



NVLAP LAB CODE 200707-0



FCC PART 18

MEASUREMENT AND TEST REPORT

For

Firefly Lighting Co., Ltd.

Firefly Building, Jinzhongyuan Industries Area, Zhongzhai,
Xiamen, Fujian, China

FCC ID: PGEBU4D

Report Type: Original Report	Product Type: CFL
Test Engineer: <u>Cookies Bu</u> <i>Cookies, Bu</i>	
Report Number: <u>RSZ08101352</u>	
Report Date: <u>2008-10-22</u>	
Reviewed By: <u>EMC Engineer</u> <i>Lisa Zhu</i>	
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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 *Firefly Lighting Co., Ltd.*'s model: *BU4-14D*, *BU4-20D* or the "EUT" as referred to in this report is a *CFL* which measures proximately as following:

Model	L (cm)	W (cm)	H(cm)
BU4-14D	11.2	4.7	4.7
BU4-20D	12.6	4.8	4.8

rated input voltage: AC 120V/60Hz.

** All measurement and test data in this report was gathered from production sample serial number: 0810514 (Assigned by BACL, Shenzhen). The EUT was received on 2008-10-13.*

Objective

The following test report is prepared on behalf of *Firefly Lighting 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 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).



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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).

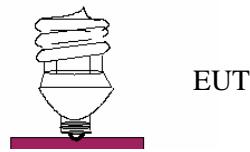
Equipment Modifications

No modifications were made to the unit tested.

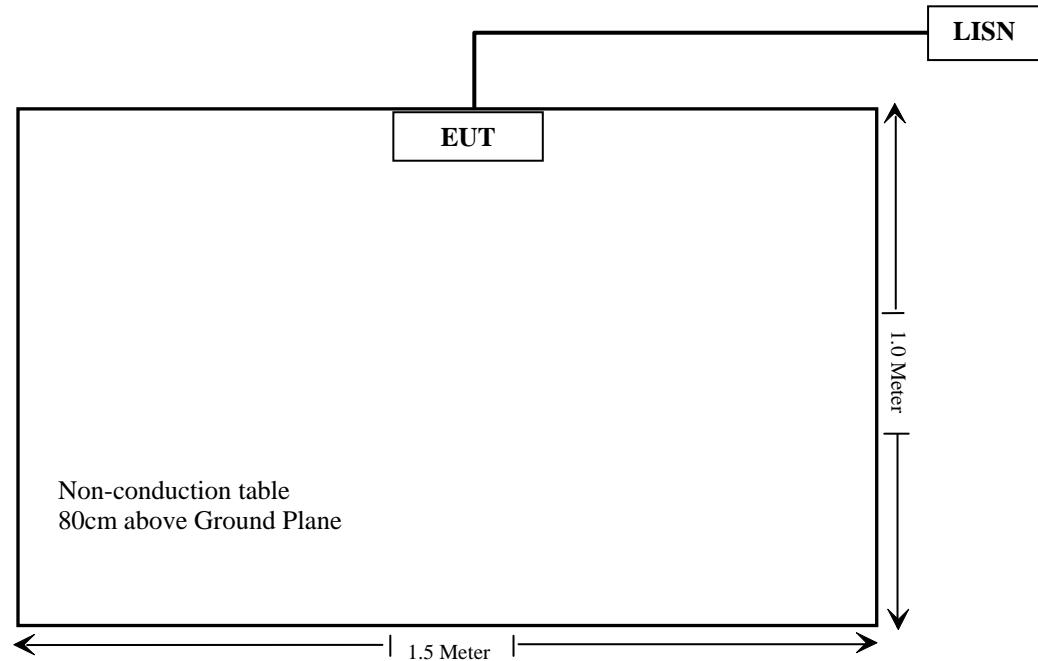
External I/O Cable

Cable Description	Length (m)	From/Port	To
Unshielded Undetectable Power Cable	1.1	EUT	AC Power

