



NVLAP LAB CODE 200707-0



FCC PART 18

MEASUREMENT AND TEST REPORT

For

Zhejiang Sunsea Lighting Electrical Appliance Co., Ltd.

NO 66, Luoyang Road, Luqiao District,
Taizhou City, Zhejiang, China

FCC ID: XWLSSBT5-28W

Report Type: Original Report	Product Type: Long shape support electron fluorescent lamp
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Report Number:	RSH09103051
Report Date:	2009-12-08
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* 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 ZHEJIANG SUNSEA LIGHTING ELECTRICAL APPLIANCE CO., LTD's model: SSBT5-28W-L011, SSBT5-21W-L011, SSBT5-14W-L011, SSBT5-13W-L011, or the "EUT" as referred to in this report is a *Long shape support electron fluorescent lamp*, which measures approximately: SSBT5-28W-L011: 120.3 cm L x 2.2 cm W x 4.2 cm H, SSBT5-21W-L011: 90.2 cm L x 2.2 cm W x 4.2 cm H, SSBT5-14W-L011: 60.3 cm L x 2.2 cm W x 4.2 cm H, SSBT5-13W-L011: 57.0 cm L x 2.2 cm W x 4.2 cm H rated input voltage: AC 120V/60Hz.

** All measurement and test data in this report was gathered from production sample serial number: 0901037 (Assigned by BACL, Shenzhen). The EUT was received on 2009-10-30.*

Objective

The following test report is prepared on behalf of ZHEJIANG SUNSEA LIGHTING ELECTRICAL APPLIANCE CO., LTD 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 21, 2007. 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).



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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).

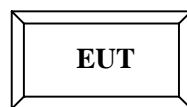
Equipment Modifications

No modifications were made to the unit tested.

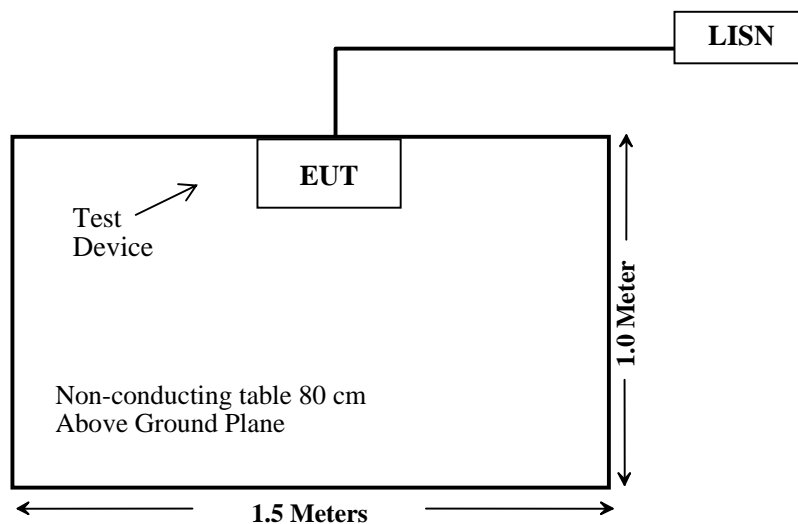
External I/O Cable

Cable Description	Length (m)	From Port	To
Unshielded Detachable Power Cable	1.0	EUT	LISN

