

FCC PART 18 EMI MEASUREMENT AND TEST REPORT

For

Super Trend Lighting Limited

Rm 302-306, Hewlett Centre, 54 Hoi Yuen Road, Kwun Tong, Kowloon, H.K.

FCC ID: N8WEU23

August 26, 2006

This Report Concerns: ☒ Original Report	Equipment Type: CFL
Test Engineer: Simon Mo <i>simon mo</i>	
Report Number: RSZ06081953	
Test Date: August 23, 2006	
Reviewed By: EMC Manager: Boni Baniqued <i>[Signature]</i>	
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Note: The test report is specially limited to the above company and this particular sample only.
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Super Trend Lighting Limited*'s model: *EU-23W-GU24, EU-23W, EU-18W, EU-25W-E26* or the "EUT" as referred to in this report is a *CFL* which measures approximately *EU-23W-GU24*: 11 cm L x 6 cm W x 6 cm H, *EU-23W*: 12 cm L x 6 cm W x 6 cm H, *EU-18W*: 12 cm L x 6 cm W x 6 cm H, *EU-25W-E26*: 13 cm L x 6 cm W x 6 cm H rated input voltage: AC 120V/60Hz.

** The test data gathered are from production sample, serial number: 0601108,0601115,0601116,0601117, Provided by the manufacturer, we received EUT on 2006-8-19.*

Objective

The following test report is prepared on behalf of *Super Trend Lighting Limited* 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 Lab 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 Lab Corp. (ShenZhen) to collect radiated and conducted emission measurement data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China.

Test site at Bay Area Compliance Lab 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 and FCC MP-5.

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 Lab Corp. (ShenZhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0). The current scope of accreditations can be found at <http://ts.nist.gov/ts/htdocs/210/214/scopes/2007070.htm>

External I/O Cable

Cable Description	Length (M)	From/Port	To
Unshielded Detachable AC Cable	1.2	EUT	AC Power

SYSTEM TEST CONFIGURATION

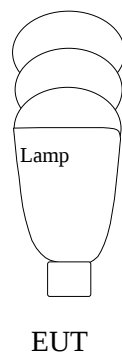
Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

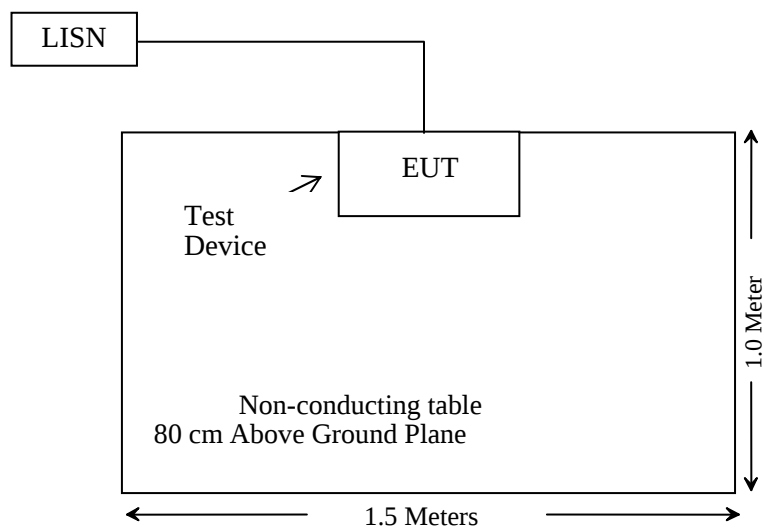
Equipment Modifications

Bay Area Compliance Lab Corp. (Shenzhen) has not done any modification on the EUT.

