



NVLAP LAB CODE 200707-0



FCC PART 18

EMI MEASUREMENT AND TEST REPORT

For

NVC LIGHTING TECHNOLOGY CORPORATION

Shiqiaotou Dongya village, Ruhu, HuiZhou, Guangdong, China

FCC ID: VVOT32026

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: CFL
Test Engineer:	Phoenix Liu <u>Phoenix Liu</u>
Report Number:	RSZ07112652
Test Date:	2007-12-10
Report Date:	2007-12-26
Reviewed By:	EMC Manager: Green Xu <u>Green Xu</u>
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008

Note: This test report is for the customer shown above and their specific product only. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Shenzhen). 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.

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST METHODOLOGY	3
TEST FACILITY	3
SYSTEM TEST CONFIGURATION.....	5
JUSTIFICATION	5
EQUIPMENT MODIFICATIONS	5
EXTERNAL I/O CABLE.....	5
CONFIGURATION OF TEST SETUP	5
BLOCK DIAGRAM OF TEST SETUP	5
CONDUCTED EMISSIONS	6
MEASUREMENT UNCERTAINTY	6
EUT SETUP.....	6
EMI TEST RECEIVER SETUP.....	7
TEST EQUIPMENT LIST AND DETAILS.....	7
TEST PROCEDURE	7
TEST RESULTS SUMMARY.....	7
TEST DATA	8
PLOT(S) OF TEST DATA.....	8

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *NVC LIGHTING TECHNOLOGY CORPORATION*'s model: **T3-ESP-20W**, **T3-ESP-23W**, or the "EUT" as referred to in this report is a *CFL* which measures approximately: **T3-ESP-20W**: 5.8 cm L x 5.8 cm W x 12.5 cm H, **T3-ESP-23W**: 5.8 cm L x 5.8 cm W x 13.5 cm H, rated input voltage: AC 120V/60Hz.

** All measurement and test data in this report was gathered from production sample serial number: 0711029 (Assigned by BACL, Shenzhen). The EUT was received on 2007-11-26.*

Objective

The following test report is prepared on behalf of *NVC LIGHTING TECHNOLOGY CORPORATION* 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).



NVLAP 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).

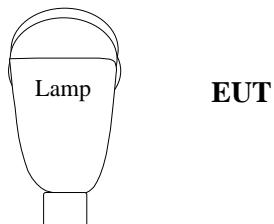
Equipment Modifications

No modifications were made to the unit tested.

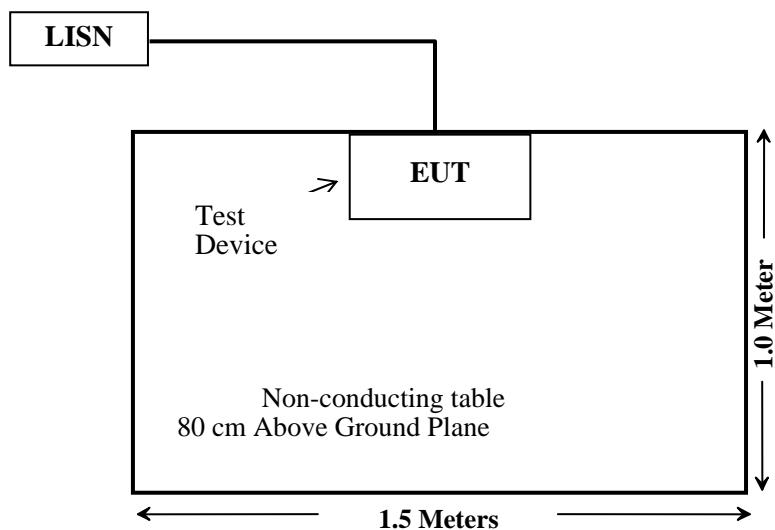
External I/O Cable

Cable Description	Length (M)	From/Port	To
Unshielded Detachable AC Power Cable	1.5	EUT	LISN

