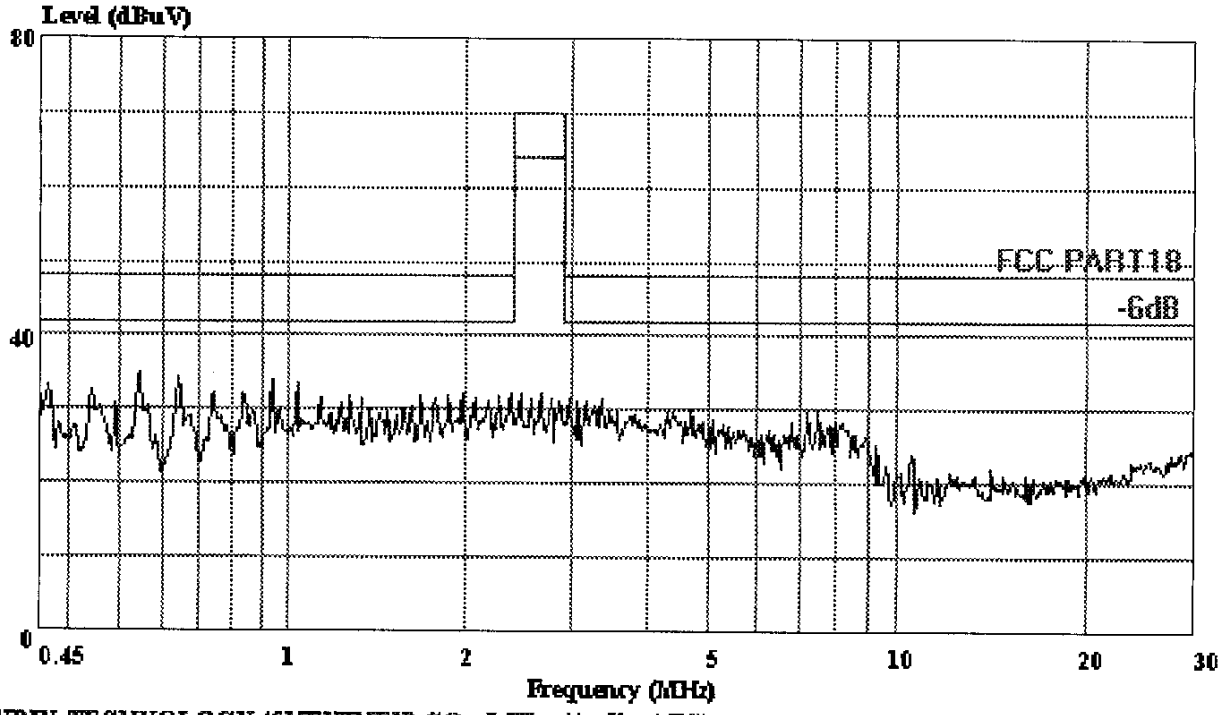

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Condition: FCC PART18
Eut: : Energy Saving Lamp M/N:I61S-9W
Manuf: : Lapin
OP Cond: : On
Operator: : Ling
Test Spec:: 120V/60Hz Vb
Comment: : Temp:24'C
: Humi:56%

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.
Shenzhen Science & Ind Park
Nantou,Guangdong,China
Tel:0755-6639495~7
Fax:0755-6632877

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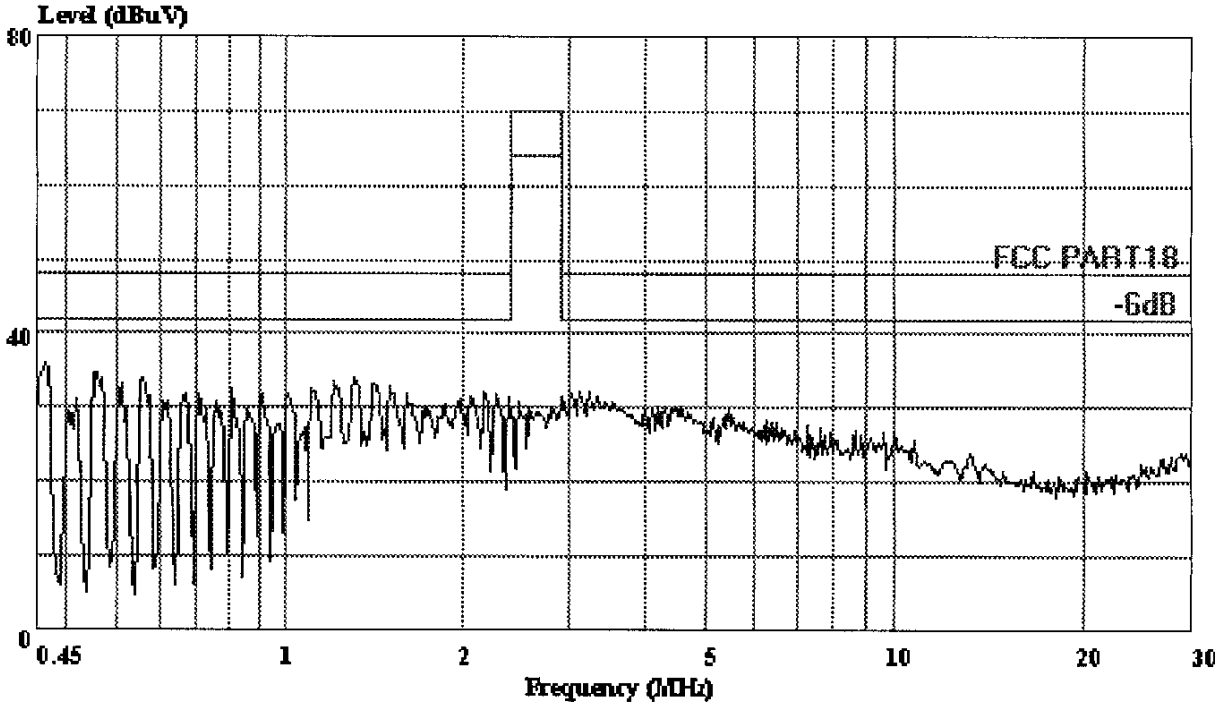

