

*EXHIBIT VI*

*TEST REPORT*

TEST REPORT FOR CERTIFICATION  
On Behalf of  
SHANGHAI VIVA HOME IMPROVMENT CO., LTD.  
Energy Saving Lamp

Model No.: P3U11, P3U13, P3U15  
P3U18, P3U20, P3U23  
Twister11, Twister13, Twister15  
Twister18, Twister20, Twister23

FCC ID: OGBGSP

Prepared For : SHANGHAI VIVA HOME IMPROVMENT CO., LTD.  
No.888, Zhangcao Rd., Caojing,  
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Report No. : ACI-F99001  
Date of Test : Feb. 05~ Mar. 05, 1999  
Date of Report : Mar. 14, 1999

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## TEST REPORT CERTIFICATION

ASI 99-002

Applicant : SHANGHAI VIVA HOME IMPROVMENT CO., LTD.  
Telephone : (+8621) 57250333  
Manufacturer : SHANGHAI VIVA HOME IMPROVEMENT CO., LTD.  
FCC ID : OGBGSP  
EUT Description : Energy Saving Lamp  
(A) Model No. : P3U11, P3U13, P3U15  
P3U18, P3U20, P3U23  
Twister11, Twister13, Twister15  
Twister18, Twister20, Twister23  
(B) Serial No. : N/A  
(C) Power Supply : AC 120V/60Hz

## Test Procedure Used:

*FCC RULES AND REGULATIONS PART 18 CONSUMER DEVICES (1997)  
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 radiated and conducted emissions.

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 to be technically compliant with the FCC official limits. AUDIX Technology (Shanghai) Co., Ltd. recommends that this data can be submitted for FCC certification purposes if a 6dB margin below FCC limits is obtained.

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.

Date of Test : Feb. 05 ~ Mar. 05, 1999

Prepared by : Linda Ling 99.03.15  
(LINDA LING)

Test Engineer : Maggie Hsu 99.03.15  
(MAGGIE HSU)  
For and on behalf of  
AUDIX TECHNOLOGY (SHANGHAI) CO., LTD.

Approved Signatory : Jeremy Geng 99.03.15  
(JEREMY GENG)

.....  
Authorized Signature(s)

AGT 99-002

## TEST REPORT CERTIFICATION

Applicant : SHANGHAI VIVA HOME IMPROVMENT CO., LTD.  
Telephone : (+8621) 57250333  
Manufacturer : SHANGHAI VIVA HOME IMPROVEMENT CO., LTD.  
FCC ID : OGBGSP  
EUT Description : Energy Saving Lamp  
(A) Model No. : P3U11, P3U13, P3U15  
P3U18, P3U20, P3U23  
Twister11, Twister13, Twister15  
Twister18, Twister20, Twister23  
(B) Serial No. : N/A  
(C) Power Supply : AC 120V/60Hz

## Test Procedure Used:

*FCC RULES AND REGULATIONS PART 18 CONSUMER DEVICES (1997)  
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 radiated and conducted emissions.

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 to be technically compliant with the FCC official limits. AUDIX Technology (Shanghai) Co., Ltd. recommends that this data can be submitted for FCC certification purposes if a 6dB margin below FCC limits is obtained.

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.

Date of Test : Feb. 5 ~ Mar. 5, 1999

Prepared by : Linda Ling 199.03.15  
(LINDA LING)

Test Engineer : Maggie Hsu 199.03.15  
(MAGGIE HSU)

Approved Signatory : Jeremy Geng 990315  
(JEREMY GENG)

# 1. GENERAL INFORMATION

ACI 99-F002

## 1.1. Description of Equipment Under Test

Description : Energy Saving Lamp

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

Model Number : P3U11, P3U13, P3U15,  
P3U18, P3U20, P3U23  
Twister11, Twister13, Twister15,  
Twister18, Twister20, Twister23

(Test data for the low, medium and high wattage rated EUT –  
P3U11, P3U18, P3U23 & Twister11, Twister18, Twister23)

Serial No. : N/A

FCC ID : OGBGSP

Applicant : SHANGHAI VIVA HOME IMPROVMENT CO., LTD.

No.888, Zhangcao Rd., Caojing,  
Jinshan, Shanghai, China 201507

Manufacturer : SHANGHAI VIVA HOME IMPROVMENT CO., LTD.

No.888, Zhangcao Rd., Caojing,  
Jinshan, Shanghai, China 201507

|           | INPUT POWER | OUTPUT POWER |
|-----------|-------------|--------------|
| P3U11     | 23          | 11           |
| P3U13     | 25          | 13           |
| P3U15     | 26          | 15           |
| P3U18     | 31          | 18           |
| P3U20     | 34          | 20           |
| P3U23     | 38          | 23           |
| Twister11 | 20          | 11           |
| Twister13 | 24          | 13           |
| Twister15 | 27          | 15           |
| Twister18 | 29          | 18           |
| Twister20 | 32          | 20           |
| Twister23 | 38          | 23           |

## 1.2. Description of Test Facility

|                                             |   |                                                                                                                                                 |
|---------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Description<br>(Semi-Anechoic Chamber) | : | Sept. 17, 1998 file on<br>Federal Communications Commission<br>FCC Engineering Laboratory<br>7435 Oakland Mills Road<br>Columbia, MD 21046, USA |
| Name of Firm                                | : | AUDIX Technology (Shanghai) Co., Ltd.                                                                                                           |
| Site Location                               | : | 3 F., 34 Bldg., 680 Guiping Rd.,<br>Caohejing Hi-Tech Park,<br>Shanghai, China                                                                  |

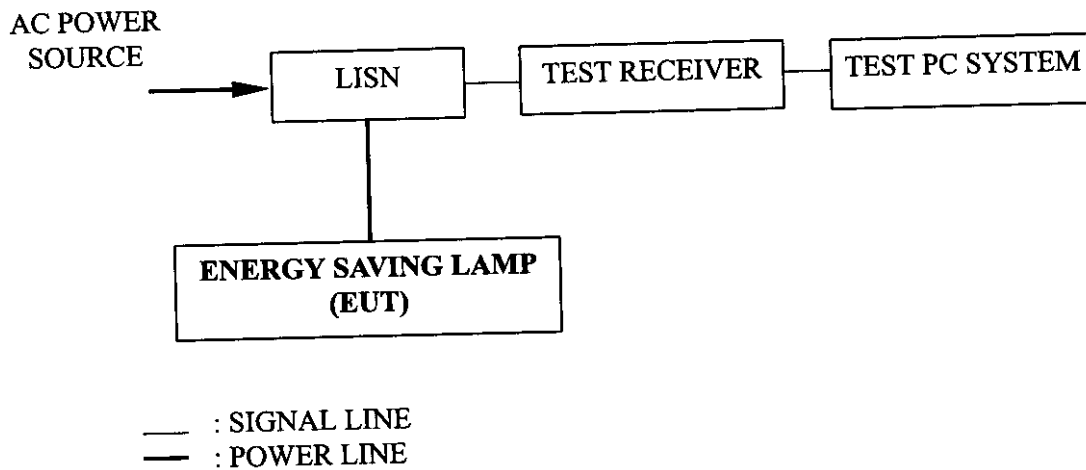
## 2. AC POWERLINE CONDUCTED TEST

### 2.1. Test Equipment

The following test equipment are used during the powerline conducted test in a shielded room:

| Item | Type                                        | Manufacturer    | Model No. | Serial No. | Last Cal.     | Cal. Interval |
|------|---------------------------------------------|-----------------|-----------|------------|---------------|---------------|
| 1.   | Test Receiver                               | Rohde & Schwarz | ESHS10    | 844077/020 | Jun. 09, 1998 | 1 Year        |
| 2.   | Line-impedance Stabilization Network (LISN) | Kyoritsu        | KMW-407   | 8-1280-4   | Jun. 22, 1998 | 1 Year        |

### 2.2. Block Diagram of Test Setup



### 2.3. Conducted Powerline Emission Limit

| Frequency<br>(MHz)                                                        | Maximum RF Line Voltage |              |
|---------------------------------------------------------------------------|-------------------------|--------------|
|                                                                           | ( $\mu$ V)              | dB( $\mu$ V) |
| 0.45 ~ 30                                                                 | 250                     | 48           |
| NOTE 1 – RF Line Voltage dB( $\mu$ V) = 20 log RF Line Voltage ( $\mu$ V) |                         |              |

## 2.4. Test Configuration

The EUT (listed in Sec. 1.1.) was installed as shown on Sec. 2.2. on Conducted Test to meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

## 2.5. Operating Condition of EUT

2.5.1. Setup the EUT as shown in section 2.2.

2.5.2. Turn on the power of all equipment.

2.5.3. The EUT will be operated normally.

## 2.6. 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 test.

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

The frequency range from 450 kHz to 30 MHz was checked. The test mode (LIGHT ON) was done on conducted test and all the test results are listed in Sec. 2.7.

The waveform is attached in APPENDIX.

## 2.7. Conducted Emission Test Results

&lt; PASS &gt;

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

Date of Test : Feb. 05, 1999      Temperature : 25°C

EUT : Energy Saving Lamp      Humidity : 53%

Model No. : P3U11

Test Mode: LIGHT ON

| Frequency<br>(MHz) | Factor<br>(dB) |             | Measurement<br>dB(μV) |              | Reading<br>dB(μV) |              | Limits<br>dB(μV) | Margin<br>(dB) |              |
|--------------------|----------------|-------------|-----------------------|--------------|-------------------|--------------|------------------|----------------|--------------|
|                    | VA             | VB          | VA                    | VB           | VA                | VB           |                  | VA             | VB           |
| 0.471              | 0.45           | 0.53        | *                     | 32.10        | *                 | 32.63        | 48.00            | *              | 15.37        |
| 0.522              | 0.42           | 0.51        | 34.20                 | *            | 34.62             | *            | 48.00            | 13.38          | *            |
| 0.568              | 0.40           | 0.50        | *                     | 34.50        | *                 | 35.00        | 48.00            | *              | 13.00        |
| 0.642              | 0.40           | 0.50        | *                     | 33.20        | *                 | 33.70        | 48.00            | *              | 14.30        |
| 0.695              | 0.40           | 0.50        | 33.00                 | *            | 33.40             | *            | 48.00            | 14.60          | *            |
| 0.735              | 0.40           | 0.50        | *                     | 31.20        | *                 | 31.70        | 48.00            | *              | 16.30        |
| <b>0.942</b>       | 0.40           | <b>0.50</b> | 36.70                 | <b>37.30</b> | 37.10             | <b>37.80</b> | <b>48.00</b>     | 10.90          | <b>10.20</b> |
| 1.003              | 0.40           | 0.50        | 36.20                 | 34.20        | 36.60             | 34.70        | 48.00            | 11.40          | 13.30        |
| 1.337              | 0.40           | 0.46        | 30.20                 | *            | 30.60             | *            | 48.00            | 17.40          | *            |
| 1.700              | 0.40           | 0.42        | 29.80                 | *            | 30.20             | *            | 48.00            | 17.80          | *            |
| 2.214              | 0.40           | 0.41        | 28.50                 | *            | 28.90             | *            | 48.00            | 19.10          | *            |
| 2.398              | 0.40           | 0.42        | *                     | 29.70        | *                 | 30.12        | 48.00            | *              | 17.88        |

NOTE 1 - All reading are Quasi-Peak values.

NOTE 2 - Factor = Insertion Loss + Cable Loss

NOTE 3 - The worst emission is detected at 0.942 MHz with corrected signal level of 37.80 dB(μV) (limit is 48.00 dB(μV)), when the VB of the EUT is connected to LISN.

NOTE 4 - "\*" means the emission level undetectable.