Configuration of Test Setup



Block Diagram of Test Setup



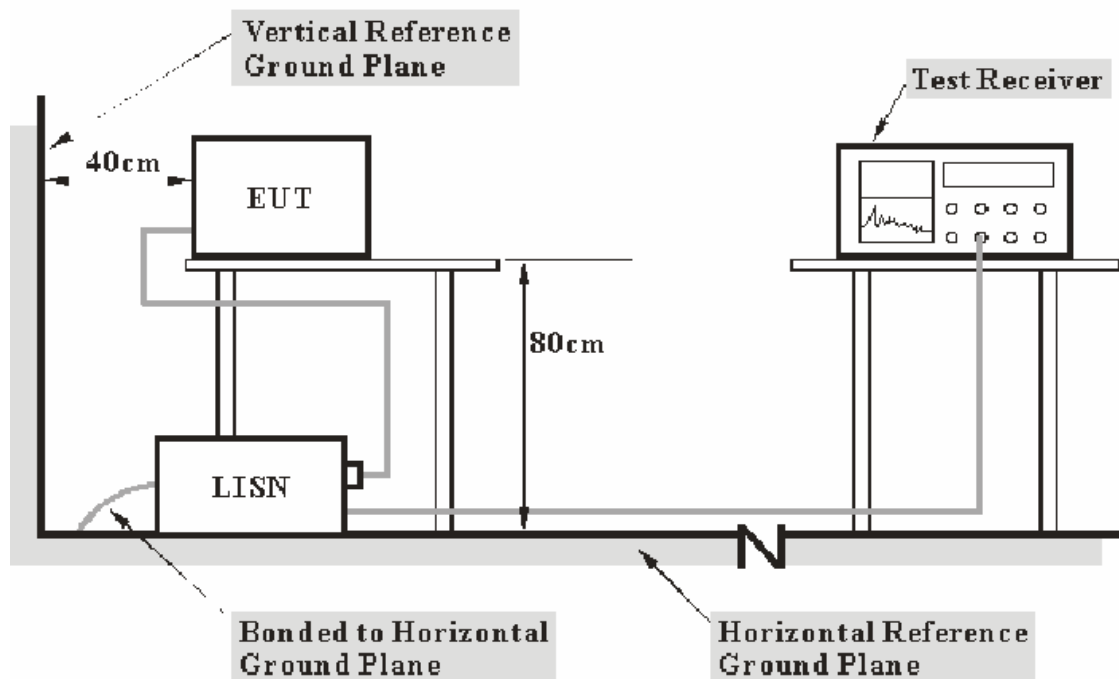
CONDUCTED EMISSION

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 Bay Area Compliance Lab 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 150 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>
150 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	12008	N/A	N/A
Rohde & Schwarz	EMI Test Receiver	ESCS30	DE25330 or 830245/006	2006-1-26	2007-1-26
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2006-3-1	2007-3-1

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

* **Statement of Traceability:** Bay Area Compliance Lab 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 were 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:

*EU-23W-GU24: -3.10 dB at 0.515 MHz in the **Neutral** conductor mode.*
*EU-23W: -6.40 dB at 0.530 MHz in the **Neutral** conductor mode.*
*EU-18W: -2.80 dB at 0.465 MHz in the **Neutral** conductor mode.*
*EU-25W-E26: -6.30 dB at 0.505 MHz in the **Live** conductor mode.*

Test Data**Environmental Conditions**

Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	940mbar

Testing was performed by Simon Mo on 2006-8-23.

Test mode: On (EU-23W-GU24)

LINE CONDUCTED EMISSIONS					FCC Part 18		
Frequency MHz	Amplitude dBμV	Detector		Phase Neutral/Live	Limit (dBμV)		Margin dB
		QP	AV		QP	AV	
0.515	44.90	QP	*	Neutral	48.00	N/A	-3.10
0.700	42.80	QP	*	Neutral	48.00	N/A	-5.20
0.510	41.50	QP	*	Live	48.00	N/A	-6.50
28.275	39.10	QP	*	Live	48.00	N/A	-8.90
0.695	38.20	QP	*	Live	48.00	N/A	-9.80
1.285	36.20	QP	*	Neutral	48.00	N/A	-11.80
1.130	30.50	QP	*	Live	48.00	N/A	-17.50
4.465	28.40	QP	*	Neutral	48.00	N/A	-19.60
1.790	26.50	QP	*	Live	48.00	N/A	-21.50
10.845	26.40	QP	*	Neutral	48.00	N/A	-21.60
2.615	30.60	QP	*	Neutral	69.00	N/A	-38.40
2.710	28.40	QP	*	Live	69.00	N/A	-40.60

Test mode: On (EU-23W)