Configuration of Test Setup



Block Diagram of Test Setup



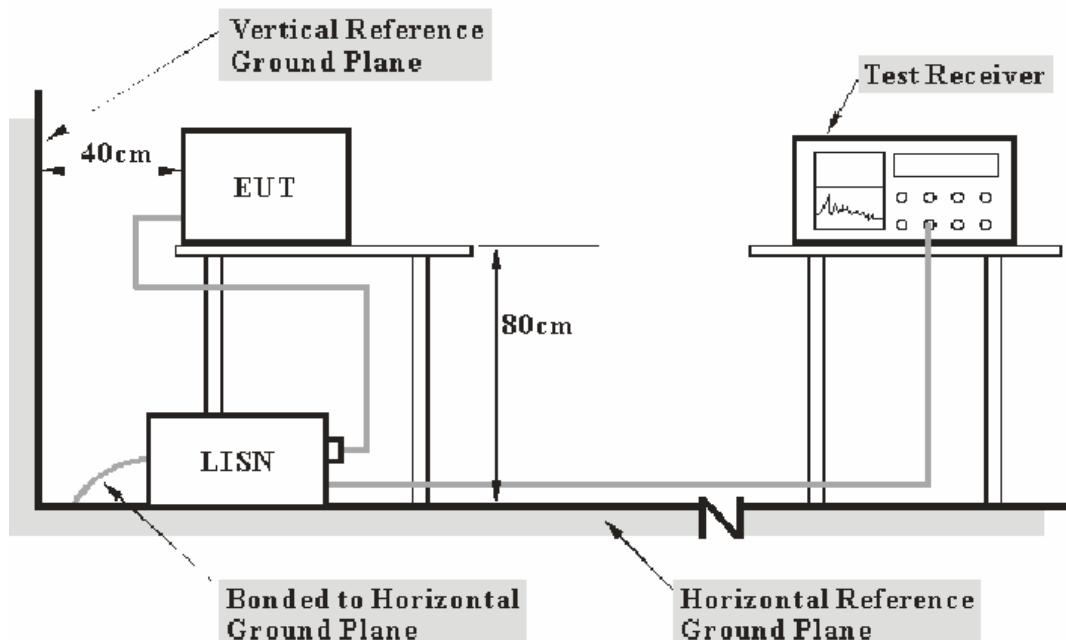
§18.307 CONDUCTED EMISSIONS

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>IFBW</i>
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	DE25330	2008-03-25	2009-03-25
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2008-03-25	2009-03-25

* 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:

8.0 dB at 0.64 MHz in the **Neutral** conductor mode for BU4-14D
2.5 dB at 0.505 MHz in the **Neutral** conductor mode for BU4-20D

Test Data**Environmental Conditions**

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

Testing was performed by Cookies Bu on 2008-08-19.

Test Mode: ON

Model: BU4-14D

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)
0.640	40.00	PK	Neutral	48.00	8.00
0.480	39.30	PK	Line	48.00	8.70
0.810	37.10	PK	Neutral	48.00	10.90
2.455	37.00	PK	Line	48.00	11.00
27.120	40.50	PK	Line	48.00	7.50
25.600	40.50	PK	Line	48.00	7.50
0.815	35.90	PK	Line	48.00	12.10
25.975	38.70	PK	Neutral	48.00	9.30
2.335	34.40	PK	Neutral	48.00	13.60
21.505	31.70	PK	Neutral	48.00	16.30
14.545	31.60	PK	Line	48.00	16.40
14.630	27.20	PK	Neutral	48.00	20.80

Model: BU4-20D

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)
0.505	45.50	PK	Neutral	48.00	2.50
0.460	43.60	PK	Line	48.00	4.40
25.400	43.60	PK	Line	48.00	4.40
0.520	43.20	PK	Line	48.00	4.80
0.640	41.80	PK	Line	48.00	6.20
26.555	41.70	PK	Neutral	48.00	6.30
0.740	39.80	PK	Neutral	48.00	8.20
0.970	39.20	PK	Line	48.00	8.80
1.825	35.80	PK	Line	48.00	12.20
0.320	34.30	PK	Neutral	48.00	13.70
2.980	33.10	PK	Neutral	48.00	14.90
7.595	31.20	PK	Neutral	48.00	16.80