TEST ENGINEER: Maggie Hsu  
(MAGGIE HSU)

Date of Test : Feb. 10, 1999 Temperature : 25°C

EUT : Energy Saving Lamp Humidity : 53%

Model No. : P3U18

Test Mode: **LIGHT ON**

| Frequency<br>(MHz) | Factor<br>(dB) |             | Measurement<br>dB( $\mu$ V) |              | Reading<br>dB( $\mu$ V) |              | Limits<br>dB( $\mu$ V) | Margin<br>(dB) |             |
|--------------------|----------------|-------------|-----------------------------|--------------|-------------------------|--------------|------------------------|----------------|-------------|
|                    | VA             | VB          | VA                          | VB           | VA                      | VB           |                        | VA             | VB          |
| <b>0.462</b>       | 0.46           | <b>0.53</b> | *                           | <b>42.40</b> | *                       | <b>42.93</b> | <b>48.00</b>           | *              | <b>5.07</b> |
| 0.570              | 0.40           | 0.50        | 39.80                       | *            | 40.20                   | *            | 48.00                  | 7.80           | *           |
| 0.572              | 0.40           | 0.50        | *                           | 40.70        | *                       | 41.20        | 48.00                  | *              | 6.80        |
| 0.708              | 0.40           | 0.50        | 36.00                       | *            | 36.40                   | *            | 48.00                  | 11.60          | *           |
| 0.811              | 0.40           | 0.50        | 39.30                       | *            | 39.70                   | *            | 48.00                  | 8.30           | *           |
| 0.815              | 0.40           | 0.50        | *                           | 37.00        | *                       | 37.50        | 48.00                  | *              | 10.50       |
| 0.920              | 0.40           | 0.50        | 39.60                       | *            | 40.00                   | *            | 48.00                  | 8.00           | *           |
| 0.947              | 0.40           | 0.50        | *                           | 36.10        | *                       | 36.60        | 48.00                  | *              | 11.40       |
| 1.003              | 0.40           | 0.50        | 36.90                       | *            | 37.30                   | *            | 48.00                  | 10.70          | *           |
| 1.234              | 0.40           | 0.47        | *                           | 36.90        | *                       | 37.37        | 48.00                  | *              | 10.63       |
| 1.940              | 0.40           | 0.40        | 35.60                       | *            | 36.00                   | *            | 48.00                  | 12.00          | *           |
| 2.730              | 0.40           | 0.43        | 33.00                       | *            | 33.40                   | *            | 48.00                  | 14.60          | *           |
| 16.860             | 0.40           | 0.50        | *                           | 29.80        | *                       | 30.30        | 48.00                  | *              | 17.70       |

NOTE 1 - All reading are Quasi-Peak values.

NOTE 2 - Factor = Insertion Loss + Cable Loss

NOTE 3 - The worst emission is detected at 0.462 MHz with corrected signal level of 42.93dB( $\mu$ V) (limit is 48.00 dB( $\mu$ V)), when the VB of the EUT is connected to LISN.

NOTE 4 - "\*" means the emission level undetectable.

TEST ENGINEER: Maggie Hsu  
(MAGGIE HSU)

Date of Test : Feb. 12, 1999 Temperature : 25°C

EUT : Energy Saving Lamp Humidity : 53%

Model No. : P3U23

Test Mode: **LIGHT ON**

| Frequency<br>(MHz) | Factor<br>(dB) |             | Measurement<br>dB( $\mu$ V) |              | Reading<br>dB( $\mu$ V) |              | Limits<br>dB( $\mu$ V) | Margin<br>(dB) |             |
|--------------------|----------------|-------------|-----------------------------|--------------|-------------------------|--------------|------------------------|----------------|-------------|
|                    | VA             | VB          | VA                          | VB           | VA                      | VB           |                        | VA             | VB          |
| 0.455              | 0.46           | 0.53        | 42.70                       | *            | 43.16                   | *            | 48.00                  | 4.84           | *           |
| <b>0.503</b>       | 0.43           | <b>0.51</b> | *                           | <b>42.80</b> | *                       | <b>43.31</b> | <b>48.00</b>           | *              | <b>4.69</b> |
| 0.574              | 0.40           | 0.50        | 40.80                       | *            | 41.20                   | *            | 48.00                  | 6.80           | *           |
| 0.619              | 0.40           | 0.50        | *                           | 40.90        | *                       | 41.40        | 48.00                  | *              | 6.60        |
| 0.635              | 0.40           | 0.50        | 39.20                       | *            | 39.60                   | *            | 48.00                  | 8.40           | *           |
| 0.773              | 0.40           | 0.50        | *                           | 41.60        | *                       | 42.10        | 48.00                  | *              | 5.90        |
| 0.834              | 0.40           | 0.50        | 41.00                       | *            | 41.40                   | *            | 48.00                  | 6.60           | *           |
| 0.882              | 0.40           | 0.50        | *                           | 43.90        | *                       | 44.40        | 48.00                  | *              | 3.60        |
| 0.950              | 0.40           | 0.50        | 40.20                       | *            | 40.60                   | *            | 48.00                  | 7.40           | *           |
| 1.003              | 0.40           | 0.50        | *                           | 44.00        | *                       | 44.50        | 48.00                  | *              | 3.50        |
| 1.005              | 0.40           | 0.50        | 38.60                       | *            | 39.00                   | *            | 48.00                  | 9.00           | *           |
| 1.113              | 0.40           | 0.48        | *                           | 38.00        | *                       | 38.48        | 48.00                  | *              | 9.52        |
| 2.260              | 0.40           | 0.41        | *                           | 36.60        | *                       | 37.01        | 48.00                  | *              | 10.99       |
| 20.080             | 0.40           | 0.50        | 28.90                       | *            | 29.30                   | *            | 48.00                  | 18.70          | *           |

NOTE 1 - All reading are Quasi-Peak values.

NOTE 2 - Factor = Insertion Loss + Cable Loss

NOTE 3 - The worst emission is detected at 0.503 MHz with corrected signal level of 43.31dB( $\mu$ V) (limit is 48.00 dB( $\mu$ V)), when the VB of the EUT is connected to LISN.

NOTE 4 - "\*" means the emission level undetectable.

TEST ENGINEER: Maggie Hsu  
(MAGGIE HSU)

Date of Test : Feb. 05, 1999 Temperature : 25°C

EUT : Energy Saving Lamp Humidity : 53%

Model No. : Twister11

Test Mode: **LIGHT ON**

| Frequency<br>(MHz) | Factor<br>(dB) |      | Measurement<br>dB( $\mu$ V) |       | Reading<br>dB( $\mu$ V) |       | Limits<br>dB( $\mu$ V) | Margin<br>(dB) |       |
|--------------------|----------------|------|-----------------------------|-------|-------------------------|-------|------------------------|----------------|-------|
|                    | VA             | VB   | VA                          | VB    | VA                      | VB    |                        | VA             | VB    |
| 0.459              | 0.46           | 0.53 | *                           | 28.20 | *                       | 28.73 | 48.00                  | *              | 19.27 |
| 0.559              | 0.40           | 0.50 | 31.20                       | *     | 31.60                   | *     | 48.00                  | 16.40          | *     |
| 0.574              | 0.40           | 0.50 | *                           | 27.20 | *                       | 27.70 | 48.00                  | *              | 20.30 |
| 0.650              | 0.40           | 0.50 | *                           | 27.10 | *                       | 27.60 | 48.00                  | *              | 20.40 |
| 0.661              | 0.40           | 0.50 | 32.80                       | *     | 33.20                   | *     | 48.00                  | 14.80          | *     |
| 0.761              | 0.40           | 0.50 | *                           | 29.40 | *                       | 29.90 | 48.00                  | *              | 18.10 |
| <b>0.942</b>       | <b>0.40</b>    | 0.50 | <b>35.90</b>                | 34.80 | <b>36.30</b>            | 35.30 | <b>48.00</b>           | <b>11.70</b>   | 12.70 |
| 1.003              | 0.40           | 0.50 | 35.80                       | 34.20 | 36.20                   | 34.70 | 48.00                  | 11.80          | 13.30 |
| 1.360              | 0.40           | 0.46 | 27.10                       | *     | 27.50                   | *     | 48.00                  | 20.50          | *     |
| 1.900              | 0.40           | 0.41 | 24.40                       | *     | 24.80                   | *     | 48.00                  | 23.20          | *     |
| 2.319              | 0.40           | 0.42 | *                           | 22.80 | *                       | 23.22 | 48.00                  | *              | 24.78 |
| 2.339              | 0.40           | 0.42 | 24.50                       | *     | 24.90                   | *     | 48.00                  | 23.10          | *     |

NOTE 1 - All reading are Quasi-Peak values.

NOTE 2 - Factor = Insertion Loss + Cable Loss

NOTE 3 - The worst emission is detected at 0.942 MHz with corrected signal level of 36.30 dB( $\mu$ V) (limit is 48.00 dB( $\mu$ V)), when the VA of the EUT is connected to LISN.

NOTE 4 - "\*" means the emission level undetectable.

TEST ENGINEER: Maggie Hsu  
(MAGGIE HSU)

Date of Test : Feb. 01, 1999 Temperature : 25°C  
 EUT : Energy Saving Lamp Humidity : 53%  
 Model No. : Twister18

Test Mode: **LIGHT ON**

| Frequency<br>(MHz) | Factor<br>(dB) |             | Measurement<br>dB( $\mu$ V) |              | Reading<br>dB( $\mu$ V) |              | Limits<br>dB( $\mu$ V) | Margin<br>(dB) |              |
|--------------------|----------------|-------------|-----------------------------|--------------|-------------------------|--------------|------------------------|----------------|--------------|
|                    | VA             | VB          | VA                          | VB           | VA                      | VB           |                        | VA             | VB           |
| 0.455              | 0.46           | 0.53        | 34.40                       | *            | 34.86                   | *            | 48.00                  | 13.14          | *            |
| 0.456              | 0.46           | 0.53        | *                           | 31.90        | *                       | 32.43        | 48.00                  | *              | 15.57        |
| 0.498              | 0.43           | 0.52        | *                           | 34.80        | *                       | 35.32        | 48.00                  | *              | 12.68        |
| 0.577              | 0.40           | 0.50        | 27.40                       | *            | 27.80                   | *            | 48.00                  | 20.20          | *            |
| 0.602              | 0.40           | 0.50        | *                           | 30.50        | *                       | 31.00        | 48.00                  | *              | 17.00        |
| 0.605              | 0.40           | 0.50        | 33.80                       | *            | 34.20                   | *            | 48.00                  | 13.80          | *            |
| 0.760              | 0.40           | 0.50        | *                           | 31.30        | *                       | 31.80        | 48.00                  | *              | 16.20        |
| 0.882              | 0.40           | 0.50        | 31.60                       | *            | 32.00                   | *            | 48.00                  | 16.00          | *            |
| 0.942              | 0.40           | 0.50        | 35.00                       | 35.10        | 35.40                   | 35.60        | 48.00                  | 12.60          | 12.40        |
| <b>1.003</b>       | 0.40           | <b>0.50</b> | 36.70                       | <b>36.70</b> | 37.10                   | <b>37.20</b> | <b>48.00</b>           | 10.90          | <b>10.80</b> |
| 1.120              | 0.40           | 0.48        | 24.10                       | *            | 24.50                   | *            | 48.00                  | 23.50          | *            |
| 2.190              | 0.40           | 0.41        | *                           | 23.10        | *                       | 23.51        | 48.00                  | *              | 24.49        |

NOTE 1 - All reading are Quasi-Peak values.

NOTE 2 - Factor = Insertion Loss + Cable Loss

NOTE 3 - The worst emission is detected at 1.003 MHz with corrected signal level of 36.70dB( $\mu$ V) (limit is 48.00 dB( $\mu$ V)), when the VB of the EUT is connected to LISN.

NOTE 4 - "\*" means the emission level undetectable.

