

Application for FCC Certificate  
On Behalf of  
SHANGHAI CHUAN-SHI TECHNICAL CO., LTD.

Self-Ballasted Lamp

Model No.: BR40B23W, BR40BP23W

Serial No.: E06040304, E06040405

FCC ID: T6P93079

Prepared For :SHANGHAI CHUAN-SHI TECHNICAL CO., LTD.  
The East of Zhi Xin Stop, San Lu Rd. Chenhang  
Pudong Minhang District Shanghai China

Prepared By :Audix Technology (Shanghai) Co., Ltd.  
3F 34Bldg 680 Guiping Rd,  
Caohejing Hi-Tech Park,  
Shanghai, China 200233.

Tel : +86-21-64955500

Fax : +86-21-64955491

Report No. : ACI-F06013  
Date of Test : Apr 13-14, 2006  
Date of Report : Apr 17, 2006

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## TEST REPORT FOR FCC CERTIFICATE

Applicant : SHANGHAI CHUAN-SHI TECHNICAL CO., LTD.  
Manufacturer : SHANGHAI CHUAN-SHI TECHNICAL CO., LTD.  
EUT Description : Self-Ballasted Lamp  
(A) Model No. : BR40B23W, BR40BP23W  
(B) Serial No. : E06040304, E06040305  
(C) Power Supply: 120V/60Hz

## Test Procedure Used:

*FCC RULES AND REGULATIONS PART 18 CONSUMER DEVICES (2005.10)  
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 (Please see the EUT Description above), which was tested in 3m anechoic chamber on Apr 13-14, 2006, 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 contains data that are not covered by the NVLAP accreditation.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test :

Apr 13-14, 2006

Prepared By:

Kathy Wang 2006.4.22  
KATHY-WANG / Assistant

Reviewer:

For and on behalf of  
CHEN / Supervisor  
Audix Technology (Shanghai) Co., Ltd.

Approved Signatory:

BYRON-KWONG / Manager  
Authorized Signature(s)

# 1 SUMMARY OF STANDARDS AND RESULTS

## 1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description / Test Item	Test Standard	Results	Meets Limit
<b>EMISSION</b>			
Conducted Disturbance At main terminal	FCC RULES AND REGULATIONS PART 18 SUBPART C OCTOBER 2005 AND MP-5/1986	Pass	18.307(c) Consumer Equipment
Magnetic Field Strength	FCC RULES AND REGULATIONS PART 18 SUBPART C OCTOBER 2005 AND MP-5/1986	Pass	18.305(b) Any type, Non-ISM Frequency

## 2 GENERAL INFORMATION

### 2.1 Description of Equipment Under Test

Description : Self-Ballasted Lamp

Type of EUT : ☒ Production ☐ Pre-product ☐ Pro-type

Model Number : BR40B23W, BR40BP23W

Serial Number : E06040304, E06040305

Note : The two models are all the same except for the cold frame.  
The data of two cold frames are recorded in this report.

Applicant : SHANGHAI CHUAN-SHI TECHNICAL CO., LTD.  
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Pudong Minhang District Shanghai China

Manufacturer : SHANGHAI CHUAN-SHI TECHNICAL CO., LTD.  
The East of Zhi Xin Stop, San Lu Rd. Chenhang  
Pudong Minhang District Shanghai China

Test Model	Apparent Power (V • A)	Real Power (W)
BR40B23W	40.50	23.00
BR40BP23W	40.60	22.90

## 2.2 Description of Test Facility

Site Description (Semi-Anechoic Chamber)	:	Sept. 17, 1998 file on August 15, 2003 Renewed Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, USA
Name of Firm	:	Audix Technology (Shanghai) Co., Ltd.
Site Location	:	3F 34Bldg 680 Guiping Rd, Caohejing Hi-Tech Park, Shanghai, China 200233
FCC registration Number	:	91789
Accredited by NVLAP, Lab Code	:	200371-0

