



NVLAP LAB CODE 200707-0



FCC PART 18

MEASUREMENT AND TEST REPORT

For

Sunny World (HK) Limited

Room 302-306, Hewlett Centre, 54 Hoi Yuen Road,
Kwun Tong, Kowloon, Hong Kong

FCC ID: XBSEF-16WFD

Report Type: Original Report	Product Type: Energy Saving Lamp
Test Engineer: <u>Senny Chen</u> <i>Senny Chen</i>	
Report Number: <u>RSZ09042052</u>	
Report Date: <u>2009-05-20</u>	
Reviewed By: <u>William Chen</u> EMC Engineer	<i>William . chan .</i>
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP*, NIST, or any agency of the Federal Government.

* This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk “*” (Rev.2)

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Sunny World (HK) Limited*'s model: *EF-15W/FD*, or the "EUT" as referred to in this report is a *ENERGY SAVING LAMP* which measures approximately: 14.0 cm L x 9.5 cm W x 9.5 cm H, rated input voltage: AC 120V/60Hz.

** All measurement and test data in this report was gathered from production sample serial number: 0904522 (Assigned by BACL, Shenzhen). The EUT was received on 2009-04-20.*

Objective

The following test report is prepared on behalf of *Sunny World (HK) Limited* in accordance with Part 2, Subpart J, and Part 18, Subparts A, B and C of the Federal Communication Commissions rules and regulations.

The objective of the manufacturer is to determine compliance with FCC Part 18 limits.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with MP-5, FCC Methods of Measurements of Radio Noise Emissions from ISM Equipment, February 1986. All measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at
<http://ts.nist.gov/Standards/scopes/2007070.htm>

SYSTEM TEST CONFIGURATION

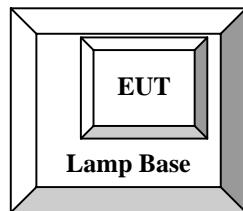
Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

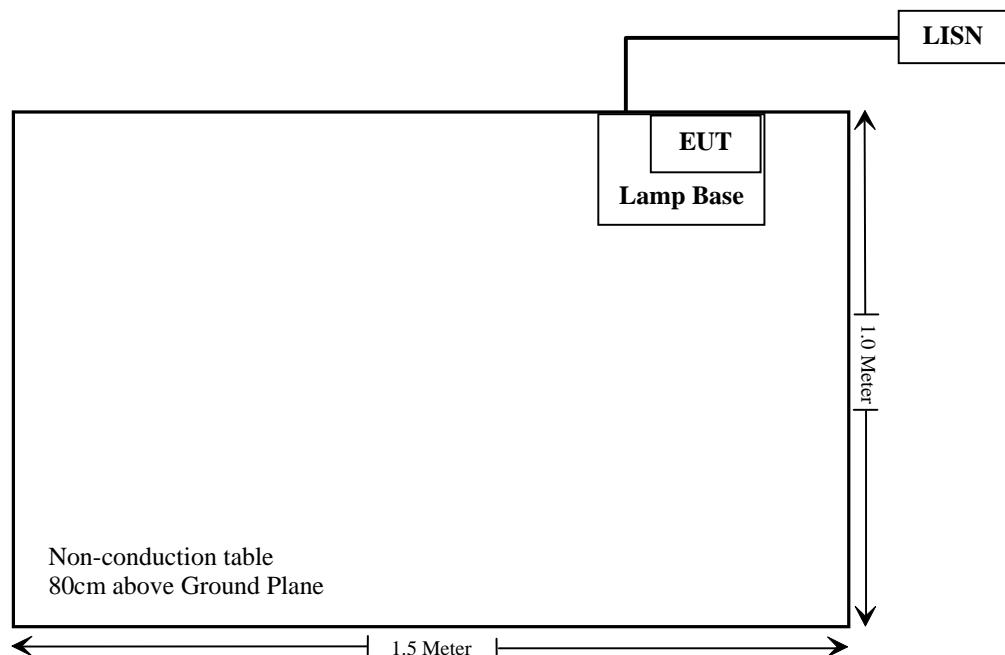
Equipment Modifications

No modifications were made to the unit tested.