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix ATC)

Trace: Ref Trace:

Condition: FCC PART18
Eut: : Energy Saving Lamp M/N:I61S-11W
Manuf: : Lapin
OP Cond: : On
Operator: : Ling
Test Spec:: 120V/60Hz Va
Comment: : Temp:24'C
: Humi:56%

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Shenzhen Science & Ind Park
Nantou,Guangdong,China
Tel:0755-6639495~7
Fax:0755-6632877

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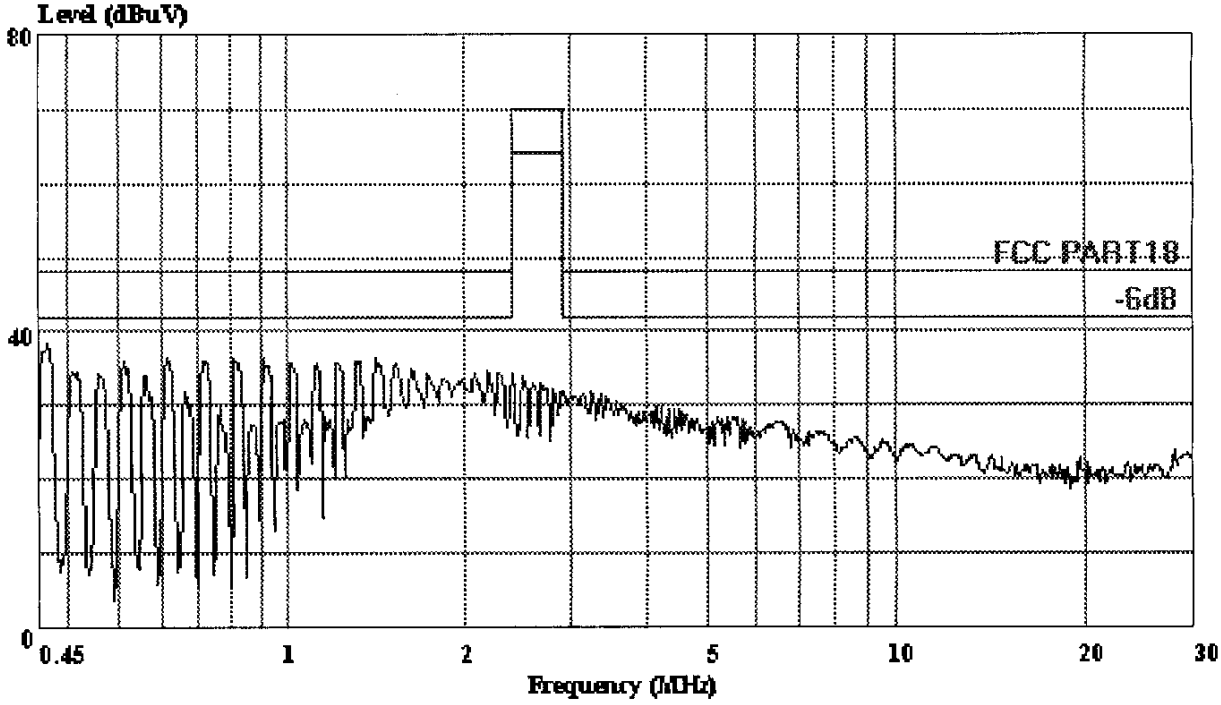

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Condition: FCC PART18
Eut: : Energy Saving Lamp M/N:I61S-11W
Manuf: : Lapin
OP Cond: : On
Operator: : Ling
Test Spec:: 120V/60Hz Vb
Comment: : Temp:24'C
: Humi:56%

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.
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Nantou,Guangdong,China
Tel:0755-6639495~7
Fax:0755-6632877

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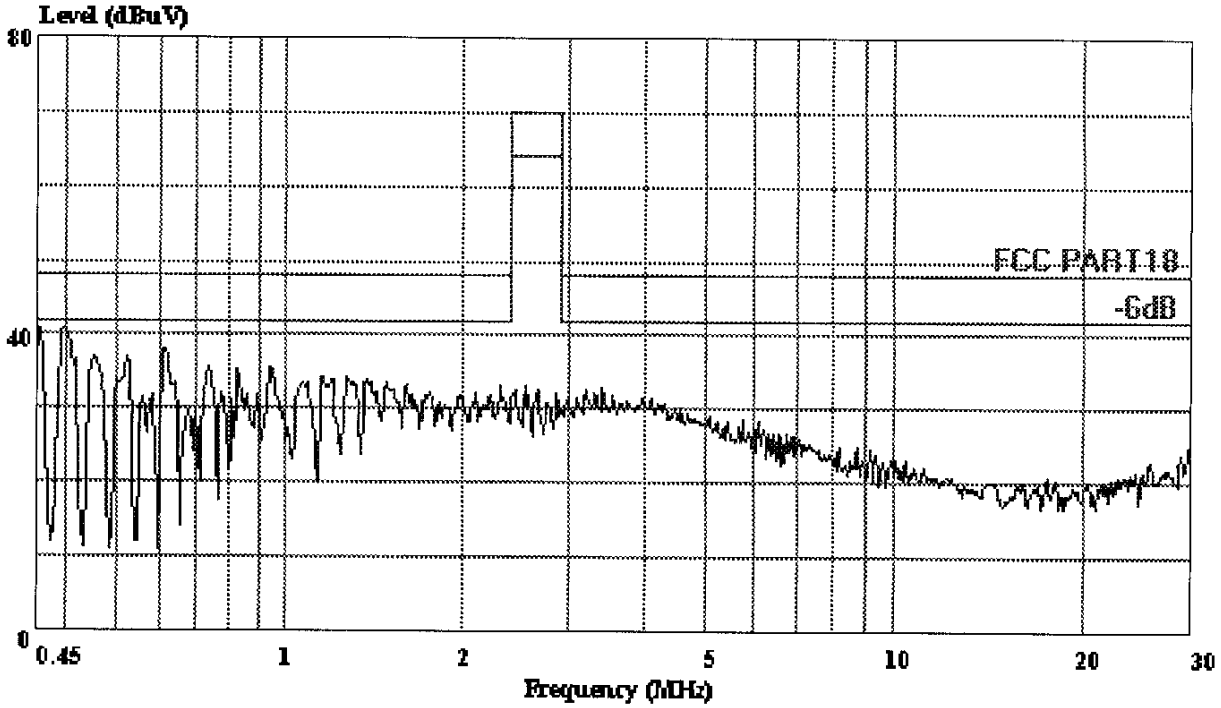