LINE CONDUCTED EMISSIONS					FCC Part 18		
Frequency MHz	Amplitude dBμV	Detector		Phase Neutral/Live	Limit (dBμV)		Margin dB
		QP	AV		QP	AV	
0.530	41.60	QP	*	Neutral	48.00	N/A	-6.40
0.515	40.70	QP	*	Live	48.00	N/A	-7.30
0.930	38.70	QP	*	Neutral	48.00	N/A	-9.30
0.845	36.70	QP	*	Live	48.00	N/A	-11.30
26.440	36.40	QP	*	Live	48.00	N/A	-11.60
1.415	34.80	QP	*	Neutral	48.00	N/A	-13.20
1.470	29.30	QP	*	Live	48.00	N/A	-18.70
2.840	28.40	QP	*	Neutral	48.00	N/A	-19.60
2.290	24.70	QP	*	Live	48.00	N/A	-23.30
13.885	20.80	QP	*	Neutral	48.00	N/A	-27.20
2.155	28.30	QP	*	Neutral	69.00	N/A	-40.70
2.725	26.70	QP	*	Live	69.00	N/A	-42.30

Test mode: On (EU-18W)

LINE CONDUCTED EMISSIONS					FCC Part 18		
Frequency MHz	Amplitude dBμV	Detector		Phase Neutral/Live	Limit (dBμV)		Margin dB
		QP	AV		QP	AV	
0.465	45.20	QP	*	Neutral	48.00	N/A	-2.80
0.625	42.00	QP	*	Live	48.00	N/A	-6.00
0.845	41.70	QP	*	Neutral	48.00	N/A	-6.30
28.150	37.90	QP	*	Live	48.00	N/A	-10.10
1.160	37.70	QP	*	Live	48.00	N/A	-10.30
1.480	37.40	QP	*	Neutral	48.00	N/A	-10.60
3.855	29.60	QP	*	Live	48.00	N/A	-18.40
4.490	29.10	QP	*	Neutral	48.00	N/A	-18.90
6.355	23.20	QP	*	Live	48.00	N/A	-24.80
7.485	23.10	QP	*	Neutral	48.00	N/A	-24.90
2.710	32.00	QP	*	Neutral	69.00	N/A	-37.00
2.715	25.80	QP	*	Live	69.00	N/A	-43.20

Test mode: On (EU-25W-E26)

LINE CONDUCTED EMISSIONS					FCC Part 18		
Frequency MHz	Amplitude dBμV	Detector		Phase Neutral/Live	Limit (dBμV)		Margin dB
		QP	AV		QP	AV	
0.505	41.70	QP	*	Live	48.00	N/A	-6.30
0.510	40.90	QP	*	Neutral	48.00	N/A	-7.10
0.670	37.80	QP	*	Live	48.00	N/A	-10.20
0.845	34.80	QP	*	Neutral	48.00	N/A	-13.20
1.180	33.70	QP	*	Live	48.00	N/A	-14.30
1.365	30.80	QP	*	Neutral	48.00	N/A	-17.20
11.440	30.70	QP	*	Live	48.00	N/A	-17.30
29.350	26.90	QP	*	Neutral	48.00	N/A	-21.10
1.890	26.60	QP	*	Live	48.00	N/A	-21.40
9.510	21.80	QP	*	Neutral	48.00	N/A	-26.20
2.725	27.30	QP	*	Neutral	69.00	N/A	-41.70
2.865	26.30	QP	*	Live	69.00	N/A	-42.70

REMARKS:

1. If the data table appeared symbol “*” means the value was too low and the QP value is under the limit for Average, so the Average level value had been omitted.

