

# TEST REPORT

For

Saving Light

Model Number: YPZ120/45-SS

Report Number : WT078001779

Test Laboratory	:	Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory Guangdong EMC Compliance Test Center
Site Location	:	Bldg. of Metrology & Quality Inspection, Longzhu Road, Shenzhen, Guangdong, China
Tel	:	0086-755-26941637, 26941529, 26941531
Fax	:	0086-755-26941545
Email	:	emc@smq.com.cn

## TABLE OF CONTENTS

<b>TEST REPORT DECLARATION .....</b>	<b>3</b>
<b>1. TEST RESULTS SUMMARY .....</b>	<b>4</b>
<b>2. GENERAL INFORMATION .....</b>	<b>5</b>
2.1. Report information .....	5
2.2. Measurement Uncertainty .....	5
<b>3. PRODUCT DESCRIPTION .....</b>	<b>6</b>
3.1. EUT Description .....	6
3.2. Related Submittal(s) / Grant (s) .....	6
3.3. Block Diagram of EUT Configuration.....	6
3.4. Operating Condition of EUT .....	6
3.5. Special Accessories.....	6
3.6. Equipment Modifications.....	6
3.7. Support Equipment List .....	6
3.8. Test Conditions .....	6
<b>4. TEST EQUIPMENT USED .....</b>	<b>7</b>
4.1. Test Equipment Used to Measure Conducted Disturbance .....	7
4.2. Test Equipment Used to Measure Radiated Disturbance .....	7
<b>5. CONDUCTED DISTURBANCE TEST .....</b>	<b>8</b>
5.1. Test Standard and Limit.....	8
5.2. Test Procedure .....	8
5.3. Test Arrangement.....	8
5.4. Test Data .....	8
<b>6. RADIATED DISTURBANCE TEST .....</b>	<b>12</b>
6.1. Test Standard and Limit.....	12
6.2. Test Procedure .....	12
6.3. Test Arrangement.....	12
6.4. Test Data .....	12
<b>7. TABLE LIST .....</b>	<b>14</b>
<b>APPENDIX I TEST PICTURE .....</b>	<b>15</b>

## TEST REPORT DECLARATION



Applicant : Zhongshan Opple Lighting Co., Ltd.  
Address : Opple Building Dong'an Road, Guzhen Town  
Manufacturer : Zhongshan Opple Lighting Co., Ltd.  
Address : Opple Building Dong'an Road, Guzhen Town  
Factory : Zhongshan Opple Lighting Co., Ltd.  
Address : Opple Building Dong'an Road, Guzhen Town  
EUT : Saving Light  
Description :  
Model Number : YPZ120/45-SS

Test Standards:

### FCC Part 18

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT and ensure the EUT to be compliance with the immunity requirements of the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Tested by:	 _____ (Louis Lin)	Date:	<u>Aug 16-2007</u>
Checked by:	 _____ (Dewelly Yang)	Date:	<u>Aug 16-2007</u>
Approved by:	 _____ (Peter Lin)	Date:	<u>Aug 16-2007</u>

**1. TEST RESULTS SUMMARY**

Table 1 Test Results Summary

Test Items	Section	Test Results
Conducted Disturbance	Section 18.307	Pass
Radiated Disturbance	Section 18.305	Pass

## **2. GENERAL INFORMATION**

### **2.1. Report information**

- 2.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.
- 2.1.2. The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.
- 2.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

### **2.2. Measurement Uncertainty**

Conducted Disturbance : 9kHz~30MHz    3.5dB

Radiated Disturbance: 30MHz~1000MHz    4.5dB  
1GHz~18GHz    4.6dB

### 3. PRODUCT DESCRIPTION

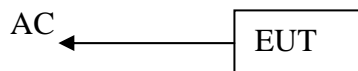
#### 3.1. EUT Description

Applicant : Zhongshan Opple Lighting Co., Ltd.  
Description : Saving Light  
Model Number : YPZ120/45-SS  
Rated Input : AC 120V 50/60Hz  
EUT Classification : RF lighting device, consumer equipment

#### 3.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: VIJYPZ12045-SS filing to comply with Section 18.305, 18.307 of the FCC Part 18 Rules for consumer equipment of RF lighting device.

#### 3.3. Block Diagram of EUT Configuration



#### 3.4. Operating Condition of EUT

Test mode 1: On

#### 3.5. Special Accessories

Not available for this EUT intended for grant.

#### 3.6. Equipment Modifications

Not available for this EUT intended for grant.