Configuration of Test Setup



Block Diagram of Test Setup



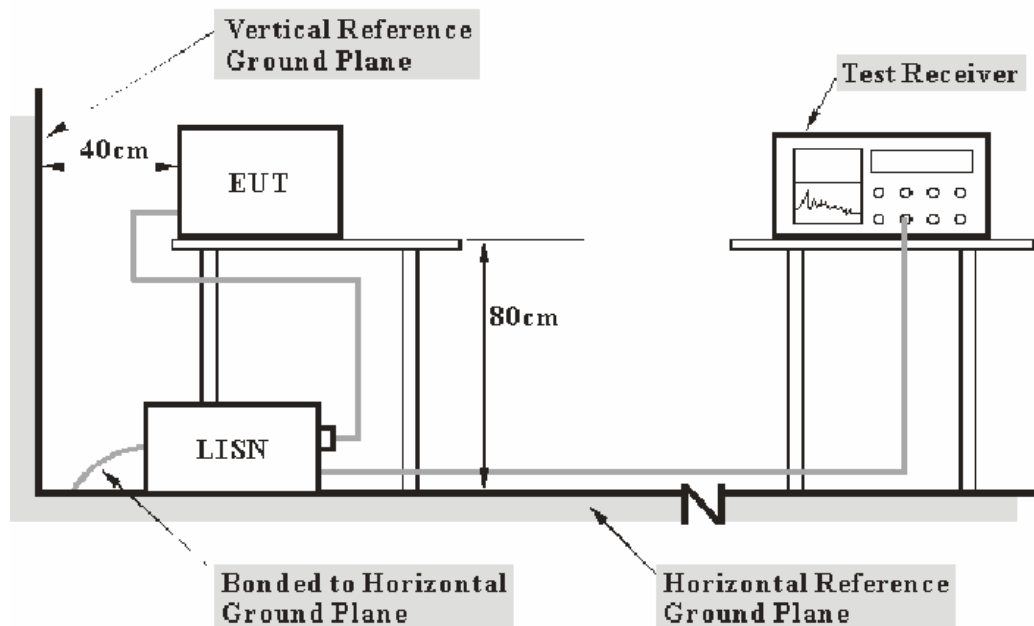
CONDUCTED EMISSIONS

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 (AMN) 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:

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Com-Power	L.I.S.N.	LI-200	12005	N/A	N/A
Com-Power	L.I.S.N.	LI-200	12208	N/A	N/A
Rohde & Schwarz	EMI Test Receiver	ESCS30	830245/006	2009-04-28	2010-04-27
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2009-04-28	2010-04-27

* Com-Power's LISN were used as the supporting equipment.

* **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 Quasi-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:

SSBT5-13W-L011: 16.60 dB at 0.485 MHz in the Neutral conductor mode.

SSBT5-14W-L011: 18.80 dB at 24.365 MHz in the Neutral conductor mode.

SSBT5-21W-L011: 6.70 dB at 28.325 MHz in the Line conductor mode.

SSBT5-28W-L011: 1.80 dB at 0.485 MHz in the Line conductor mode.

Test Data**Environmental Conditions**

Temperature:	25 ° C
Relative Humidity:	50 %
ATM Pressure:	100.0 kPa

Testing was performed by Jessica He on 2009-11-03 and Cassio Wu on 2009-12-07.

Model: SSBT5-13W-L011

Line Conducted Emissions				FCC Part 18.307	
Frequency (MHz)	Amplitude (dBμV)	Detector	Conductor (Line/Neutral)	Limit (dBμV)	Margin (dB)
0.485	31.40	Peak	Neutral	48.00	16.60
24.620	31.00	Peak	Neutral	48.00	17.00
0.450	31.00	Peak	Line	48.00	17.00
0.535	30.90	Peak	Line	48.00	17.10
0.630	30.80	Peak	Line	48.00	17.20
0.635	30.50	Peak	Neutral	48.00	17.50
0.815	30.40	Peak	Line	48.00	17.60
0.530	30.30	Peak	Neutral	48.00	17.70
0.715	30.20	Peak	Line	48.00	17.80
0.930	29.40	Peak	Neutral	48.00	18.60
1.050	28.90	Peak	Neutral	48.00	19.10
29.970	25.60	Peak	Line	48.00	22.40

Model: SSBT5-14W-L011

Line Conducted Emissions				FCC Part 18.307	
Frequency (MHz)	Amplitude (dBμV)	Detector	Conductor (Line/Neutral)	Limit (dBμV)	Margin (dB)
24.365	29.20	Peak	Neutral	48.00	18.80
0.450	28.70	Peak	Line	48.00	19.30
0.540	28.10	Peak	Line	48.00	19.90
14.105	27.70	Peak	Line	48.00	20.30
0.470	27.40	Peak	Neutral	48.00	20.60
24.370	26.80	Peak	Line	48.00	21.20
0.600	26.60	Peak	Line	48.00	21.40
30.000	26.50	Peak	Neutral	48.00	21.50
0.510	26.20	Peak	Neutral	48.00	21.80
0.820	24.50	Peak	Line	48.00	23.50
14.125	23.50	Peak	Neutral	48.00	24.50
4.585	23.20	Peak	Neutral	48.00	24.80

