

# ***FCC TEST REPORT***

**FCC ID** : NOGDEC28-32W

**Applicant** : Ningbo Ledeshi Electrical Equipment Co., Ltd.

**Address** : 438 Youngor Rd Shiqi Town, Ningbo, Zhejiang, China

## **Equipment Under Test (EUT) :**

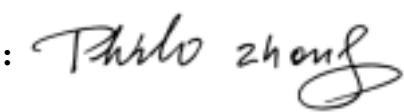
Product description : Energy Saving Lamp

Model No. : DEC3H Series 28W/30W/32W

**Standards** : FCC Part18

**Date of Test** : Mar.25, 2006

**Test Engineer** : Tiger Su

**Reviewed By** : 

PERPARED BY:  
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### 3 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 1GHz)	FCC PART 18: 2003	ANSI C63.4:2003	Class B	N/A
Conducted Emission (150KHz to 30MHz)	FCC PART 18: 2003	ANSI C63.4:2003	Class B	PASS

## 4 General Information

### 4.1 Client Information

Applicant: Ningbo Ledeshi Electrical Equipment Co., Ltd.  
Address of Applicant: 438 Youngor Rd Shiqi Town, Ningbo, Zhejiang, China

Manufacturer: Ningbo Ledeshi Electrical Equipment Co., Ltd.  
Address of Manufacture: 438 Youngor Rd Shiqi Town, Ningbo, Zhejiang, China

### 4.2 General Description of E.U.T.

Product description: Energy Saving Lamp  
Model No.: DEC3H Series 28W/30W/32W

### 4.3 Details of E.U.T.

Power Supply: 120VAC / 60Hz

### 4.4 Description of Support Units

The EUT has been tested as an independent unit.

### 4.5 Standards Applicable for Testing

The customer requested FCC tests for an Energy Saving Lamp. The standards used were FCC Part18.

### 4.6 Test Methodology

All measurements contained in this report are conducted with FCC Measurement Procedure MP-5, technical requirements for Methods of Measurement of Radio-Noise Emission from ISM Equipment.

#### **4.7 Test Facility**

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC – Registration No.: 759357**

Solid Industrial (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 759357, November 04, 2003.

#### **4.8 Test Location**

All Emissions tests were performed at:-

Solid Industrial (Shenzhen) Co., Ltd. at 333 Bulong Highway Buji Longgang, Shenzhen, Guangdong, China.

Its' **VCCI – Registration No.: 2153**

## 5 Equipment Used during Test

Equipment	Brand Name	Model	Cal. Int Months	Last Cal. Date
<b>EMI Shielded Room</b>				
Spectrum analyzer	ADVANTEST	R3261C	12	2005-08
EMI Test Receiver	R&S	ESS	12	2005-08
Pre Amplifier	Anritsu	MH648A	12	2005-08
LISN	R&S	MNZ050D11	12	2005-08
LISN	Kyoritsu	KNW-407	12	2005-08
LISN	Kyoritsu	KNW-242C	12	2005-08
Absorbing Clamp	R&S	MDS-21	12	2005-08
Absorbing Clamp	R&S	MDS-21	12	2005-08
Absorbing Clamp	Kyoritsu	KT-20	12	-
Distortion Meter	MEGURO	MAK-6578A	12	2005-09
AM/FM Stereo Signal Generator	Panasonic	VP-8122A	12	2005-08
Oscilloscope	LEADER	LS1020	12	2005-09
Function Generator	National	VP-7422A	12	2005-08
Signal Generator	R&S	SMG	12	2005-08
RF Selector	TOYO	NS4000	-	-
RF Selector	TOYO	NS4900	-	-
Remote Controller	TOYO	MAC	-	-

## 6 Conducted Emission Test

Product Name:	Energy Saving Lamp
Test Requirement:	FCC Part 18
Test Method:	Based on FCC Part 18
Test Date:	Mar. 25, 2006
Frequency Range:	150kHz to 30MHz
Class:	Class B
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximised peak within 6dB of Average Limit

### 6.1 Test Equipment

Please refer to Section 5 this report.