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Condition: FCC PART18
Eut: : Energy Saving Lamp M/N:I61S-13W
Manuf: : Lapin
OP Cond: : On
Operator: : Ling
Test Spec:: 120V/60Hz Va
Comment: : Temp:24'C
: Humi:56%

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Nantou,Guangdong,China
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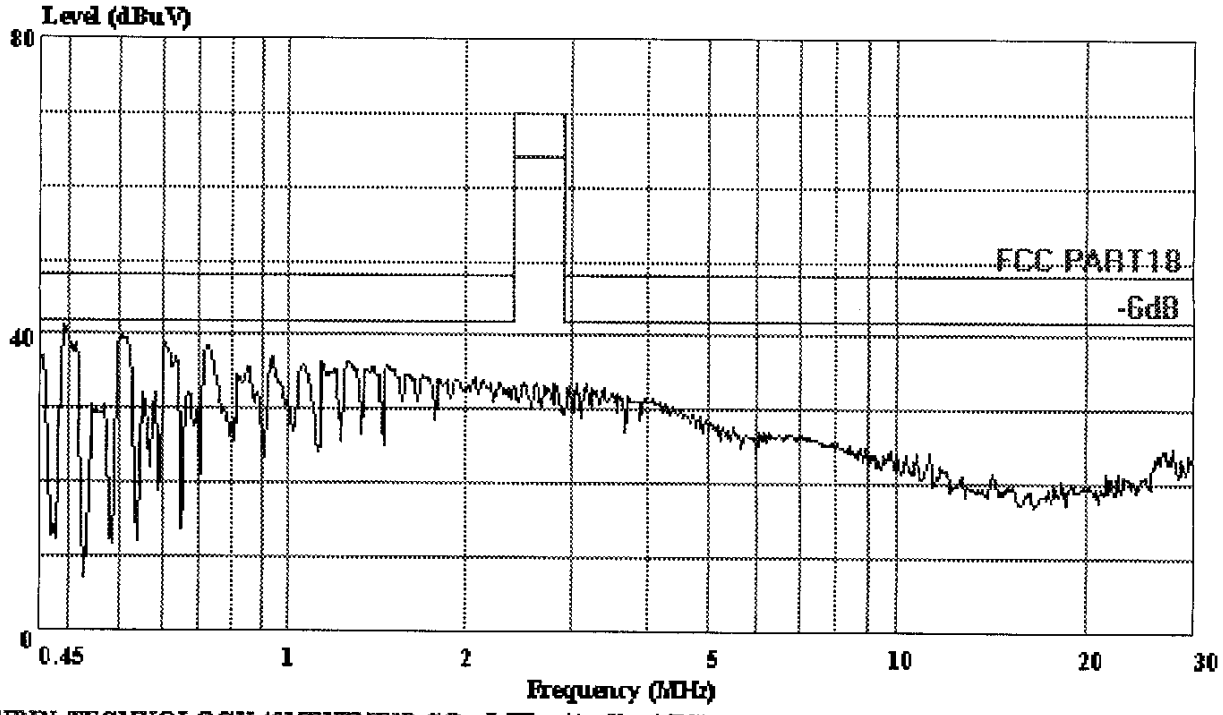

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Condition: FCC PART18
Eut: : Energy Saving Lamp M/N:I61S-13W
Manuf: : Lapin
OP Cond: : On
Operator: : Ling
Test Spec:: 120V/60Hz Vb
Comment: : Temp:24'C
: Humi:56%

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Nantou,Guangdong,China
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Fax:0755-6632877

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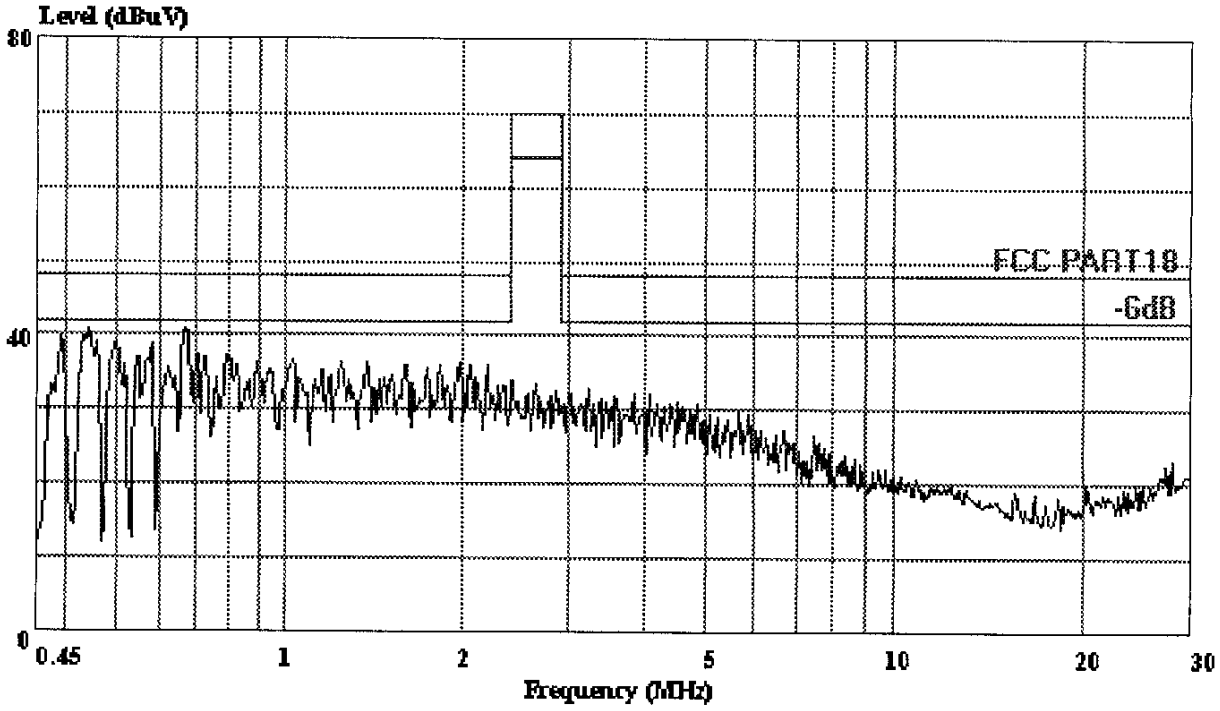