Configuration of Test Setup



Block Diagram of Test Setup



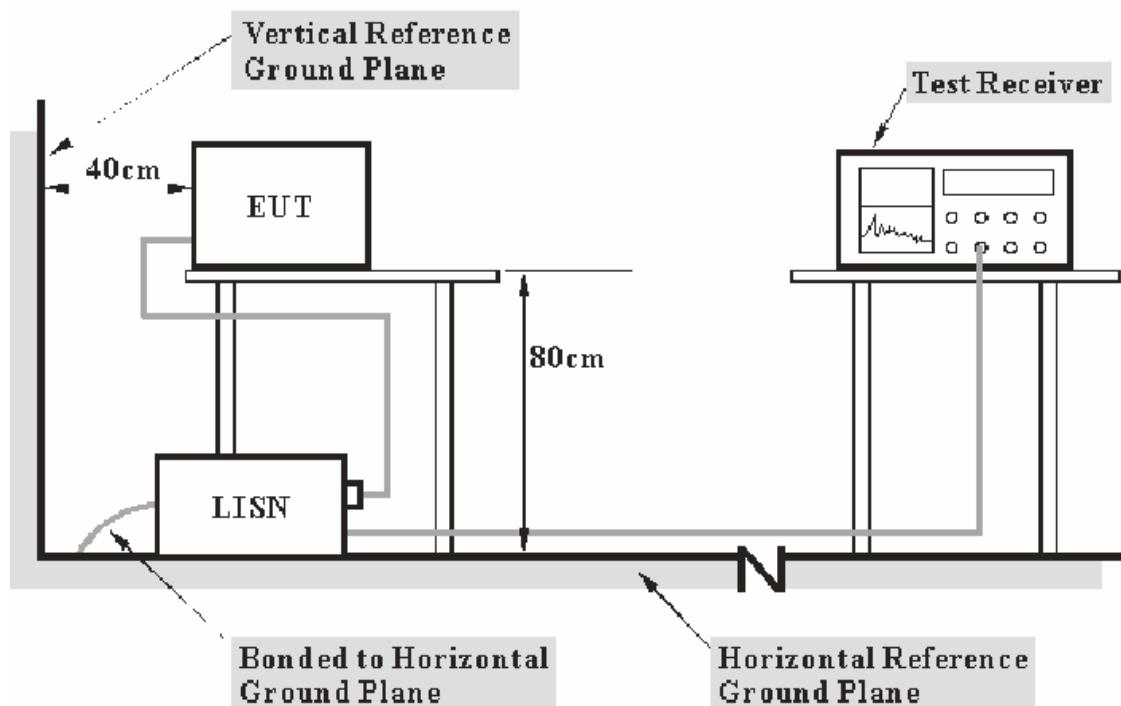
CONDUCTED EMISSIONS

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:

Frequency Range	IF B/W
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	DE25330	2007-03-26	2008-03-26
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2007-03-26	2008-03-26

* 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:

T3-ESP-20W: **1.40** at **0.450 MHz** in the **Neutral** conductor mode.

T3-ESP-23W: **1.70 dB** at **1.685 MHz** in the **Hot** conductor mode.

Test Data**Environmental Conditions**

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

Testing was performed by Phoenix Liu on 2007-12-10.

Model : T3-ESP-20W

Line Conducted Emissions				FCC Part 18.307	
Frequency (MHz)	Amplitude (dB μ V)	Detector (QP/AV)	Conductor Hot/Neutral	Limit (dB μ V)	Margin (dB)
0.450	46.60	QP	Neutral	48.00	1.40
0.485	46.20	QP	Neutral	48.00	1.80
0.530	44.70	QP	Neutral	48.00	3.30
1.740	40.30	QP	Neutral	48.00	7.70
0.490	39.70	QP	Hot	48.00	8.30
1.770	39.70	QP	Hot	48.00	8.30
0.525	39.00	QP	Hot	48.00	9.00
0.625	37.20	QP	Hot	48.00	10.80
0.790	36.70	QP	Hot	48.00	11.30
20.520	36.60	QP	Neutral	48.00	11.40
18.545	35.40	QP	Hot	48.00	12.60
24.110	25.70	QP	Neutral	48.00	22.30

Model: T3-ESP-23W

Line Conducted Emissions				FCC Part 18.307	
Frequency (MHz)	Amplitude (dB μ V)	Detector (QP/AV)	Conductor Hot/Neutral	Limit (dB μ V)	Margin (dB)
1.685	46.30	QP	Hot	48.00	1.70
1.770	46.20	QP	Hot	48.00	1.80
0.485	44.80	QP	Hot	48.00	3.20
0.565	43.00	QP	Hot	48.00	5.00
1.415	42.30	QP	Hot	48.00	5.70
1.625	41.10	QP	Neutral	48.00	6.90
0.845	41.10	QP	Hot	48.00	6.90
0.835	41.00	QP	Neutral	48.00	7.00
1.785	40.40	QP	Neutral	48.00	7.60
0.670	40.20	QP	Neutral	48.00	7.80
0.475	38.70	QP	Neutral	48.00	9.30
0.515	38.60	QP	Neutral	48.00	9.40