### 6.2 Test Procedure

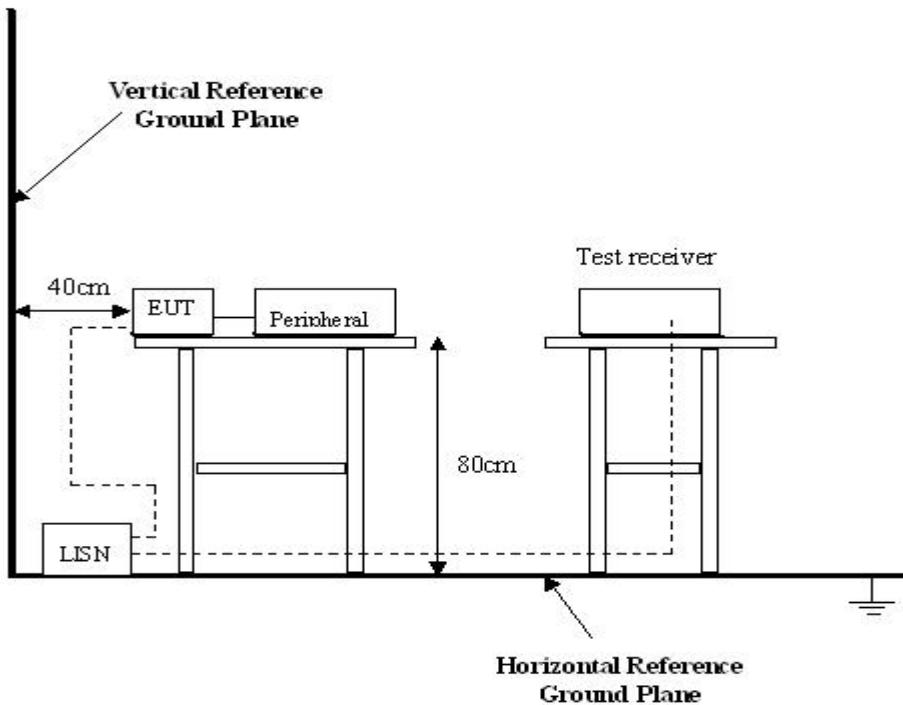
1. During the conducted emission test, the power cord of the EUT is connected to the auxiliary outlet of the LISN.
2. The EUT was tested according to FCC MP-5. The frequency spectrum from 150kHz to 30MHz was investigated.
3. The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

### 6.3 Conducted Test Setup

The conducted emission tests were performed using the setup accordance with the FCC MP-5 measurement procedure.

The EUT is tested independently.

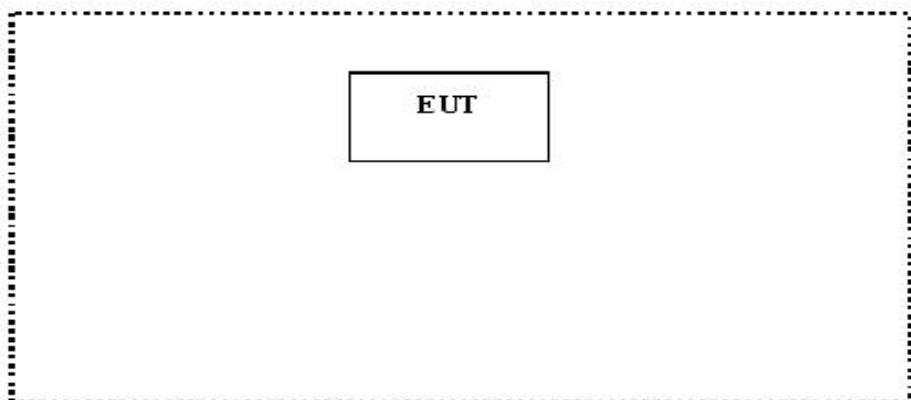
The power supply used by the EUT is connected to a 120VAC / 60Hz power source.



