

Shunde Corso Electronics Co., Ltd.

Energy Saving Lamp

Model Number: CMTL-25W

Prepared for : Shunde Corso Electronics Co., Ltd.
Damenqu Daliang Town,
Shunde Guangdong China

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
No. 6 Ke Feng Rd., 52 Block,
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Report Number : ACS-F04070
Date of Test : Mar.11~13, 2004
Date of Report : Mar.17, 2004

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TEST REPORT CERTIFICATION

Applicant : Shunde Corso Electronics Co., Ltd.
Manufacturer : Shunde Corso Electronics Co., Ltd.
EUT Description : Energy Saving Lamp
(A) MODEL NO. : CMTL-25W
(B) SERIAL NO. : F2004031702
(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 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 : Mar.11~13, 2004

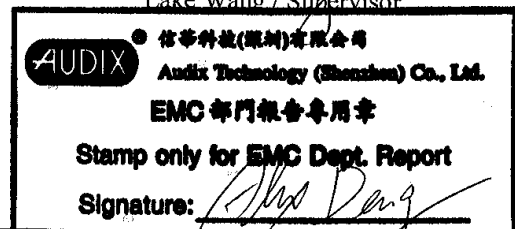
Jane Dai

Jane Dai / Assistant

Prepared by :

Lake Wang
Lake Wang / Supervisor

Reviewer :



Alex Deng / Assistant Manager

Approved & Authorized Signer :

Name of the Representative of the Responsible Party :

Signature :

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Energy Saving Lamp
Model Number	:	CMTL-25W
Applicant	:	Shunde Corso Electronics Co., Ltd. Damenqu Daliang Town, Shunde Guangdong China
Manufacturer	:	Shunde Corso Electronics Co., Ltd. Damenqu Daliang Town, Shunde Guangdong China
Power Cord	:	Unshielded, Detachable 1.6m
Date of Test	:	Mar.11~13, 2004

1.2. Test Facility

Site Description

3m Anechoic Chamber : Certificated by FCC, USA
Aug. 24, 2003

EMC Lab. : Certificated by DATech, German
Feb. 02, 2004

Certificated by NVLAP, USA
NVLAP Code: 200372-0
Mar. 31, 2003

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. Measurement Uncertainty

Conduction Uncertainty = $\pm 2.66\text{dB}$

Radiation Uncertainty = $\pm 4.26\text{dB}$

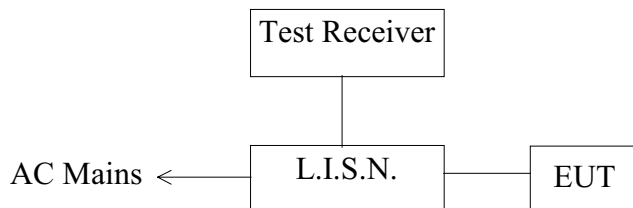
2. POWER LINE CONDUCTED EMISSION TEST

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	ESHS10	838693/001	May.31, 03	1 Year
2.	L.I.S.N. #1	Kyoritsu	KNW-407	8-541-4	May.31, 03	1 Year
3.	L.I.S.N. #2	R&S	ESH2-Z5	834066/011	May.31, 03	1 Year
4.	Terminator	EMCO	50Ω	No. 1	May.31, 03	1 Year
5.	Terminator	EMCO	50Ω	No. 2	May.31, 03	1 Year
6.	RF Cable	FUJIKURA	RG-55/U	LISN Cable	Feb. 20, 04	1/2 Year
7.	Coaxial Switch	Anritsu	MP59B	M55367	Nov.30, 03	1/2 Year
8.	PC	N/A	586ATXS	N/A	N/A	N/A
9.	Printer	HP	Laserjet2100	SGGJ092351	N/A	N/A

2.2. Block Diagram of Test Setup



(EUT: Energy Saving Lamp)

2.3. Power Line Conducted Emission Test Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150KHz ~ 500KHz	66 ~ 56*	56 ~ 46*
500KHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

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 : CMTL-25W
Serial Number : F2004031702
Manufacturer : Shunde Corso Electronics Co., Ltd.

2.5. Operating Condition of EUT

2.5.1. Setup the EUT and simulator as shown on 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 C63.4-2001 on Conducted Emission Test.

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

The frequency range from 150KHz 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 150KHz to 30 MHz is investigated.

All emissions not reported below are too low against the prescribed limits.

