

FCC PART 18
MEASUREMENT AND TEST REPORT

FOR

Amoilite Electronic Co.

Tuku, Hongwen, Xiamen, China

FCC ID: QO3AM100

August 20, 2002

This Report Concerns: ☒ Original Report	Equipment Type: Energy saving lights
Test Engineer: Davil Wang	
Report Number: RSZ02071102-5	
Test Date: July 11, 2002	
Certified By: _____	
Prepared By: Bay Area Compliance Laboratory Corporation 230 Commercial Street Sunnyvale, CA 94085 Tel: (408) 732-9162 Fax: (408) 732-9164	

Note: The test report is specially limited to the use of the above client company and the product model. It may not be duplicated without prior written consent of Bay Area Compliance Laboratory Corporation. This report **must not** be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government

TABLE OF CONTENTS

1 - GENERAL INFORMATION	3
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	3
1.2 OBJECTIVE	3
1.3 TEST METHODOLOGY	3
1.4 TEST FACILITY	3
1.5 TEST EQUIPMENT LIST AND DETAILS.....	4
1.6 EQUIPMENT UNDER TEST (EUT) GENERAL DESCRIPTION	4
2 - SYSTEM TEST CONFIGURATION	5
2.1 JUSTIFICATION	5
2.2 EUT EXERCISE PROGRAM.....	5
2.3 SCHEMATICS/BLOCK DIAGRAM	5
2.4 EQUIPMENT MODIFICATIONS.....	5
2.5 CONFIGURATION OF TEST SYSTEM	6
2.6 TEST SETUP BLOCK DIAGRAM	6
3 - CONDUCTED EMISSIONS TEST DATA.....	7
3.1 MEASUREMENT UNCERTAINTY	7
3.2 EUT SETUP	7
3.3 EMI RECEIVER SETUP	7
3.4 TEST PROCEDURE	7
3.5 SUMMARY OF TEST RESULTS.....	8
3.6 CONDUCTED EMISSIONS TEST DATA.....	8

1 - GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

The *Amoilite Electronic Co.*, Model: AM-111, 131, 151, 181, 201, 241 or the "EUT" as referred to in this report is a Energy saving lights.

***Above products' Nominal Operation Frequency as follows:**

Model	Nominal Operation Frequency	Power Consumption
AM-181, 241	44KHz	18W, 24W
AM-111, 131, 151, 201,	48KHz	11W, 13W, 15W, 20W

1.2 Objective

This Part 18 report is prepared on behalf of *Amoilite Electronic Co.* in accordance with Part 2, Subpart J, and Part 18, Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to demonstrate compliance with FCC Part 18 and CISPR 11 Consumer Equipment limits for consumer equipment test condition.

1.3 Test Methodology

All measurements contained in this report are conducted with FCC Measurement Procedure MP-5, technical requirements for Methods of Measurement of Radio-Noise Emissions from FCC Part 18 Consumer Equipment.

All radiated and conducted emissions measurements are performed at Bay Area Compliance Laboratory Corp. The radiated tests are performed at an antenna-to-EUT distance of 3 meters.

1.4 Test Facility

The Open Area Test site used by Sichuan Bay Area Compliance Laboratory Corporation to collect radiated and conducted emission measurement data is located in the back parking lot of the building at 230 Commercial Street, Sunnyvale, California, USA.

Test site at Sichuan Bay Area Compliance Laboratory Corporation has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2000 and FCC MP-5.

The Federal Communications Commission and Voluntary Control Council for Interference have the reports on file and listed under FCC file 31040/SIT 1300F2 and VCCI Registration No.: C-1298 and R-1234. The test site has been approved by the FCC and VCCI for public use and listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratory Corporation is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (NVLAP). The scope of the accreditation covers the FCC Method - 47 CFR Part 15 - Digital Devices, IEC/CISPR 22: 1998, and AS/NZS 3548: Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment test methods under NVLAP Lab Code 200167-0.

1.5 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Due Date
R/S	Spectrum Analyzer	FSEM	849720/019	08/05/2003
R/S	Receiver	ESCS30	N/A	08/05/2003
HP	Amplifier	8447D	2944A09795	08/05/2003
ETS	Log Periodic Antenna	3146	9603-4421	09/05/2003
ETS	Biconical Antenna	3110B	3360	08/05/2003
Solar Electronics	LISN	TYPE 8012-50-R-24-BNC	21162	09/05/2003
Solar Electronics	LISN	TYPE 8012-50-R-25-BNC	21163	10/05/2003

1.6 Equipment under Test (EUT) General Description

Manufacturer	Description	Model	Serial Number	FCC ID
Amoilite Electronic Co.	Energy saving lights	AM-111, 131, 151, 181, 201, 241	None	DOC

2 - SYSTEM TEST CONFIGURATION

2.1 Justification

The EUT is configured for testing in a typical fashion (as normally used by a typical user).

