



**COMPATIBLE
ELECTRONICS**

FCC ID: N96SP-23SL

EXHIBIT 3

TECHNICAL TEST REPORT

*FCC PART 18, SUBPART C
CONSUMER CLASS TEST REPORT*

for

ELECTRONIC ENERGY SAVING BULB

Model: SP-23SL

Prepared for

SUNPARK ELECTRONICS CORPORATION
1815 WEST 205TH STREET
SUITE 104
TORRANCE CA 90251

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DATE: NOVEMBER 25, 1998

	REPORT BODY	APPENDICES		TOTAL
		<i>A</i>	<i>B</i>	
PAGES	10	7	2	19

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1	Equipment Cabling Setup - EMI
2	Conducted Emissions Test Setup

**GENERAL REPORT SUMMARY**

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedure described in the test specification given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full.

Device Tested: Electronic Energy Saving Bulb
Model: SP-23SL
S/N: None

Product Description: The equipment under test is a fluorescent coiled light bulb for use in any standard light socket.

Manufacturer: Sunpark Electronics Corp.
252 W. 38th St.
Suite 104
Torrance CA 90251

Test Date: October 15, 1998

Test Specifications: EMI requirements
FCC Title 47, Part 18, Subpart C, Consumer Class
Test Procedure: ANSI C63.4: 1992.

Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 450 KHz - 30 MHz.	Complies with the Consumer Class limits of FCC Title 47, Part 18, Subpart C.

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Electronic Energy Saving Bulb Model: SP-23SL. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 1992. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Consumer Class** specification limits defined in FCC Title 47, Part 18, Subpart C.

2 ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 19121 El Toro Road, Silverado, California.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Sunpark Electronics Corporation:

Howard Taps Vice President of Sales and Marketing

Compatible Electronics Inc.:

John Ethington Test Engineer
Jesse A. Metoyer Sr. Test Engineer
Victor Ratinoff Lab Manager

2.4 Date Test Sample was Received

The test sample was received on October 15, 1998.

2.5 Disposition of the Test Sample

The test sample was be returned to Sunpark Electronics Corporation on October 30, 1998.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

CML	Corrected Meter Limit	N.C.R.	No Calibration Required
EMI	Electromagnetic Interference	N/A	Non-Applicable
EUT	Equipment Under Test	P/N	Part Number
HP	Hewlett Packard	RF	Radio Frequency
ITE	Information Technology Equipment	S/N	Serial Number
LISN	Line Impedance Stabilization Network		

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI/EMC Test Report.

SPEC	TITLE
FCC Title 47, Part 18, Subpart C.	FCC Rules - RF lighting devices.
ANSI C63.4 1992	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 KHz to 40 GHz.

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

Setup and operation of the equipment under test.

The Sunpark Electronics Corporation Electronic Energy Saving Bulb, Model: SP-23SL (EUT) was connected to the generic light bulb socket. The generic light bulb socket was plugged directly into the power outlet.

The EUT was powered on during the testing.

It was determined that the conducted emissions were at their highest level when the EUT was operating in the configuration as described above. The final data can be found in Appendix A of this test report. The cables were moved to maximize the emissions. The final conducted data was taken in this mode of operation. Cables were bundled and routed as shown in the photographs in Appendix A.

4.1.1 **Cable Construction and Termination**

Cable 1 This is a 1.0 meter flat two wire unshielded cable connecting the generic light bulb socket to the 120 Volts AC power outlet.