Date of Test :	Mar.13, 2004	Temperature :	24°C
EUT :	Energy Saving Lamp	Humidity :	54%
Model No. :	CMTL-25W	Test Mode :	ON
Test Engineer :	Seco		

Frequency (MHz)	Reading (dBμV)				Limit (dBμV)	
	VA		VB		Quasi-Peak	Average
	Quasi-Peak	Average	Quasi-Peak	Average		
0.205	45.84	41.84	*	*	63.40	53.40
0.228	*	*	46.20	38.20	62.52	52.52
0.277	48.61	40.61	*	*	60.90	50.90
0.320	*	*	48.55	40.55	59.71	49.71
0.393	48.25	38.25	*	*	57.99	47.99
0.413	*	*	48.50	39.50	57.59	47.59
0.505	47.47	37.47	*	*	56.00	46.00
0.516	*	*	46.73	36.73	56.00	46.00
0.651	45.65	37.65	*	*	56.00	46.00
0.697	*	*	46.45	36.45	56.00	46.00
0.848	43.81	32.81	*	*	56.00	46.00
0.880	*	*	43.27	35.27	56.00	46.00

"" As the QP value is too low against AV limit, So AV Value had been omitted.

Reviewer:

Cake Wang

3. MAGNETIC FIELD EMISSION TEST

3.1. Test Equipment

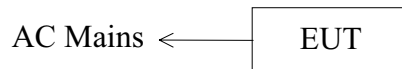
The following test equipments are used during the radiated emission test:

3.1.1. Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Loop Antenna	Chase	HLA6120	1062	May.31, 03	1 Year
2	Test Receiver	Rohde & Schwarz	ESHS20	836600/006	Sep.09, 03	1 Year

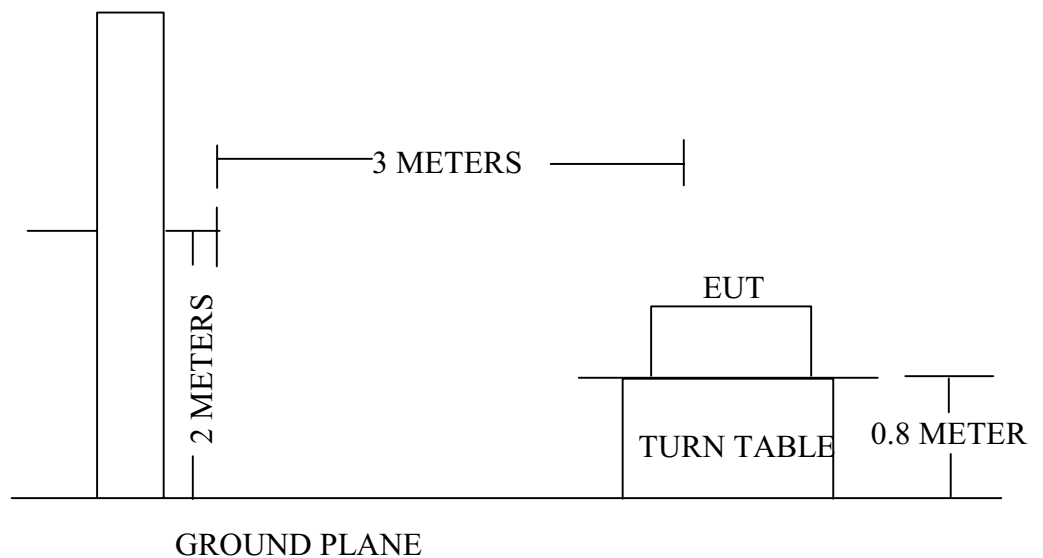
3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of connection between the 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(μ V/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 FCC part 18 Class A regulations test method must be used to find the maximum emission during Radiated Emission test.

The configuration of EUT is same as used in Conducted Emission test. Please refer to Section 2.4.

3.5. Operating Condition of EUT

3.5.1. Setup the EUT and the simulators as shown on Section 3.2.

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 MP-5. The antenna shall be vertically installed, with the lower edge of the loop at 2m 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 II.