TEST ENGINEER: Maggie Hsu  
 (MAGGIE HSU)

Date of Test : Feb. 01, 1999 Temperature : 25°C

EUT : Energy Saving Lamp Humidity : 53%

Model No. : Twister23

Test Mode: **LIGHT ON**

| Frequency<br>(MHz) | Factor<br>(dB) |             | Measurement<br>dB( $\mu$ V) |              | Reading<br>dB( $\mu$ V) |              | Limits<br>dB( $\mu$ V) | Margin<br>(dB) |              |
|--------------------|----------------|-------------|-----------------------------|--------------|-------------------------|--------------|------------------------|----------------|--------------|
|                    | VA             | VB          | VA                          | VB           | VA                      | VB           |                        | VA             | VB           |
| 0.453              | 0.46           | 0.53        | *                           | 23.90        | *                       | 24.43        | 48.00                  | *              | 23.57        |
| 0.454              | 0.46           | 0.54        | 24.10                       | *            | 24.56                   | *            | 48.00                  | 23.44          | *            |
| 0.455              | 0.46           | 0.53        | *                           | 26.00        | *                       | 26.53        | 48.00                  | *              | 21.47        |
| 0.504              | 0.43           | 0.51        | *                           | 32.10        | *                       | 32.61        | 48.00                  | *              | 15.49        |
| 0.506              | 0.43           | 0.51        | 31.90                       | *            | 32.33                   | *            | 48.00                  | 15.67          | *            |
| 0.551              | 0.40           | 0.50        | 36.30                       | *            | 36.70                   | *            | 48.00                  | 11.30          | *            |
| 0.609              | 0.40           | 0.50        | 35.60                       | *            | 36.00                   | *            | 48.00                  | 12.00          | *            |
| 0.664              | 0.40           | 0.50        | *                           | 32.80        | *                       | 33.30        | 48.00                  | 14.70          | *            |
| 0.883              | 0.40           | 0.50        | *                           | 32.80        | *                       | 33.30        | 48.00                  | 14.70          | *            |
| 0.942              | 0.40           | 0.50        | 34.80                       | 34.30        | 35.20                   | 34.80        | 48.00                  | 12.80          | 13.20        |
| <b>1.003</b>       | 0.40           | <b>0.50</b> | *                           | <b>36.30</b> |                         | <b>36.80</b> | <b>48.00</b>           | *              | <b>11.20</b> |
| 1.152              | 0.40           | 0.48        | 27.60                       | *            | 28.00                   | *            | 48.00                  | 20.00          | *            |
| 2.740              | 0.40           | 0.43        | *                           | 25.50        | *                       | 25.93        | 48.00                  | *              | 22.07        |
| 2.997              | 0.40           | 0.44        | 28.10                       | *            | 28.50                   | *            | 48.00                  | 19.50          | *            |

NOTE 1 - All reading are Quasi-Peak values.

NOTE 2 - Factor = Insertion Loss + Cable Loss

NOTE 3 - The worst emission is detected at 1.003 MHz with corrected signal level of 36.80dB( $\mu$ V) (limit is 48.00 dB( $\mu$ V)), when the VB of the EUT is connected to LISN.

NOTE 4 - "\*" means the emission level undetectable.

TEST ENGINEER: Maggie Hsu  
(MAGGIE HSU)

### 3. RADIATED EMISSION TEST

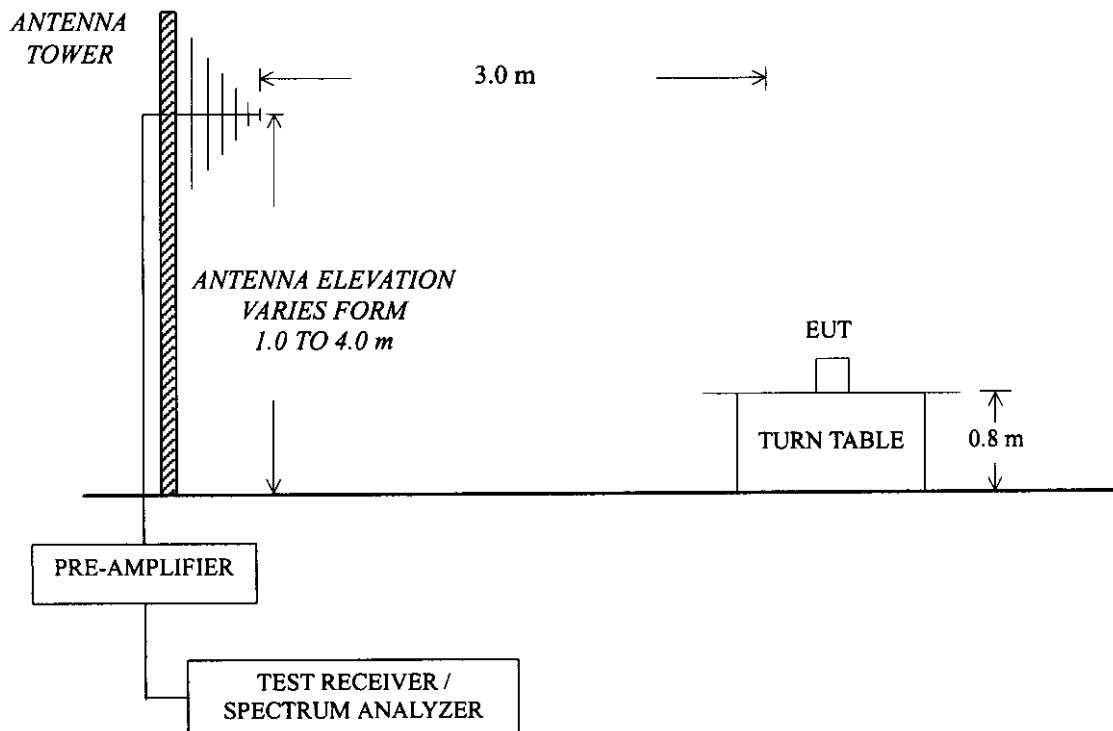
#### 3.1. Test Equipment

The following test equipment are used during the radiated emission test in an anechoic chamber:

| Item | Type              | Manufacturer    | Model No. | Serial No. | Last Cal.     | Cal. Interval |
|------|-------------------|-----------------|-----------|------------|---------------|---------------|
| 1.   | Spectrum Analyzer | HP              | 8593EM    | 3628A00167 | Jun. 10, 1998 | 1 Year        |
| 2.   | Pre-Amplifier     | HP              | 8447D     | 2944A06849 | Dec. 03, 1998 | 1/2 Year      |
| 3.   | Bilog Antenna     | Chase           | CBL6111   | 1146       | Dec. 04, 1998 | 1/2 Year      |
| 4.   | Test Receiver     | Rohde & Schwarz | ESVS10    | 844594/001 | Jun. 04, 1998 | 1 Year        |

#### 3.2. Block Diagram of Test Setup

##### 3.2.1. Radiation test setup



### 3.3. Radiated Emission Limit

| Frequency<br>(MHz)                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Distance<br>(m) | Field strength limits<br>( $\mu\text{V/m}$ ) | Converted Field Strengths Limits<br>By 3 meters Measuring Distance |                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------|--------------------------------------------------------------------|----------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                                              | $\mu\text{V/m}$                                                    | $\text{dB}(\mu\text{V/m})$ |
| 30 ~ 88                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30              | 10                                           | 100                                                                | 40.0                       |
| 88 ~ 216                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 30              | 15                                           | 150                                                                | 43.5                       |
| 216 ~ 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 30              | 20                                           | 200                                                                | 46.0                       |
| NOTE 1 - Emission Level $\text{dB}(\mu\text{V/m}) = 20 \log \text{Emission Level } (\mu\text{V/m})$<br>NOTE 2 - The tighter limit applies at the band edges.<br>NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.<br>NOTE 4 - The measurements are made at 3 meters distance, then the permissible field strength limits be adjusted using $1/d$ as an attenuation factor. |                 |                                              |                                                                    |                            |

### 3.4. Test Configuration

The configuration of the EUT is same as those used in conducted test.

Please refer to Sec. 2.4.

### 3.5. Operating Condition of EUT

Same as conducted test which is listed in Sec. 2.5., except the test set up replaced by Sec. 3.2.

### 3.6. Test Procedures

The EUT was placed on a turn table which is 0.8 meter above ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) or dipole antenna were used as receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to MP-5/1986 requirements during radiated test.

The bandwidth setting on Test Receiver ESVS10 was 120 kHz.

The frequency range from 30 MHz to 1000 MHz was checked. The test mode (LIGHT ON) was done on radiated test and all the test results are listed in Sec. 3.7.

## 3.7. Radiated Emission Test Results

&lt;PASS&gt;

The frequency and amplitude of the highest radiated emissions relative the limit is reported. All the emissions not reported below are too low against the FCC Subpart C limit.

Date of Test : Mar. 5, 1999 Temperature : 20°C  
 EUT : Energy Saving Lamp Humidity : 50%  
 Model No. : P3U11

Test Mode: **LIGHT ON**

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Meter Reading Horizontal dB(μV) | Emission Level Horizontal dB(μV/m) | Limits dB(μV/m) | Margin (dB)  |
|-----------------|-----------------------|-----------------|--------------------|---------------------------------|------------------------------------|-----------------|--------------|
| 31.940          | 17.35                 | 6.74            | 25.55              | 20.37                           | 18.91                              | 40.00           | 21.09        |
| 119.240         | 13.12                 | 7.50            | 25.10              | 16.17                           | 11.69                              | 43.50           | 31.81        |
| 140.580         | 11.53                 | 7.61            | 25.10              | 20.26                           | 14.30                              | 43.50           | 29.20        |
| 167.740         | 10.20                 | 7.85            | 25.10              | 22.75                           | 15.70                              | 43.50           | 27.80        |
| 774.960         | 22.46                 | 10.68           | 26.59              | 17.91                           | 24.46                              | 46.00           | 21.54        |
| <b>921.430</b>  | <b>24.25</b>          | <b>11.10</b>    | <b>26.39</b>       | <b>18.84</b>                    | <b>27.80</b>                       | <b>46.00</b>    | <b>18.20</b> |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 921.430 MHz with corrected signal level of 27.80 dB(μV/m) (limit is 46.00 dB(μV/m)) when the antenna was at horizontal polarization and was at 1.94 m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie Hsu  
 (MAGGIE HSU)

Date of Test : Mar. 05, 1999 Temperature : 20°C  
 EUT : Energy Saving Lamp Humidity : 50%  
 Model No. : P3U11

Test Mode: **LIGHT ON**

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Meter Reading Vertical dB(μV) | Emission Level Vertical dB(μV/m) | Limits dB(μV/m) | Margin (dB)  |
|-----------------|-----------------------|-----------------|--------------------------|-------------------------------|----------------------------------|-----------------|--------------|
| 30.970          | 17.73                 | 6.72            | 25.56                    | 20.12                         | 19.01                            | 40.00           | 20.99        |
| 38.730          | 14.51                 | 6.80            | 25.47                    | 19.26                         | 15.10                            | 40.00           | 24.90        |
| 51.340          | 8.00                  | 6.91            | 25.36                    | 25.34                         | 14.89                            | 40.00           | 25.11        |
| 120.210         | 13.23                 | 7.50            | 25.10                    | 17.68                         | 13.31                            | 43.50           | 30.19        |
| 167.740         | 10.20                 | 7.85            | 25.10                    | 21.94                         | 14.89                            | 43.50           | 28.61        |
| <b>775.930</b>  | <b>22.46</b>          | <b>10.68</b>    | <b>26.59</b>             | <b>22.25</b>                  | <b>28.80</b>                     | <b>46.00</b>    | <b>17.20</b> |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 775.930 MHz with corrected signal level of 28.80dB(μV/m) (limit is 46.00 dB(μV/m)) when the antenna was at vertical polarization and was at 1.00 m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie Hsu  
 (MAGGIE HSU)

Date of Test : Mar. 05, 1999 Temperature : 20°C  
 EUT : Energy Saving Lamp Humidity : 50%  
 Model No. : P3U18

Test Mode: **LIGHT ON**

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Meter Reading Horizontal dB(μV) | Emission Level Horizontal dB(μV/m) | Limits dB(μV/m) | Margin (dB) |
|-----------------|-----------------------|-----------------|--------------------|---------------------------------|------------------------------------|-----------------|-------------|
| 31.940          | 17.35                 | 6.74            | 25.55              | 22.77                           | 21.31                              | 40.00           | 18.69       |
| 38.730          | 14.51                 | 6.80            | 25.47              | 19.66                           | 15.50                              | 40.00           | 24.50       |
| 117.300         | 12.85                 | 7.49            | 25.10              | 21.43                           | 16.67                              | 43.50           | 26.83       |
| 153.190         | 10.81                 | 7.73            | 25.10              | 19.05                           | 12.49                              | 43.50           | 31.01       |
| 167.740         | 10.20                 | 7.85            | 25.10              | 23.71                           | 16.66                              | 43.50           | 26.84       |
| 895.240         | 24.17                 | 10.99           | 26.42              | 19.91                           | 28.65                              | 46.00           | 17.35       |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 895.240 MHz with corrected signal level of 28.65dB(μV/m) (limit is 46.00 dB(μV/m)) when the antenna was at horizontal polarization and was at 1.14 m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie Hsu  
 (MAGGIE HSU)