Plot(s) of Test Data

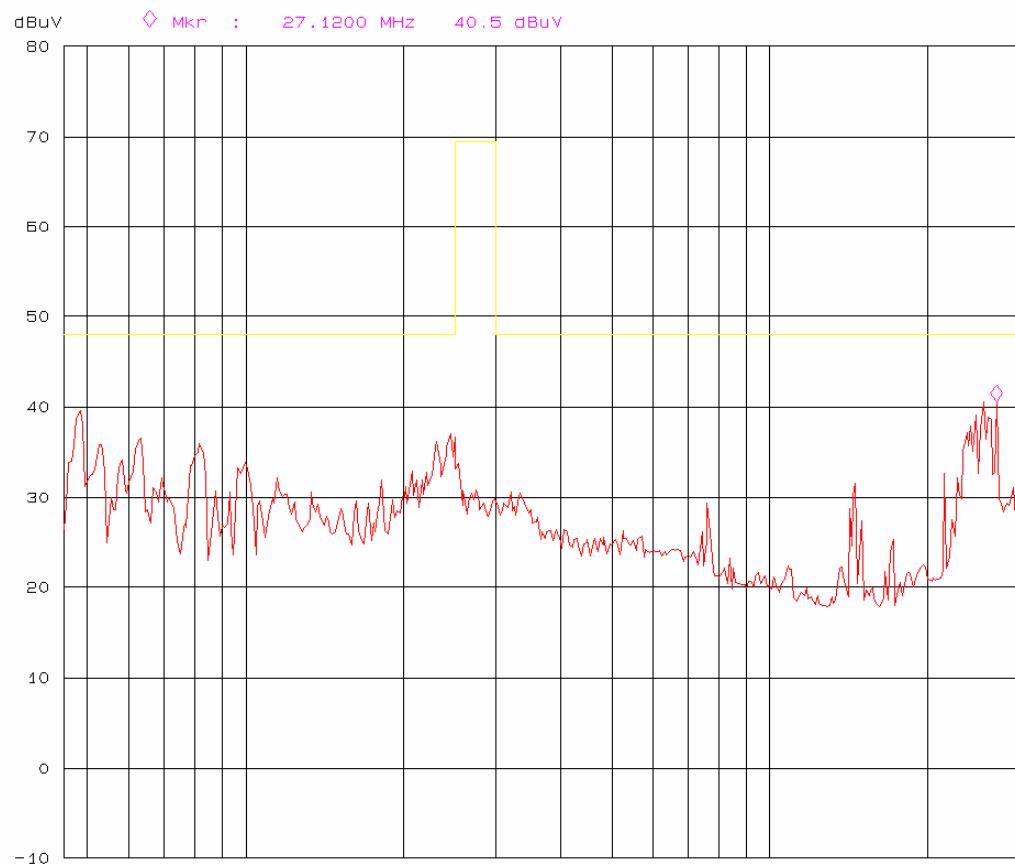
Plot(s) of Test Data is presented hereinafter as reference.

Model: BU4-14D**Conducted Emission**

19. Aug 08 14:02

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EUT: CFL M/N: BU4_14D
Manuf: Firefly Lighting Co., Ltd
Op Cond: ON
Operator: Cookies
Test Spec: AC120V/60Hz L
Comment: Temp: 25 Hum: 56%