Model: SSBT5-21W-L011

Line Conducted Emissions				FCC Part 18.307	
Frequency (MHz)	Amplitude (dBμV)	Detector	Conductor (Line/Neutral)	Limit (dBμV)	Margin (dB)
28.325	41.30	Peak	Line	48.00	6.70
29.135	39.90	Peak	Line	48.00	8.10
29.895	38.70	Peak	Neutral	48.00	9.30
28.445	36.90	Peak	Neutral	48.00	11.10
0.475	35.70	Peak	Neutral	48.00	12.30
25.845	35.30	Peak	Neutral	48.00	12.70
0.590	35.00	Peak	Line	48.00	13.00
0.535	34.50	Peak	Neutral	48.00	13.50
0.595	34.50	Peak	Neutral	48.00	13.50
0.630	34.10	Peak	Line	48.00	13.90
0.470	33.70	Peak	Line	48.00	14.30
0.645	32.90	Peak	Line	48.00	15.10

Model: SSBT5-28W-L011

Line Conducted Emissions				FCC Part 18.307	
Frequency (MHz)	Amplitude (dBμV)	Detector	Conductor (Line/Neutral)	Limit (dBμV)	Margin (dB)
0.485	46.20	Peak	Line	48.00	1.80*
0.455	46.00	Peak	Line	48.00	2.00
0.450	45.30	Peak	Neutral	48.00	2.70
0.475	44.90	Peak	Neutral	48.00	3.10
0.535	44.60	Peak	Line	48.00	3.40
0.500	44.20	Peak	Neutral	48.00	3.80
0.555	44.00	Peak	Line	48.00	4.00
26.670	44.00	Peak	Line	48.00	4.00
0.605	42.00	Peak	Line	48.00	6.00
0.530	41.50	Peak	Neutral	48.00	6.50
26.755	41.30	Peak	Neutral	48.00	6.70
0.595	39.00	Peak	Neutral	48.00	9.00

* Within measurement uncertainty.