Date of Test : Mar. 05, 1999 Temperature : 20°C

EUT : Energy Saving Lamp Humidity : 50%

Model No. : P3U18

Test Mode: **LIGHT ON**

| Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Meter Reading<br>Vertical<br>dB(μV) | Emission Level<br>Vertical<br>dB(μV/m) | Limits<br>dB(μV/m) | Margin<br>(dB) |
|--------------------|-----------------------------|-----------------------|--------------------------|-------------------------------------|----------------------------------------|--------------------|----------------|
| 30.970             | 17.73                       | 6.72                  | 25.56                    | 20.78                               | 19.67                                  | 40.00              | 20.33          |
| 41.640             | 12.86                       | 6.80                  | 25.44                    | 18.32                               | 12.54                                  | 40.00              | 27.46          |
| 119.240            | 13.12                       | 7.50                  | 25.10                    | 18.36                               | 13.88                                  | 43.50              | 29.62          |
| 174.530            | 9.60                        | 7.90                  | 25.10                    | 24.79                               | 17.19                                  | 43.50              | 26.31          |
| 853.530            | 23.58                       | 10.91                 | 26.48                    | 17.88                               | 25.89                                  | 46.00              | 20.11          |
| <b>950.530</b>     | <b>24.26</b>                | <b>11.25</b>          | <b>26.36</b>             | <b>19.69</b>                        | <b>28.84</b>                           | <b>46.00</b>       | <b>17.16</b>   |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 950.530 MHz with corrected signal level of 28.84dB(μV/m) (limit is 46.00 dB(μV/m)) when the antenna was at vertical polarization and was at 1.00 m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie Hsu  
(MAGGIE HSU)

Date of Test : Mar. 05, 1999 Temperature : 20°C  
 EUT : Energy Saving Lamp Humidity : 50%  
 Model No. : P3U23

Test Mode: **LIGHT ON**

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Meter Reading Horizontal dB(μV) | Emission Level Horizontal dB(μV/m) | Limits dB(μV/m) | Margin (dB)  |
|-----------------|-----------------------|-----------------|--------------------|---------------------------------|------------------------------------|-----------------|--------------|
| 31.940          | 17.35                 | 6.74            | 25.55              | 22.43                           | 20.97                              | 40.00           | 19.03        |
| 36.790          | 15.29                 | 6.80            | 25.49              | 18.32                           | 14.92                              | 40.00           | 25.08        |
| 109.540         | 11.79                 | 7.45            | 25.10              | 23.93                           | 18.07                              | 43.50           | 25.43        |
| 121.180         | 12.85                 | 7.50            | 25.10              | 23.69                           | 18.94                              | 43.50           | 24.56        |
| 167.740         | 10.20                 | 7.85            | 25.10              | 27.89                           | 20.84                              | 43.50           | 22.66        |
| <b>948.590</b>  | <b>24.25</b>          | <b>11.23</b>    | <b>26.36</b>       | <b>20.14</b>                    | <b>29.26</b>                       | <b>46.00</b>    | <b>16.74</b> |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 948.590 MHz with corrected signal level of 29.26dB(μV/m) (limit is 46.00 dB(μV/m)) when the antenna was at horizontal polarization and was at 2.58 m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie Hsu  
 (MAGGIE HSU)

Date of Test : Mar. 05, 1999 Temperature : 20°C  
 EUT : Energy Saving Lamp Humidity : 50%  
 Model No. : P3U23

Test Mode: LIGHT ON

| Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Meter Reading<br>Vertical<br>dB(μV) | Emission Level<br>Vertical<br>dB(μV/m) | Limits<br>dB(μV/m) | Margin<br>(dB) |
|--------------------|-----------------------------|-----------------------|--------------------------|-------------------------------------|----------------------------------------|--------------------|----------------|
| 31.940             | 17.35                       | 6.74                  | 25.55                    | 22.17                               | 20.71                                  | 40.00              | 19.29          |
| 38.730             | 14.51                       | 6.80                  | 25.47                    | 22.12                               | 17.96                                  | 40.00              | 22.04          |
| 48.430             | 9.12                        | 6.87                  | 25.38                    | 22.29                               | 12.90                                  | 40.00              | 27.10          |
| 121.180            | 12.85                       | 7.50                  | 25.10                    | 21.90                               | 17.15                                  | 43.50              | 26.35          |
| 213.330            | 10.33                       | 8.18                  | 25.10                    | 25.66                               | 19.07                                  | 43.50              | 24.43          |
| 938.890            | 24.25                       | 11.20                 | 26.37                    | 20.16                               | 29.24                                  | 46.00              | 16.76          |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 938.890 MHz with corrected signal level of 29.24dB(μV/m) (limit is 46.00 dB(μV/m)) when the antenna was at vertical polarization and was at 1.00 m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie Hsu  
 (MAGGIE HSU)

Date of Test : Mar. 02, 1999 Temperature : 20°C  
 EUT : Energy Saving Lamp Humidity : 50%  
 Model No. : Twister11

Test Mode: **LIGHT ON**

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamplifier Factor (dB) | Meter Reading Horizontal dB(μV) | Emission Level Horizontal dB(μV/m) | Limits dB(μV/m) | Margin (dB)  |
|-----------------|-----------------------|-----------------|--------------------------|---------------------------------|------------------------------------|-----------------|--------------|
| 31.403          | 17.54                 | 6.73            | 25.55                    | 19.73                           | 18.45                              | 40.00           | 21.55        |
| 114.390         | 12.46                 | 7.47            | 25.10                    | 19.02                           | 13.85                              | 43.50           | 29.65        |
| 164.830         | 10.45                 | 7.83            | 25.10                    | 19.22                           | 12.40                              | 43.50           | 31.10        |
| 606.180         | 20.67                 | 9.93            | 26.70                    | 20.15                           | 24.05                              | 46.00           | 21.95        |
| 887.480         | 24.04                 | 10.97           | 26.43                    | 20.09                           | 28.67                              | 46.00           | 17.33        |
| <b>948.590</b>  | <b>24.25</b>          | <b>11.23</b>    | <b>26.36</b>             | <b>20.10</b>                    | <b>29.22</b>                       | <b>46.00</b>    | <b>16.78</b> |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamplifier Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 948.590 MHz with corrected signal level of 29.22 dB(μV/m) (limit is 46.00 dB(μV/m)) when the antenna was at horizontal polarization and was at 1.94 m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie-Hsu  
 (MAGGIE HSU)

Date of Test : Mar. 02, 1999 Temperature : 20°C  
 EUT : Energy Saving Lamp Humidity : 50%  
 Model No. : Twister 11

Test Mode: **LIGHT ON**

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Meter Reading Vertical dB(μV) | Emission Level Vertical dB(μV/m) | Limits dB(μV/m) | Margin (dB)  |
|-----------------|-----------------------|-----------------|--------------------|-------------------------------|----------------------------------|-----------------|--------------|
| 30.970          | 17.73                 | 6.72            | 25.56              | 19.44                         | 18.33                            | 40.00           | 21.67        |
| 33.880          | 16.54                 | 6.78            | 25.53              | 19.28                         | 17.07                            | 40.00           | 22.93        |
| 121.180         | 12.85                 | 7.50            | 25.10              | 19.50                         | 14.75                            | 43.50           | 28.75        |
| 153.190         | 10.81                 | 7.73            | 25.10              | 19.32                         | 12.76                            | 43.50           | 30.74        |
| 512.090         | 19.86                 | 9.47            | 26.70              | 20.10                         | 22.73                            | 46.00           | 23.27        |
| <b>955.380</b>  | <b>24.26</b>          | <b>11.27</b>    | <b>26.35</b>       | <b>19.98</b>                  | <b>29.16</b>                     | <b>46.00</b>    | <b>16.84</b> |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 955.380 MHz with corrected signal level of 29.16dB(μV/m) (limit is 46.00 dB(μV/m)) when the antenna was at vertical polarization and was at 1.00 m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie Hsu  
 (MAGGIE HSU)

Date of Test : Mar. 04, 1999 Temperature : 20°C  
 EUT : Energy Saving Lamp Humidity : 50%  
 Model No. : Twister18

Test Mode: **LIGHT ON**

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Meter Reading Horizontal dB( $\mu$ V) | Emission Level Horizontal dB( $\mu$ V/m) | Limits dB( $\mu$ V/m) | Margin (dB)  |
|-----------------|-----------------------|-----------------|--------------------|---------------------------------------|------------------------------------------|-----------------------|--------------|
| 30.270          | 18.06                 | 6.70            | 25.57              | 21.07                                 | 20.26                                    | 40.00                 | 19.74        |
| 40.530          | 13.65                 | 6.80            | 25.45              | 22.85                                 | 17.85                                    | 40.00                 | 22.15        |
| 120.990         | 12.98                 | 7.50            | 25.10              | 23.66                                 | 19.04                                    | 43.50                 | 24.46        |
| 255.180         | 12.89                 | 8.43            | 25.10              | 24.94                                 | 21.16                                    | 46.00                 | 24.84        |
| 838.300         | 23.37                 | 10.88           | 26.51              | 19.90                                 | 27.64                                    | 46.00                 | 18.36        |
| <b>928.900</b>  | <b>24.25</b>          | <b>11.13</b>    | <b>26.38</b>       | <b>20.60</b>                          | <b>29.60</b>                             | <b>46.00</b>          | <b>16.40</b> |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 928.900 MHz with corrected signal level of 29.60dB( $\mu$ V/m) (limit is 46.00 dB( $\mu$ V/m)) when the antenna was at horizontal polarization and was at 1.00 m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie Hsu  
 (MAGGIE HSU)

Date of Test : Mar. 04, 1999 Temperature : 20°C  
 EUT : Energy Saving Lamp Humidity : 50%  
 Model No. : Twister18

Test Mode: **LIGHT ON**

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Meter Reading Vertical dB(μV) | Emission Level Vertical dB(μV/m) | Limits dB(μV/m) | Margin (dB)  |
|-----------------|-----------------------|-----------------|--------------------|-------------------------------|----------------------------------|-----------------|--------------|
| 32.420          | 17.11                 | 6.75            | 25.54              | 19.52                         | 17.84                            | 40.00           | 22.16        |
| 51.335          | 8.00                  | 6.91            | 25.36              | 24.48                         | 14.03                            | 40.00           | 25.97        |
| 126.035         | 11.69                 | 7.51            | 25.10              | 19.16                         | 13.26                            | 43.50           | 30.24        |
| 173.949         | 9.66                  | 7.89            | 25.10              | 19.33                         | 11.78                            | 43.50           | 31.72        |
| 889.400         | 24.08                 | 10.98           | 26.43              | 20.23                         | 28.86                            | 46.00           | 17.14        |
| <b>915.000</b>  | <b>24.25</b>          | <b>11.07</b>    | <b>26.40</b>       | <b>19.96</b>                  | <b>28.88</b>                     | <b>46.00</b>    | <b>17.12</b> |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 915.000 MHz with corrected signal level of 28.88dB(μV/m) (limit is 46.00 dB(μV/m)) when the antenna was at vertical polarization and was at 1.00m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie Hsu  
 (MAGGIE HSU)

Date of Test : Mar. 05, 1999 Temperature : 20°C

EUT : Energy Saving Lamp Humidity : 50%

Model No. : Twister23

Test Mode: **LIGHT ON**

| Frequency<br>(MHz) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Preamp<br>Factor<br>(dB) | Meter Reading<br>Horizontal<br>dB(μV) | Emission Level<br>Horizontal<br>dB(μV/m) | Limits<br>dB(μV/m) | Margin<br>(dB) |
|--------------------|-----------------------------|-----------------------|--------------------------|---------------------------------------|------------------------------------------|--------------------|----------------|
| 30.970             | 17.73                       | 6.72                  | 25.56                    | 20.70                                 | 19.59                                    | 40.00              | 20.41          |
| 40.670             | 13.56                       | 6.80                  | 25.45                    | 20.01                                 | 14.92                                    | 40.00              | 25.08          |
| 119.240            | 13.12                       | 7.50                  | 25.10                    | 21.68                                 | 17.20                                    | 43.50              | 26.30          |
| 167.740            | 10.20                       | 7.85                  | 25.10                    | 20.16                                 | 13.11                                    | 43.50              | 30.39          |
| 798.240            | 22.78                       | 10.79                 | 26.56                    | 19.87                                 | 26.88                                    | 46.00              | 19.12          |
| <b>890.390</b>     | <b>24.08</b>                | <b>10.98</b>          | <b>26.43</b>             | <b>20.30</b>                          | <b>28.93</b>                             | <b>46.00</b>       | <b>17.07</b>   |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 2 - All readings are Quasi-Peak values.