#### 3.7. Support Equipment List

N/A

#### 3.8. Test Conditions

Date of test: Jul.23,2007-Aug 13, 2007  
Date of EUT Receive: Jul.20,2007  
Temperature: 22-25 °C  
Relative Humidity: 56-65%

## 4. TEST EQUIPMENT USED

### 4.1. Test Equipment Used to Measure Conducted Disturbance

Table 2 Conducted Disturbance Test Equipment

No.	Equipment	Manufacturer	Model No.	Cal due date
SB2603	EMI Test Receiver	Rohde & Schwarz	ESCS30	January 24, 2008
SB3321	AMN	Rohde & Schwarz	ESH2-Z5	January 24, 2008

### 4.2. Test Equipment Used to Measure Radiated Disturbance

Table 3 Radiated Disturbance Test Equipment

No.	Equipment	Manufacturer	Model No.	Cal due date
SB2603	EMI Test Receiver	Rohde & Schwarz	ESCS30	January 24, 2008
SB3321	AMN	Rohde & Schwarz	ESH2-Z5	January 24, 2008

## 5. CONDUCTED DISTURBANCE TEST

### 5.1. Test Standard and Limit

#### 5.1.1. Test Standard

FCC Part 18 Section 18.307

#### 5.1.2. Test Limit

Table 4 Conducted Disturbance Test Limit

Frequency	Maximum RF Line Voltage (dB $\mu$ V)
0.45~2.51MHz	48.0
2.51~3.0MHz	69.5
3.0~30MHz	48.0

\* Lower limit is applied at the transition frequency

### 5.2. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions from both sides of AC line. According to the requirements in Section 7 and 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.45 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

### 5.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

### 5.4. Test Data



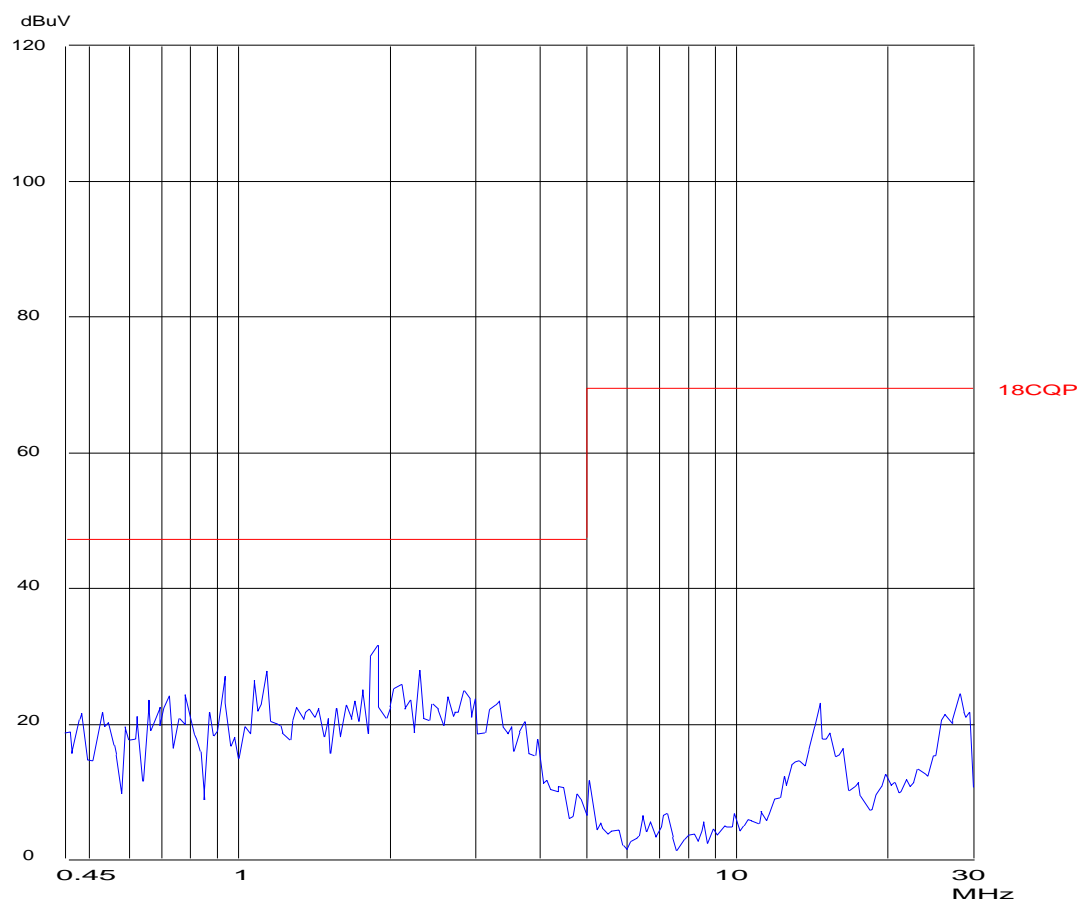
Table 5 Conducted Disturbance Test Data at AC Input Port