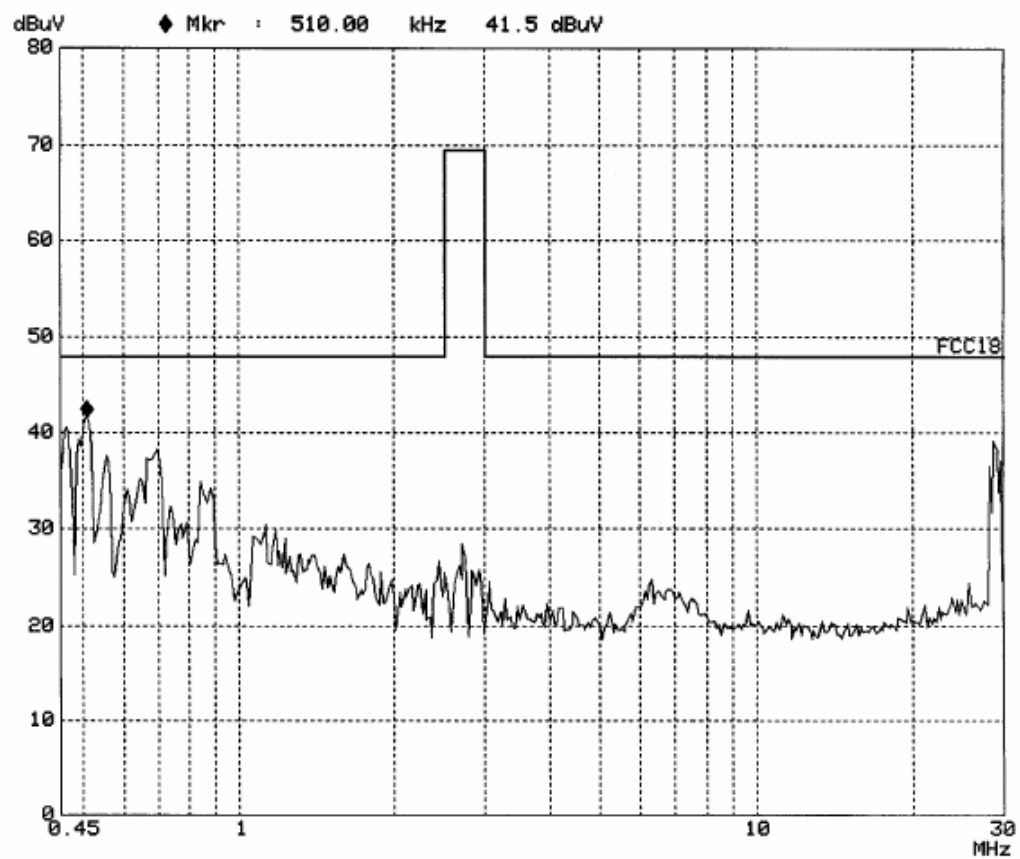
Plot(s) of Test Data

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

conducted disturbance test

FCC18 ID

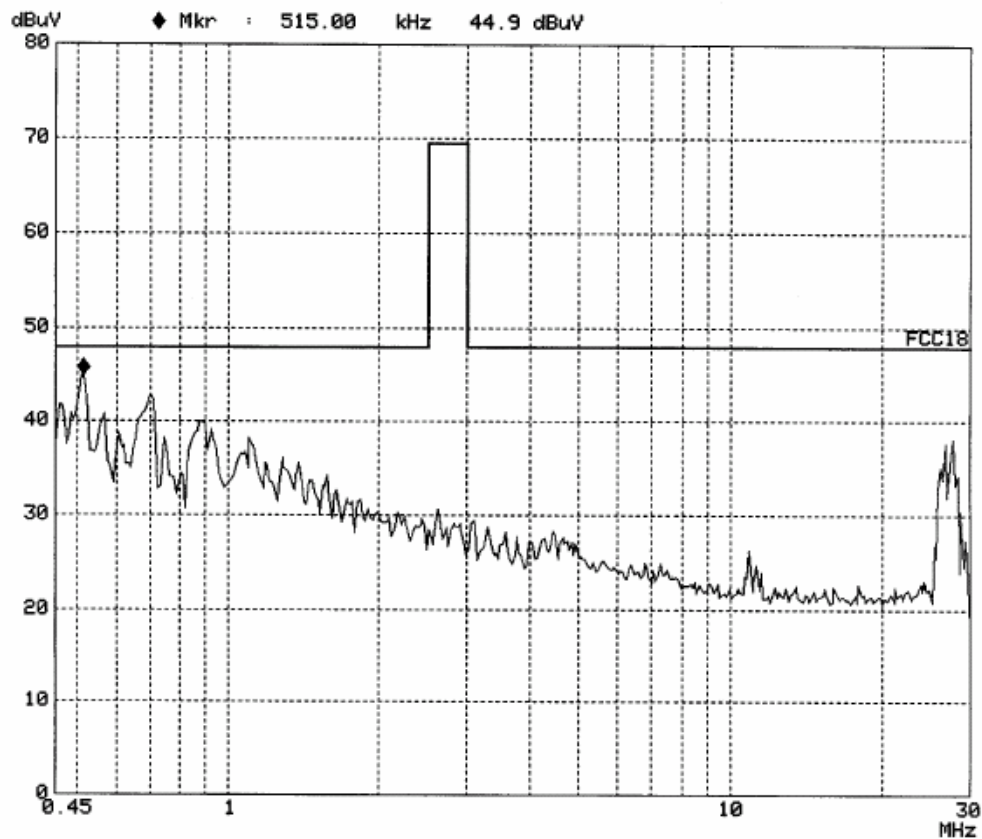
EUT: CFL M/N:EU-23W-GU24
Manuf: SUPER TREND LIGHTING
Op Cond: ON
Operator: SIMON
Test Spec: AC 120V/60Hz L
Comment: Temp:27 Humi:60%
Date: 23. Aug 06 22:06