**5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT****5.1 EUT and Accessory List**

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NUMBER	FCC IDENTIFIER
Electronic Energy Saving Bulb (EUT)	Sunpark Electronics Corporation	SP-23SL	None	N96SP-23SL
Light Bulb Socket	Generic	None	None	None

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DUE DATE	CAL. CYCLE
Spectrum Analyzer-RF	Hewlett Packard	8566B	2747A04875	August 11, 1999	1 Year
Spectrum Analyzer-Disp.	Hewlett Packard	85682A	2848a18386	August 11, 1999	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650A	2811A01195	August 11, 1999	1 Year
RF Attenuator	Pasternack	PE4132	02473	February 9, 1999	1 Year
LISN	Com Power	LI-200	01767	July 12, 1999	1 Year
LISN	Com Power	LI-200	01768	July 12, 1999	1 Year
LISN	Com Power	LI-200	01765	July 12, 1999	1 Year
LISN	Com Power	LI-200	2774	July 12, 1999	1 Year
Computer	Hewlett Packard	98561X	2522A08303	N.C.R.	N/A
Computer Disk Drive	Hewlett Packard	9153A	2732A15018	N.C.R.	N/A
Computer Monitor	Hewlett Packard	35731A	8604K16666	N.C.R.	N/A
Printer	Hewlett Packard	2225A	2620S30245	N.C.R.	N/A
Plotter	Hewlett Packard	7550A	2407A01455	N.C.R.	N/A
Keyboard	Hewlett Packard	46021A	3020S50284	N.C.R.	N/A

**6. TEST SITE DESCRIPTION****6.1 Test Facility Description**

Please refer to section 7.1.1 and 7.1.2 of this report for EMI test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.

7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests.

7.1 RF Emissions**7.1.1 Conducted Emissions Test**

The HP 8566B spectrum analyzer was used as a measuring meter along with the HP 85650A quasi-peak adapter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak detector was used only where indicated in the data sheets. A 10 dB attenuation pad was used for the protection of the spectrum analyzer input stage, and the spectrum analyzer offset was adjusted accordingly to read the actual data measured. The LISN output was read by the HP 8566B spectrum analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for the conducted emissions test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 1992. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 10 centimeters in length.

The initial test data was taken in manual mode while scanning the frequencies ranges of 0.45 MHz to 1.6 MHz, 1.6 MHz to 5 MHz and 5 MHz to 30 MHz. The conducted emissions from the EUT were maximized for operating mode as well as cable and peripheral placement. Once a predominant frequency (within 12 dB of the limit) was found, it was more closely examined with the spectrum analyzer span adjusted to 1 MHz.

The final data was collected under program control by the HP 9000/300 in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. The six highest emissions are listed in Table 1.

7.1.3 **RF Emissions Test Results**Table 1.0 **CONDUCTED EMISSION RESULTS**
Electronic Energy Saving Bulb
Model: SP-23SL

Frequency MHz	Emission Level* dB _u V	Specification Limit dB _u V	Emission Level* uV	Specification Limit uV	Delta dB
0.5019	45.4	48	185	250	- 2.6
0.5082	45.9	48	196	250	- 2.1
0.5961	43.9	48	156	250	- 4.1
0.5961	43.7	48	152	250	- 4.3
0.6732	44.6	48	169	250	- 3.4
0.8479	43.6	48	150	250	- 4.4

Notes:

* The complete emissions data is given in Appendix A of this report.

8.

CONCLUSIONS

The Sunpark Electronics Corporation Electronic Energy Saving Bulb, Model: SP-23SL meets all of the **Consumer Class** requirements of the FCC Title 47, Part 18, Subpart C.