Model No.:YPZ120/45-SS					
Test Mode: 1					
L					
Frequency (MHz)	Correction Factor(dB)	Quasi-Peak			
		Reading (dBμV)	Level (dBμV)	Limit (dBμV)	Margin (dB)
1.862	9.9	10.1	20.0	48.0	28.0
N					
Frequency (MHz)	Correction Factor(dB)	Quasi-Peak			
		Reading (dBμV)	Level (dBμV)	Limit (dBμV)	Margin (dB)
1.623	9.9	23.9	33.8	48.0	14.2
1.854	9.9	26.3	36.2	48.0	11.8
2.452	10.0	22.1	32.1	48.0	15.9
2.893	10.0	20.3	30.3	48.0	17.7

1. Emission level(dBuV)=Read Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)
3. The other emission levels were very low against the limit.

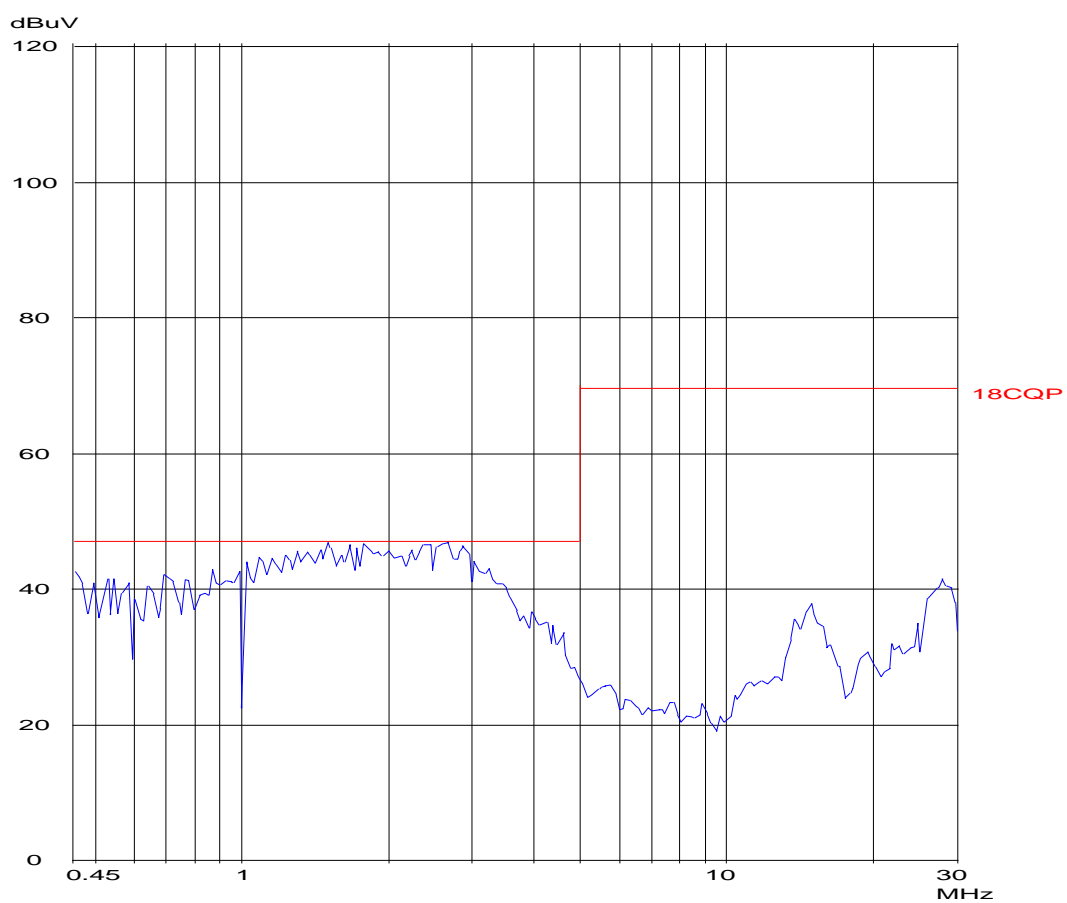
## Conducted Disturbance

EUT: M/N:YPZ120/45-SS  
Op Cond: ON  
Test Spec: L  
Comment: AC 120V/60Hz



## Conducted Disturbance

EUT: M/N:YPZ120/45-SS  
Op Cond: ON  
Test Spec: N  
Comment: AC 120V/60Hz



## 6. RADIATED DISTURBANCE TEST

### 6.1. Test Standard and Limit

#### 6.1.1. Test Standard

FCC Part 18 Section 18.305

#### 6.1.2. Test Limit

Table 6 Radiated Disturbance Test Limit

Frequency	Limit (dB $\mu$ V/m)
	Quasi-peak Level
30MHz~88MHz	40.0
88MHz~216MHz	43.5
216MHz~1000MHz	46.0

\* The lower limit shall apply at the transition frequency.

\* The test distance is 3m.

### 6.2. Test Procedure

The EUT is placed on a turntable, which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 and13 of ANSI C63.4-2003.

The RBW of the EMI test receiver is :

30~1000MHz 120KHz

1000-18000MHz 1MHz

### 6.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

### 6.4. Test Data

Table 7 Radiated Disturbance Test Data

Model No.: YPZ120/45-SS

Test Mode: 1

Frequency MHz	Cable Loss(dB)	Antenna Factor(dB)	Readings dB	Emmision Level dB $\mu$ V/m	Polarizatio n	Limits dB $\mu$ V/m	Margin (dB)
31.433	0.9	18.8	18.4	38.1	Vertical	40.0	1.9
31.673	0.9	18.8	17.7	37.4	Horizontal	40.0	2.6