NOTE 3 - The worst emission was detected at 890.390 MHz with corrected signal level of 28.93dB(μV/m) (limit is 46.00 dB(μV/m)) when the antenna was at horizontal polarization and was at 1.00 m height and the turn table was at 180°.

NOTE 4 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie Hsu  
(MAGGIE HSU)

Date of Test : Mar. 05, 1999 Temperature : 20°C  
 EUT : Energy Saving Lamp Humidity : 50%  
 Model No. : Twister23

Test Mode: **LIGHT ON**

| Frequency (MHz) | Antenna Factor (dB/m) | Cable Loss (dB) | Preamp Factor (dB) | Meter Reading Vertical dB( $\mu$ V) | Emission Level Vertical dB( $\mu$ V/m) | Limits dB( $\mu$ V/m) | Margin (dB)  |
|-----------------|-----------------------|-----------------|--------------------|-------------------------------------|----------------------------------------|-----------------------|--------------|
| 30.970          | 17.73                 | 6.72            | 25.56              | 21.14                               | 20.03                                  | 40.00                 | 19.97        |
| 51.340          | 8.00                  | 6.91            | 25.36              | 25.96                               | 15.51                                  | 40.00                 | 24.49        |
| 119.240         | 13.12                 | 7.50            | 25.10              | 22.87                               | 18.39                                  | 43.50                 | 25.11        |
| 167.740         | 10.20                 | 7.85            | 25.10              | 21.45                               | 14.40                                  | 43.50                 | 29.10        |
| 861.290         | 23.70                 | 10.92           | 26.47              | 19.93                               | 28.08                                  | 46.00                 | 17.92        |
| <b>953.440</b>  | <b>24.26</b>          | <b>11.27</b>    | <b>26.35</b>       | <b>20.90</b>                        | <b>30.08</b>                           | <b>46.00</b>          | <b>15.92</b> |

NOTE 1 - Emission Level = Meter Reading + Antenna Factor + Cable Loss - Preamp Factor

NOTE 1 - All readings are Quasi-Peak values.

NOTE 2 - The worst emission was detected at 953.440 MHz with corrected signal level of 30.08dB( $\mu$ V/m) (limit is 46.00 dB( $\mu$ V/m)) when the antenna was at vertical polarization and was at 1.00 m height and the turn table was at 180°.

NOTE 3 - 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Maggie.Hsu  
 (MAGGIE HSU)

# **APPENDIX**

## **CONDUCTED EMISSION WAVEFORM**

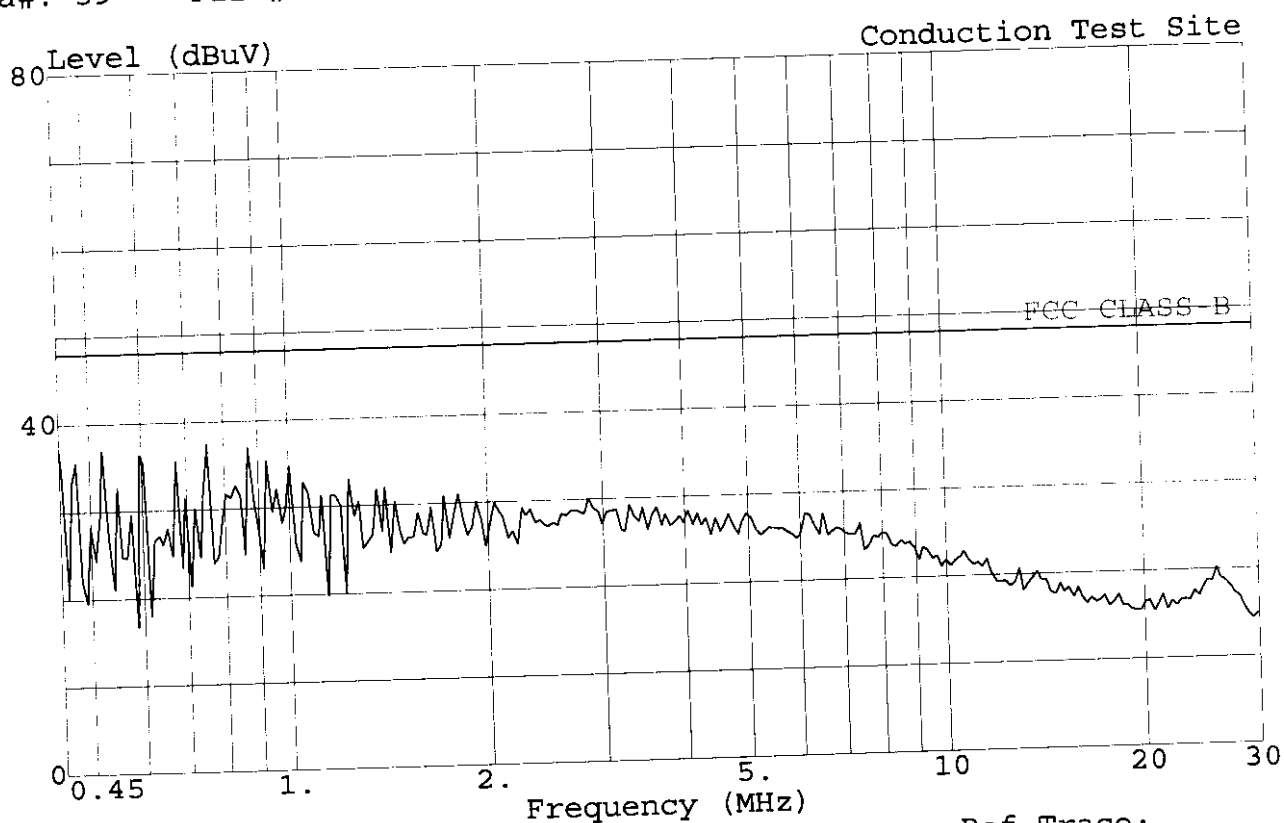
**AUDIX**

3,4F #34 No.680 Guiping Rd A-II  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 59 File#: VIVA.EMI

Date: 1999-02-05 Time: 16:20:33



Ref Trace:

Trace:

Limit: FCC CLASS-B Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : P3U 11

Power Supply : 120V/60Hz

Ambient : 25.0°C 53%

Test Mode : On

Test Line : VA

Test Engineer: Maggie Hsu

**AUDIX**

3,4F #34 No.680 Guiping Rd  
Caohejing Xinxing Center  
Shanghai, China

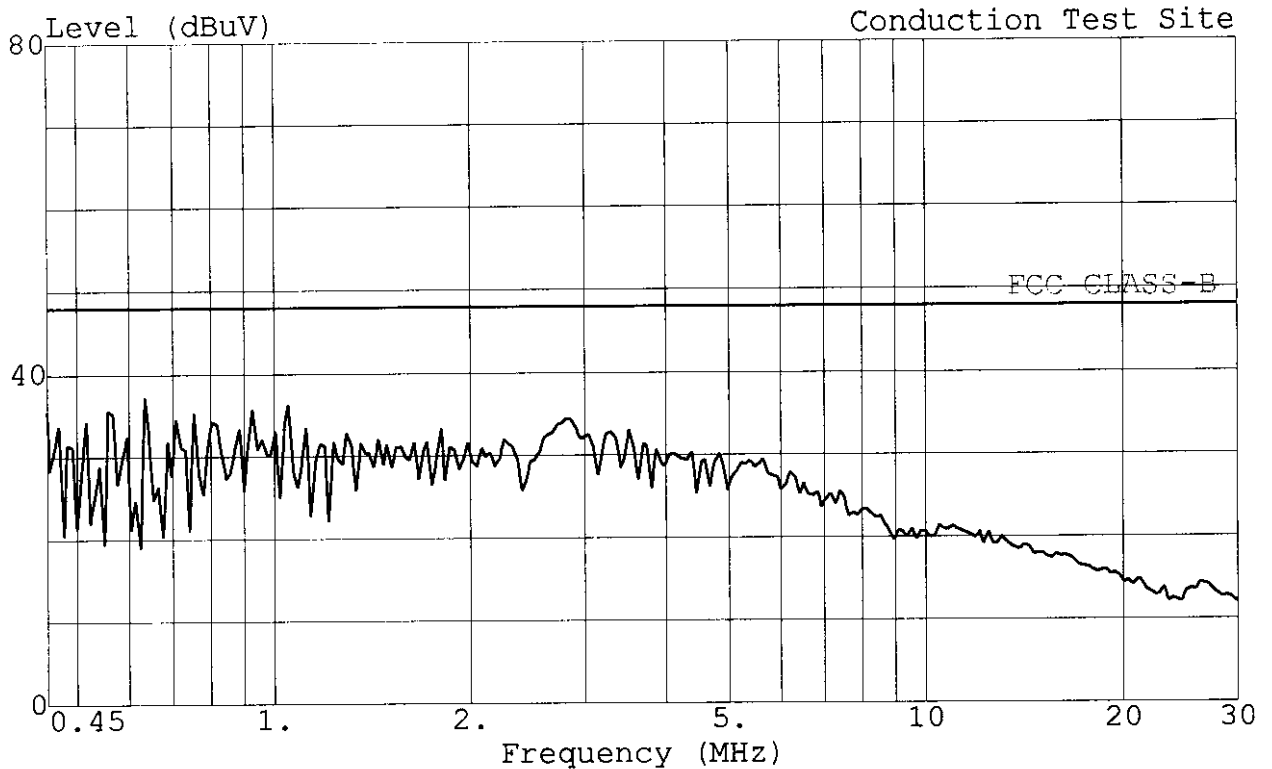
A-III

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 61

File#: VIVA.EMI

Date: 1999-02-05 Time: 16:57:43



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Ref Trace:

Limit: FCC CLASS-B Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : P3U 11

Power Supply : 120V/60Hz

Ambient : 25.0'c 53%

Test Mode : On

Test Line : VB

Test Engineer: *Massie Hsu*

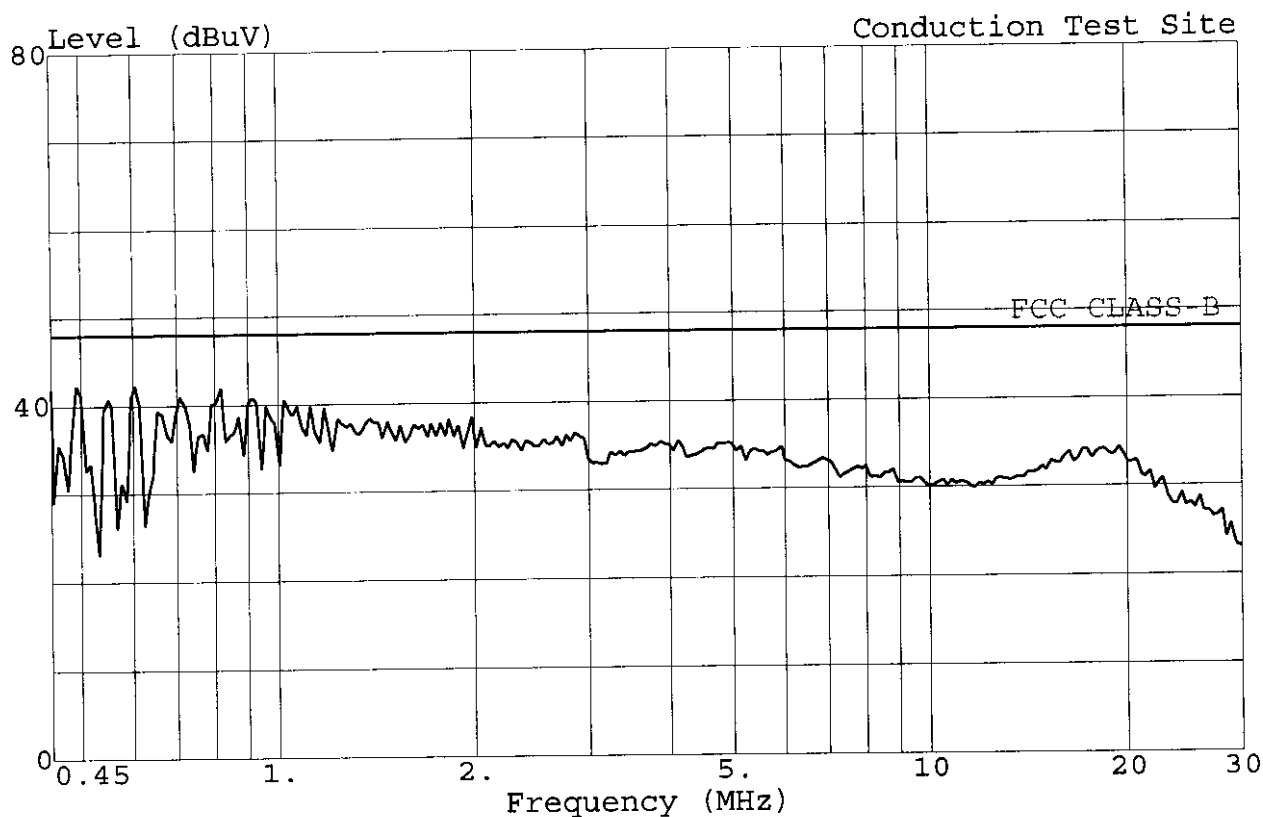
**AUDIX**

3,4F #34 No.680 Guiping Rd A-IV  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 71 File#: VIVA.EMI

Date: 1999-02-10 Time: 17:17:23



Trace:

Ref Trace:

Limit: FCC CLASS-B Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : P3U 18

Power Supply : 120V/50Hz

Ambient : 25.0'C 53%

Test Mode : On

Test Line : VA

Test Engineer: *Maggie Hsu*

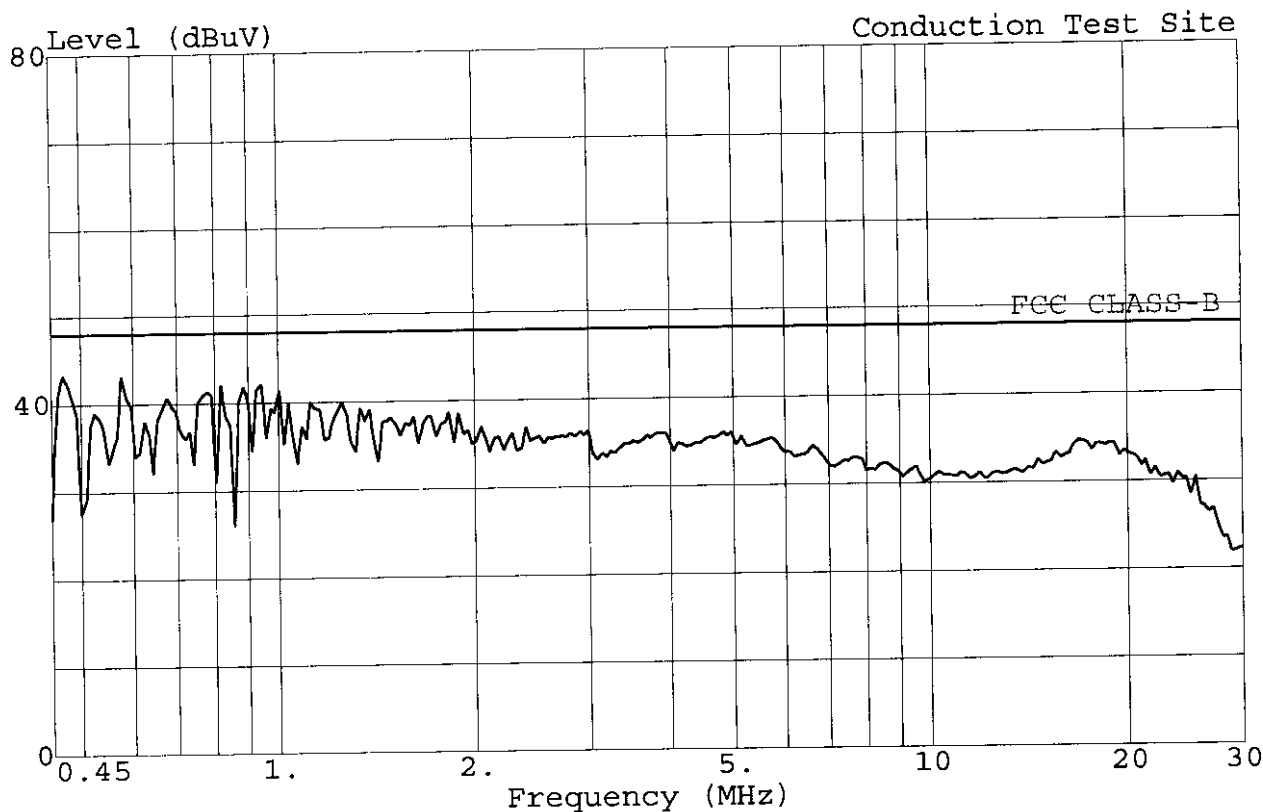
**AUDIX**

3,4F #34 No.680 Guiping Rd A-V  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 73 File#: VIVA.EMI

Date: 1999-02-11 Time: 08:38:11



Trace:

Ref Trace:

Limit: FCC CLASS-B Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : P3U 18

Power Supply : 120V/50Hz

Ambient : 25.0'C 53%

Test Mode : On

Test Line : VB

Test Engineer: *Maggie Hsu*

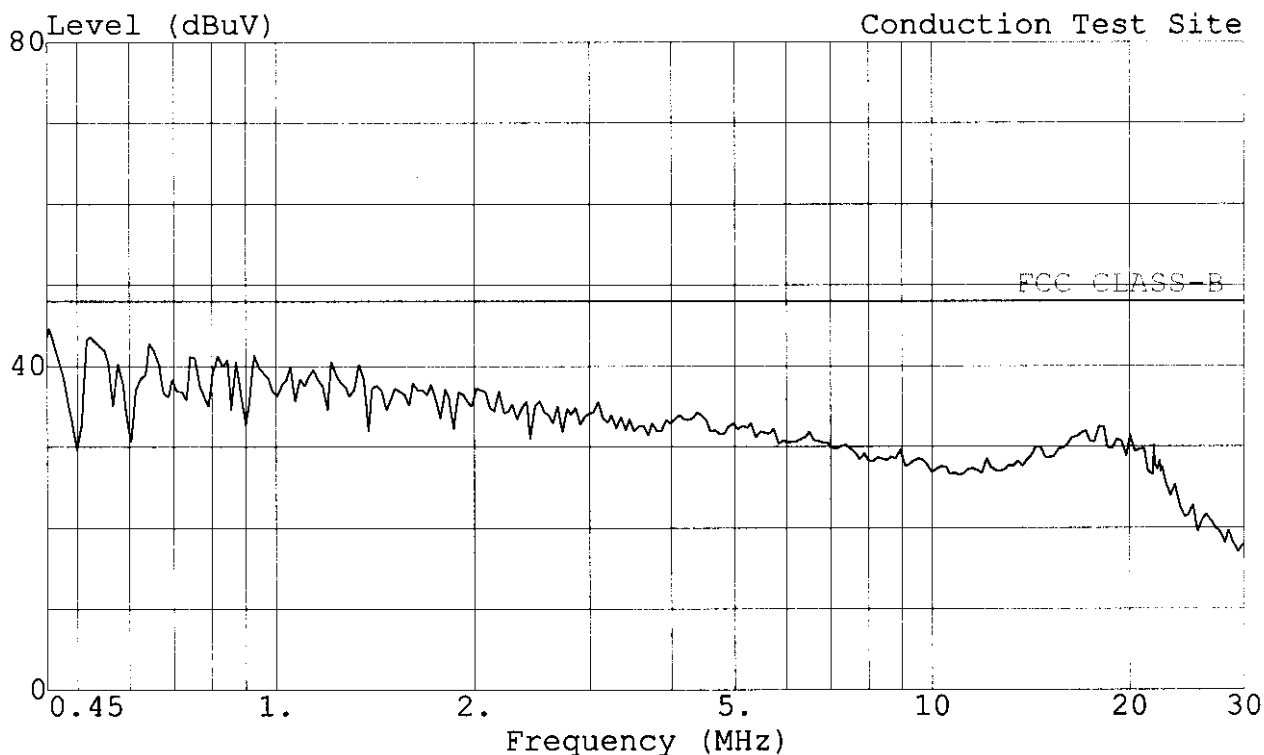
**AUDIX**

3,4F #34 No.680 Guiping Rd  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 79 File#: VIVA.EMI

Date: 1999-02-12 Time: 13:54:19



Trace:

Ref Trace:

Limit: FCC CLASS-B

Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : P3U 23

Power Supply : 120V/50Hz

Ambient : 25.0°C 53%

Test Mode : On

Test Line : VA

Test Engineer: *Maggio. Hsu*

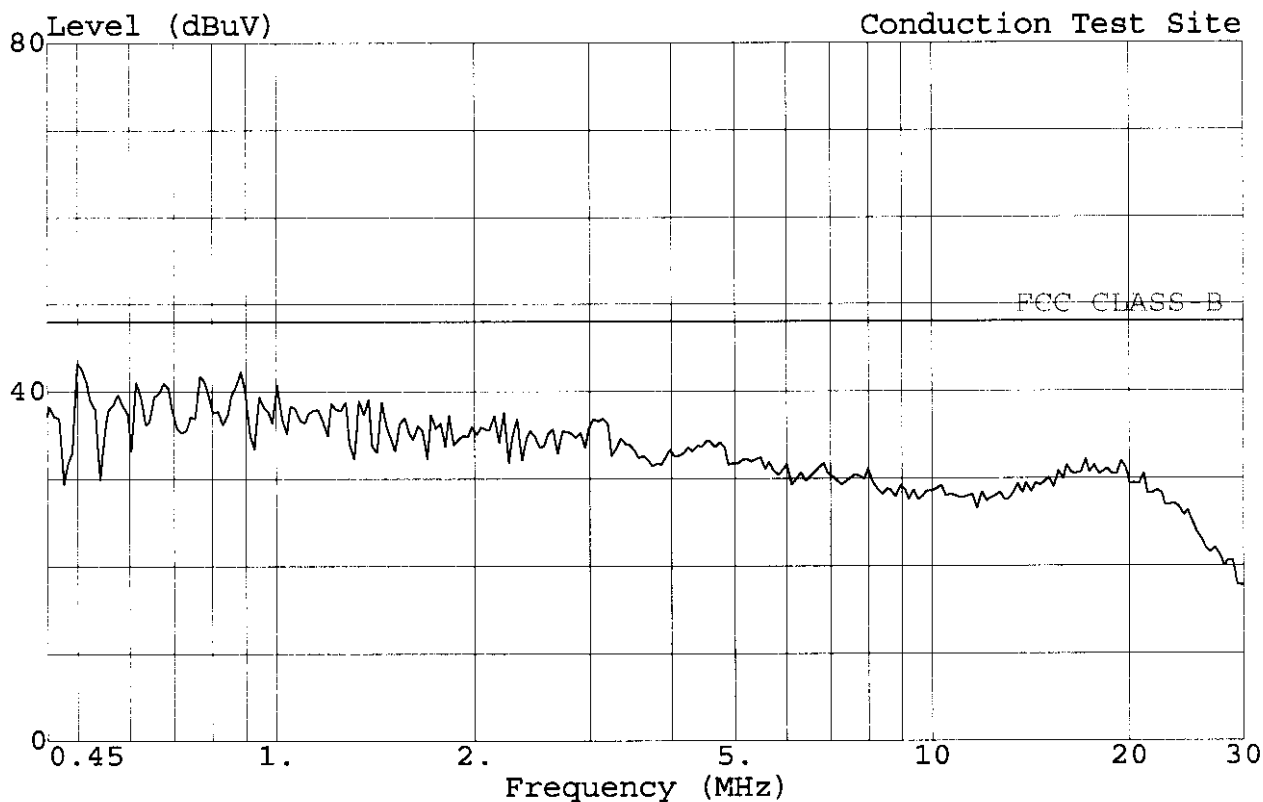
**AUDIX**

3,4F #34 No.680 Guiping Rd A-VII  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 81 File#: VIVA.EMI