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Manuf: : Lapin
OP Cond: : On
Operator: : Ling
Test Spec:: 120V/60Hz Va
Comment: : Temp:24'C
: Humi:56%

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Shenzhen Science & Ind Park
Nantou,Guangdong,China
Tel:0755-6639495~7
Fax:0755-6632877

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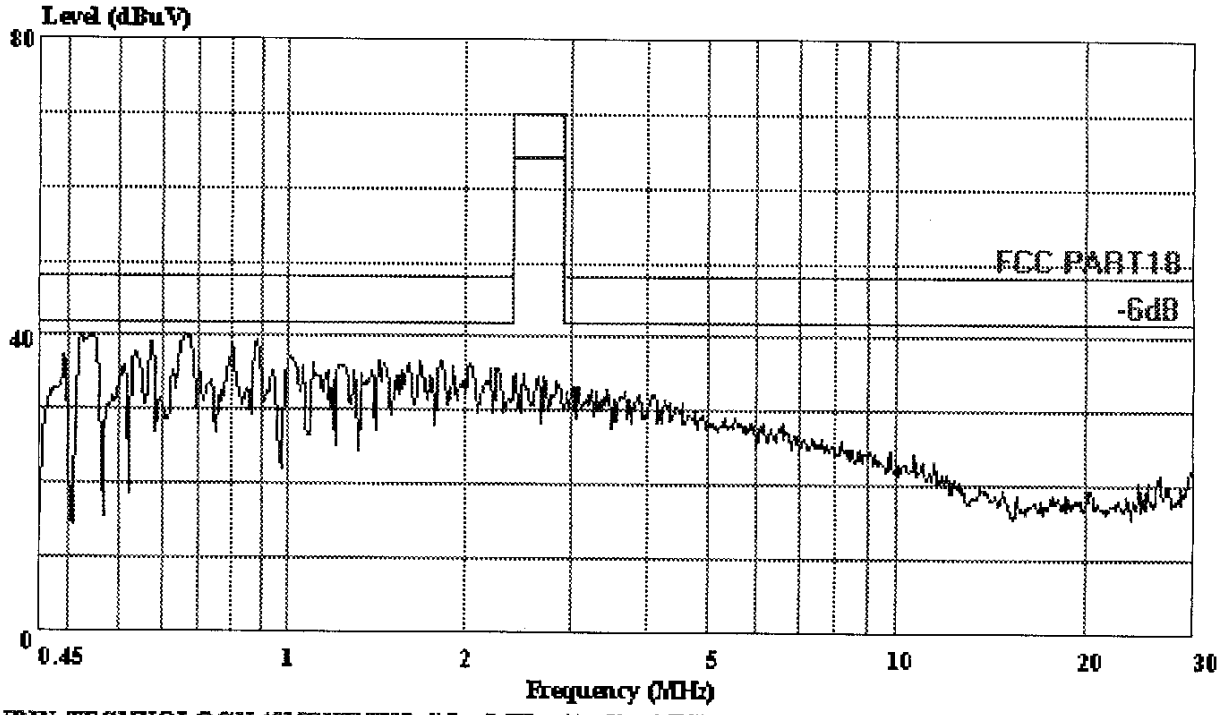

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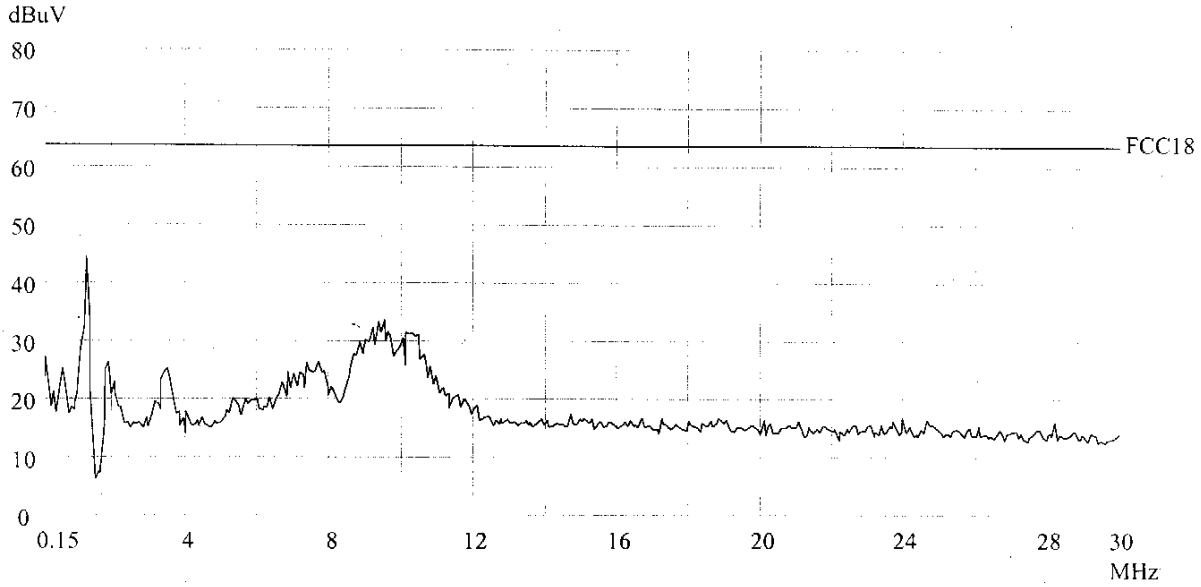
Condition: FCC PART18
Eut: : Energy Saving Lamp M/N:I61S-15W
Manuf: : Lapin
OP Cond: : On
Operator: : Ling
Test Spec:: 120V/60Hz Vb
Comment: : Temp:24'C
: Humi:56%