### 6.4 EUT Operating Condition

Operating condition is according to FCC MP-5.

- A. Setup the EUT and simulators as shown on follow.
- B. Enable RF signal and confirm EUT active.
- C. Modulate output capacity of EUT up to specification.



## 6.5 Conducted Emission Limits

Frequency of Emission (MHz)	Conducted Limit (dBuV)- Quasi-peak
0.15— 0.5	66-56
0.5 — 5.0	56
5.0 — 30	60

**Note:** In the above limits, the tighter limit applies at the band edges.

## 6.6 Spectrum Analyzer

The spectrum analyzer is configured during the conduction test is as follows:

Start Frequency ..... 150 kHz  
Stop Frequency ..... 30 MHz  
Sweep Speed ..... Auto  
IF Bandwidth ..... 9 kHz  
Video Bandwidth ..... 100 kHz  
Quasi-Peak Adaptor Bandwidth ..... 9 kHz  
Quasi-Peak Adaptor Mode ..... Normal

## 6.7 Frequency Range Of Measurements

Frequency band in which device operates (MHz)	Range of frequency measurements	
	Lowest frequency	Highest frequency
Below 1.705	Lowest frequency generated in the device, but not lower than 9 kHz.	30MHz.
1.705 to 30	Lowest frequency generated in the device, but not lower than 9 kHz.	400MHz.
30 to 500	Lowest frequency generated in the device or 25MHz, whichever is lower.	Tenth harmonic or 1,000MHz, whichever is higher.
500 to 1,000	Lowest frequency generated in the device or 100MHz, whichever is lower.	Tenth harmonic.
Above 1,000	do	Tenth harmonic or highest detectable emission.

## 6.8 Conducted Emission Test Result

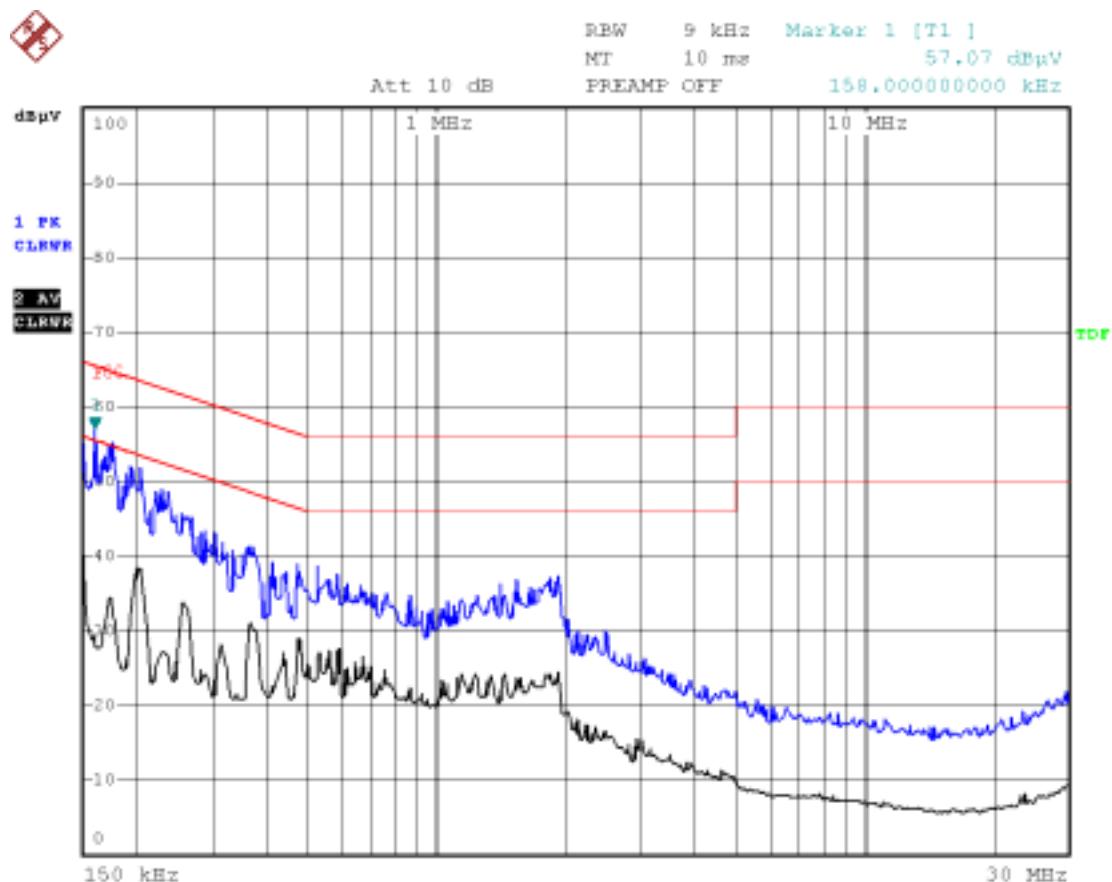
Test Item:	Conducted Emission Test
Test Voltage:	120VAC / 60Hz
Test Mode:	Normal
Temperature:	24 °C
Humidity:	52%RH
Test Result:	PASS