2.2 EUT Exercise Program

The sequence used is as follows:

The EUT will work when turned on after being connected to power supply.

2.3 Schematics/Block Diagram

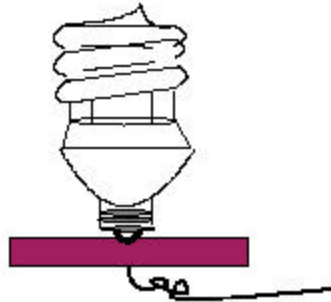
The EUT's block diagram is presented in Appendix D.

2.4 Equipment Modifications

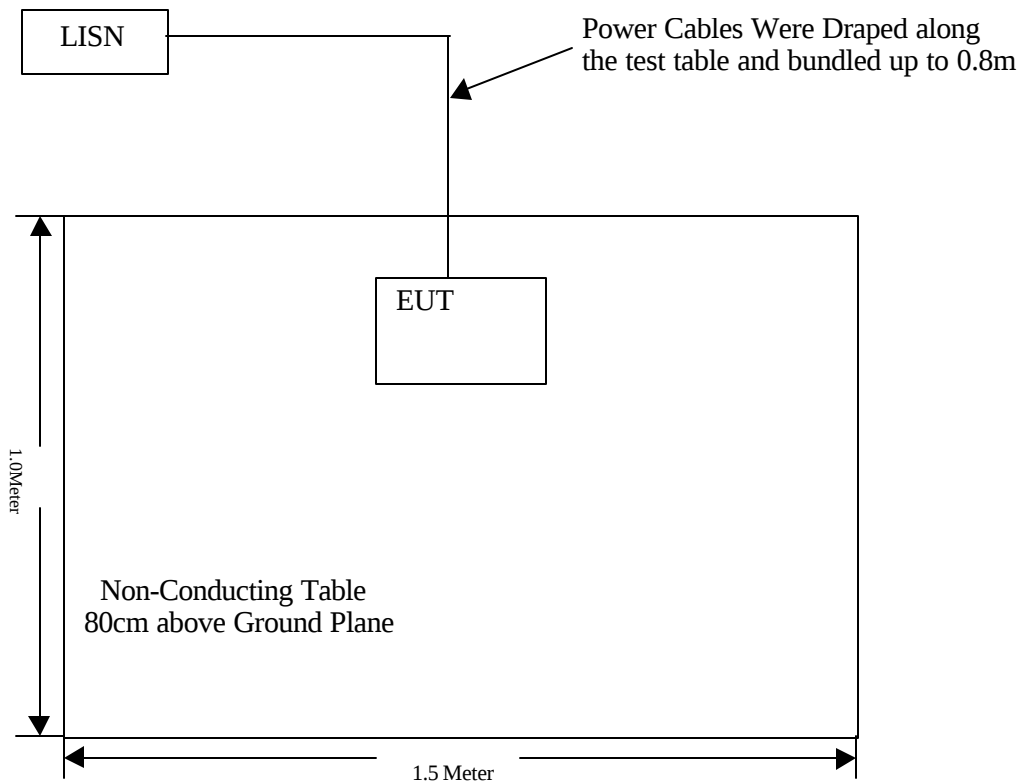
No modifications are made by BACL to ensure EUT is compliant with applicable limits.

2.5 Configuration of Test System

EUT:



2.6 Test Setup Block Diagram



3 - CONDUCTED EMISSIONS TEST DATA

3.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMI. The factors contributing to uncertainties are EMI receiver, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMI Measurements, the best estimate of the uncertainty of any conducted emissions measurement at BACL is ± 2.4 dB.

3.2 EUT Setup

The measurement is performed at the **Open Area Test Site**, using the same setup per FCC MP-5 measurement procedure.

The EUT was placed on the center back of the test table connected to a 120 VAC / 60 Hz power source.. The rear of the host system and peripherals were placed flushed with the rear of the tabletop.

Input / Output cables were draped over edge of the test table and bundle when necessary.

3.3 EMI Receiver Setup

The EMI receiver is configured during the conduction test is as follows:

Start Frequency	450 kHz
Stop Frequency	30 MHz
Sweep Speed.....	Auto
IF Bandwidth.....	10 kHz
Video Bandwidth	10 kHz
Quasi-Peak Adapter Bandwidth.....	9 kHz
Quasi-Peak Adapter Mode.....	Normal

3.4 Test Procedure

During the conducted emission test, the power cord of the EUT is connected to the auxiliary outlet of the LISN.