APPENDIX A***RADIATED AND CONDUCTED EMISSIONS
DATA SHEETS***

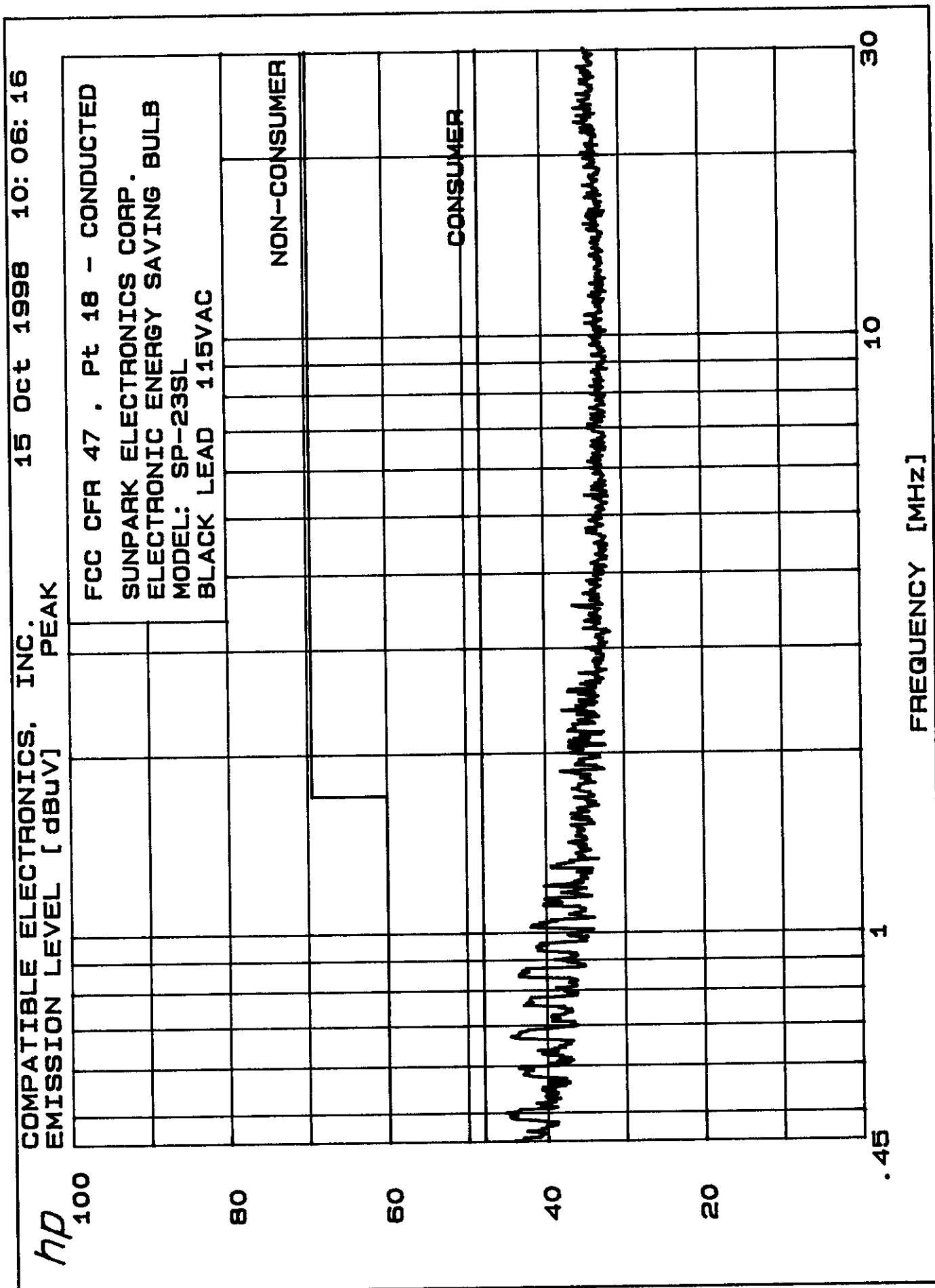
19121 EL TORO ROAD, SILVERADO, CALIFORNIA 92676 PHONE: (949) 589-0700 FAX: (949) 589-7700

MEASUREMENT NOTES:

FCC CFR 47, PART 18 CONDUCTED EMISSIONS TEST
SUNPARK ELECTRONICS CORP.
ELECTRONIC ENERGY SAVING BULB MODEL: SP-23SL
TIME: 10:06:16 DATE: 10-15-98
BLACK LEAD 115VAC
TESTED BY: JOHN ETHINGTON