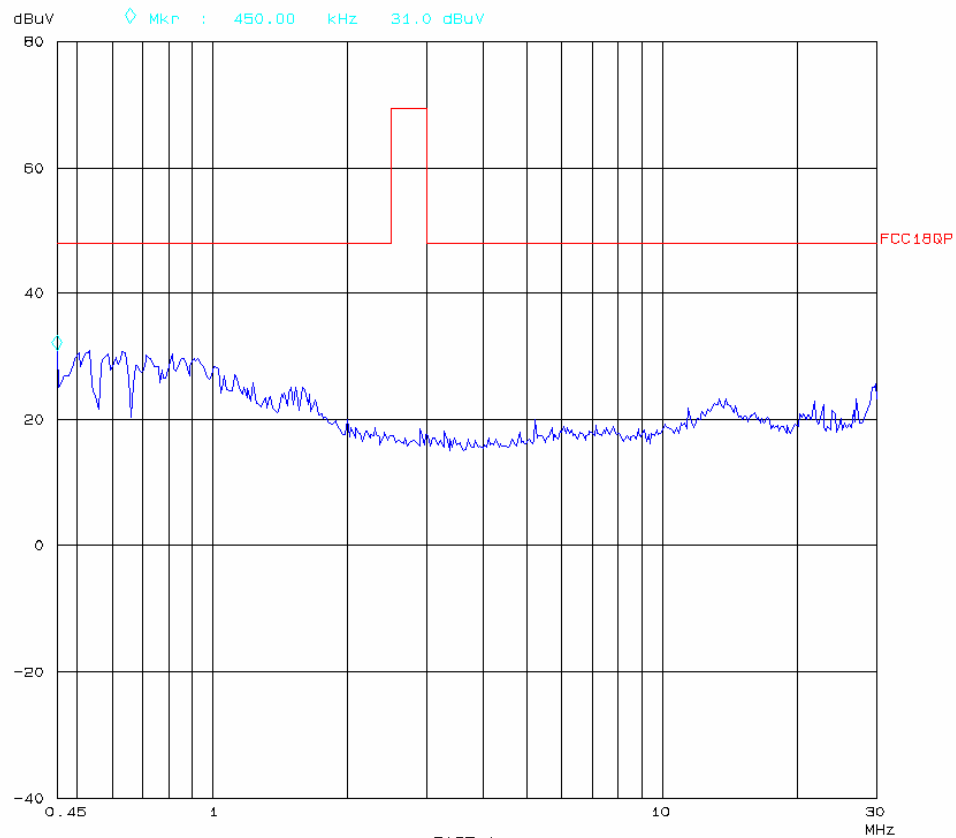
Plot(s) of Test Data

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

Model: SSBT5-13W-L011Conducted Emission
FCC PART 18

03. Nov 09 14:13

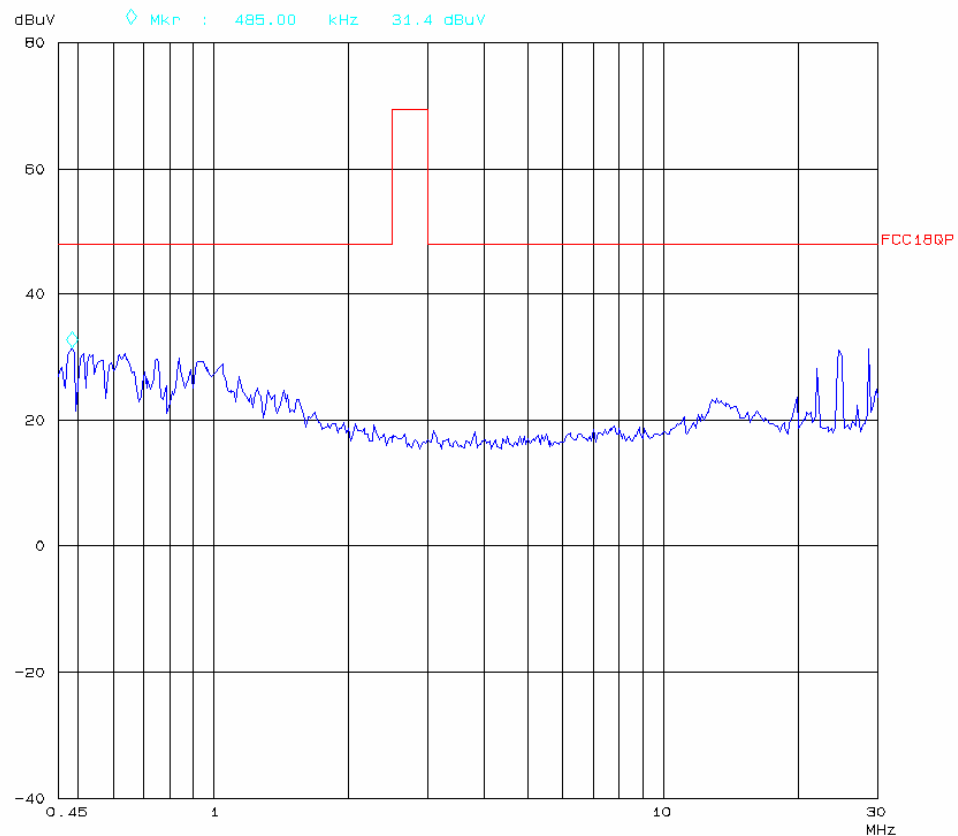
EUT: Long shape support electron fluorescent lamp M/N: SSBT5-13W-L011
Manuf: SUNSEA
Op Cond: ON
Operator: Jessica
Test Spec: AC 120V/60Hz L
Comment: Temp: 25 Hum: 50%
BACL