### 6.8.1 Measurement Data

An initial pre-scan was performed on the live and neutral lines.

No further quasi-peak or average measurements were performed since no peak emissions were detected within 10dB line below the average limit.

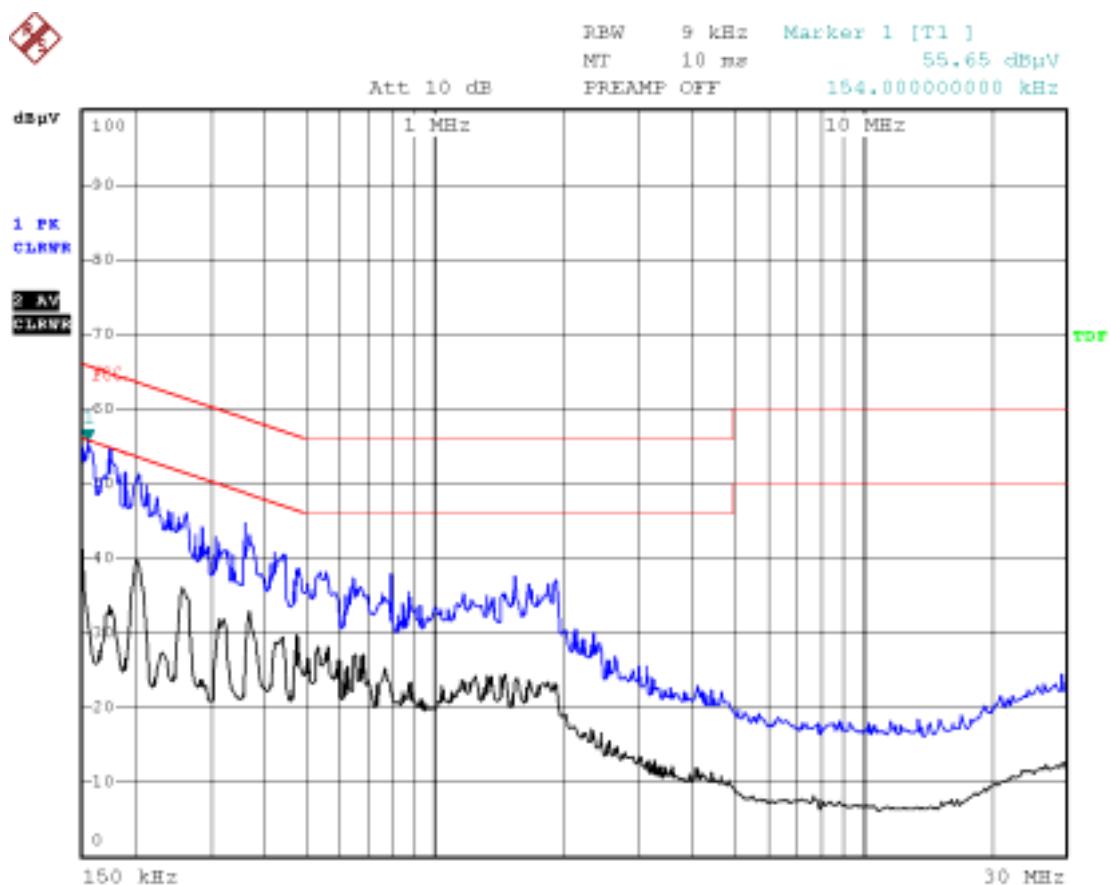
Please refer to the following peak scan graph for reference.

