Toshiba Lighting &Technology Corporation

Self-ballasted lamp

Model Number: SKB13EAP-WW

Prepared for : Toshiba Lighting &Technology Corporation
Minamishinagawa JN Bldg.2-13, Minamishinagawa 2-Chome Shinagawa-Ku, Tokyo

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

Tel: (0755) 26639496

Report Number	:	ACS-F06006
Date of Test	:	Dec.17, 2005~Jan.05, 2006
Date of Report	:	Jan.09, 2006

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TEST REPORT CERTIFICATION

Applicant : Toshiba Lighting &Technology Corporation

Manufacturer : Star Electrical Equipment Co. Ltd.

EUT Description : Self-ballasted lamp

(A) MODEL NO. : SKB13EAP-WW
(B) SERIAL NO. : F2006010901
(C) POWER SUPPLY : AC 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, NIST or any agency of the U.S. Government.

Date of Test : Dec.17, 2005~Jan.05, 2006

Prepared by :

Sala Yang / Assistant

Ken Lu / Assistant Manager

Reviewer :

Approved & Authorized Signer :

Audix Technology (Shenzhen) Co., Ltd.
EMC 部門報告專用章
Stamp only for EMC Dept. Report
Signature:

Smart Tsai / Vice General Manager

Name of the Representative of the Responsible Party : _____

Signature : _____

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Self-ballasted lamp
Model Number	:	SKB13EAP-WW
Applicant	:	Toshiba Lighting &Technology Corporation Minamishinagawa JN Bldg.2-13, Minamishinagawa 2-Chome Shinagawa-Ku, Tokyo
Manufacturer	:	Star Electrical Equipment Co. Ltd. No. 1619 He Shan Road Xiamen China
Date of Test	:	Dec.17, 2005~Jan.05, 2006

1.2. Test Facility

Site Description

3m Anechoic Chamber	:	Certificated by FCC, USA Registration Number: 90454 Aug. 15, 2003
3m & 10m Anechoic Chamber	:	Certificated by FCC, USA Registration Number: 794232 Mar. 15, 2004
EMC Lab.	:	Certificated by DATech, German Registration Number: DAT-P-091/99-01 Feb. 02, 2004 Certificated by NVLAP, USA NVLAP Code: 200372-0 Mar. 31, 2004 Certificated by Nemko, Norway Aut. No.: ELA135 April. 22, 2004 Certificated by Industry Canada Registration Number: IC 5183 Jul. 28, 2004
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

No.	Item	Uncertainty	Remark
1.	Uncertainty for Conducted Emission Test	1.22dB	
2.	Uncertainty for Radiated Emission Test	3.14dB	3m Chamber
3.	Uncertainty for Radiated Emission Test	3.18dB	10m Chamber
4.	Uncertainty for Power Clamp Test	1.38dB	

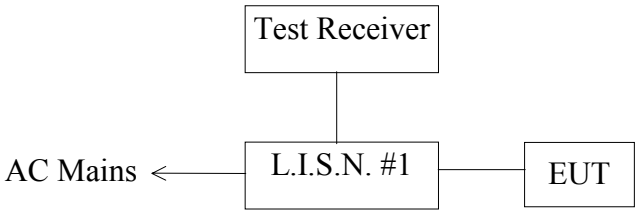
2. POWER LINE CONDUCTED EMISSION TEST

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 16, 05	1 Year
2.	L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	834066/011	May 16, 05	1 Year
3.	Terminator	Hubersuhner	50Ω	No. 1	May 16, 05	1 Year
4.	RF Cable	MIYAZAKI	5D-2W	LISN Cable 1#	Aug. 17, 05	1/2 Year
5.	Coaxial Switch	Anritsu	MP59B	M55367	Aug.17, 05	1/2 Year
6.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100340	Aug.17, 05	1/2 Year

2.2. Block Diagram of Test Setup



(EUT: Self-ballasted lamp)

2.3. Power Line Conducted Emission Test Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
540kHz ~ 2.51kHz	48	N/A
2.51kHz ~ 3MHz	70	N/A
3MHz ~ 30MHz	48	N/A

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. Self-ballasted lamp（EUT）

Model Number : SKB13EAP-WW
Serial Number : F2006010901
Manufacturer : Star Electrical Equipment 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.#1). 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 C63.4-2003 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESHS10) 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

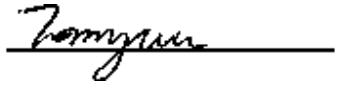
PASS.