conducted disturbance test

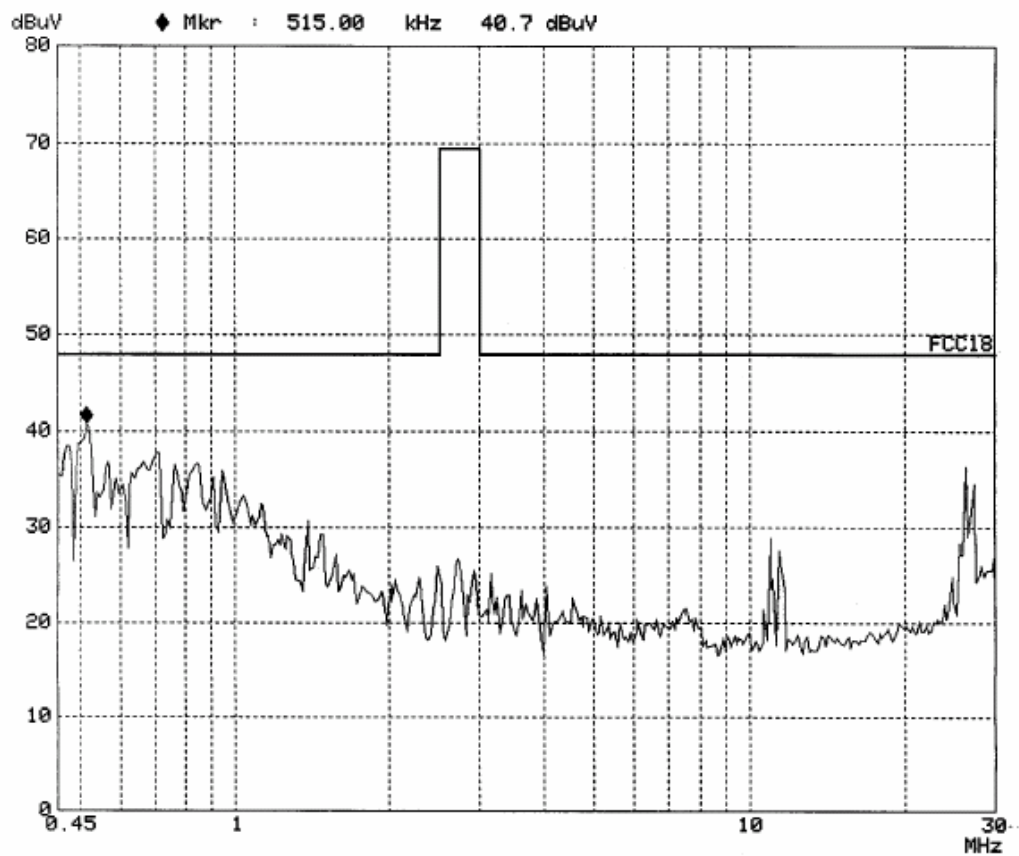
FCC18 ID

EUT: CFL M/N:EU-23W-GU24
Manuf: SUPER TREND LIGHTING
Op Cond: ON
Operator: SIMON
Test Spec: AC 120V/60Hz N
Comment: Temp:27 Humi:60%
Date: 23. Aug 06 21:50