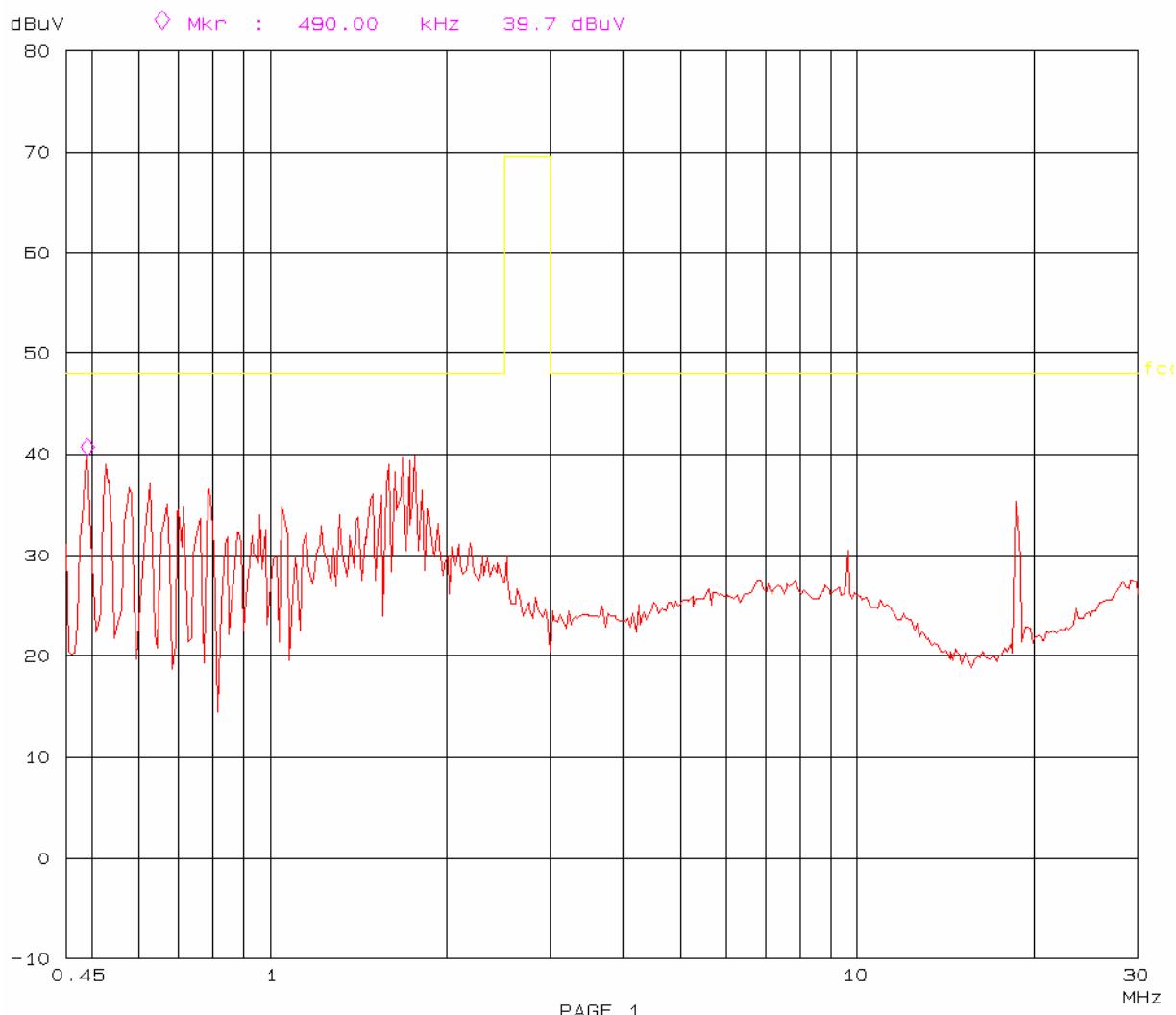
Plot(s) of Test Data

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

Conducted Emission test
FCC Part 18

10. Dec 07 21:23