4. DEVIATION TO TEST SPECIFICATIONS

[NONE]

APPENDIX I



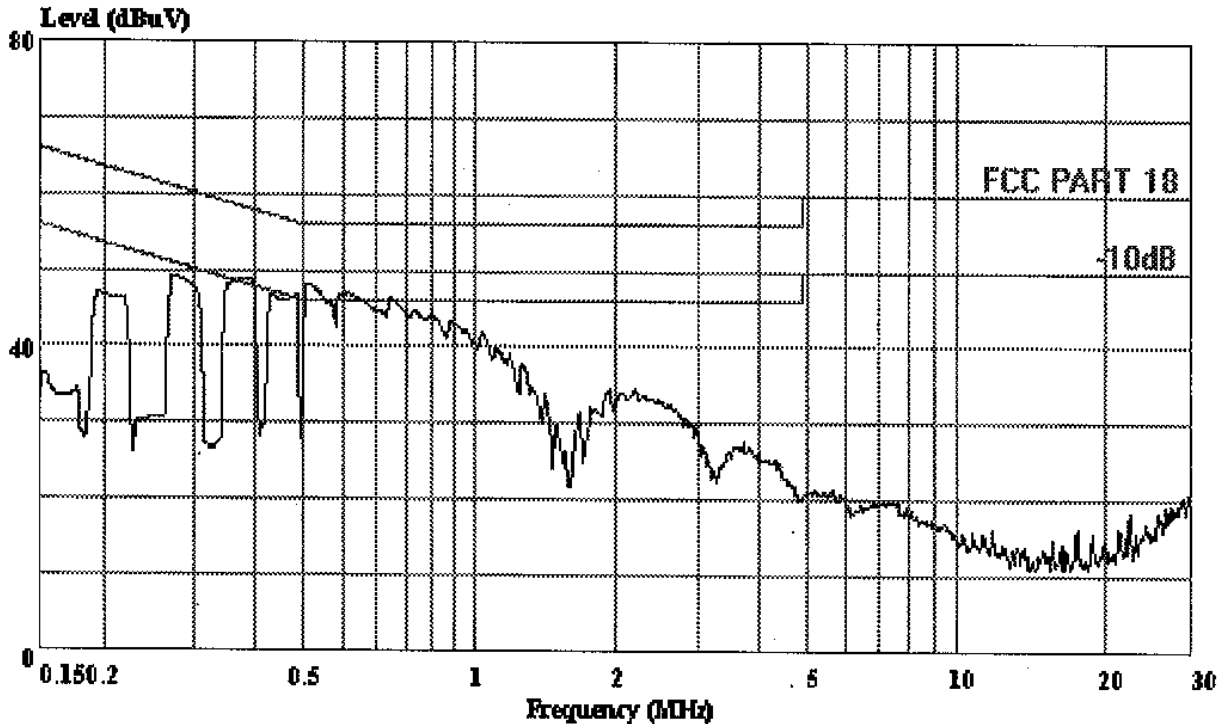
AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

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Data#: 8

File#: Corso.emi

Date: 2004-03-13 Time: 12:14:24



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

Trace:

Ref Trace:

Condition: FCC PART 18 VA (KNW-407)

