FCC PART 18

MEASUREMENT AND TEST REPORT

For

Firefly Lighting Co., Ltd.

Firefly Building, Jinzhongyuan Industrial Area, Zhongzhai, Xiamen, Fujian, China.

FCC ID: PGE-BU5

November 2, 2004

This Report Concerns:	**Equipment Type:**
☒ Original Report	Luminary, Compact Fluorescent Lamp with integral Ballast

Test Engineer:	Sam Lin
Report Number	RSZ04101882
Test Date:	October 19, 2004
Reviewed By:	Chris Zeng
Prepared By:	Bay Area Compliance Lab Corp. ShenZhen 6/F, the 3nd Phase of WanLi Industrial Building, FengHuang Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R. China Tel: 86- 755- 33320018 Fax: 86- 755- 33320008

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *Firefly Lighting Co., Ltd.*'s model *BU5-20W, BU5-23W, BU5-25W, XBU58-20U, XBU58-23U or the "EUT" as referred to in this report is a* Luminary, Compact Fluorescent Lamp with integral Ballast *which meas*ures approximately *BU5-20W*: 5.0cm L x 5.0cm W x 12.0cm H, *BU5-23W:* 5.0cm L x 5.0cm W x 12.0cm H, *BU5-25W*: 5.0cm L x 5.0cm W x 12.0cm H, *XBU58-20U:* 5.0cm L x 5.0cm W x 12.0cm H, *XBU58-23U:* 5.0cm L x 5.0cm W x 12.0cm H, rated input voltage: AC 120 V/60Hz.

** The test data gathered are from production sample, serial number: BU5-20W: 00000996000, BU5-23W: 00000643000, BU5-25W: 00000551000, XBU58-20U: 000000789000, XBU58-23U: 00000158000, provided by the manufacturer.*

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 is to determine compliance with FCC rules.

Related Submittal(s)/Grant(s)

No Related Submittals.

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 radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 Meters.

Test Facility

Test site at Bay Area Compliance Laboratory Corporation has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports has been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997 and Article 8 of the VCCI regulations on December 25, 1997. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2001 and FCC MP-5.

The Federal Communications Commission and Voluntary Control Council for Interference has the reports on file and is listed under FCC file 31040/SIT 1300F2 and VCCI Registration No.: C-1298 and R-1234. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

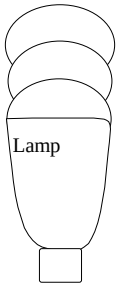
Justification

The EUT was tested under the normal operating conditions stated in the instructions by the manufacturer

Equipment Modifications

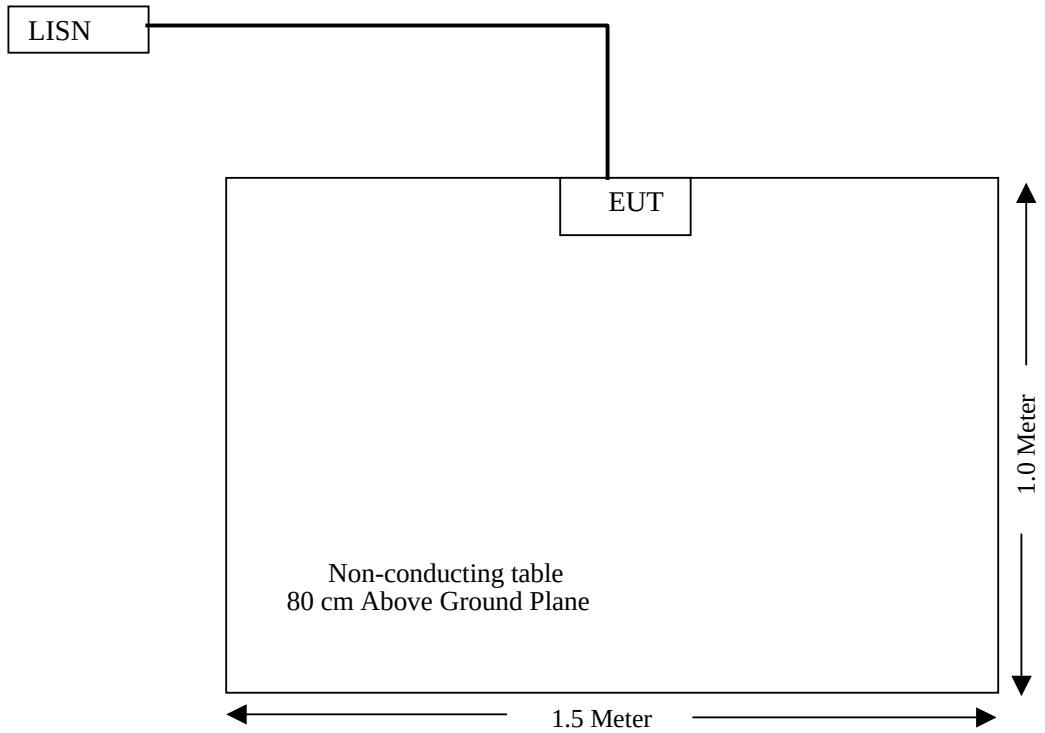
The EUT samples provided were reported by the manufacturer to be unmodified production samples