20 highest Peaks above -20 dB of Limit Line #2
Peak criteria = 4 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5019	45.4	-2.6
2	.5961	43.7	-4.3
3	.6374	41.3	-6.7
4	.6732	44.6	-3.4
5	.7571	43	-5.0
6	.8479	43.6	-4.4
7	.9496	41.3	-6.7
8	1.024	42	-6.0
9	1.114	40.4	-7.6
10	1.201	40.3	-7.7
11	1.29	39.4	-8.6
12	1.866	38.1	-9.9
13	2.046	37	-11.0
14	2.09	37	-11.0
15	2.36	37.8	-10.2
16	3.531	36.4	-11.6



MEASUREMENT NOTES:

 FCC CFR 47, PART 18 CONDUCTED EMISSIONS TEST
 SUNPARK ELECTRONICS CORP.
 ELECTRONIC ENERGY SAVING BULB MODEL: SP-23SL
 TIME: 10:18:59 DATE: 10-15-98
 WHITE LEAD 115VAC
 TESTED BY: JOHN ETHINGTON

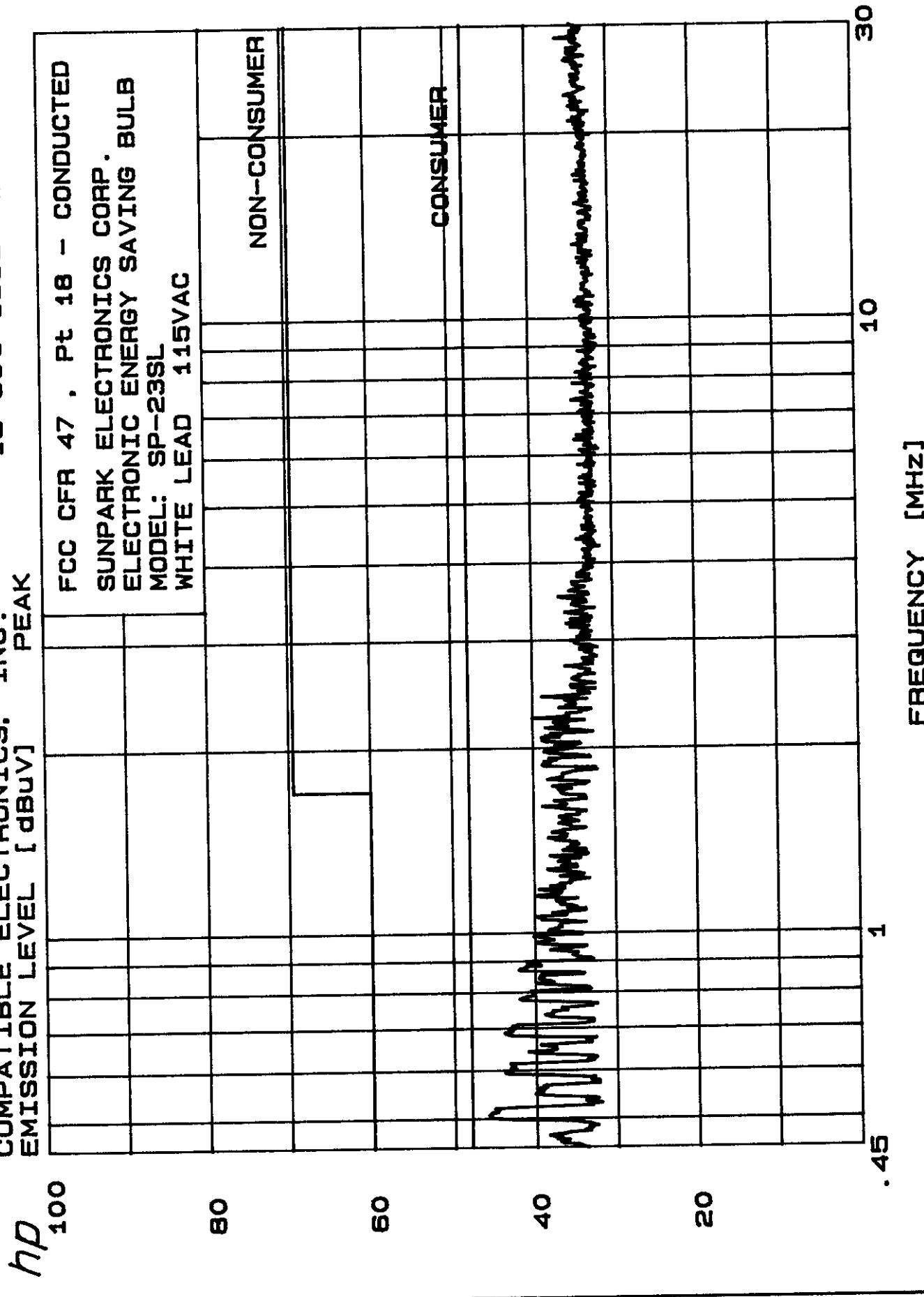
20 highest Peaks above -20 dB of Limit Line #2
 peak criteria = 4 dB