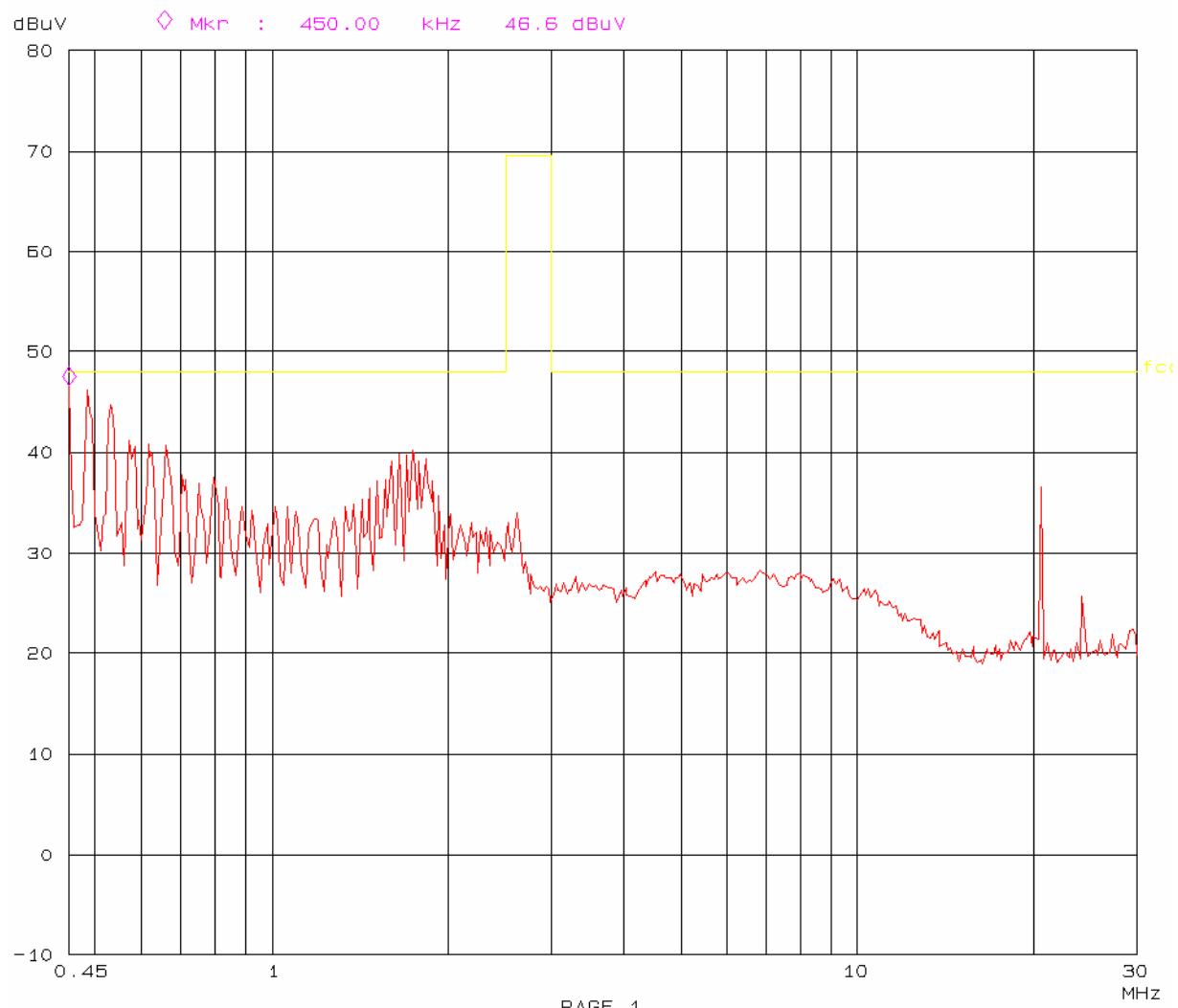
EUT: CFL M/N: T3-ESP-20W
Manuf: NVC
Op Cond: ON
Operator: Phoenix Liu
Test Spec: AC120V/60Hz HOT
Comment: Temp: 25 Humi 56%