Configuration of Test System



EUT

Test Setup Block Diagram



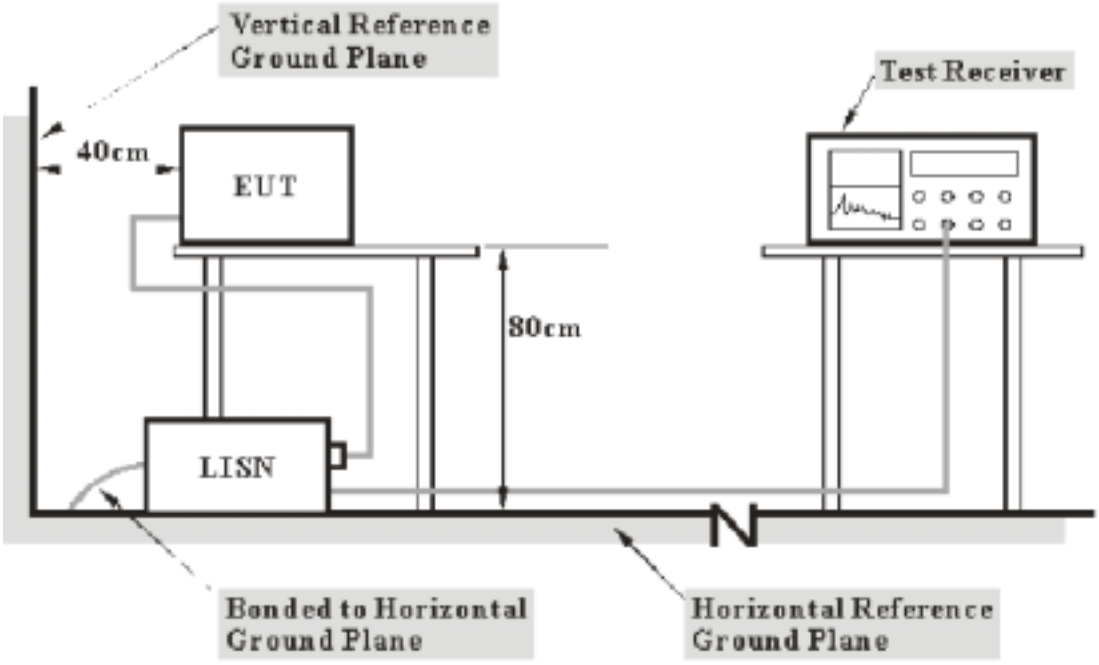
CONDUCTED EMISSION

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 BACL 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 measurement procedure. The specification used was 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 30MHz.

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

Frequency Range	***IFBW***
450KHz - 30MHz	9KHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde &Schwarz	A.M.N	ESH2-Z5	892107/021	2003-11-20	2004-11-19
Rohde &Schwarz	EMI Test Receiver	ESCS30	830245/006	2003-11-20	2004-11-19
Rohde &Schwarz	EMI Test Receiver	ESH3Z2	DE25985	2003-11-20	2004-11-19
THERMAX	Coaxial Cable	RGS-142	EC001	2003-11-20	2004-11-19
Compwer	LISN	LT-200	12208	2004-10-30	2005-10-29
Compwer	LISN	LT-200	12005	2004-10-30	2005-10-29
Fluke	True RMS Multimeter	187	78540402	2004-3-23	2005-3-22

*** Statement of Traceability:** BACL attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

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

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

All data was recorded in the peak detection mode.