## 2.3 Measurement Uncertainty

Conducted Disturbance Expanded Uncertainty :  $U = 1.84\text{dB}$

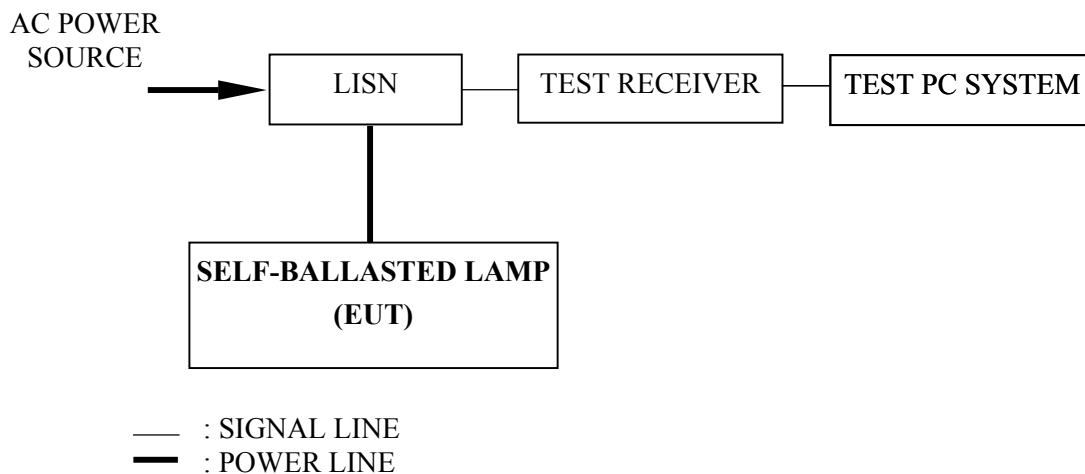
### 3 AC POWERLINE CONDUCTED EMISSION TEST

#### 3.1 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.	Next Cal.
1.	Test Receiver	R&S	ESHS10	830223/007	Apr 08, 2006	Apr 08, 2007
2.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-4	Apr 12, 2006	Apr 12, 2007
3.	50Ω Coaxial Switch	ANRITSU	MP59B	6200426389	Apr 07, 2006	Oct 07, 2006
4.	Software	Audix	E3	SET00200 9804M592	--	--

#### 3.2 Block Diagram of Test Setup



### 3.3 Conducted Emission Limits (FCC Part 18 Consumer)

Frequency (MHz)	Maximum RF Line Voltage	
	( $\mu$ V)	dB( $\mu$ V)
0.45 ~ 2.51	250	48
2.51 ~ 3	3000	70
3 ~ 30	250	48
NOTE 1 – RF Line Voltage dB ( $\mu$ V) = 20 log RF Line Voltage ( $\mu$ V) NOTE 2 – The tighter limits shall apply at the boundary between two frequency ranges.		

### 3.4 Test Configuration on Test

The EUT (listed in Sec. 2.1) was installed as shown on Sec. 3.2 to meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

### 3.5 Operating Condition of EUT

3.5.1 Setup the EUT as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipment.

3.5.3 The EUT will be operated normally.

### 3.6 Test Procedures

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 IF bandwidth of Test Receiver ESHS10 was set at 10 kHz.

The frequency range from 450 kHz to 30 MHz was checked.

The test mode (Lighting) was done on conducted test and the test results of the highest emissions are listed in Sec. 3.7.



### 3.7 Test Results

#### < PASS >

The frequency and amplitude of the highest AC power-line conducted emissions relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

NOTE 1 - Factor = Cable Loss + LISN Factor.

NOTE 2 – Emission Level = Meter Reading + Factor.

NOTE 3 - All reading are Quasi-Peak Values.

NOTE 4 - The worst case is for M/N: BR40BP23W. The worst emission is detected at 0.57 MHz with corrected signal level of 37.44 dB (μV) (limit is 48.00 dB (μV)), when the VA of the EUT is connected to LISN.

EUT : Self-Ballasted Lamp Temperature : 22°C

Model No. : BR40B23W Humidity : 53%

Serial No. : E06040304 Date of Test : Apr 14, 2006

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.49	32.20	0.48	32.68	48.00	15.32
	0.67	32.41	0.39	32.80	48.00	15.20
	<b>0.76</b>	<b>35.49</b>	<b>0.39</b>	<b>35.88</b>	<b>48.00</b>	<b>12.12</b>
	1.52	34.22	0.36	34.58	48.00	13.42
	3.42	27.34	0.35	27.69	48.00	20.31
	4.01	26.46	0.36	26.82	48.00	21.18
VB	0.59	33.19	0.33	33.52	48.00	14.48
	0.69	33.90	0.27	34.17	48.00	13.83
	1.19	34.00	0.29	34.29	48.00	13.71
	1.39	31.90	0.30	32.20	48.00	15.80
	1.90	31.52	0.29	31.81	48.00	16.19
	3.12	27.99	0.32	28.31	48.00	19.69

TEST ENGINEER: Sky  
(SKY SHI)