Conducted Emission test
FCC Part 18

10. Dec 07 21:13

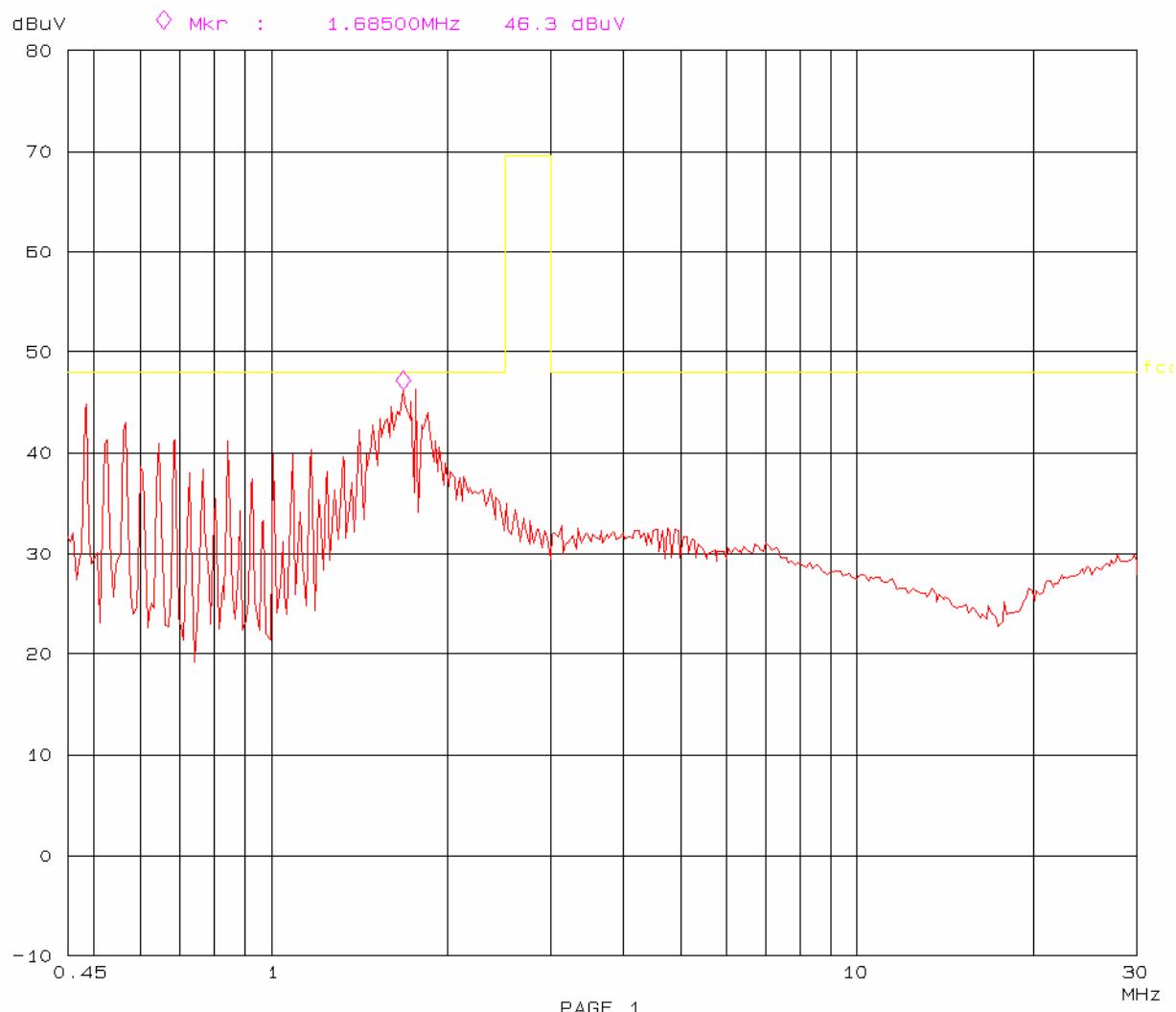
EUT: CFL M/N: T3-ESP-20W
Manuf: NVC
Op Cond: ON
Operator: Phoenix Liu
Test Spec: AC120V/60Hz Neutral
Comment: Temp: 25 Humi 56%



Conducted Emission test
FCC Part 18

10. Dec 07 21:46

EUT: CFL M/N: T3-ESP-23W
Manuf: NVC
Op Cond: ON
Operator: Phoenix Liu
Test Spec: AC120V/60Hz HOT
Comment: Temp: 25 Humi 56%