Test Data

Date of Test:	October 19, 2004	Temperature:	25℃
EUT:	Luminary, Compact Fluorescent Lamp with integral Ballast	Humidity:	70%
M/N:	BU5-20W	Operating Mode:	On
S/N:	00000996000	Test Engineer:	Sam Lin

LINE CONDUCTED EMISSIONS				FCC PART 18	
Frequency MHz	Amplitude dBμV	Detector QP/AV/PK	Phase Line/Neutral	Limit dBμV	Margin dB
0.555	40.30	PK	Neutral	48.00	-7.70
0.465	39.90	PK	Neutral	48.00	-8.10
0.475	37.30	PK	Line	48.00	-10.70
0.560	36.40	PK	Line	48.00	-11.60
0.750	36.10	PK	Line	48.00	-11.90
0.825	36.00	PK	Neutral	48.00	-12.00

Date of Test:	October 19, 2004	Temperature:	25℃
EUT:	Luminary, Compact Fluorescent Lamp with integral Ballast	Humidity:	70%
M/N:	BU5-23W	Operating Mode:	On
S/N:	00000643000	Test Engineer:	Sam Lin

LINE CONDUCTED EMISSIONS				FCC PART 18	
Frequency MHz	Amplitude dBμV	Detector QP/AV/ PK	Phase Line/Neutral	Limit dBμV	Margin dB
0.495	38.70	PK	Line	48.00	-9.30
0.495	37.70	PK	Neutral	48.00	-10.30
0.945	37.30	PK	Neutral	48.00	-10.70
0.750	37.20	PK	Neutral	48.00	-10.80
0.580	37.00	PK	Neutral	48.00	-11.00
0.570	35.90	PK	Line	48.00	-12.10
0.615	35.90	PK	Line	48.00	-12.10
0.745	35.60	PK	Line	48.00	-12.40

Date of Test:	October 19, 2004	Temperature:	25℃
EUT:	Luminary, Compact Fluorescent Lamp with integral Ballast	Humidity:	70%
M/N:	BU5-25W	Operating Mode:	On
S/N:	00000551000	Test Engineer:	Sam Lin

LINE CONDUCTED EMISSIONS				FCC PART 18	
Frequency MHz	Amplitude dBμV	Detector QP/AV/ PK	Phase Line/Neutral	Limit dBμV	Margin dB
0.770	37.30	PK	Neutral	48.00	-10.70
0.725	37.10	PK	Neutral	48.00	-10.90
0.555	36.90	PK	Line	48.00	-11.10
0.560	36.80	PK	Neutral	48.00	-11.20
0.875	35.90	PK	Line	48.00	-12.10
0.805	35.40	PK	Line	48.00	-12.60

Date of Test:	October 19, 2004	Temperature:	25℃
EUT:	Luminary, Compact Fluorescent Lamp with integral Ballast	Humidity:	70%
M/N:	XBU58-20U	Operating Mode:	On
S/N:	00000789000	Test Engineer:	Sam Lin

LINE CONDUCTED EMISSIONS				FCC PART 18	
Frequency MHz	Amplitude dBμV	Detector QP/AV/ PK	Phase Line/Neutral	Limit dBμV	Margin dB
0.580	39.60	PK	Neutral	48.00	-8.40
0.770	39.30	PK	Neutral	48.00	-8.70
0.905	38.20	PK	Neutral	48.00	-9.80
0.450	37.60	PK	Line	48.00	-10.40
0.490	37.00	PK	Line	48.00	-11.00
0.585	36.10	PK	Line	48.00	-11.90
0.860	35.70	PK	Line	48.00	-12.30

Date of Test:	October 19, 2004	Temperature:	25℃
EUT:	Luminary, Compact Fluorescent Lamp with integral Ballast	Humidity:	70%
M/N:	XBU58-23U	Operating Mode:	On
S/N:	00000158000	Test Engineer:	Sam Lin

LINE CONDUCTED EMISSIONS				FCC PART 18	
Frequency MHz	Amplitude dBµV	Detector QP/AV/ PK	Phase Line/Neutral	Limit dBµV	Margin dB
0.450	37.30	PK	Line	48.00	-10.70
0.500	36.90	PK	Neutral	48.00	-11.10
0.500	35.90	PK	Line	48.00	-12.10
0.455	35.80	PK	Neutral	48.00	-12.20
0.890	35.70	PK	Neutral	48.00	-12.30
0.665	0.67	PK	Line	48.00	-47.34