Configuration of Test Setup



Block Diagram of Test Setup



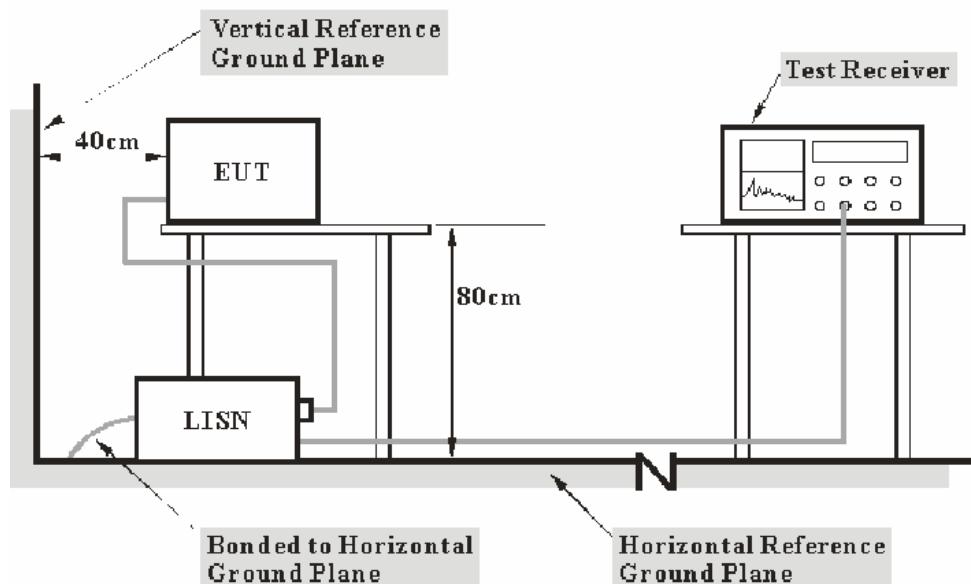
CONDUCTED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is ± 2.4 dB.

EUT Setup



Note:

1. Support units were connected to second LISN.
2. Both of LISNs (AMIN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with MP-5: 1986 measurement procedure. Specification used was with the FCC Part 18 limits.

The EUT was connected to a 120 VAC/ 60Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 450 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

<u>Frequency Range</u>	<u>IF B/W</u>
450 kHz – 30 MHz	9 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	830245/006	2009-03-25	2010-03-25
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2009-03-25	2010-03-25

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

During the conducted emission test, the EUT power cord was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Peak detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the [FCC Part 18](#), with the worst margin reading of:

8.50 dB at 0.480 MHz in the **Neutral** conductor mode

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0 kPa

Testing was performed by Senny Chen on 2009-04-22.

Test Mode: On

Line Conducted Emissions				FCC Part 18.307	
Frequency (MHz)	Amplitude (dB μ V)	Detector (PK/QP/AV)	Conductor (Line/Neutral)	Limit (dB μ V)	Margin (dB)
0.480	39.50	PK	Neutral	48	8.5
24.755	39.40	PK	Line	48	8.6
0.580	36.00	PK	Neutral	48	12.0
0.480	35.40	PK	Line	48	12.6
0.685	34.00	PK	Neutral	48	14.0
0.845	33.90	PK	Neutral	48	14.1
0.615	32.80	PK	Line	48	15.2
0.685	32.70	PK	Line	48	15.3
1.650	32.10	PK	Neutral	48	15.9
1.005	31.70	PK	Line	48	16.3
0.790	30.00	PK	Line	48	18.0
28.890	28.70	PK	Neutral	48	19.3