EUT : Energy Saving Lamp

M/N : CMTL-25W

OP Condition : On

Test Spec : AC 120V/60Hz

Test Engineer: Seco

Comment : Temp:24' Humi:54%

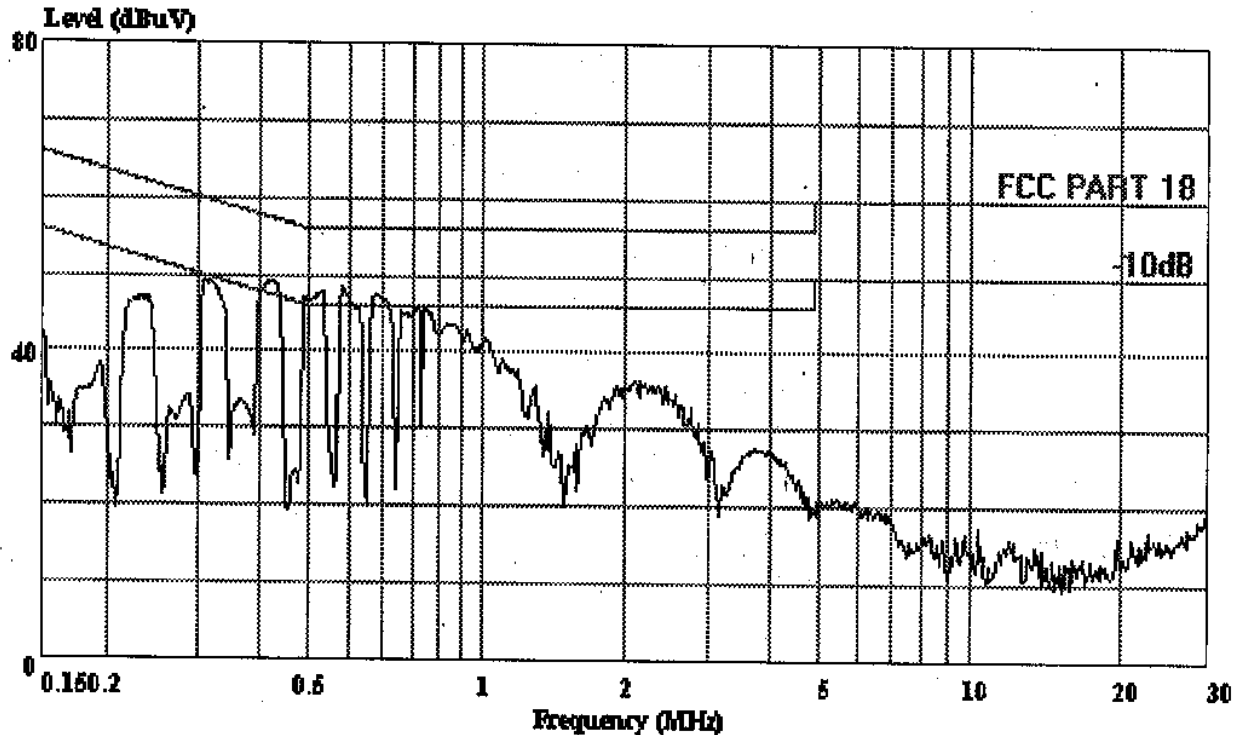


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Data#: 7 File#: Corso.emi

Date: 2004-03-13 Time: 12:09:56



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

Trace:

Ref Trace:

Condition: FCC PART 18 VB (KNW-407)
EUT : Energy Saving Lamp
M/N : CMTL-25W
OP Condition : On
Test Spec : AC 120V/60Hz
Test Engineer: Seco
Comment : Temp:24' Humi:54%

APPENDIX II

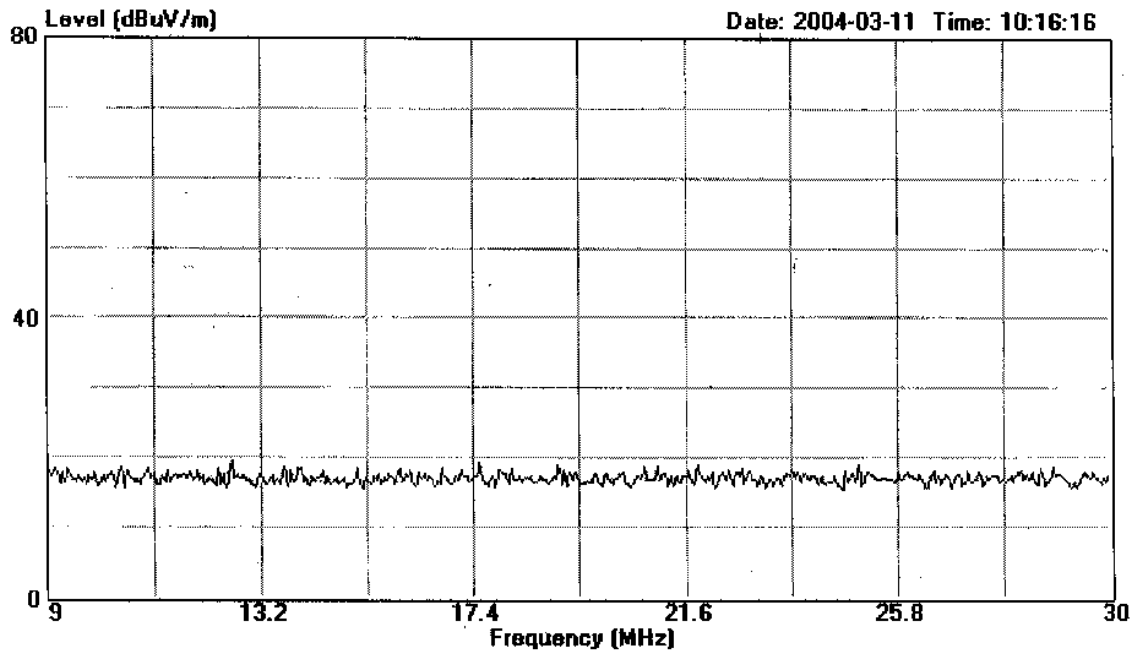


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Data#: 5 File#: C:\EMI TEST DATA\C\Corso.emi



Site : 1# Chamber
Condition : 3m
EUT : Energy Saving Lamp
M/N : CMTL-25W
Power : AC 120V/60Hz
Test Engineer : Seco
Memo : Temp:23' Humi:54%
Memo : On