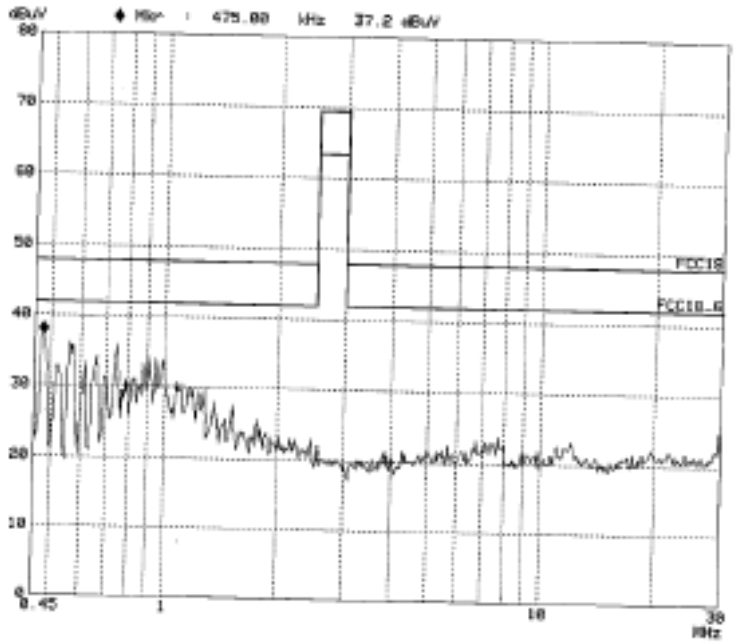
Test Result: Pass

Plot(s) of Test Data

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

BU5-20W

Line:



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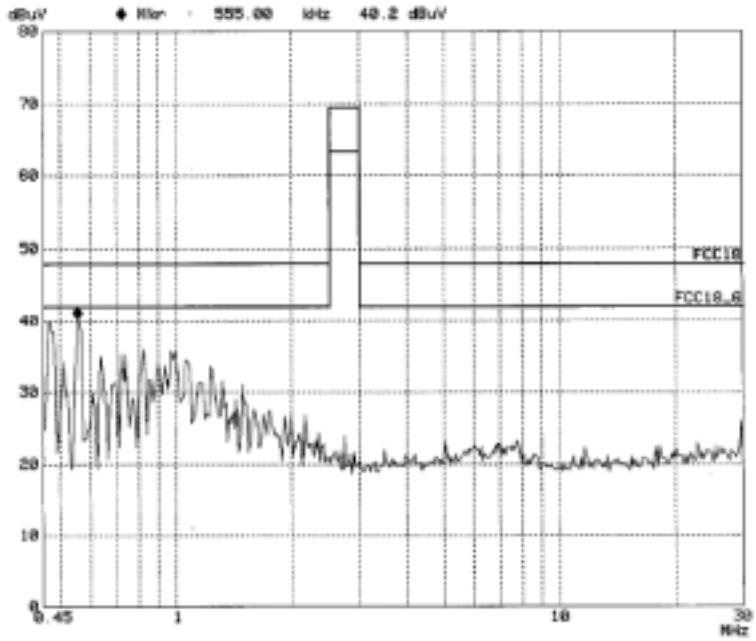
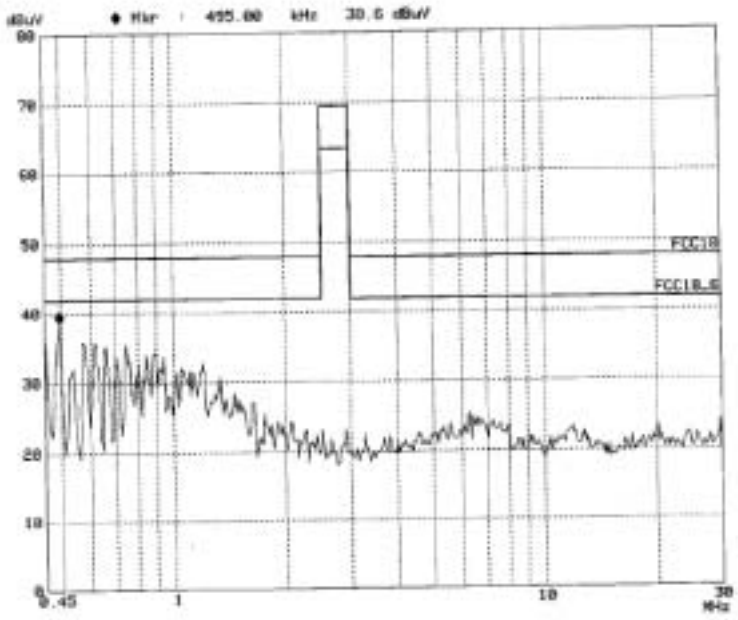