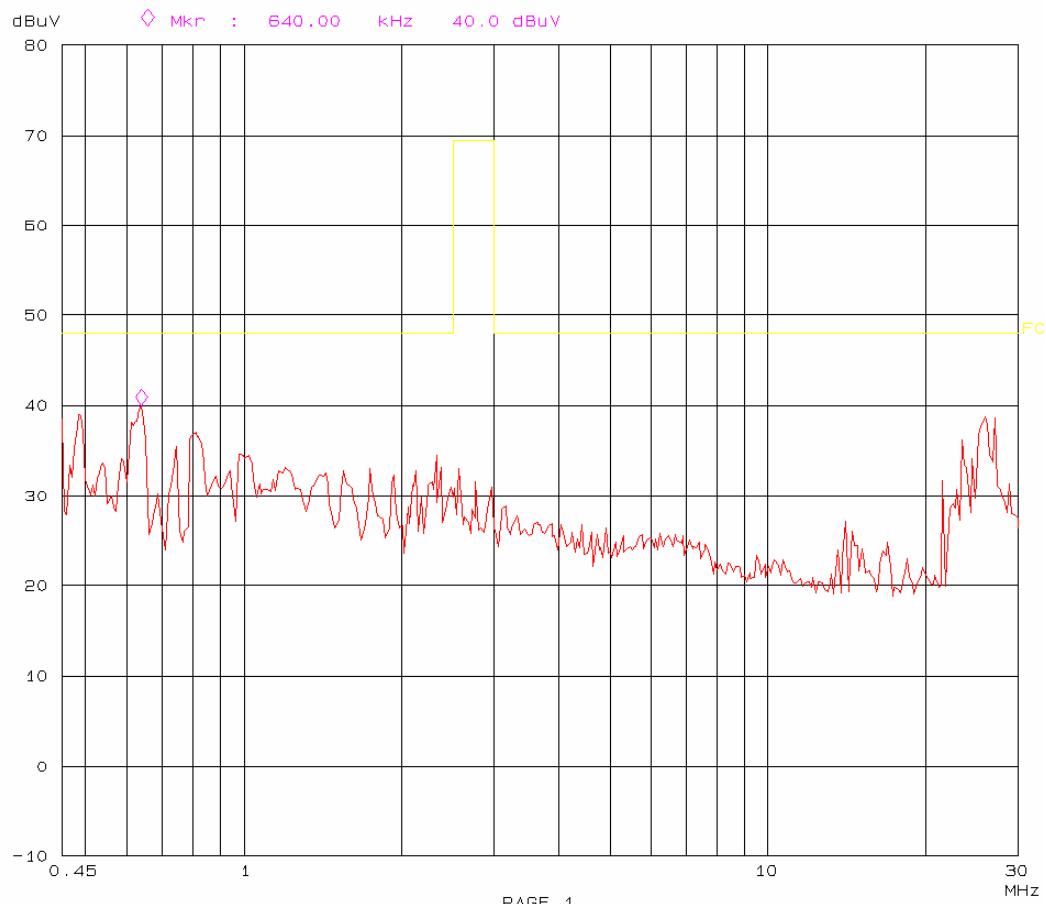


Conducted Emission

19. Aug 08 13:53

FCC PART 18

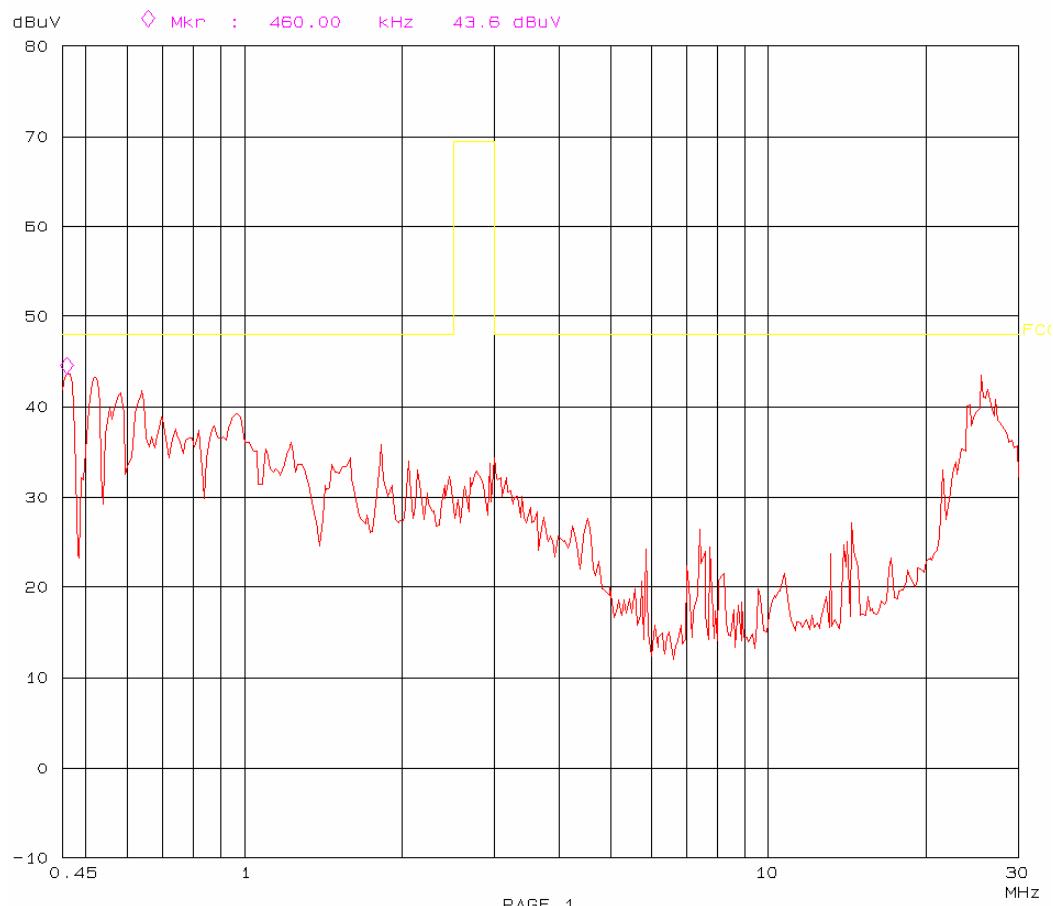
EUT: CFL M/N: BU4_14D
Manuf: Firefly Lighting Co., Ltd
Op Cond: ON
Operator: Cookies
Test Spec: AC120V/60Hz N
Comment: Temp: 25 Hum: 56%