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

Date of Test：	Dec.17, 2005	Temperature：	23℃
EUT ：	Self-ballasted lamp	Humidity：	54%
Model No.：	SKB13EAP-WW	Test Mode：	ON
Test Engineer：	Sniper		

Frequency (MHz)	Reading (dBμV)				Limit (dBμV)	
	VA		VB			
	Quasi-Peak	Average	Quasi-Peak	Average	Quasi-Peak	Average
0.463	34.27	*	33.86	*	48.00	N/A
0.485	26.80	*	N/A	N/A	48.00	N/A
0.534	N/A	N/A	35.59	*	48.00	N/A
0.541	33.23	*	N/A	N/A	48.00	N/A
0.599	N/A	N/A	32.57	*	48.00	N/A
0.711	31.61	*	32.14	*	48.00	N/A
1.030	N/A	N/A	31.00	*	48.00	N/A
1.610	N/A	N/A	29.65	*	48.00	N/A
1.620	29.00	*	N/A	N/A	48.00	N/A
2.480	25.91	*	N/A	N/A	48.00	N/A

Remark: 1) If the data table appeared symbol of "N/A" means the value was too low to be measured.
2) If the data table appeared symbol of "*" means the Q.P. value is under the limit for average, so, the average value had been omitted.

Reviewer: 

3. MAGNETIC FIELD EMISSION TEST

3.1. Test Equipment

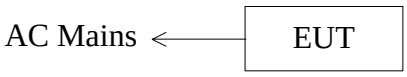
The following test equipments are used during the radiated emission test:

3.1.1. Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Loop Antenna	Chase	HLA6120	1062	June 06,05	1 Year
2	Test Receiver	Rohde & Schwarz	ESHS20	836600/006	May 16, 05	1 Year

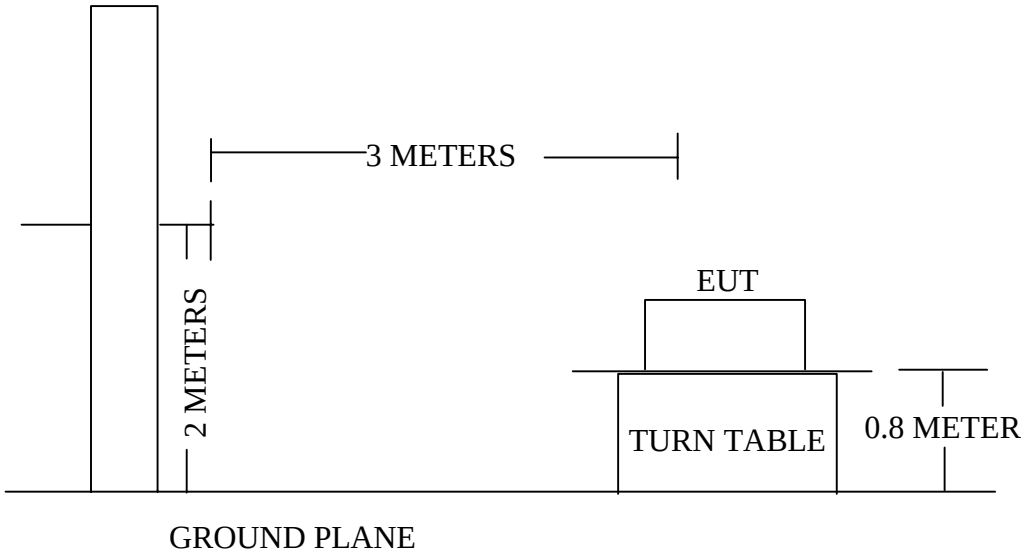
3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of connection between the EUT and simulators



(EUT: Self-ballasted 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 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 ESHS20) is 200Hz. The EUT is tested in Chamber. All the scanning waveform are attached within Appendix II.