BU5-23W
Line:



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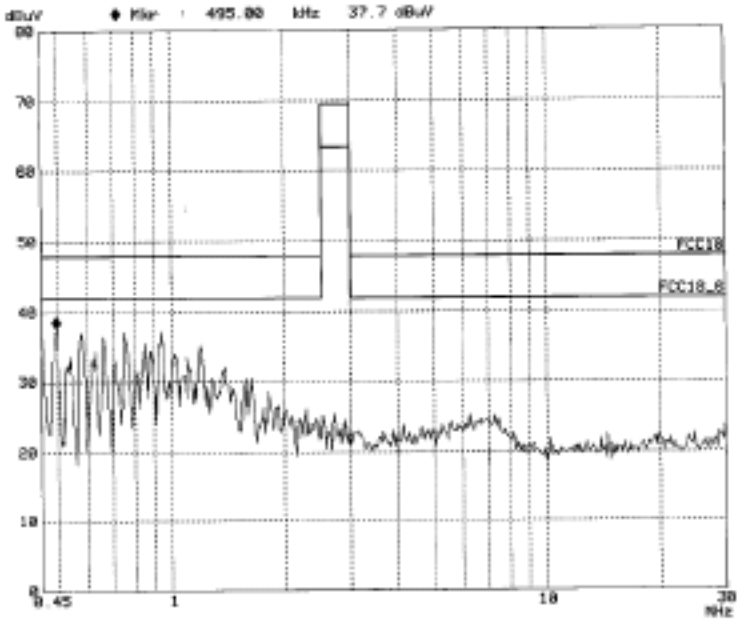
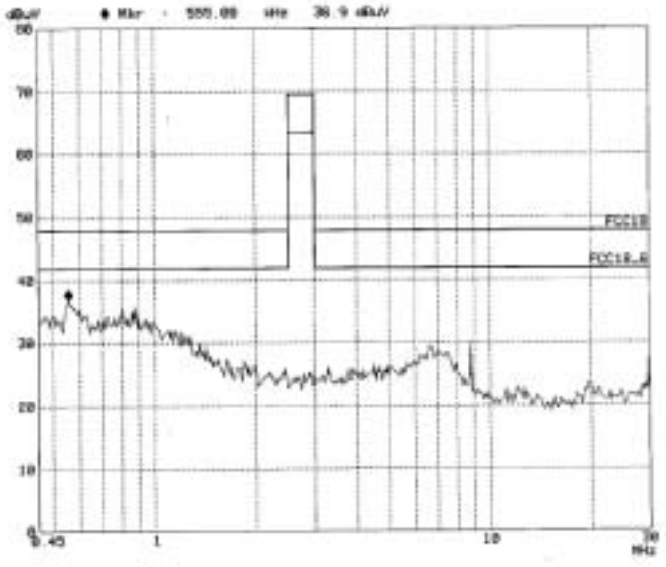


BU5-25W

Line



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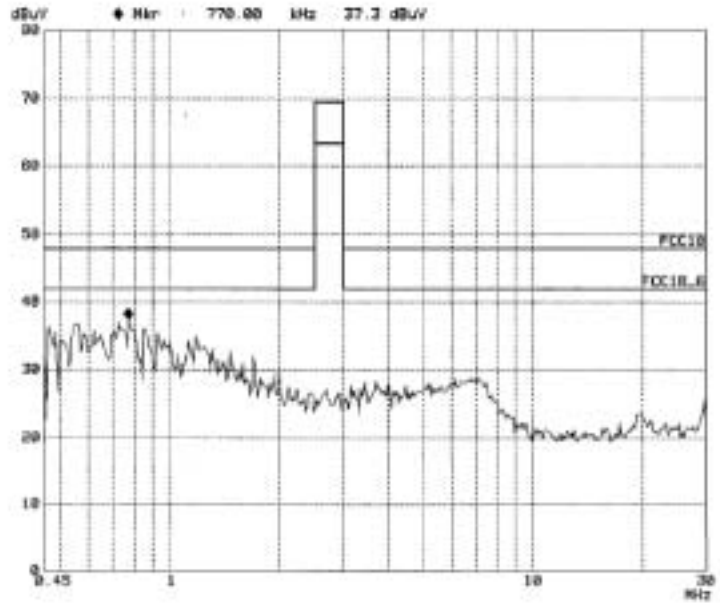
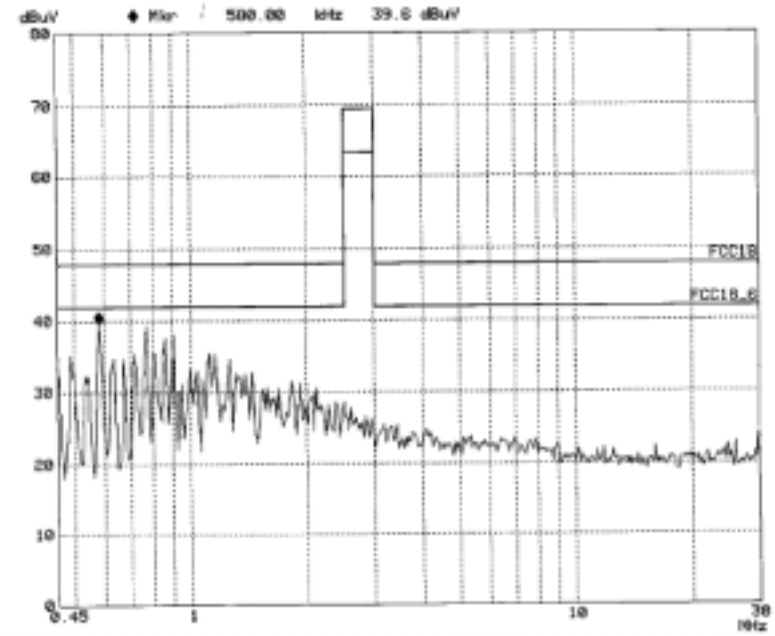