1. Emission level(dBuV/m)=Read Value(dB) + Antenna Factor (dB/m) + Cable Factor (dB)

2. The other emission levels were very low against the limit.

### ***Radiated Disturbance***

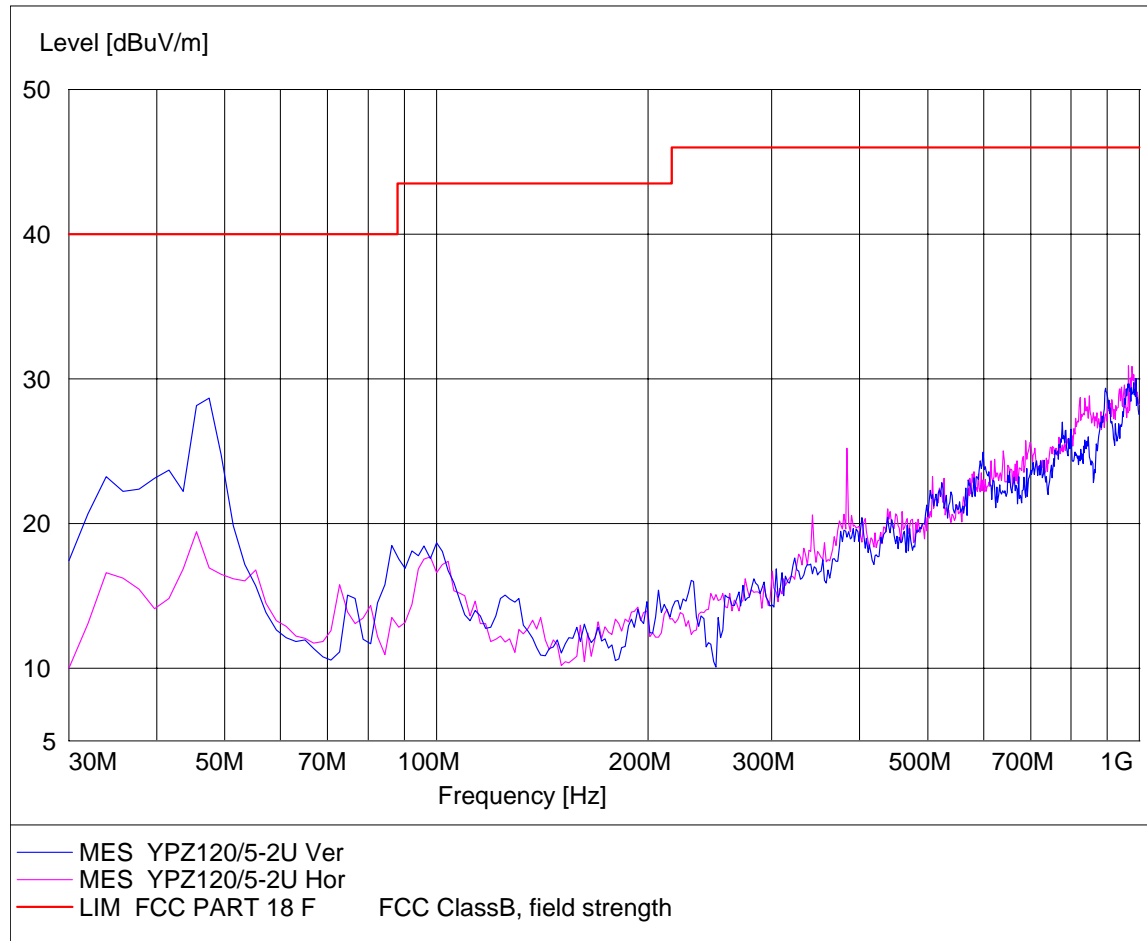
EUT: M/N: YPZ120/5-2U

Operating Condition: On

Test Site: SMQ EMC Lab. SAC

Test Specification: Vertical & Horizontal

comment: AC 120V/60Hz



**7. TABLE LIST**

Table 1 Test Results Summary ..... 4