Date: 1999-02-12 Time: 14:08:02



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Ref Trace:

Limit: FCC CLASS-B Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : P3U 23

Power Supply : 120V/50Hz

Ambient : 25.0'C 53%

Test Mode : On

Test Line : VB

Test Engineer: *Maggie Hsu*

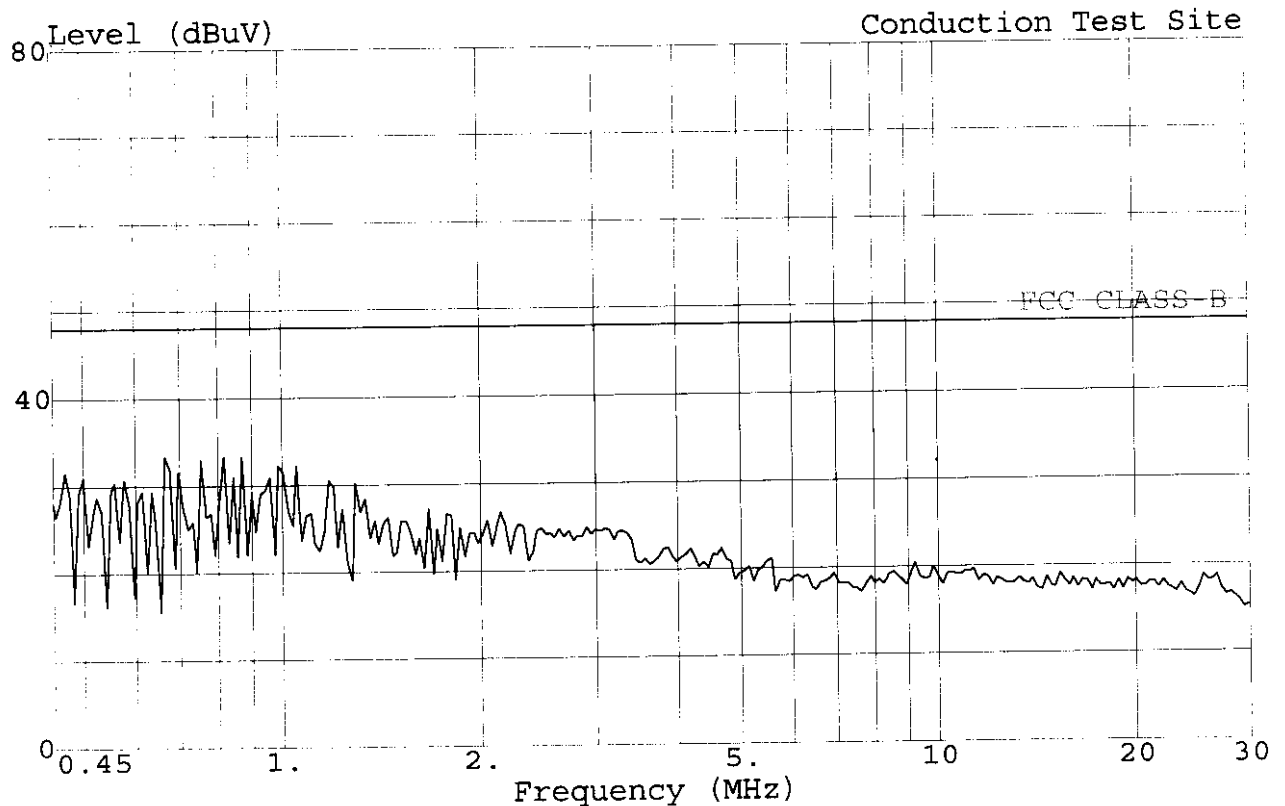
**AUDIX**

3,4F #34 No.680 Guiping Rd <sup>A-VIII</sup>  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 55 File#: VIVA.EMI

Date: 1999-02-05 Time: 15:47:23



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Ref Trace:

Limit: FCC CLASS-B Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : Twister 11

Power Supply : 120V/60Hz

Ambient : 25.0 'c 53%

Test Mode : On

Test Line : VA

Test Engineer: *Maggio.Hsu*

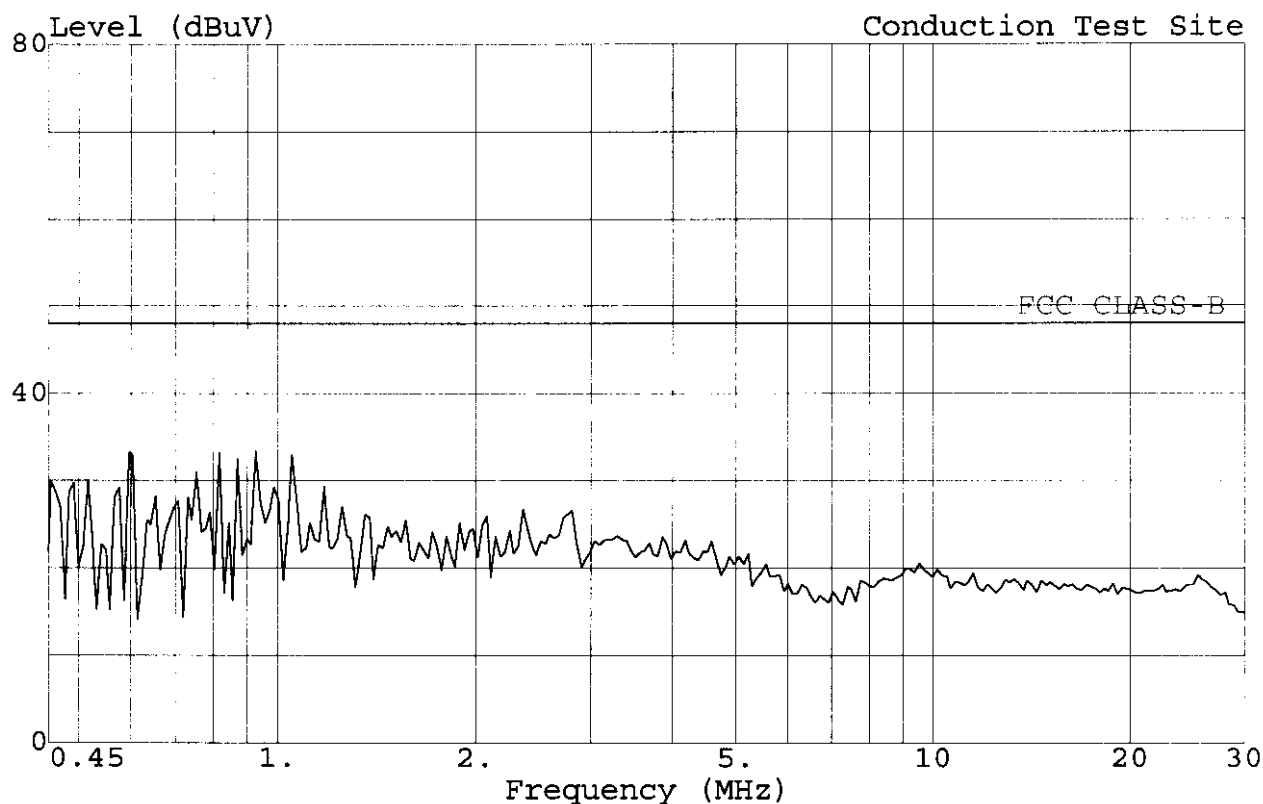
**AUDIX**

3,4F #34 No.680 Guiping Rd A-IX  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 57 File#: VIVA.EMI

Date: 1999-02-05 Time: 16:01:16



Trace:

Ref Trace:

Limit: FCC CLASS-B Probe:  
Project No. : ACI-E-990001  
Applicant : VIVA Home Improvement Co., Ltd.  
EUT : Energy Saving Lamp  
M/N : Twister 11  
Power Supply : 120V/60Hz  
Ambient : 25.0°C 53%  
Test Mode : On  
Test Line : VB  
Test Engineer: *Maggie Hsu*

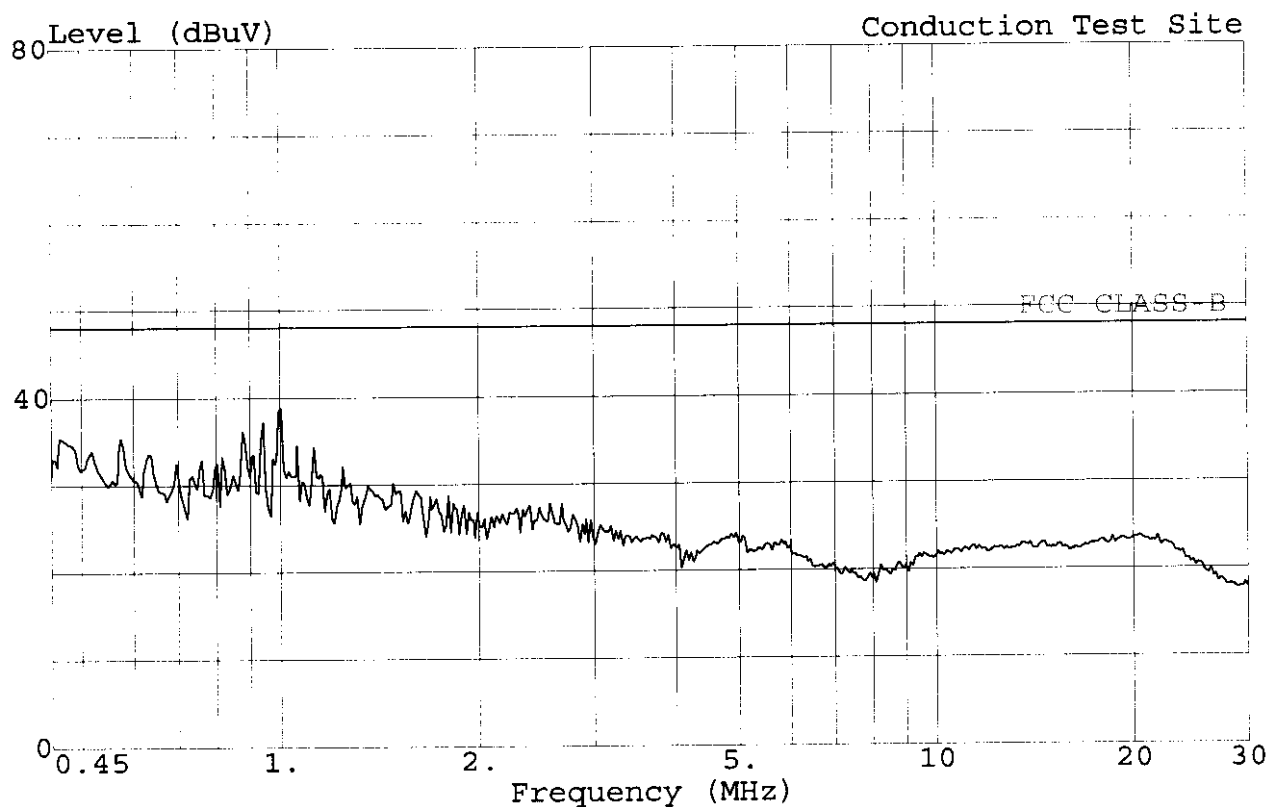
**AUDIX**

3,4F #34 No.680 Guiping Rd A-X  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 13 File#: VIVA.EMI