Conducted Emission
FCC PART 18

03. Nov 09 14:25

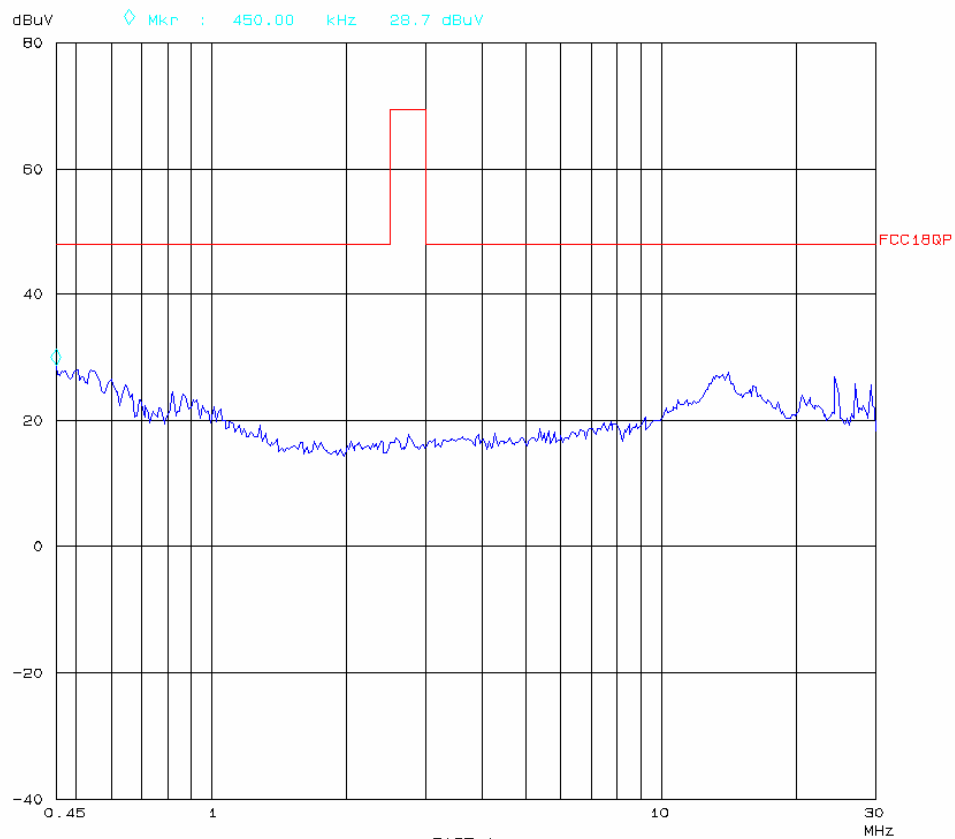
EUT: Long shape support electron fluorescent lamp M/N: SSBT5-13W-L011
Manuf: SUNSEA
Op Cond: ON
Operator: Jessica
Test Spec: AC 120V/60Hz N
Comment: Temp: 25 Hum: 50%
BACL



Model: SSBT5-14W-L011Conducted Emission
FCC PART 18

03. Nov 09 13:45

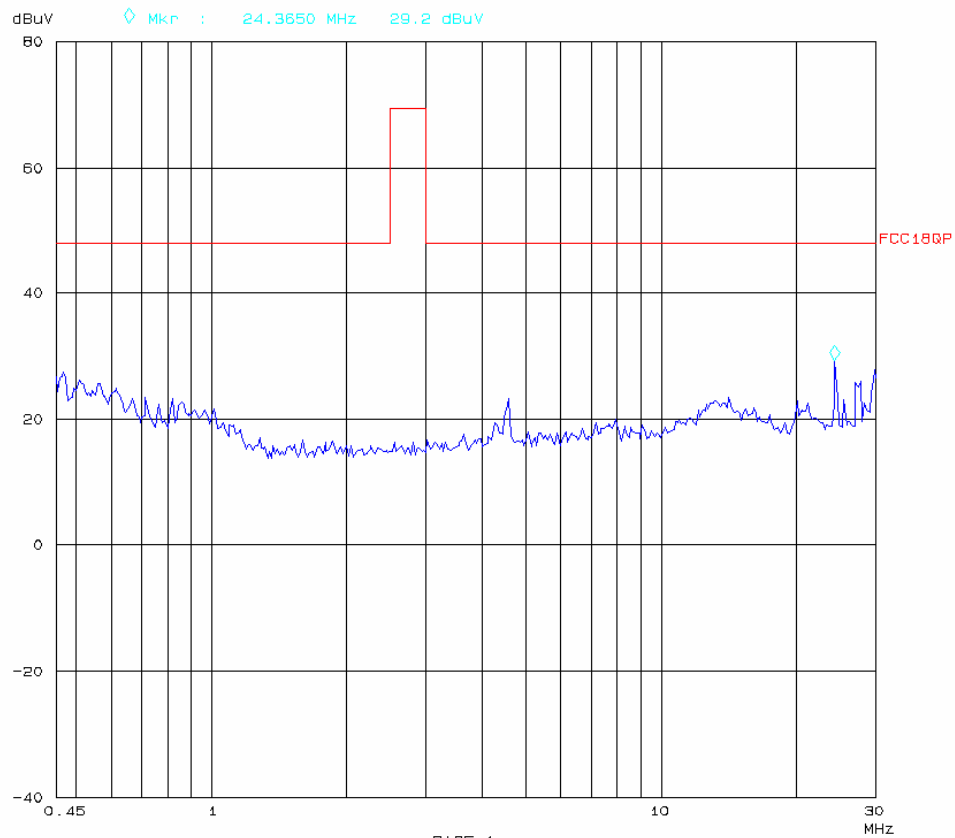
EUT: Long shape support electron fluorescent lamp M/N: SSBT5-14W-L011
Manuf: SUNSEA
Op Cond: ON
Operator: Jessica
Test Spec: AC 120V/60Hz L
Comment: Temp: 25 Hum: 50%
BACL