Table 2 Conducted Disturbance Test Equipment ..... 7

Table 3 Radiated Disturbance Test Equipment ..... 7

Table 4 Conducted Disturbance Test Limit ..... 8

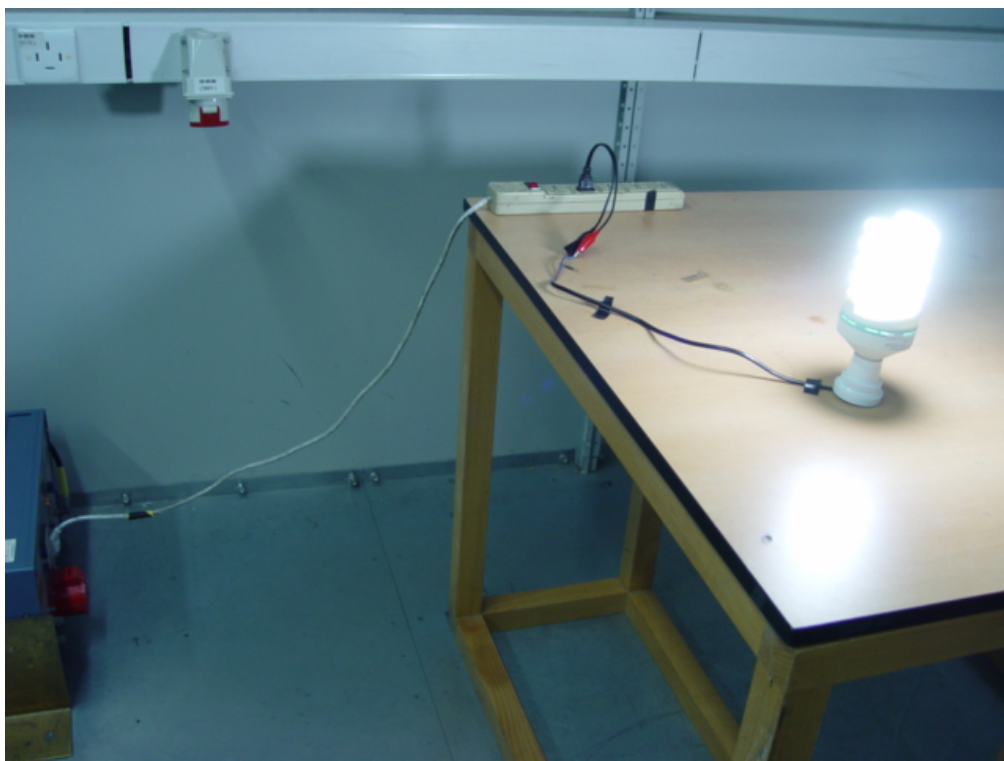
Table 5 Conducted Disturbance Test Data at AC Input Port..... 9

Table 6 Radiated Disturbance Test Limit ..... 12

Table 7 Radiated Disturbance Test Data ..... 13

## **APPENDIX I TEST PICTURE**

**Photo 1 Conducted Disturbance Test**



**Photo 2 Radiated disturbances Test**