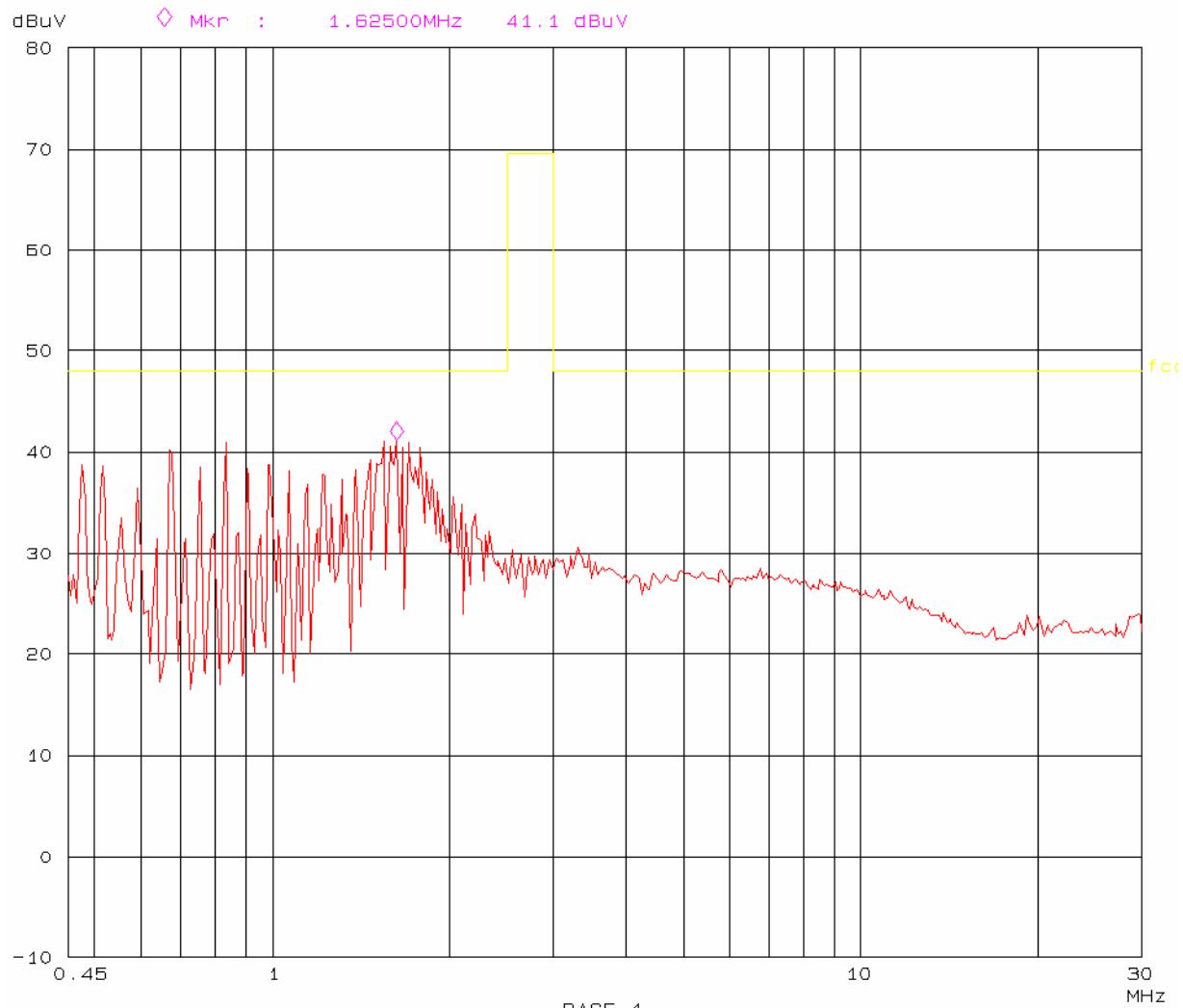


Conducted Emission test

10. Dec 07 21:53

FCC Part 18

EUT: CFL M/N: T3-ESP-23W
Manuf: NVC
Op Cond: ON
Operator: Phoenix Liu
Test Spec: AC120V/60Hz Neutral
Comment: Temp: 25 Humi 56%



PAGE 1

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