APPENDIX II

Magnetic Emission Test
FCC PART18

23. Mar 02 10:53

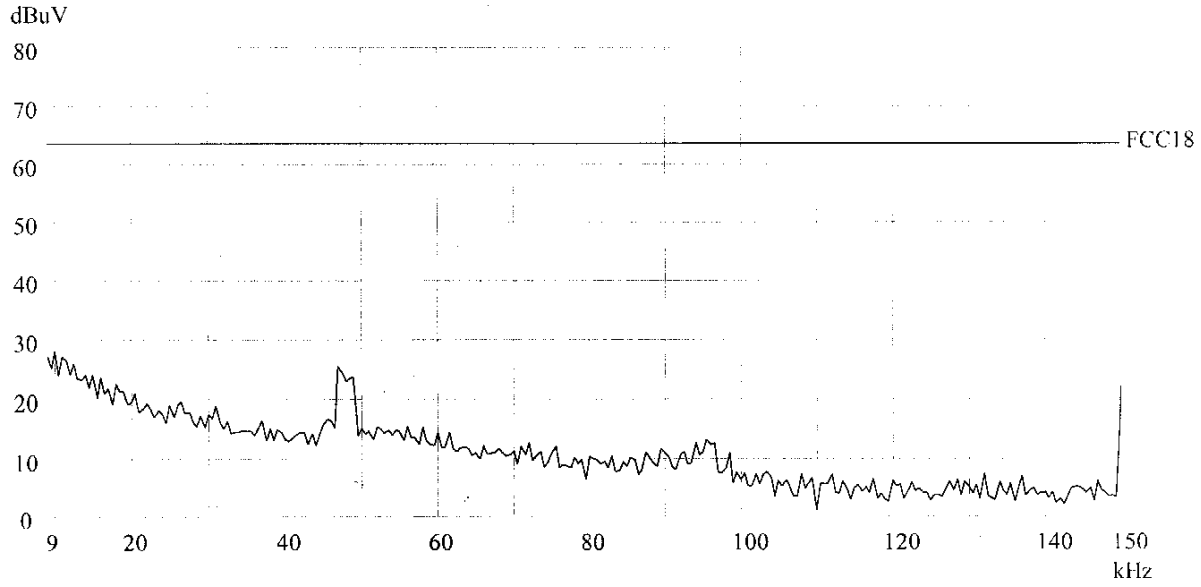
EUT:	Energy Saving Lamp M/N:I61S-7W
Manuf:	Lanin
Op Cond:	ON
Operator:	Ling
Test Spec:	120V/60Hz
Comment:	Tem 22'C
	Humi 55%



Magnetic Emission Test
FCC PART18

23. Mar 02 10:56

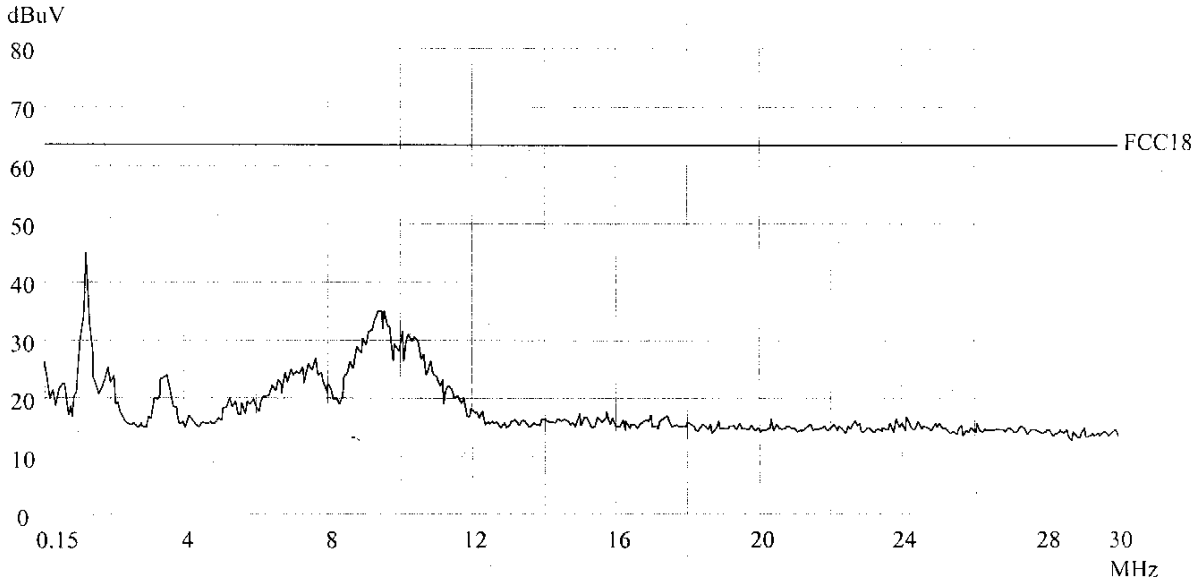
EUT:	Energy Saving Lamp M/N:I61S-7W
Manuf:	Lanin
Op Cond:	ON
Operator:	Ling
Test Spec:	120V/60Hz
Comment:	Tem 22'C
	Humi 55%



Magnetic Emission Test
FCC PART18

23. Mar 02 11:23

EUT: Energy Saving Lamp M/N:I61S-9W
Manuf: Lanin
Op Cond: ON
Operator: Ling
Test Spec: 120V/60Hz
Comment: Tem 22'C
Humi 55%