Conducted Emission
FCC PART 18

03. Nov 09 13:55

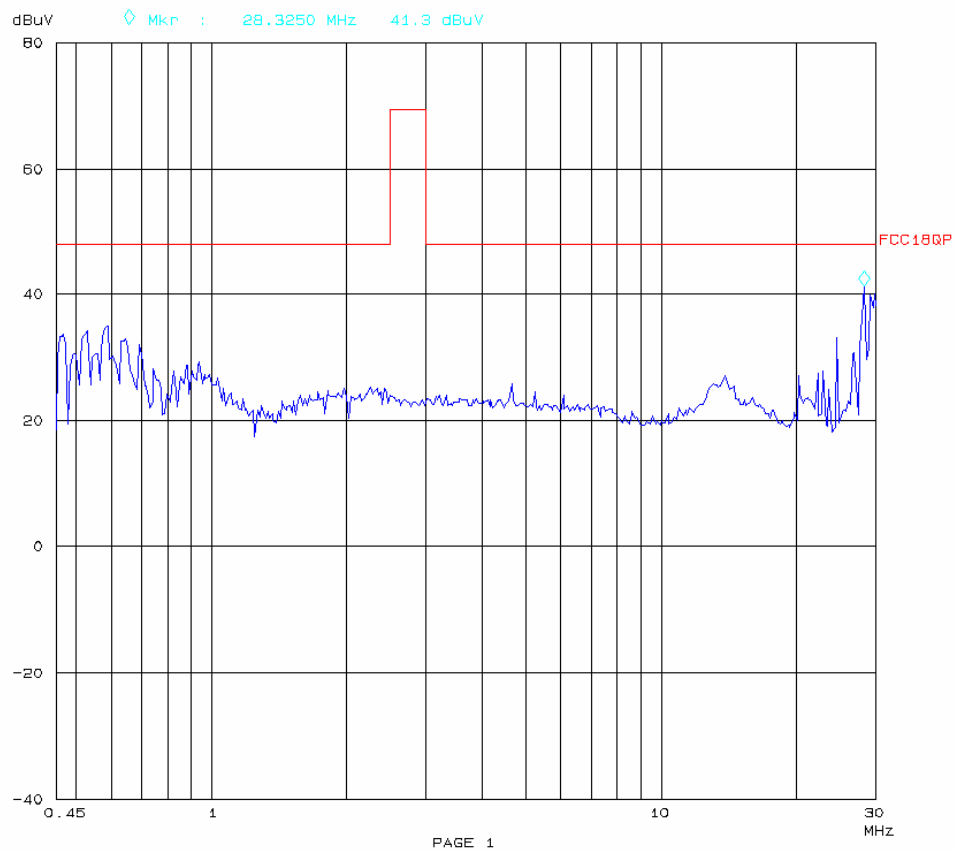
EUT: Long shape support electron fluorescent lamp M/N: SSBT5-14W-L011
Manuf: SUNSEA
Op Cond: ON
Operator: Jessica
Test Spec: AC 120V/60Hz N
Comment: Temp: 25 Hum: 50%
BACL