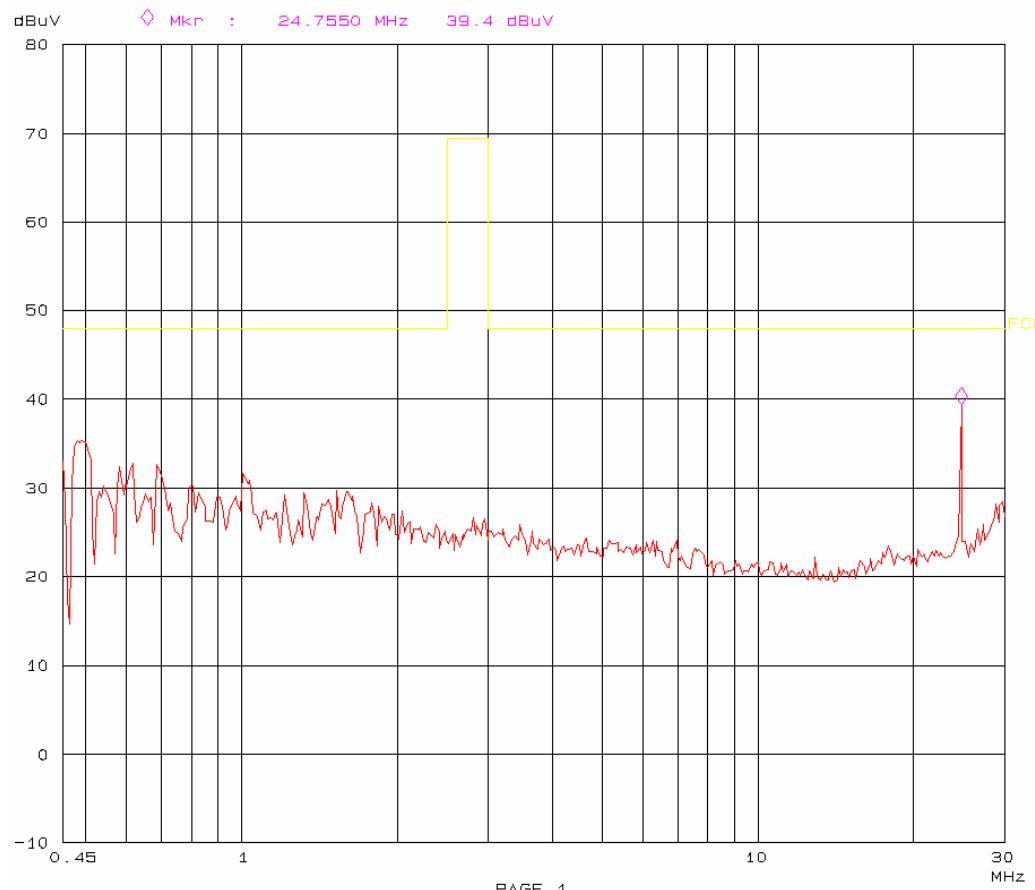
Plot(s) of Test Data

Plot(s) of Test Data is presented hereinafter as reference..

Conducted emission

FCC Part 18

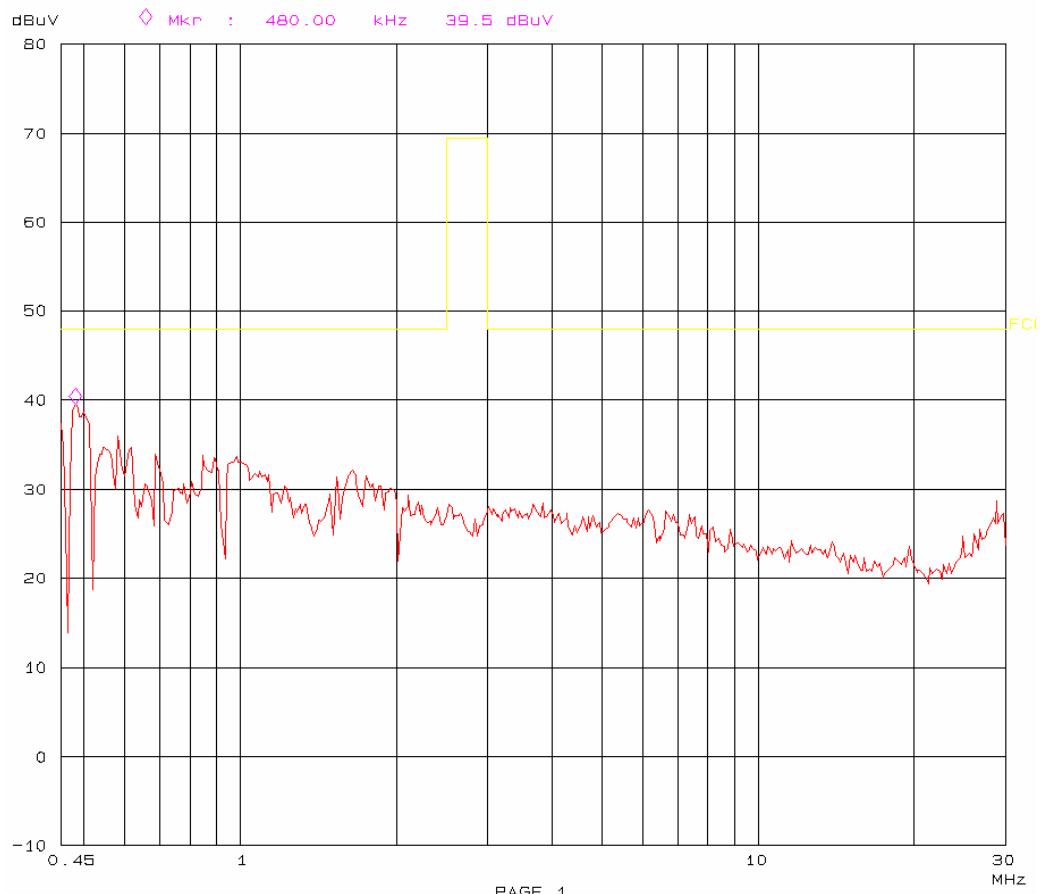
EUT: Energy Saving Lamp M/N: EF-15W/FD
Manuf: Sunny World (HK) Limited
Op Cond: On
Operator: Sunny
Test Spec: AC 120V/60Hz L
Comment: Temp: 24 Hum: 50%
BACL



Conducted emission

FCC Part 18

EUT: Energy Saving Lamp M/N: EF-15W/FD
Manuf: Sunny World (HK) Limited
Op Cond: On
Operator: Sunny
Test Spec: AC 120V/60Hz N
Comment: Temp: 24 Hum: 50%
BACL



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***** END OF REPORT *****