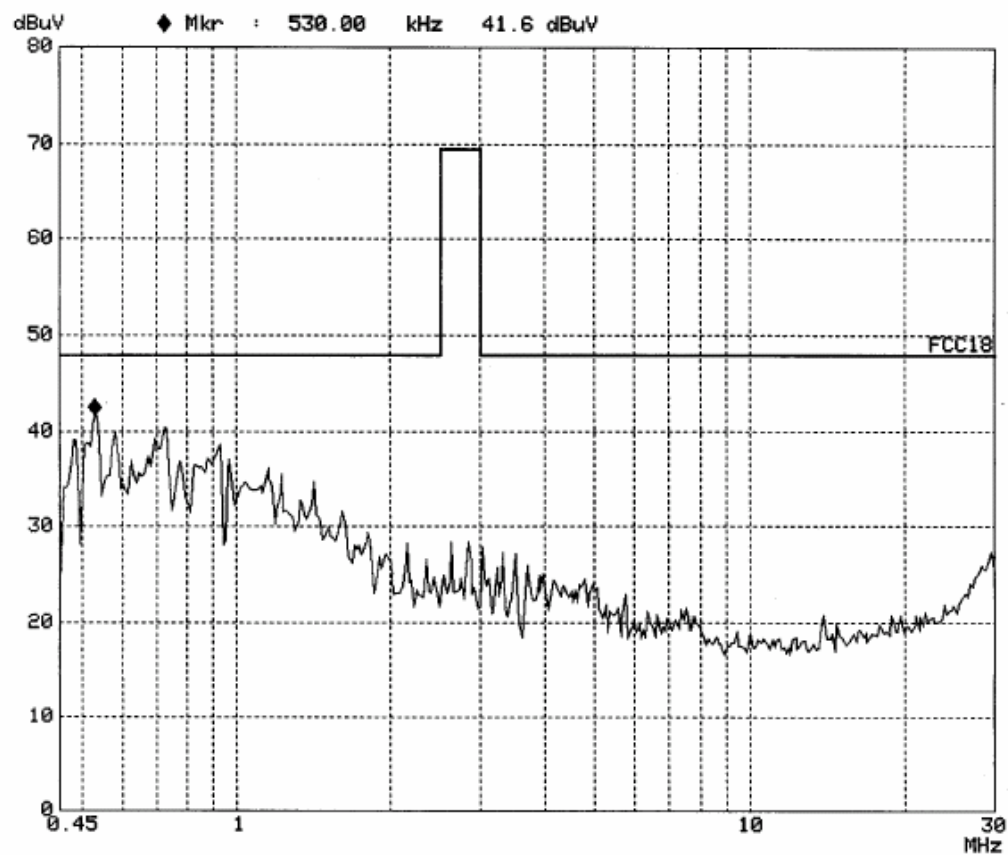
conducted disturbance test

FCC18 ID
EUT: CFL M/N:EU-23W
Manuf: SUPER TREND LIGHTING
Op Cond: ON
Operator: SIMON
Test Spec: AC 120V/60Hz L
Comment: Temp:27 Humi:60%
Date: 23. Aug 06 22:54