Magnetic Emission Test
FCC PART18

23. Mar 02 11:26

EUT: Energy Saving Lamp M/N:I61S-9W
Manuf: Lanin
Op Cond: ON
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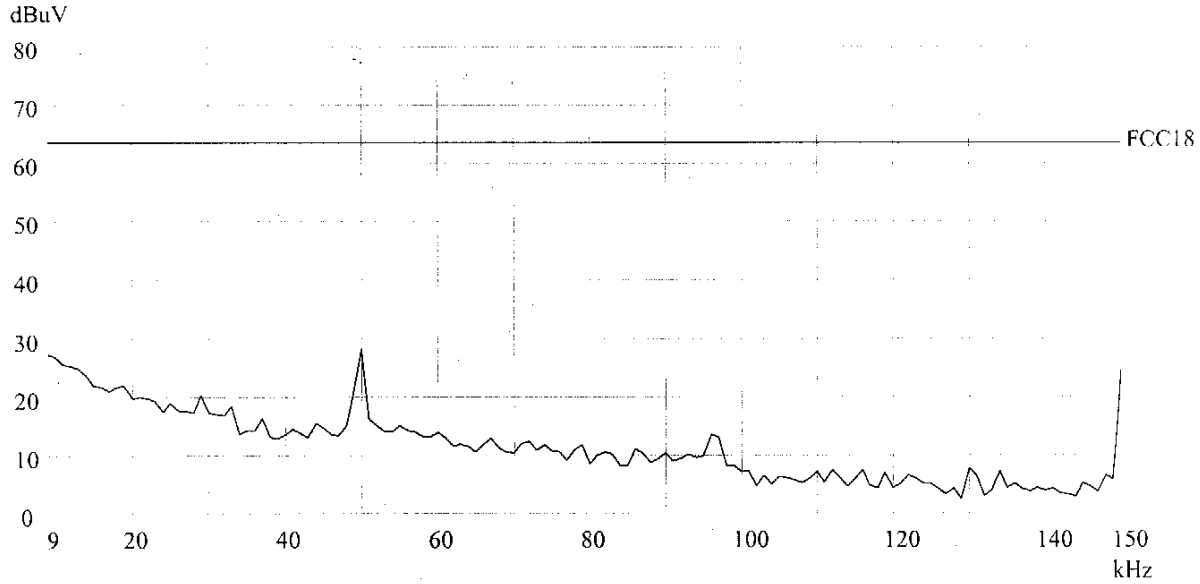
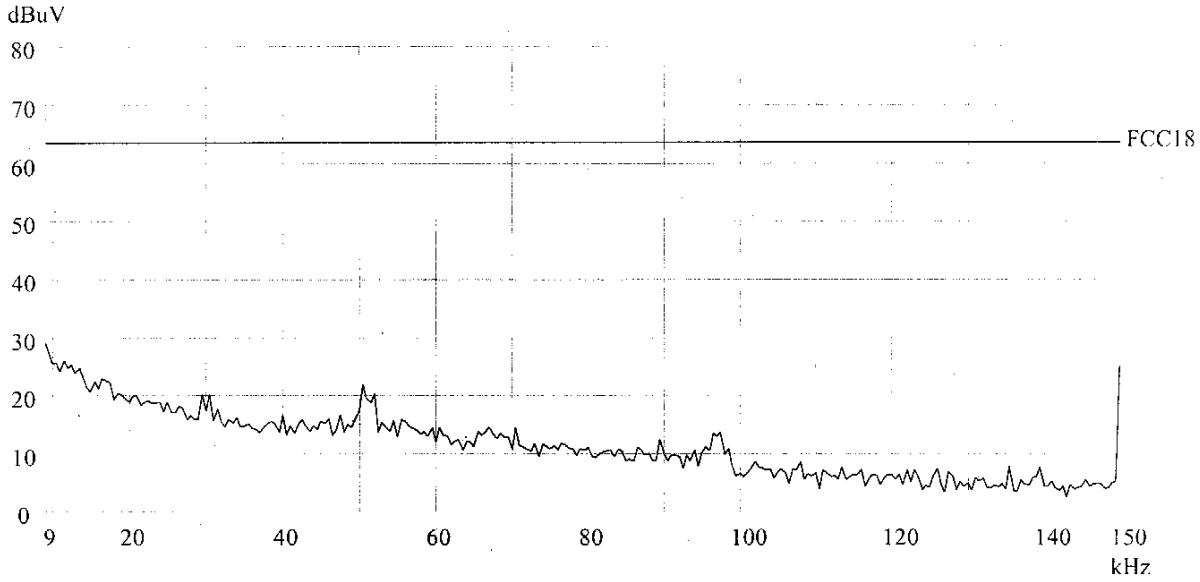
Test Spec: 120V/60Hz
Comment: Tem 22'C
Humi 55%