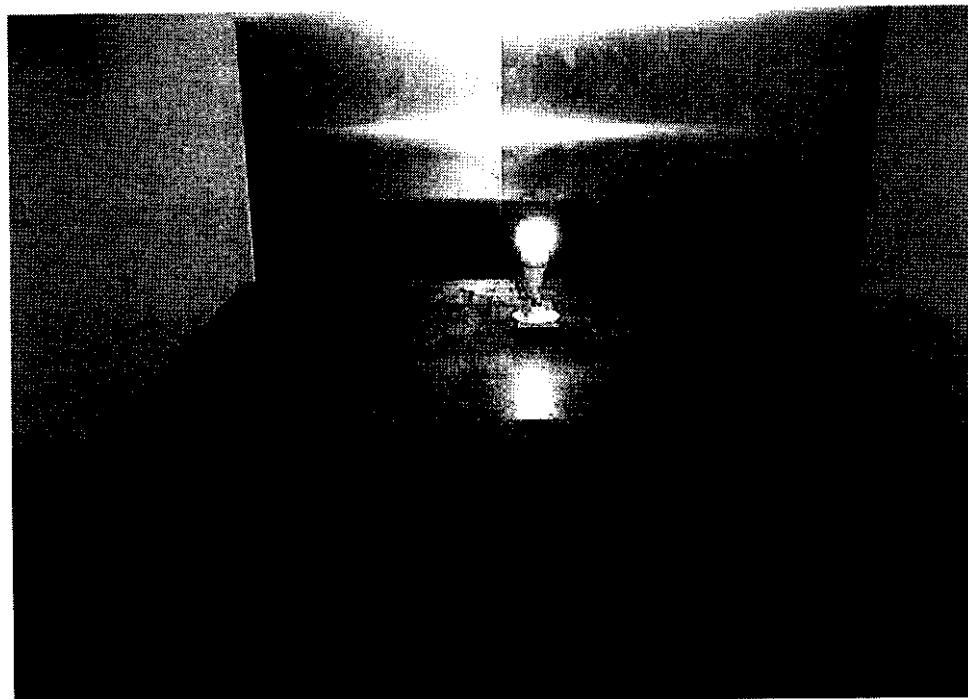
PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.4713	38.5	-9.5
2	.5082	45.9	-2.1
3	.5504	40.2	-7.8
4	.5961	43.9	-4.1
5	.6455	41	-7.0
6	.6903	43.9	-4.1
7	.7383	38.9	-9.1
8	.7829	42	-6.0
9	.8303	39.8	-8.2
10	.8732	42.1	-5.9
11	.9903	40.2	-7.8
12	1.068	40	-8.0
13	1.152	40	-8.0
14	1.611	39	-9.0
15	1.882	38.9	-9.1
16	1.979	38.7	-9.3
17	2.064	38.9	-9.1
18	2.161	38.5	-9.5
19	2.244	40.1	-7.9
20	2.43	38.9	-9.1