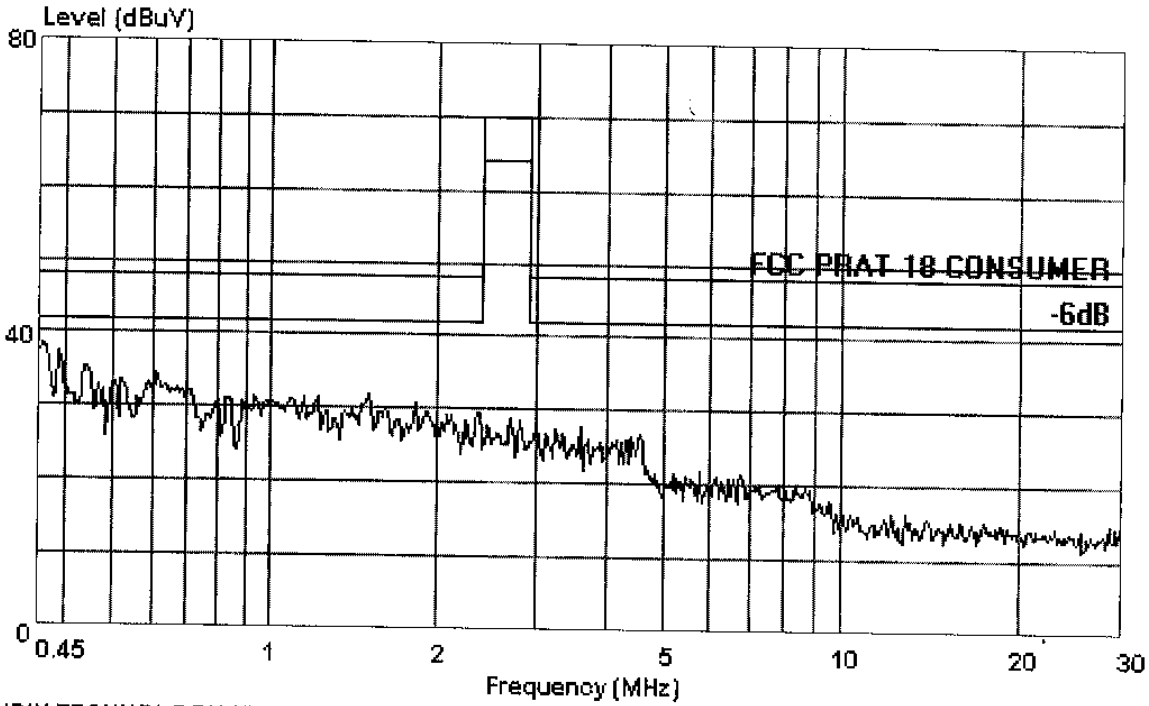
4. DEVIATION TO TEST SPECIFICATIONS

[NONE]

APPENDIX I

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.
Shenzhen Science & Ind Park
Tel:0755-26639496
Fax:26632877

Data#: 1 File#: acs5q1021.EMI Date: 2005-12-17 Time: 00:56:41



AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix NO.1 CONDUCTION)

Trace: Ref Trace:

Condition: FCC PRAT 18 CONSUMER VA KNW-407
EUT : Self-ballasted lamp
M/N : SKB13EAP-WW
Test Spec : AC 120V/60Hz
Test Engineer: Sniper
Comment : Temp:23' Humi:54%
OP Condition : On
Memo :

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.
Shenzhen Science & Ind Park
Tel:0755-26639496
Fax:26632877

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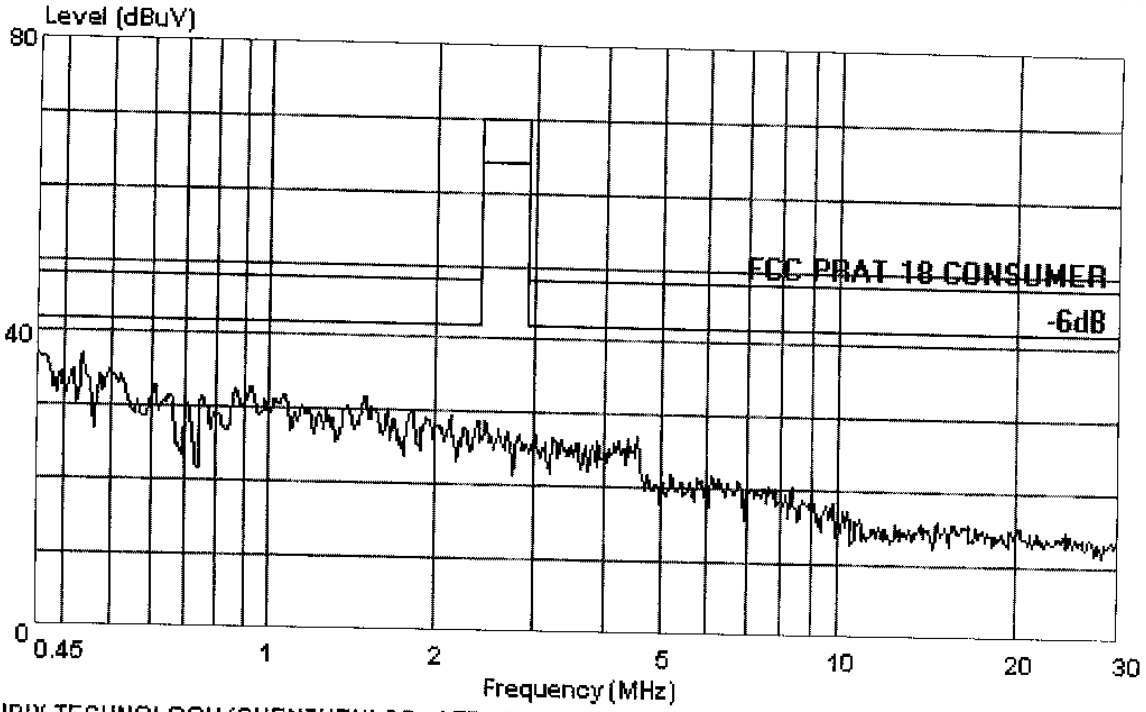