EUT : Self-Ballasted Lamp Temperature : 22°C

Model No. : BR40BP23W Humidity : 53%

Serial No. : E06040305 Date of Test : Apr 14, 2006

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	<b>0.57</b>	<b>36.99</b>	<b>0.45</b>	<b>37.44</b>	<b>48.00</b>	<b>10.56</b>
	0.80	35.36	0.38	35.74	48.00	12.26
	0.96	35.47	0.41	35.88	48.00	12.12
	1.83	31.41	0.33	31.74	48.00	16.26
	3.74	26.93	0.36	27.29	48.00	20.71
	4.95	23.10	0.39	23.49	48.00	24.51
VB	0.65	36.15	0.29	36.44	48.00	11.56
	0.80	36.97	0.26	37.23	48.00	10.77
	0.97	34.69	0.28	34.97	48.00	13.03
	1.50	32.96	0.29	33.25	48.00	14.75
	2.13	29.81	0.31	30.12	48.00	17.88
	4.08	26.20	0.34	26.54	48.00	21.46

TEST ENGINEER: Sky  
(SKY-SHI)

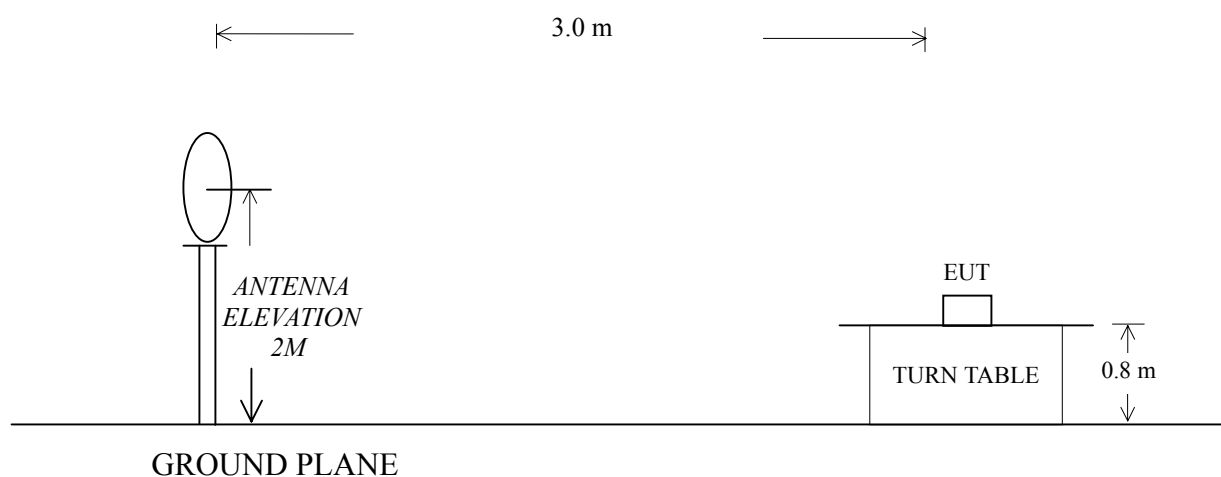
## 4 MAGNETIC FIELD EMISSION TEST

### 4.1 Test Equipment

The following test equipment are used during the field strength test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Loop Antenna	Schaffner	HLA6120	1193	Apr 12, 2006	Apr 12, 2007
2.	Test Receiver	R&S	ESHS10	830223/007	Apr 08, 2006	Apr 08, 2007
3.	50Ω Coaxial Switch	ANRITSU	MP59B	6200426390	Apr 07, 2006	Oct 07, 2006
4.	Software	Audix	E3	SET00200 9912M295-2	--	--

### 4.2 Block Diagram of Test Setup



### 4.3 Magnetic Field Emission Limit (FCC Part 18 305(b))

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

Frequency (MHz)	Distance (m)	Field Strength Limits ( $\mu\text{V/m}$ )	Converted Field Strength Limits By 3 Meters Measuring Distance dB ( $\mu\text{V/m}$ )
0.009~30	300	15	63.5
NOTE 1 - Distance refers to the distance in meters between the test antenna and the closed point of any part of the EUT.			
NOTE 2 - Audix Technology (Shanghai) Co., Ltd. only has a 3 meters Semi-anechoic Chamber to do the radiated disturbance test, therefore, Audix Shanghai used 3 meters measuring distance and converted limits to judge the EUT compliance with or not.			

### 4.4 EUT Configuration on Test

The FCC part 18 regulations test method must be used to find the maximum emission during Radiated Emission test.