15 Oct 1998 10: 18: 59

COMPATIBLE ELECTRONICS, INC.
EMISSION LEVEL [dB_{UV}]

FCC CFR 47 . Pt 18 - CONDUCTED

SUNPARK ELECTRONICS CORP.
ELECTRONIC ENERGY SAVING BULB
MODEL: SP-23SL
WHITE LEAD 115VAC



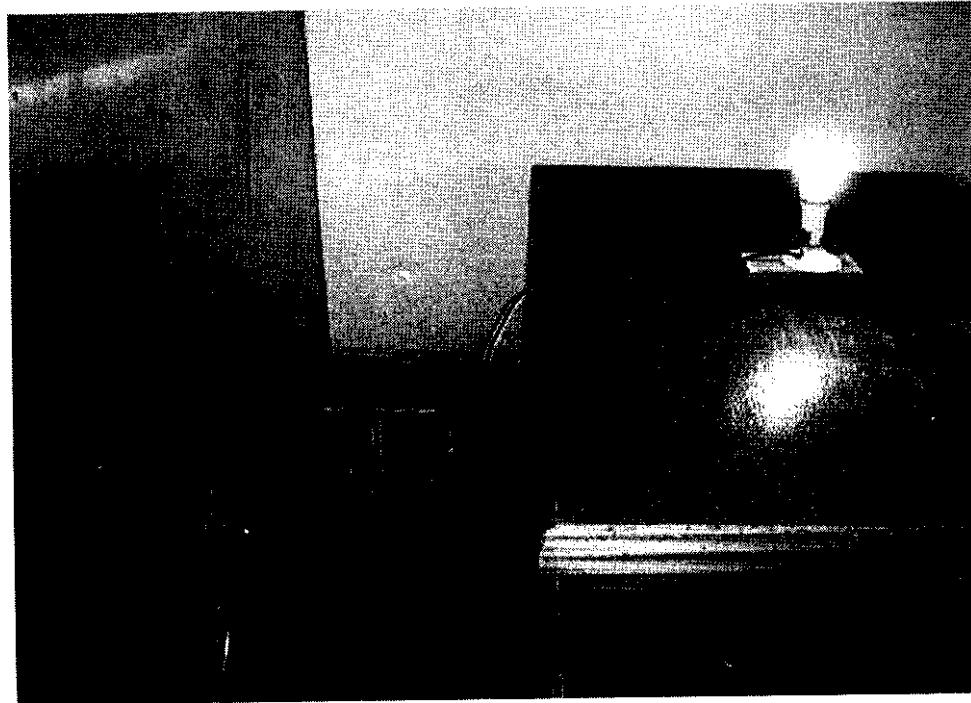
FRONT VIEW

SUNPARK ELECTRONICS CORPORATION
ELECTRONIC ENERGY SAVING BULB
MODEL: SP-23SL

FCC ID: N96SP-23SL - CONDUCTED EMISSIONS - 10/13/97