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. (Audix NO.1 CONDUCTION)

Trace: Ref Trace:

Condition: FCC PRAT 18 CONSUMER VB KNW-407
EUT : Self-ballasted lamp
M/N : SKB13EAP-WW
Test Spec : AC 120V/60Hz
Test Engineer: Sniper
Comment : Temp:23' Humi:54%
OP Condition : On
Memo :

APPENDIX II

AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.
Shenzhen Science & Ind Park
Tel:0755-26639496
Fax:26632877

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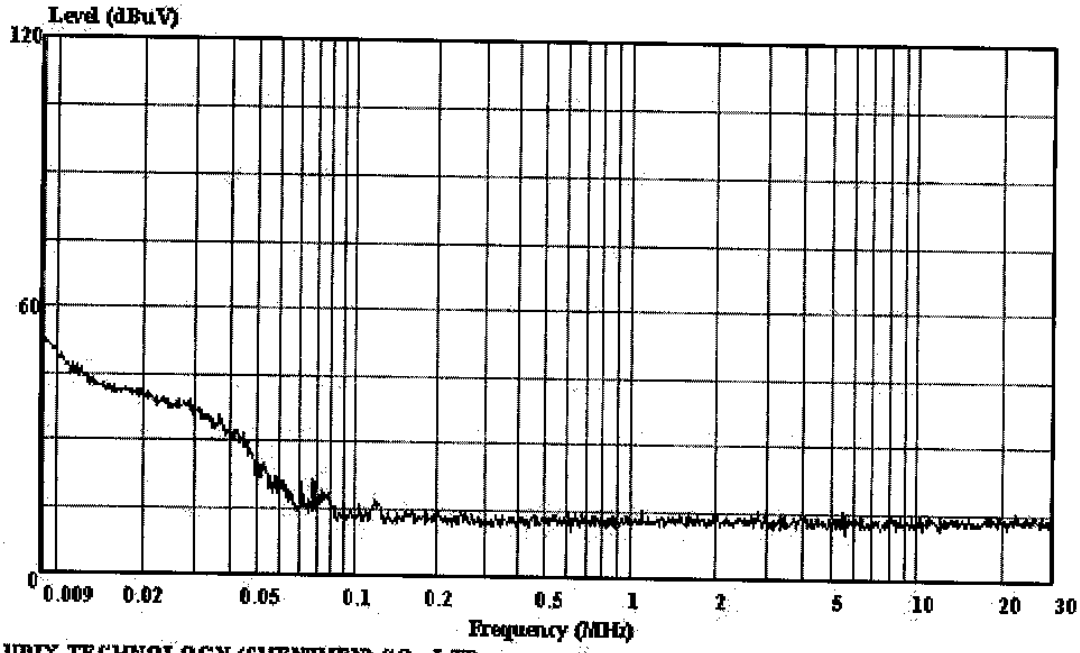

Trace: Ref Trace:

Condition:
EUT : Self-ballasted lamp
M/N : SKB13EAP-WW
OP Condition : ON
Test Spec : AC 120V/60Hz
Test Engineer: sam
Comment : Temp:23' C Humi:54%