Maximizing procedure is performed on the six (6) highest emissions to ensure EUT compliance using all installation combination. All data is recorded in the peak detection mode. Quasi-peak readings are only performed when an emission is found to be marginal (within -4 dB μ V of specified limitations). Quasi-peak readings are distinguished with a "Qp".

Final test data for this test configuration is recorded in the table listed under section 3.6 of this report.

3.5 Summary of Test Results

According to the data in section 3.6, the EUT, complied with the FCC 18 Conducted margin for a Consumer Equipment limits and these test results is deemed satisfactory evidence, with the *worst* margin reading of:

-0.95dBmV at 0.50MHz in the Line Mode with the 120VAC/ 60Hz Power Supply for AM-111 Model

-1.10dBmV at 0.49MHz in the Line Mode with the 120VAC/ 60Hz Power Supply for AM-131 Model

-1.11dBmV at 0.51MHz in the Neutral Mode with the 120VAC/ 60Hz Power Supply for AM-151 Model

-1.10dBmV at 0.54MHz in the Neutral Mode with the 120VAC/ 60Hz Power Supply for AM-181 Model

-1.05dBmV at 0.54MHz in the Neutral Mode with the 120VAC/ 60Hz Power Supply for AM-201 Model

-1.20dBmV at 0.45MHz in the Neutral Mode with the 120VAC/ 60Hz Power Supply for AM-241 Model

3.6 Conducted Emissions Test Data

3.6.1 Conducted Test, 0.45-30MHz. For AM-111 Model

LINE CONDUCTED EMISSIONS				FCC18 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	Qp/Ave/Peak	Line/Neutral	dBμV	dB
0.50	47.05	Qp	Line	48.00	-0.95
0.51	46.90	Qp	Neutral	48.00	-1.10
16.37	19.80	Qp	Neutral	48.00	-28.20
17.24	19.00	Qp	Line	48.00	-29.00
9.49	18.50	Qp	Line	48.00	-29.50
9.49	17.50	Qp	Neutral	48.00	-30.50

3.6.2 Conducted Test, 0.45-30MHz. For AM-131 Model

LINE CONDUCTED EMISSIONS				FCC18 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	Qp/Ave/Peak	Line/Neutral	dBμV	dB
0.49	46.90	Qp	Line	48.00	-1.10
0.50	46.50	Qp	Neutral	48.00	-1.50
16.37	20.20	Qp	Neutral	48.00	-27.80
17.24	19.00	Qp	Line	48.00	-29.00
9.49	18.50	Qp	Line	48.00	-29.50
9.49	17.50	Qp	Neutral	48.00	-30.50

3.6.3 Conducted Test, 0.45-30MHz.For AM-151 Model

LINE CONDUCTED EMISSIONS				FCC18 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	Qp/Ave/Peak	Line/Neutral	dBμV	dB
0.51	46.89	Qp	Neutral	48.00	-1.11
0.50	46.80	Qp	Line	48.00	-1.20
16.47	19.80	Qp	Neutral	48.00	-28.20
17.24	19.00	Qp	Line	48.00	-29.00
9.49	18.50	Qp	Line	48.00	-29.50
9.49	17.50	Qp	Neutral	48.00	-30.50

3.6.4 Conducted Test, 0.45-30MHz.For AM-181 Model

LINE CONDUCTED EMISSIONS				FCC18 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	Qp/Ave/Peak	Line/Neutral	dBμV	dB
0.54	46.90	Qp	Neutral	48.00	-1.10
0.49	46.80	Qp	Line	48.00	-1.20
16.37	20.20	Qp	Neutral	48.00	-27.80
17.24	19.00	Qp	Line	48.00	-29.00
9.49	18.50	Qp	Line	48.00	-29.50
9.49	17.50	Qp	Neutral	48.00	-30.50

3.6.5 Conducted Test, 0.45-30MHz.For AM-201 Model

LINE CONDUCTED EMISSIONS				FCC18 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	Qp/Ave/Peak	Line/Neutral	dBμV	dB
0.54	46.95	Qp	Neutral	48.00	-1.05
0.49	46.85	Qp	Line	48.00	-1.15
16.37	21.20	Qp	Neutral	48.00	-26.80
9.49	19.50	Qp	Line	48.00	-28.50
17.24	19.00	Qp	Line	48.00	-29.00
9.49	17.50	Qp	Neutral	48.00	-30.50

3.6.6 Conducted Test, 0.45-30MHz.For AM-241 Model

LINE CONDUCTED EMISSIONS				FCC18 CLASS B	
Frequency	Amplitude	Detector	Phase	Limit	Margin
MHz	dBμV	Qp/Ave/Peak	Line/Neutral	dBμV	dB
0.45	46.80	Qp	Neutral	48.00	-1.20
0.47	46.70	Qp	Line	48.00	-1.30
16.37	20.20	Qp	Neutral	48.00	-27.80
17.24	19.00	Qp	Line	48.00	-29.00
9.49	18.50	Qp	Line	48.00	-29.50
9.49	17.50	Qp	Neutral	48.00	-30.50

3.6.7 Plot of Conducted Emissions Test Data

The plot(s) of conducted emission test is presented in the following page as reference.