XBU58-20U

Line



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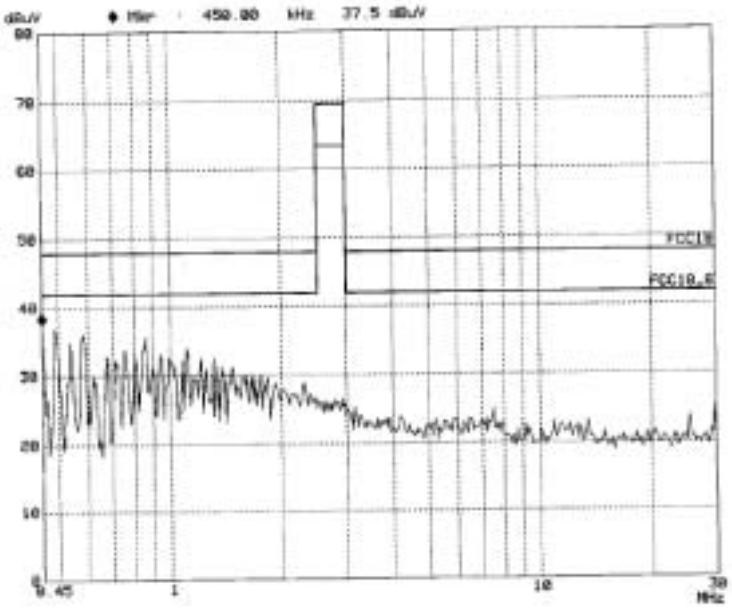
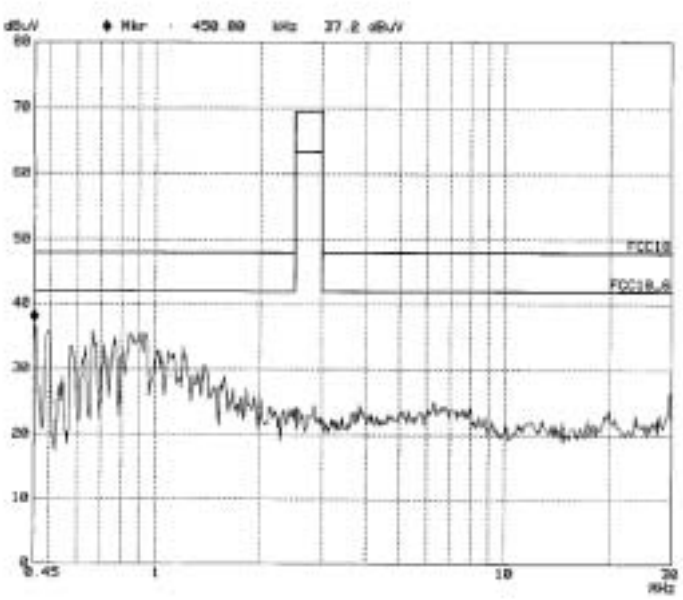


XBU58-23U
Line:



Neutral