Magnetic Emission Test
FCC PART18

23. Mar 02 11:00

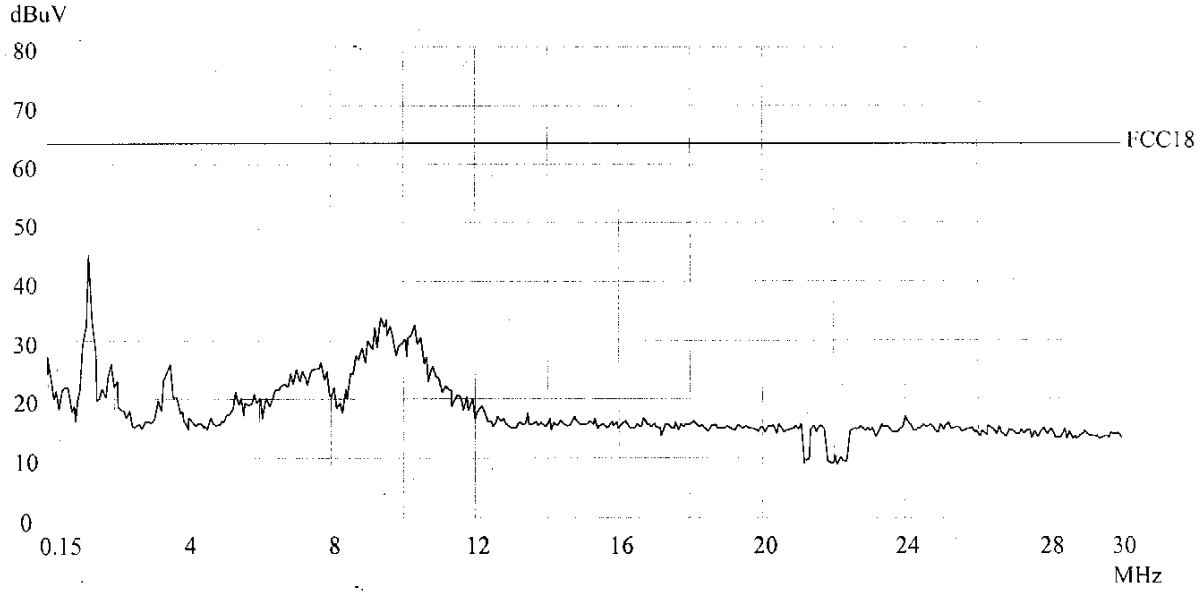
EUT: Energy Saving Lamp M/N:I61S-11W
Manuf: Lanin
Op Cond: ON
Operator: Ling
Test Spec: 120V/60Hz
Comment: Tem 22'C
Humi 55%



Magnetic Emission Test
FCC PART18

23. Mar 02 11:03

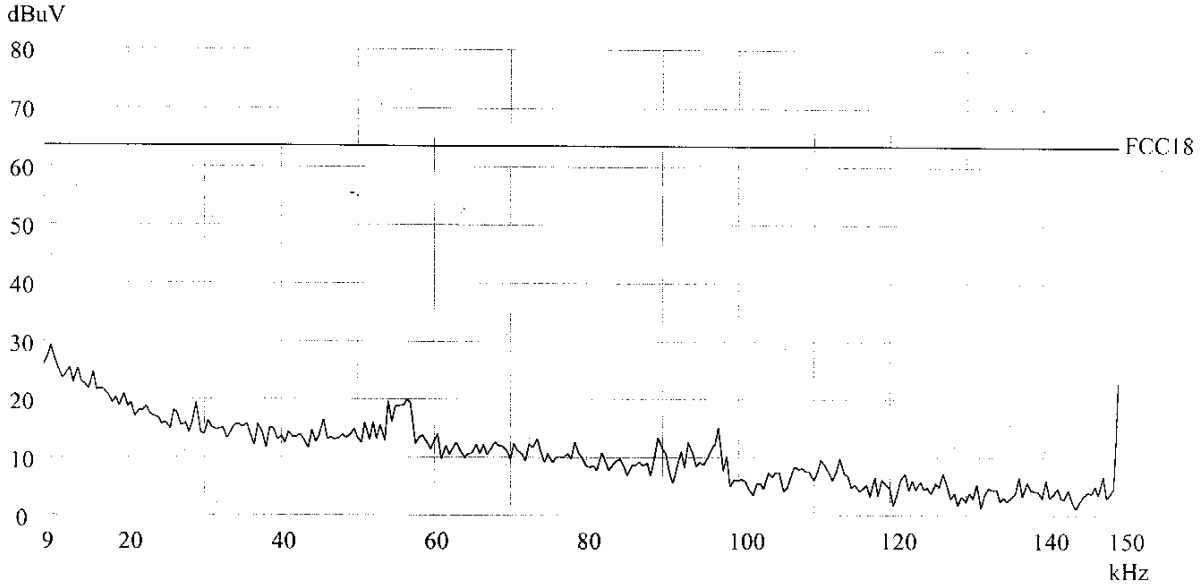
EUT: Energy Saving Lamp M/N:I61S-11W
Manuf: Lanin
Op Cond: ON
Operator: Ling
Test Spec: 120V/60Hz
Comment: Tem 22'C
Humi 55%



Magnetic Emission Test
FCC PART18

23. Mar 02 11:16

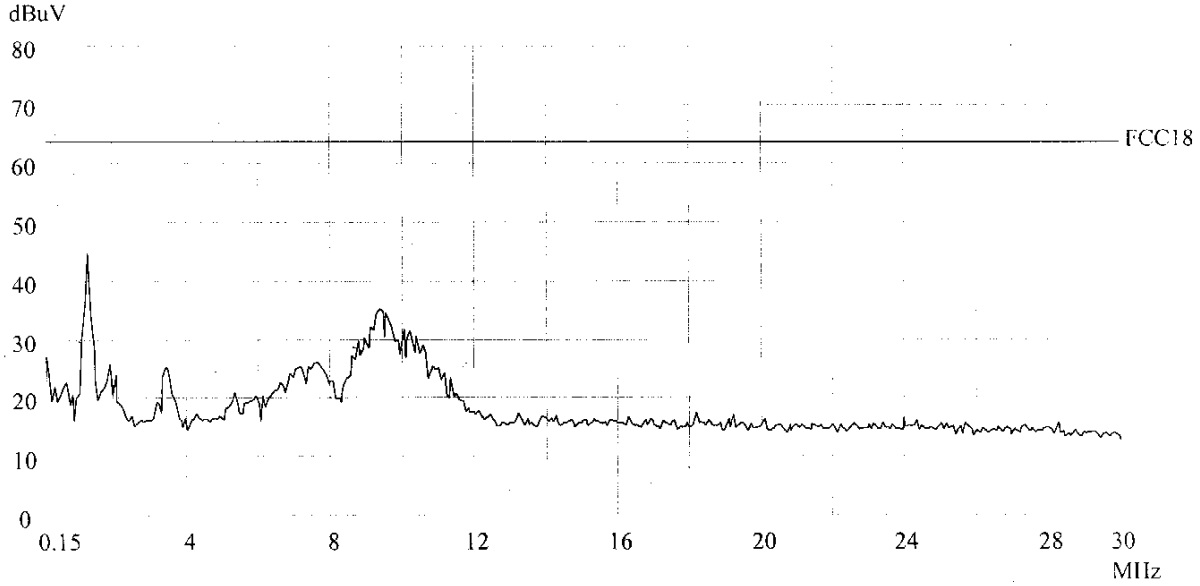
EUT:	Energy Saving Lamp M/N:I61S-13W
Manuf:	Lanin
Op Cond:	ON
Operator:	Ling
Test Spec:	120V/60Hz
Comment:	Tem 22'C
	Humi 55%