**PHOTOGRAPHS SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

19121 EL TORO ROAD, SILVERADO, CALIFORNIA 92676 PHONE: (949) 589-0700 FAX: (949) 589-7700



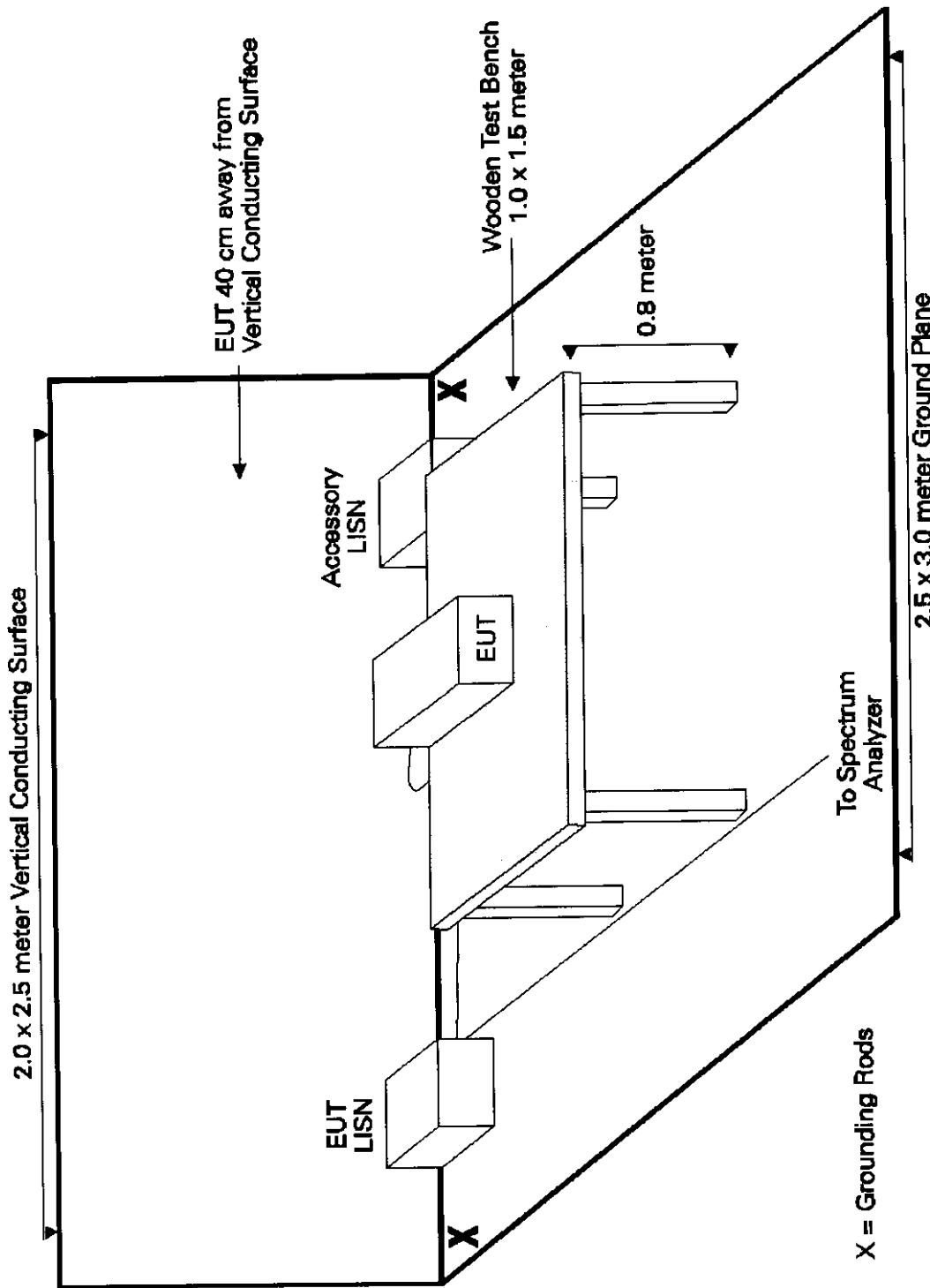
REAR VIEW

SUNPARK ELECTRONICS CORPORATION
ELECTRONIC ENERGY SAVING BULB
MODEL: SP-23SL

FCC ID: N96SP-23SL - CONDUCTED EMISSIONS - 10/13/97

**PHOTOGRAPHS SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

APPENDIX B***TEST SETUP DIAGRAM***



CONDUCTED EMISSIONS TEST SETUP