Model: BU4-20DConducted Emission
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19. Aug 08 14:18

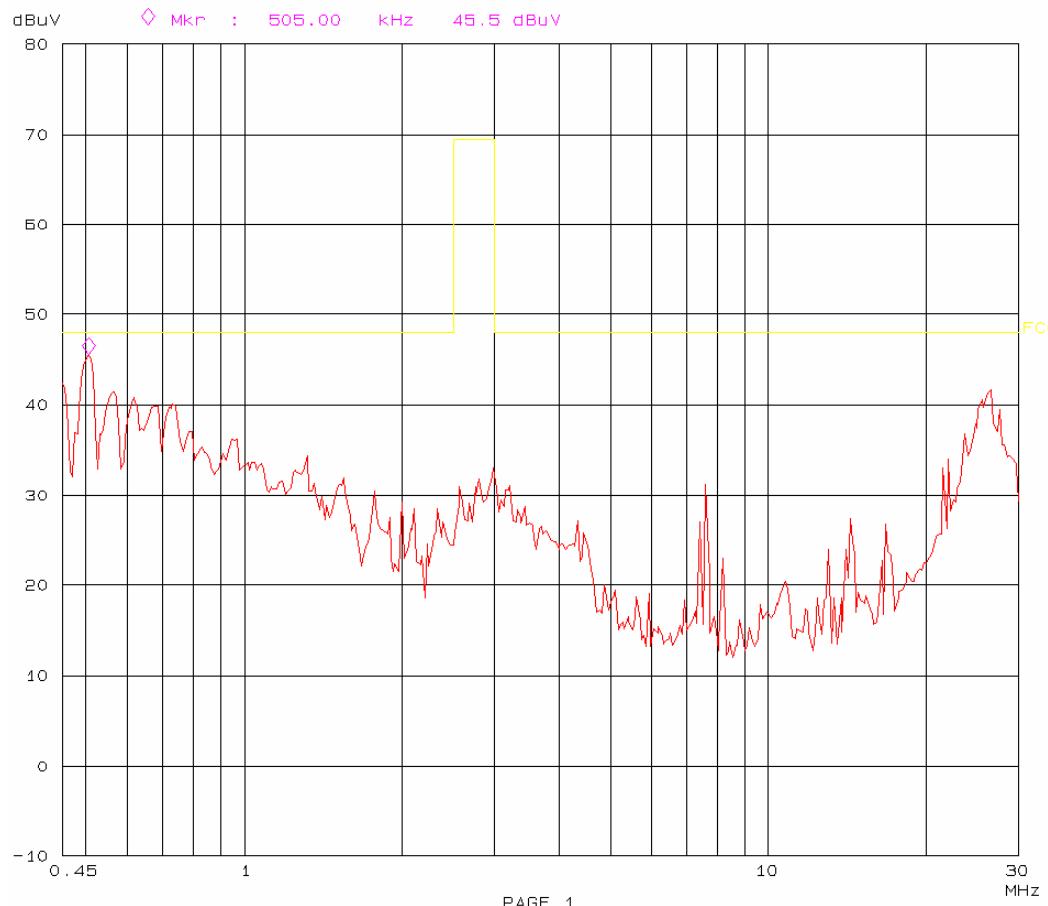
EUT: CFL M/N: BU4_20D
Manuf: Firefly Lighting Co., Ltd
Op Cond: ON
Operator: Cookies
Test Spec: AC120V/60Hz L
Comment: Temp: 25 Hum: 56%



Conducted Emission
FCC PART 18

19. Aug 08 14:29

EUT: CFL M/N: BU4_20D
Manuf: Firefly Lighting Co., Ltd
Op Cond: ON
Operator: Cookies
Test Spec: AC120V/60Hz N
Comment: Temp: 25 Hum: 56%



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