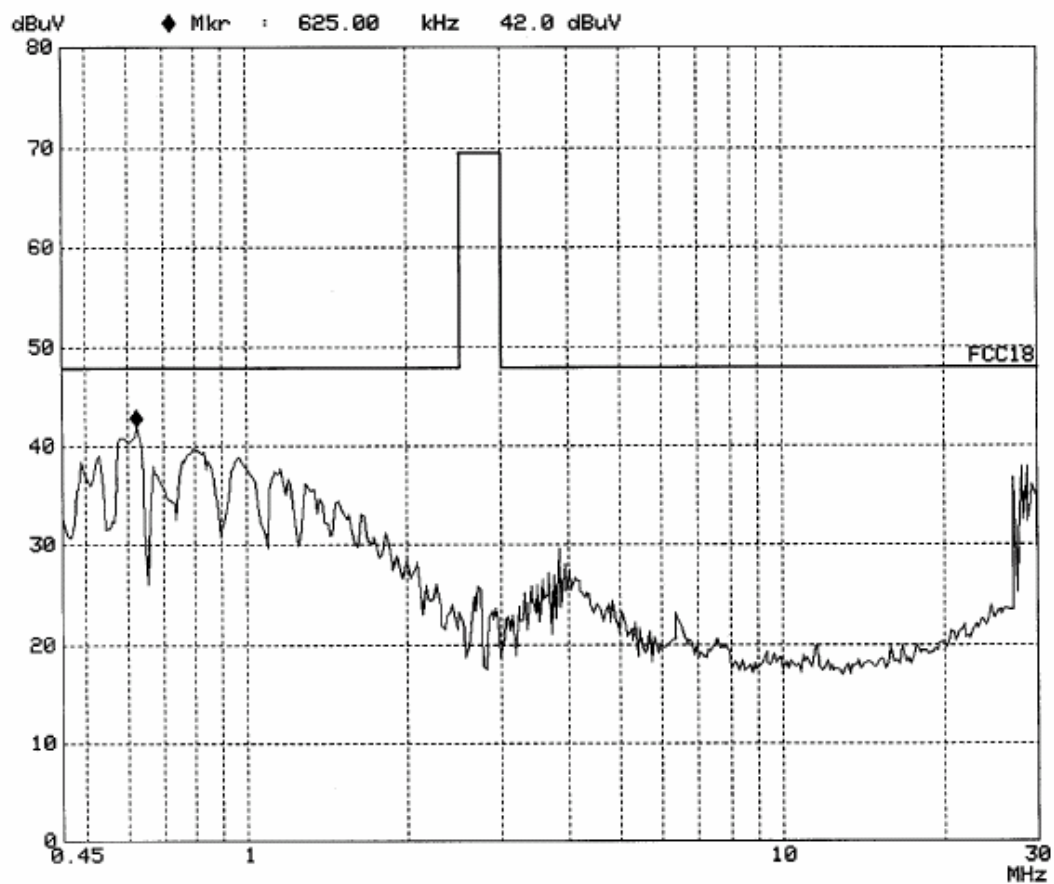
conducted disturbance test
FCC18 ID

EUT: CFL M/N:EU-23W
Manuf: SUPER TREND LIGHTING
Op Cond: ON
Operator: SIMON
Test Spec: AC 120V/60Hz N
Comment: Temp:27 Humi:60%
Date: 23. Aug 06 22:39



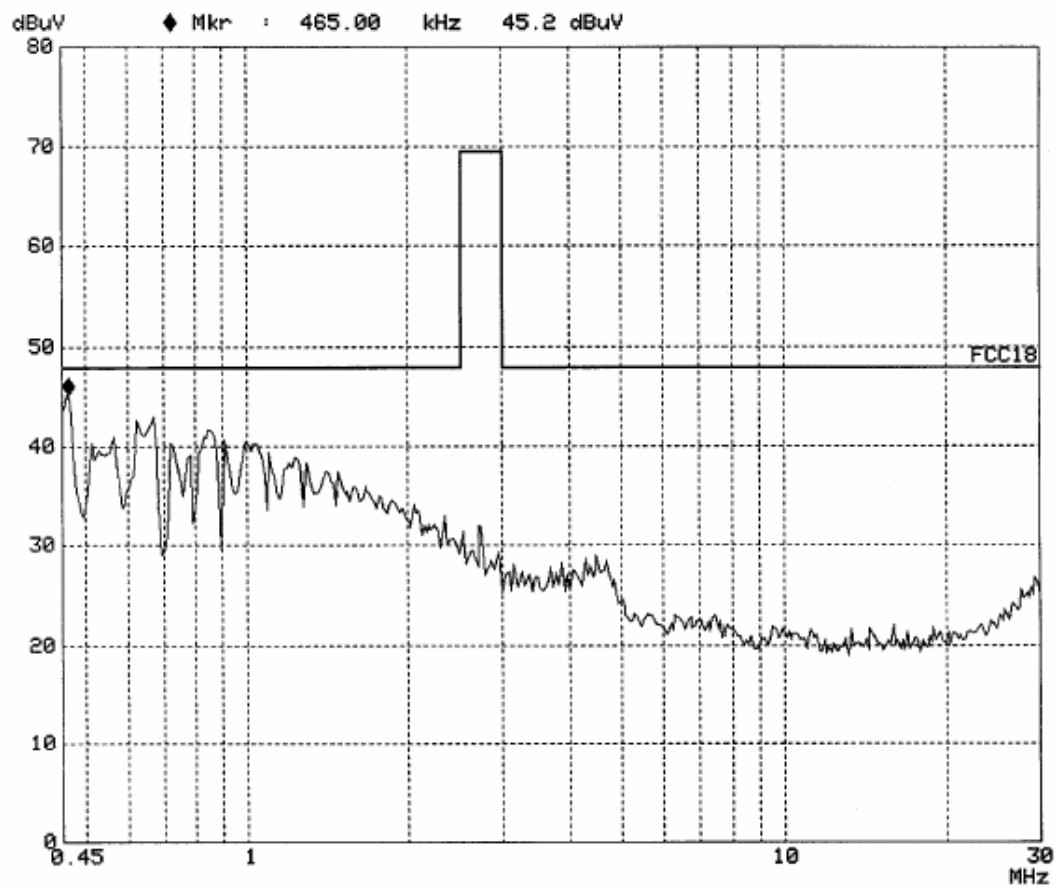
conducted disturbance test FCC18 ID

EUT: CFL M/N:EU-18W
Manuf: SUPER TREND LIGHTING
Op Cond: ON
Operator: SIMON
Test Spec: AC 120V/60Hz L
Comment: Temp:27 Humi:60%
Date: 23. Aug 06 23:24