The configuration of the EUT is same as used in conducted emission test. Please Refer to Section 3.4.

### 4.5 Operating Condition of EUT

4.5.1 Setup the EUT as shown on Section 4.2.

4.5.2 Turn on the power of all equipments.

4.5.3 Let the EUT work in test mode (Lighting) and test it.

### 4.6 Test Procedures

The EUT is placed on a table, which is 0.8 meter above ground. Measurements are performed at 3.0m distance with a 0.6m loop antenna as described in 2.2.4 of MP-5 . The antenna shall be with the lower edge of the loop at 2m height above the floor.

The bandwidth setting on the test receiver (R&S Test Receiver ESHS10) is 200Hz from 9kHz to 150kHz and 10kHz from 150kHz to 30MHz. The EUT is tested in a semi-anechoic chamber.

All the test results refer to Sec. 4.7.

## 4.7 Test Results

<PASS>

Refer to the following pages.

NOTE 1 - Factor = Antenna Factor + Cable Loss.

NOTE 2 - Level = Read Level + Factor.

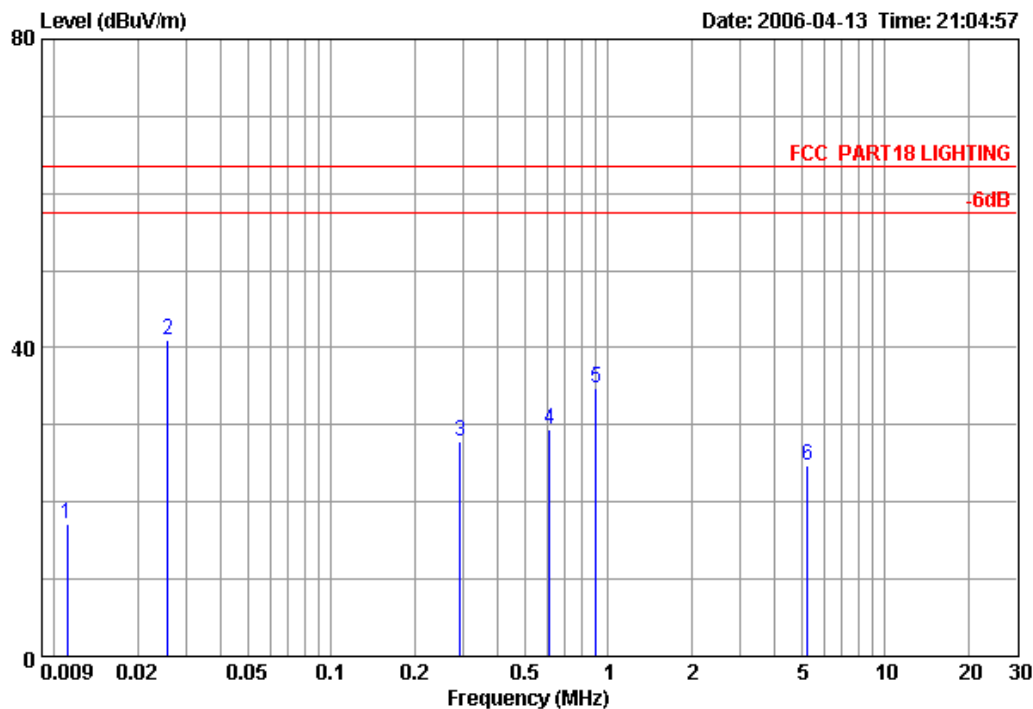
NOTE 3 - All readings are Quasi-Peak Values.



Audix Technology (Shanghai) Co., Ltd.  
 3F #34Bldg. No.680 GuiPing Rd.,  
 CaoHeJing Hi-Tech Park,  
 Shanghai, China 200233  
 Tel: +86-21-64955500 Fax: +86-21-64955491  
 audixaci@audix.com

Data: 38 File: D:\Test-Data\C\Chuanshi.emi (39)

Date: 2006-04-13 Time: 21:04:57



Site : Chamber 3  
 Condition : FCC PART18 LIGHTING 3m  
 Project No. : AOE-001079  
 Applicant : SHANGHAI CHUAN-SHI TECHNICAL CO.,LTD  
 EUT : Self-Ballasted Lamp  
 M/N : BR40B23W  
 S/N : E06040304  
 Power Supply : 120V/60Hz  
 Ambient : 22°C 50%  
 Test Mode : LIGHTING  
 Test Engineer : EMMA