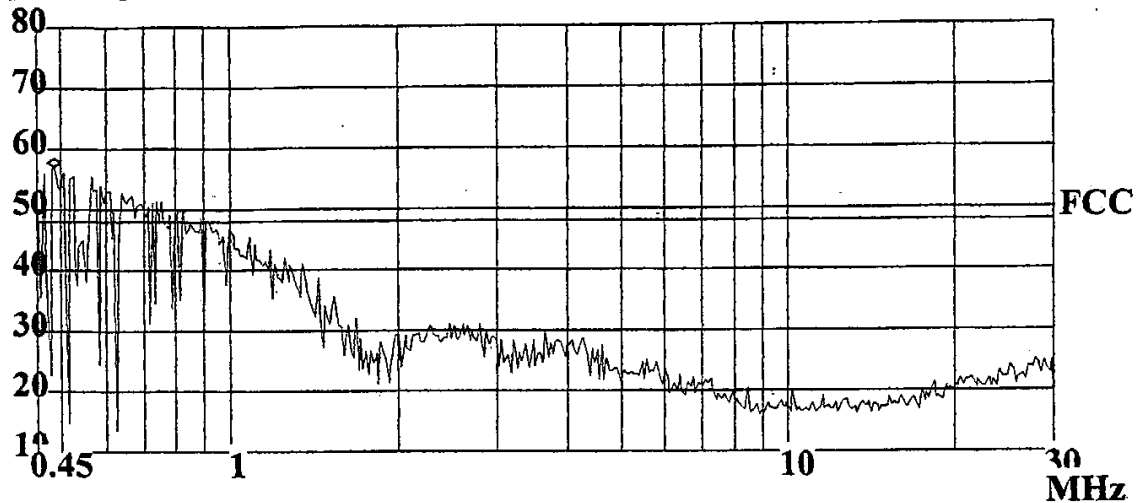
For Am-111 Model:

Conducted Disturbance

EUT :lamp

Op Cond:ON

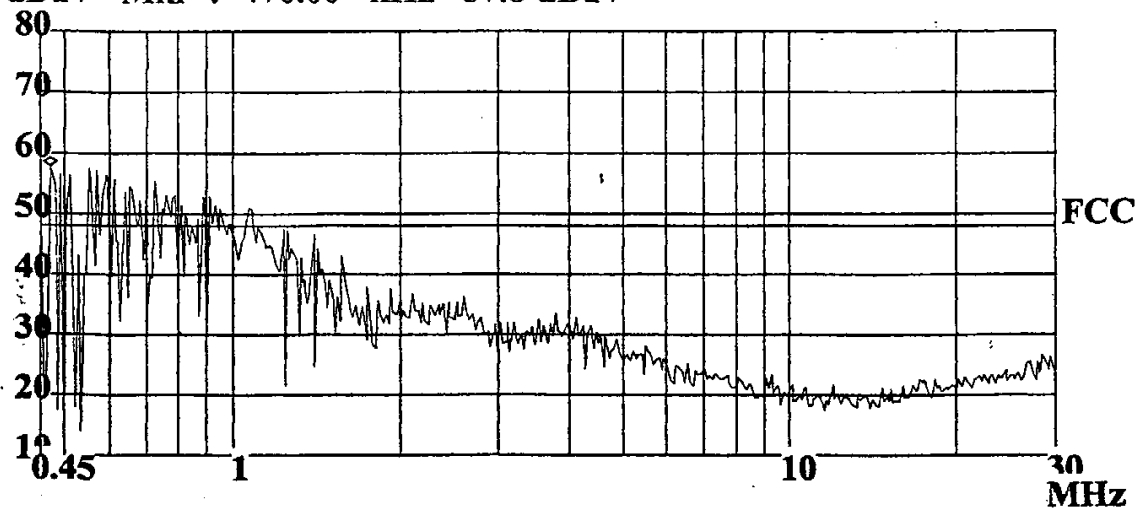
Test Spec :AC 120V 60Hz

dBuV Mkr : 486.00 kHz 57.0 dBuV**Conducted Disturbance**

EUT :lamp

Op Cond:ON

Test Spec :AC 120V 60Hz

dBuV Mkr : 470.00 kHz 57.8 dBuV

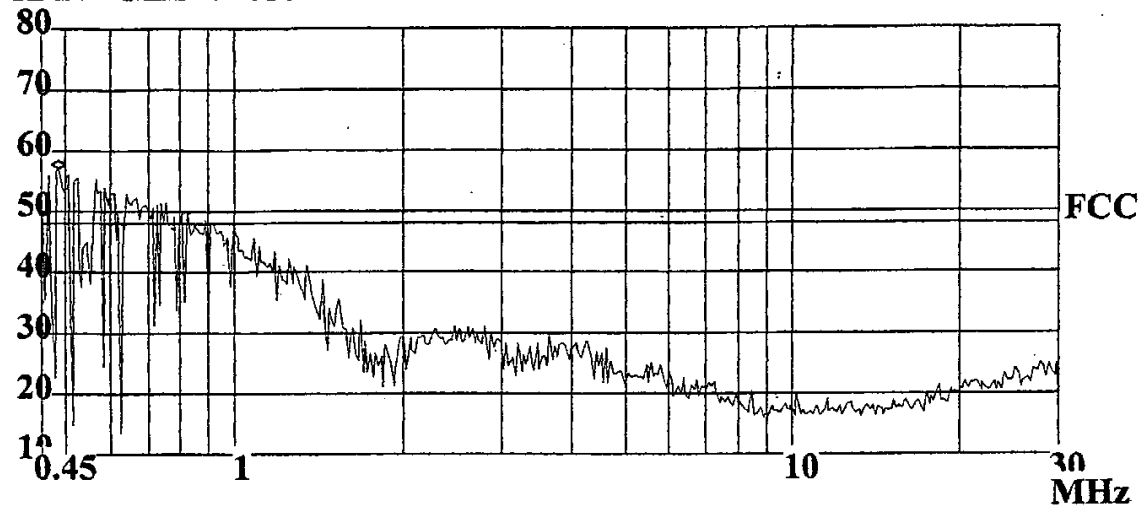
For AM-131 Model:

Conducted Disturbance

EUT :lamp

Op Cond:ON

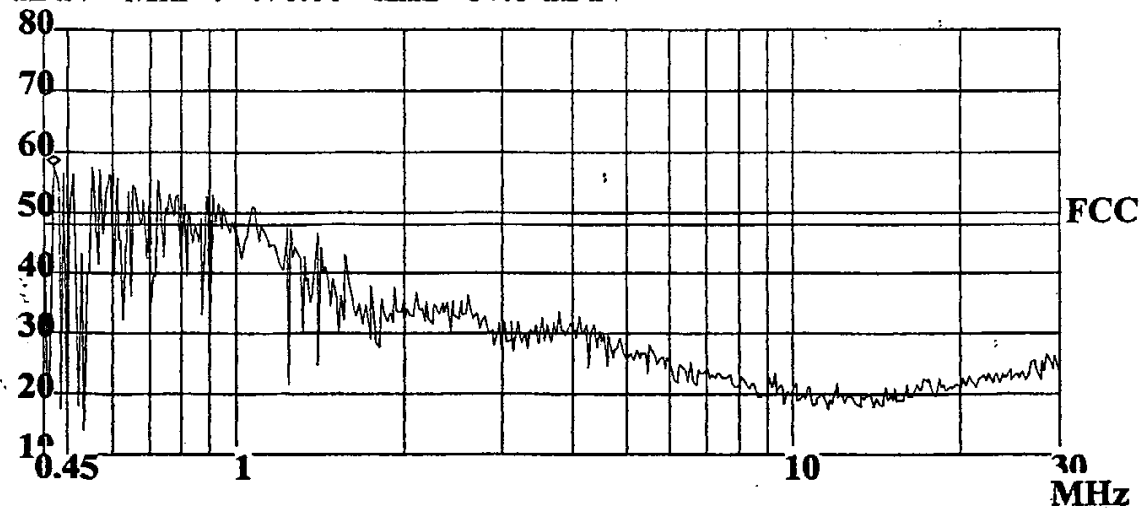
Test Spec :AC 120V 60Hz

dBuV Mkr : 486.00 kHz 57.0 dBuV**Conducted Disturbance**

EUT :lamp

Op Cond:ON

Test Spec :AC 120V 60Hz

dBuV Mkr : 470.00 kHz 57.8 dBuV

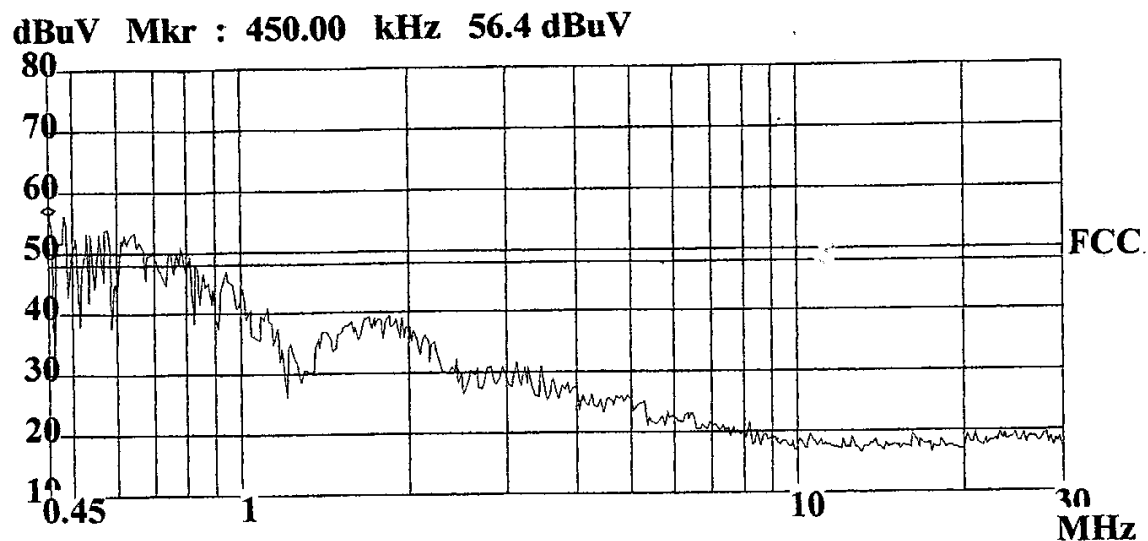
For AM-151 Model:

Conducted Disturbance

EUT :lamp

Op Cond:ON

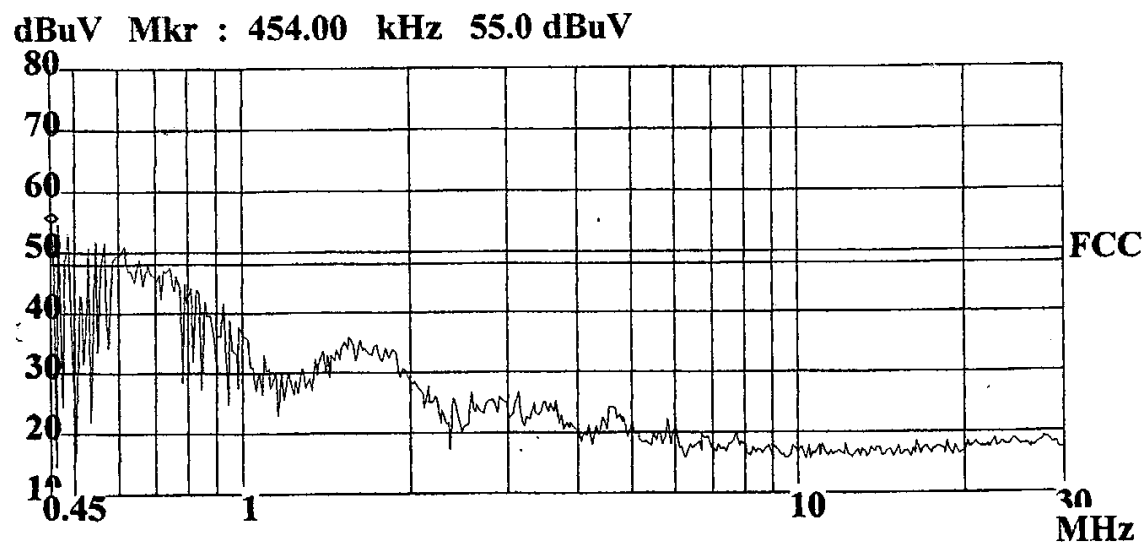
Test Spec :AC 120V 60Hz

**Conducted Disturbance**

EUT :lamp

Op Cond:ON

Test Spec :AC 120V 60Hz



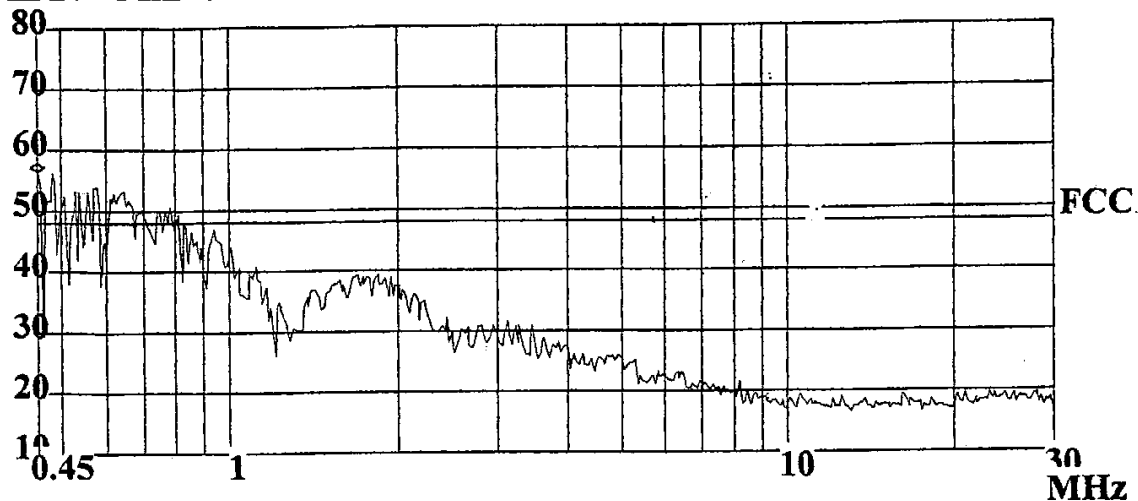
For AM-181 Model:

Conducted Disturbance

EUT :lamp

Op Cond:ON

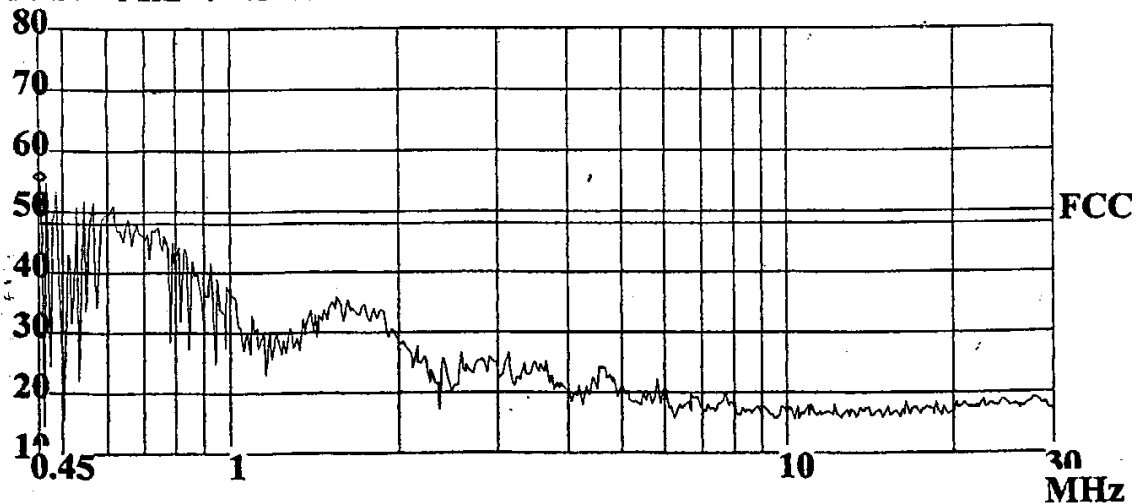
Test Spec :AC 120V 60Hz

dBuV Mkr : 450.00 kHz 56.4 dBuV**Conducted Disturbance**

EUT :lamp

Op Cond:ON

Test Spec :AC 120V 60Hz

dBuV Mkr : 454.00 kHz 55.0 dBuV

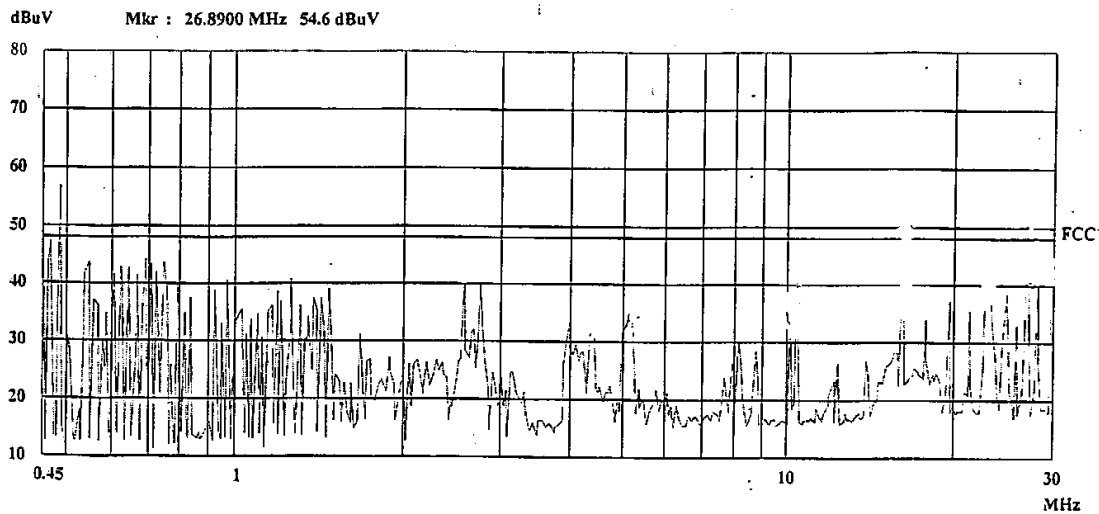
For AM-201 Model:

Conducted Disturbance

EUT: lamp

Op Cond: ON

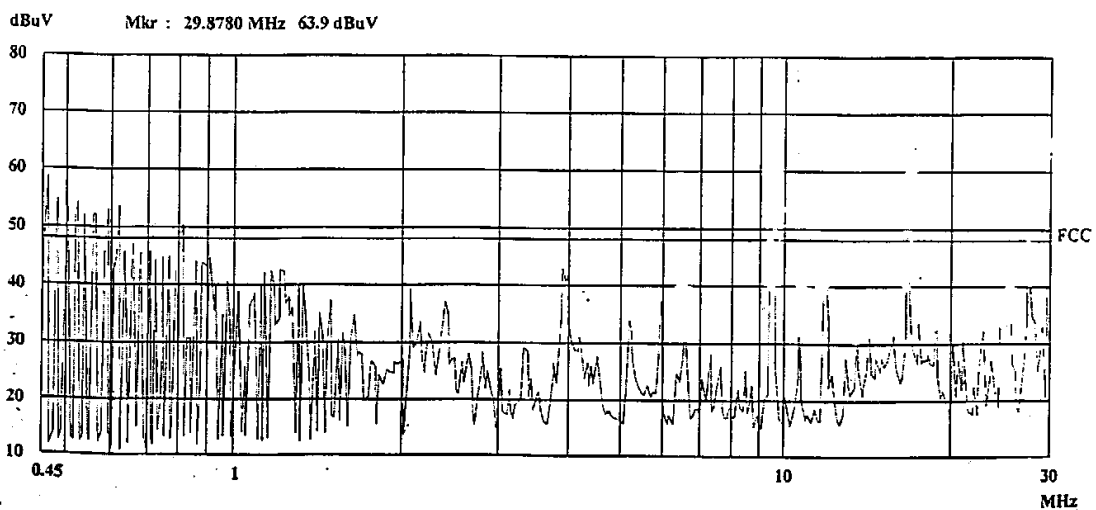
Test Spec :AC 120V 60Hz

**Conducted Disturbance**

EUT: lamp

Op Cond: ON

Test Spec :AC 120V 60Hz



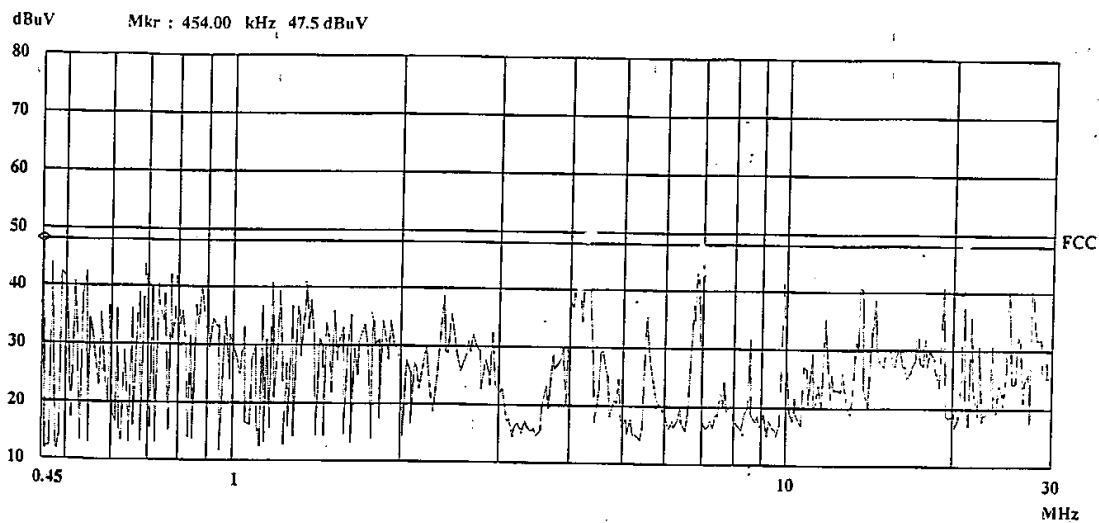
For AM-241 Model:

Conducted Disturbance

EUT: lamp

Op Cond: ON

Test Spec :AC 120V 60Hz

**Conducted Disturbance**

EUT: lamp

Op Cond: ON

Test Spec :AC 120V 60Hz