Date: 1999-02-01 Time: 13:39:54



Trace:

Ref Trace:

Limit: FCC CLASS-B Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : Twister 18

Power Supply : 120V/60Hz

Ambient : 25.0'c 53%

Test Mode : On

Test Line : VA

Test Engineer: *Maggie Hsu*

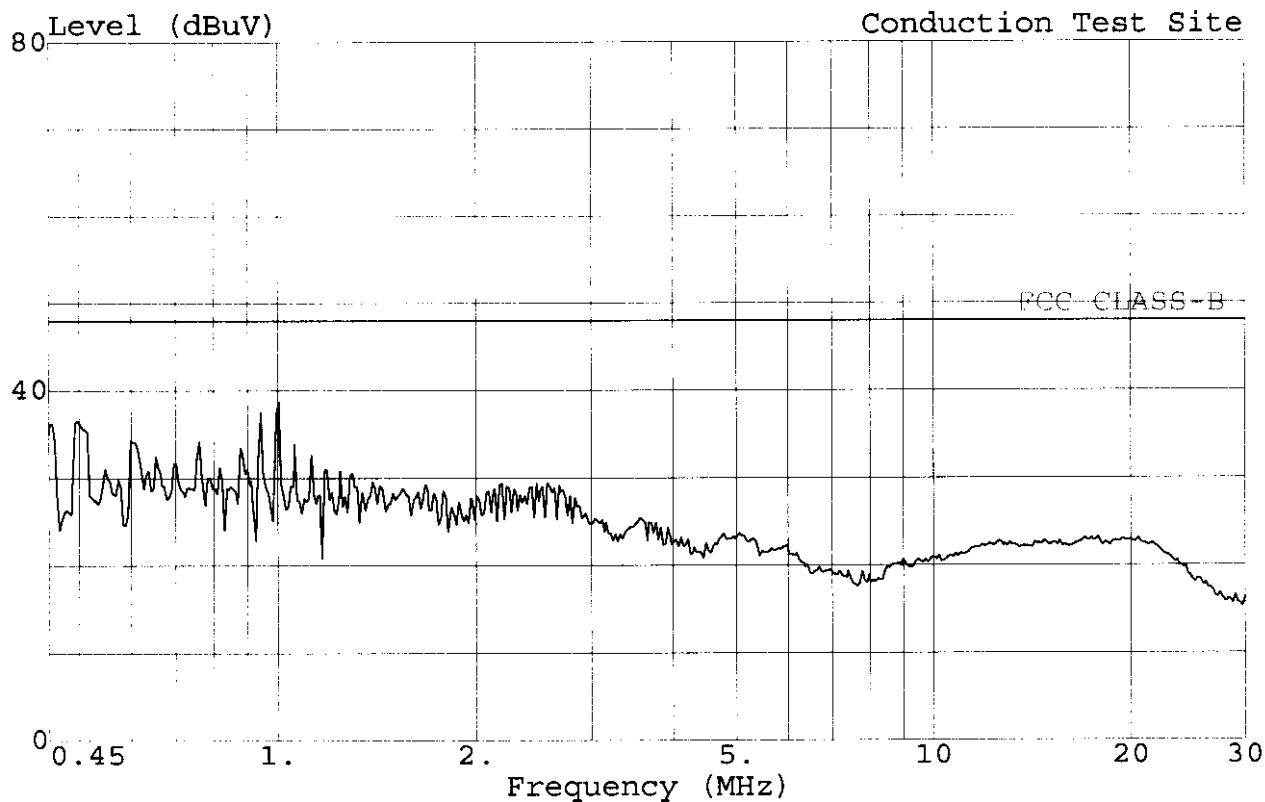
**AUDIX**

3,4F #34 No.680 Guiping Rd A-XI  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 15 File#: VIVA.EMI

Date: 1999-02-01 Time: 13:54:56



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Ref Trace:

Limit: FCC CLASS-B Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : Twister 18

Power Supply : 120V/60Hz

Ambient : 25.0'c 53%

Test Mode : On

Test Line : VB

Test Engineer: *Maggie-Hsu*

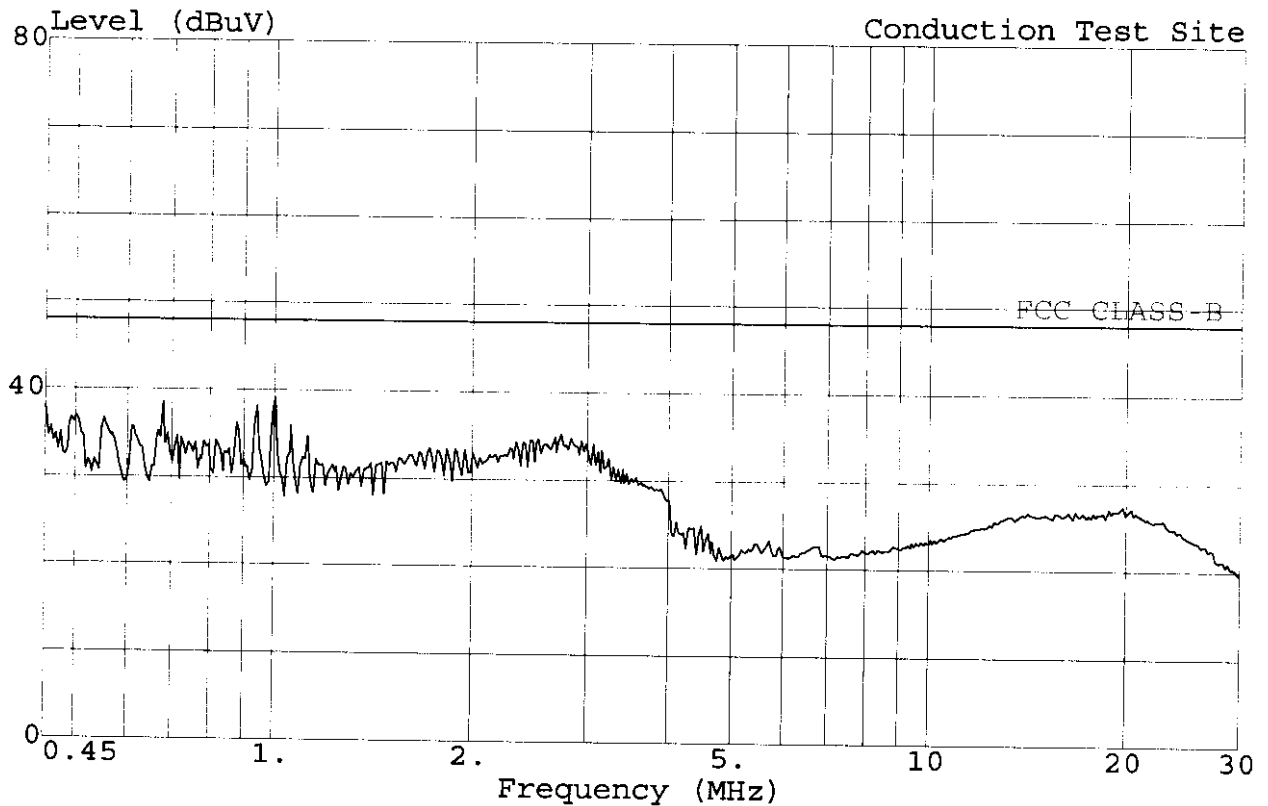
**AUDIX**

3,4F #34 No.680 Guiping Rd *A-XIII*  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 7 File#: VIVA.EMI

Date: 1999-02-01 Time: 11:52:36



Trace:

Limit: FCC CLASS-B Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : Twister 23

Power Supply : 120V/60Hz

Ambient : 25.0'C 53%

Test Mode : On

Test Line : VB

Test Engineer: *Maggie. Hsu*

Ref Trace:

**AUDIX**

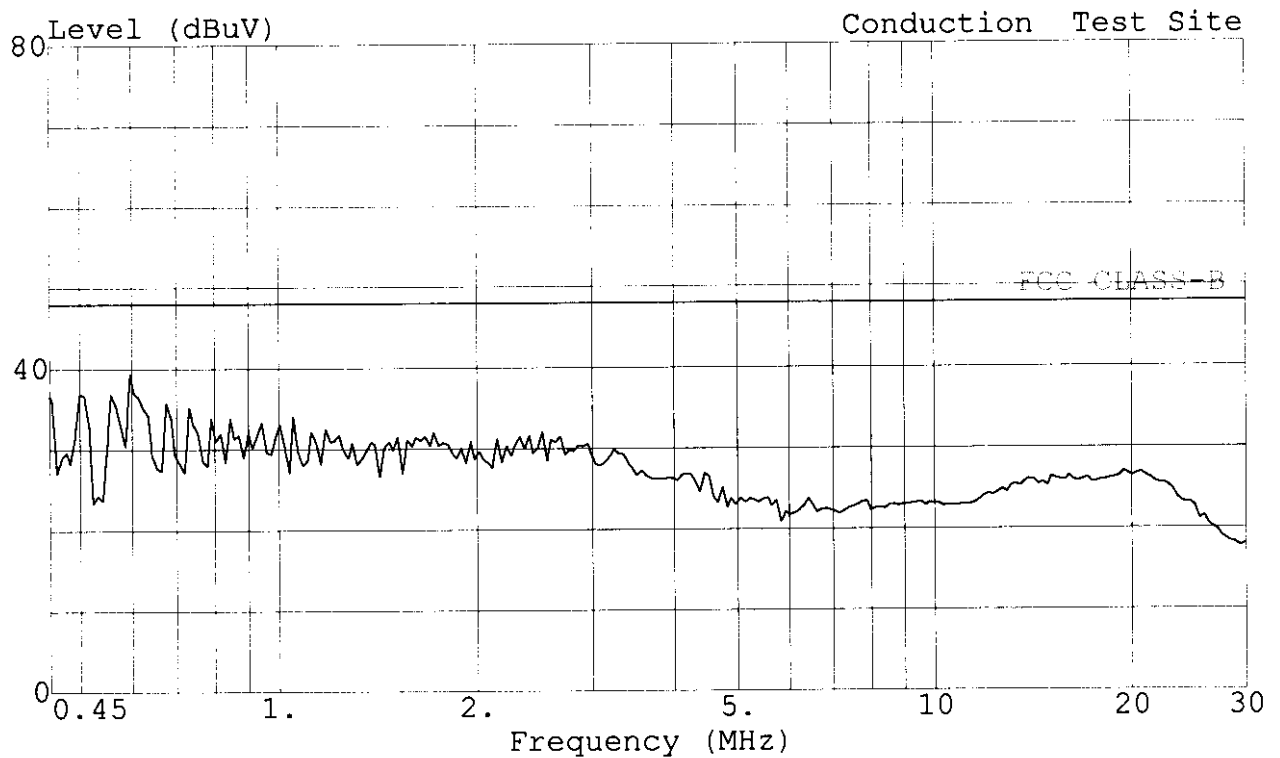
3,4F #34 No.680 Guiping Rd <sup>A-XII</sup>  
Caohejing Xinxing Center  
Shanghai, China

AUDIX Technology (Shanghai) Co., Ltd. Tel:021-64955500 Fax:021-64950791

Data#: 5

File#: VIVA.EMI

Date: 1999-02-01 Time: 11:16:20



Trace:

Ref Trace:

Limit: FCC CLASS-B Probe:

Project No. : ACI-E-990001

Applicant : VIVA Home Improvement Co., Ltd.

EUT : Energy Saving Lamp

M/N : Twister 23

Power Supply : 120V/60Hz

Ambient : 25.0'c 53%

Test Mode : On

Test Line : VA

Test Engineer: *Maggie Hsu*