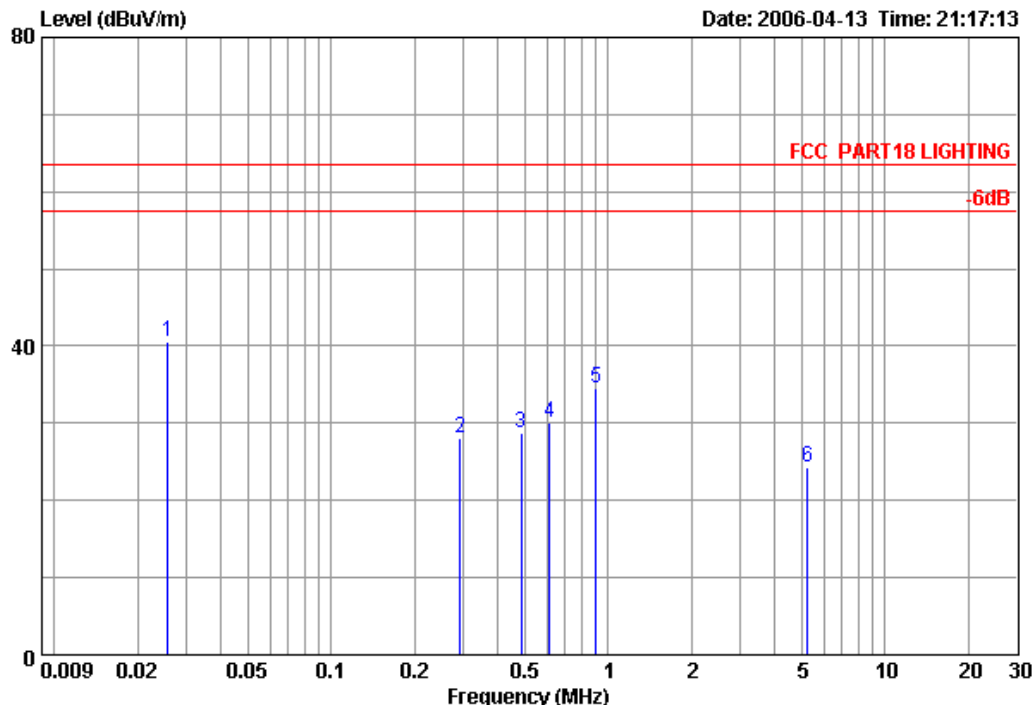
*Emma Zhang*

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	CableAntenna Loss	Factor
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB/m
1	0.01	17.05	-46.45	63.50	-3.38	20.43	0.07	20.36
2	0.03	40.95	-22.55	63.50	20.47	20.48	0.07	20.41
3	0.29	27.84	-35.66	63.50	7.56	20.28	0.07	20.21
4	0.62	29.51	-33.99	63.50	9.40	20.11	0.07	20.04
5	0.90	34.68	-28.82	63.50	14.54	20.14	0.07	20.07
6	5.24	24.65	-38.85	63.50	3.90	20.75	0.39	20.36



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 CaoHeJing Hi-Tech Park,  
 Shanghai, China 200233  
 Tel: +86-21-64955500 Fax: +86-21-64955491  
 audixaci@audix.com

Data: 39 File: D:\Test-Data\C\Chuanshi.emi (39)



Site : Chamber 3  
 Condition : FCC PART18 LIGHTING 3m  
 Project No. : AOE-001079  
 Applicant : SHANGHAI CHUAN-SHI TECHNICAL CO.,LTD  
 EUT : Self-Ballasted Lamp  
 M/N : BR40BP23W  
 S/N : E06040305  
 Power Supply : 120V/60Hz  
 Ambient : 22°C 50%  
 Test Mode : LIGHTING  
 Test Engineer : EMMA *Emma Zhang*

	Freq	Level	Over	Limit	Read		CableAntenna	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor
			dB	dBuV/m	dBuV	dB/m	dB	dB/m
1	0.03	40.59	-22.91	63.50	20.11	20.48	0.07	20.41
2	0.29	28.01	-35.49	63.50	7.73	20.28	0.07	20.21
3	0.49	28.84	-34.66	63.50	8.67	20.17	0.07	20.10
4	0.62	30.02	-33.48	63.50	9.91	20.11	0.07	20.04
5	0.90	34.48	-29.02	63.50	14.34	20.14	0.07	20.07
6	5.24	24.33	-39.17	63.50	3.58	20.75	0.39	20.36



## **5 DEVIATION TO TEST SPECIFICATIONS**

None.