Model: SSBT5-21W-L011Conducted Emission
FCC PART 18

03. Nov 09 14:43

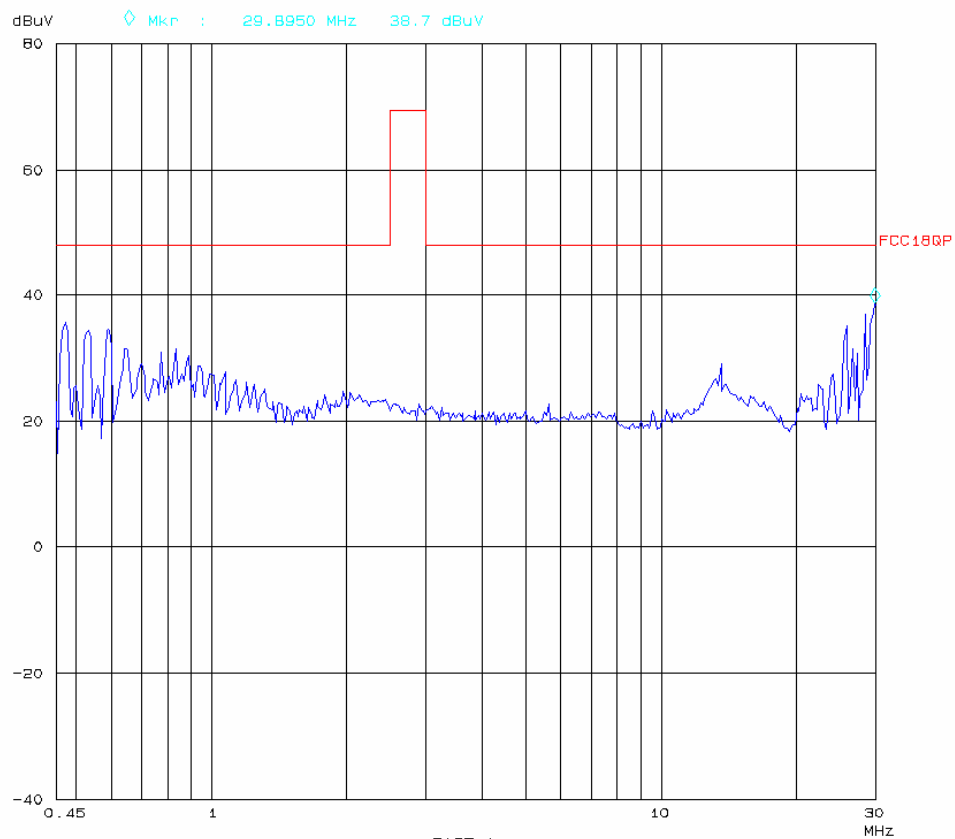
EUT: Long shape support electron fluorescent lamp M/N: SSBT5-21W-L011
Manuf: SUNSEA
Op Cond: ON
Operator: Jessica
Test Spec: AC 120V/60Hz L
Comment: Temp: 25 Hum: 50%
BACL



Conducted Emission
FCC PART 18

03. Nov 09 14:35

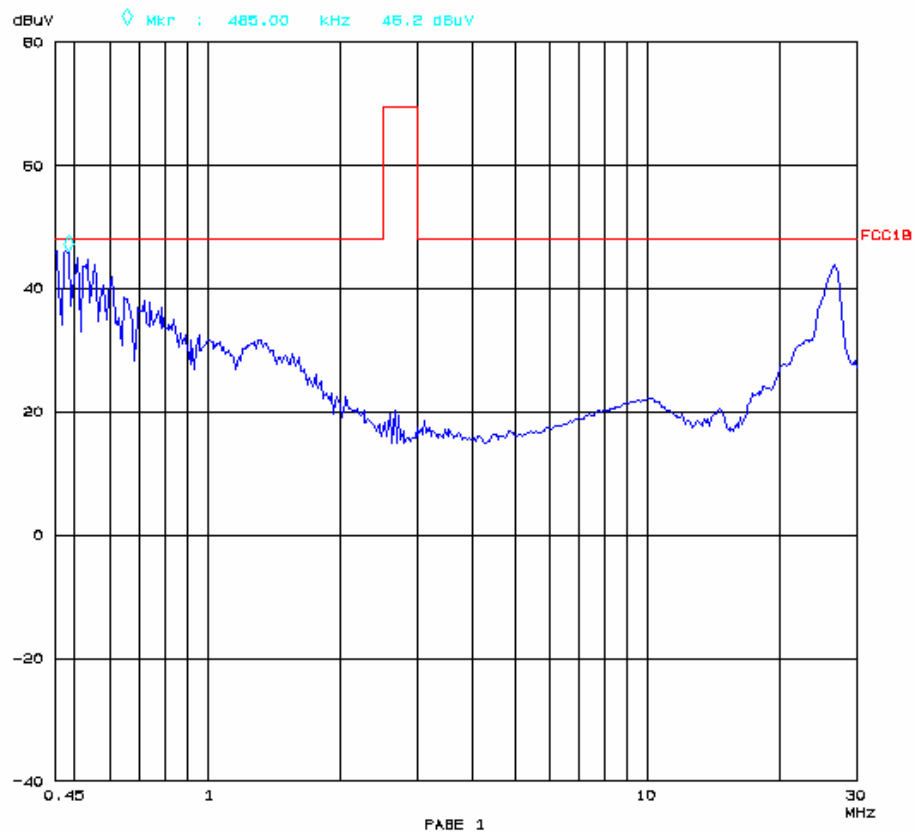
EUT: Long shape support electron fluorescent lamp M/N: SSBT5-21W-L011
Manuf: SUNSEA
Op Cond: ON
Operator: Jessica
Test Spec: AC 120V/60Hz N
Comment: Temp: 25 Hum: 50%
BACL