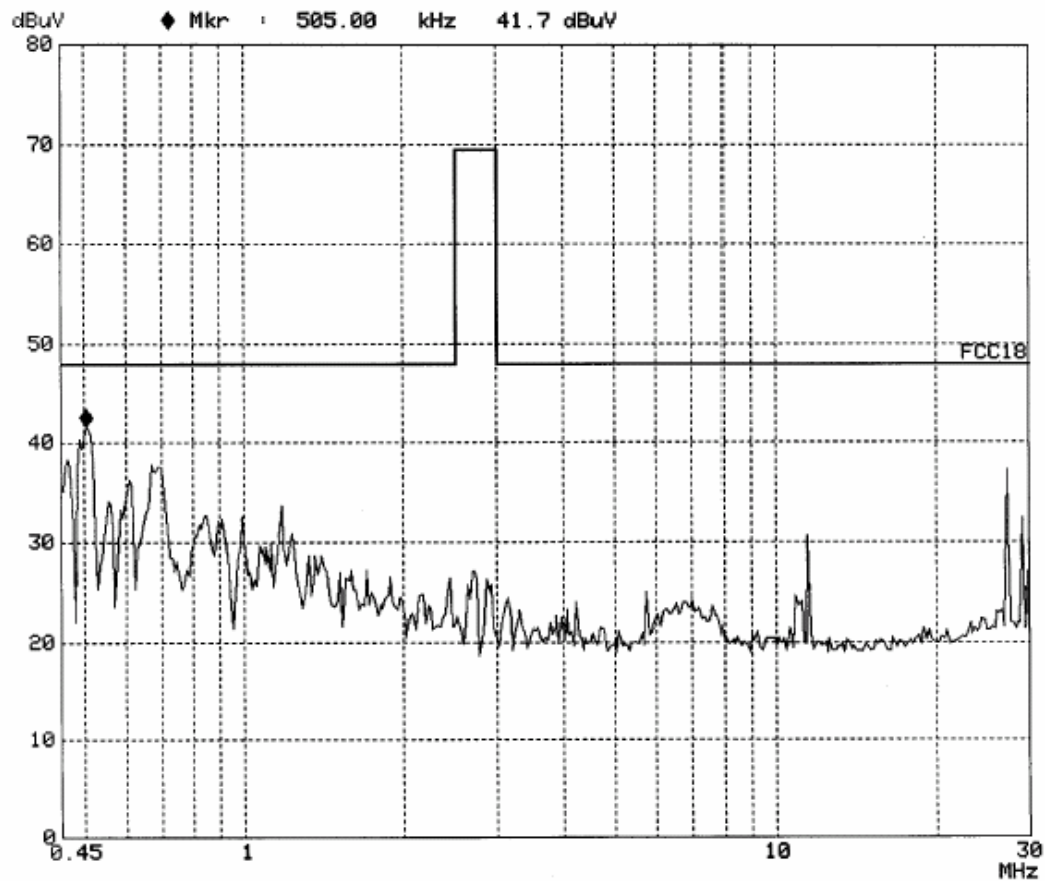
conducted disturbance test FCC18 ID

EUT: CFL M/N:EU-18W
Manuf: SUPER TREND LIGHTING
Op Cond: ON
Operator: SIMON
Test Spec: AC 120V/60Hz N
Comment: Temp:27 Humi:60%
Date: 23. Aug 06 23:13



conducted disturbance test FCC18 ID

EUT: CFL M/N:EU-25W-E26
Manuf: SUPER TREND LIGHTING
Op Cond: ON
Operator: SIMON
Test Spec: AC 120V/60Hz L
Comment: Temp:27 Humi:60%
Date: 23. Aug 06 22:17



conducted disturbance test
FCC18 ID

EUT: CFL M/N:EU-25W-E26
Manuf: SUPER TREND LIGHTING
Op Cond: ON
Operator: SIMON
Test Spec: AC 120V/60Hz N
Comment: Temp:27 Humi:60%
Date: 23. Aug 06 22:26