Magnetic Emission Test
FCC PART18

23. Mar 02 11:18

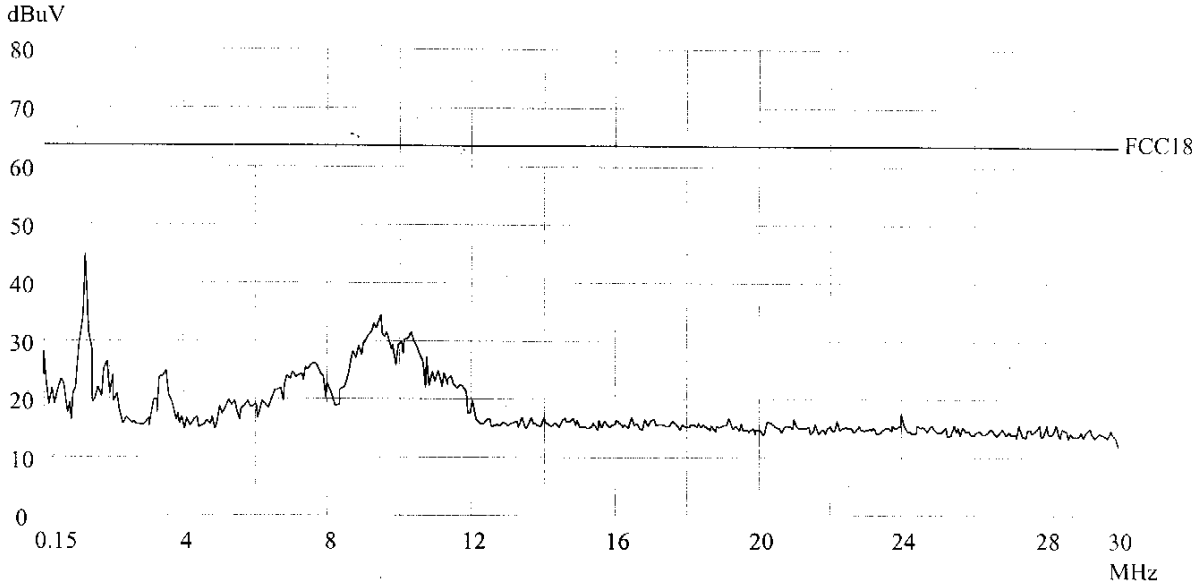
EUT:	Energy Saving Lamp M/N:I61S-13W
Manuf:	Lanin
Op Cond:	ON
Operator:	Ling
Test Spec:	120V/60Hz
Comment:	Tem 22'C
	Humi 55%



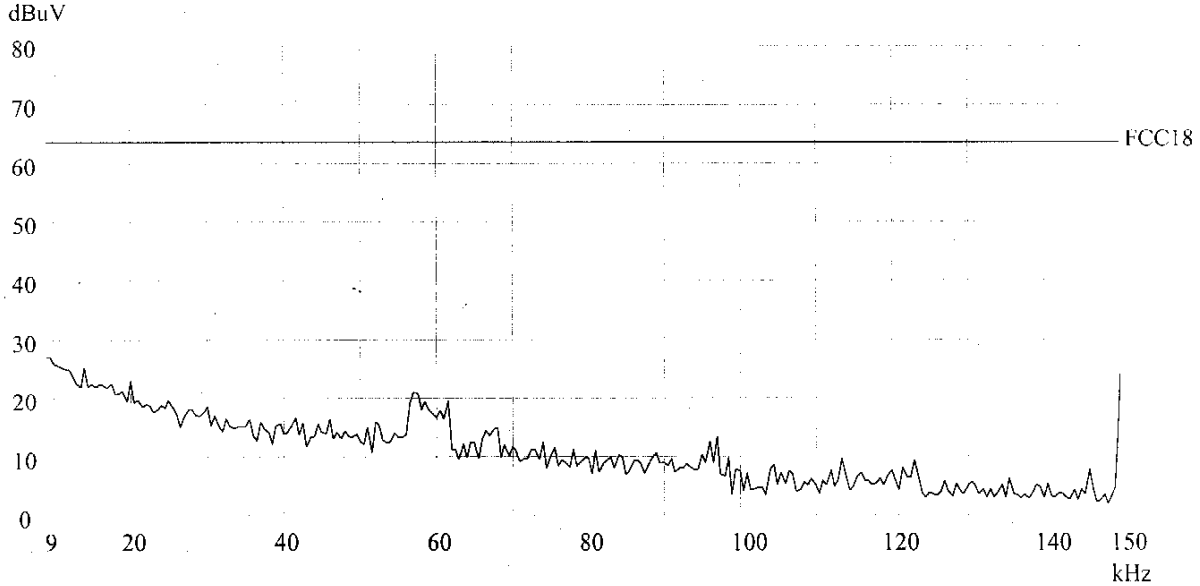
Magnetic Emission Test
FCC PART18

23. Mar 02 11:09

EUT:	Energy Saving Lamp M/N:I61S-15W
Manuf:	Lanin
Op Cond:	ON
Operator:	Ling
Test Spec:	120V/60Hz
Comment:	Tem 22'C
	Humi 55%



Magnetic Emission Test
FCC PART18

23. Mar 02 11:12

EUT:	Energy Saving Lamp M/N:I61S-15W
Manuf:	Lanin
Op Cond:	ON
Operator:	Ling
Test Spec:	120V/60Hz
Comment:	Tem 22'C
	Humi 55%