Model: SSBT5-28W-L011**Conducted Emission
FCC Part18**

07. Dec 09 11:04

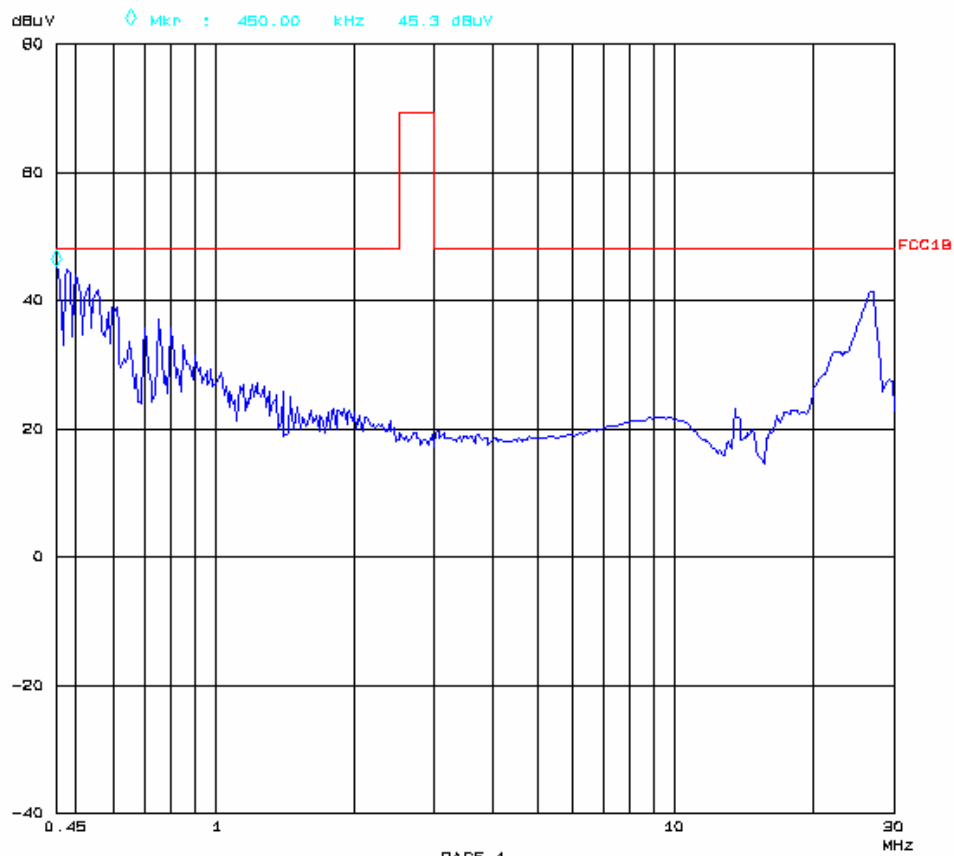
EUT: Long shape support electron fluorescent Lamp M/N:SSBT5-28W-L011
Manuf: SUNSEA
Op Cond: ON
Operator: Cassio
Test Spec: AC 120V/60HZ L
Comment: Tem: 25 Hum: 55%
BACL



Conducted Emission
FCC Part18

07. Dec 09 10:04

EUT: Long shape support electron fluorescent Lamp M/N:SSBT5-28W-L011
Manuf: SUNSEA
Op Cond: ON
Operator: Cassin
Test Spec: AC 120V/60HZ N
Comment: Tem: 25 Hum: 56%
BACL



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