**Live Line For DEC3H Series 28W**

1

Date: 25.MAR.2006 17:31:51

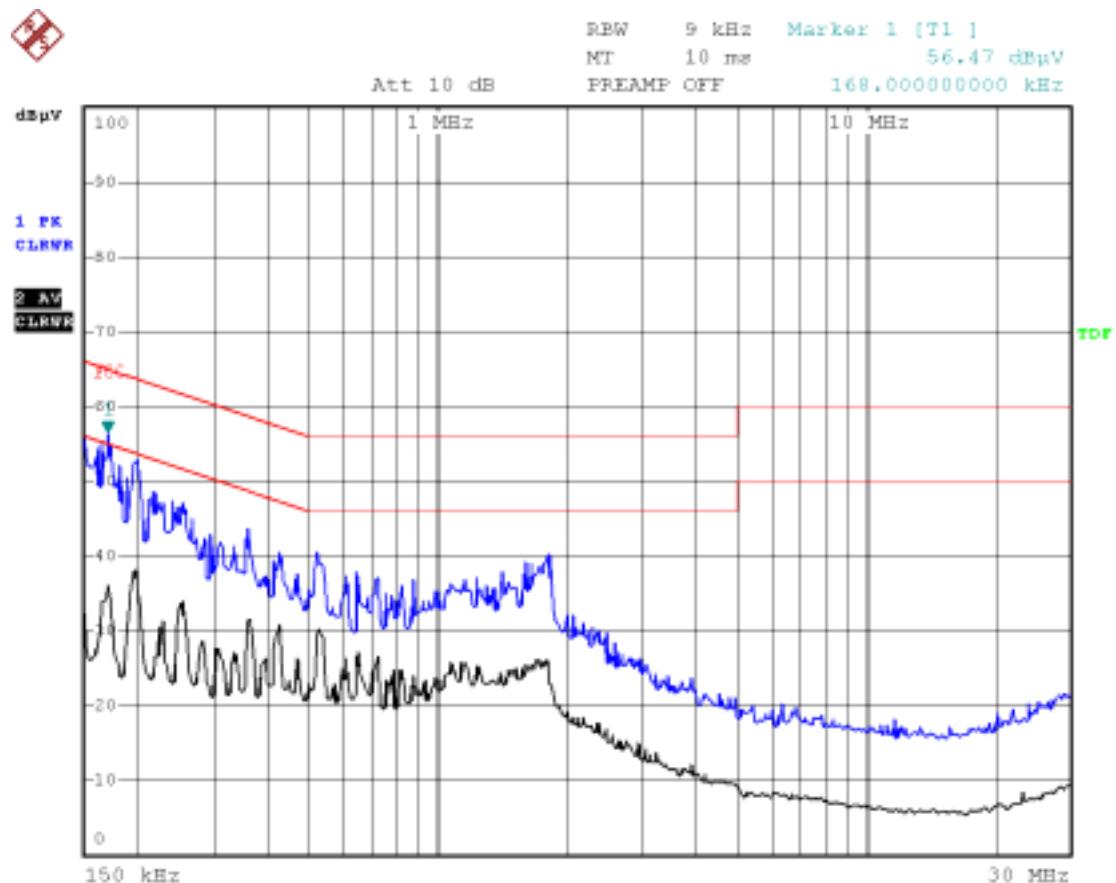
## Neutral Line For DEC3H Series 28W



1

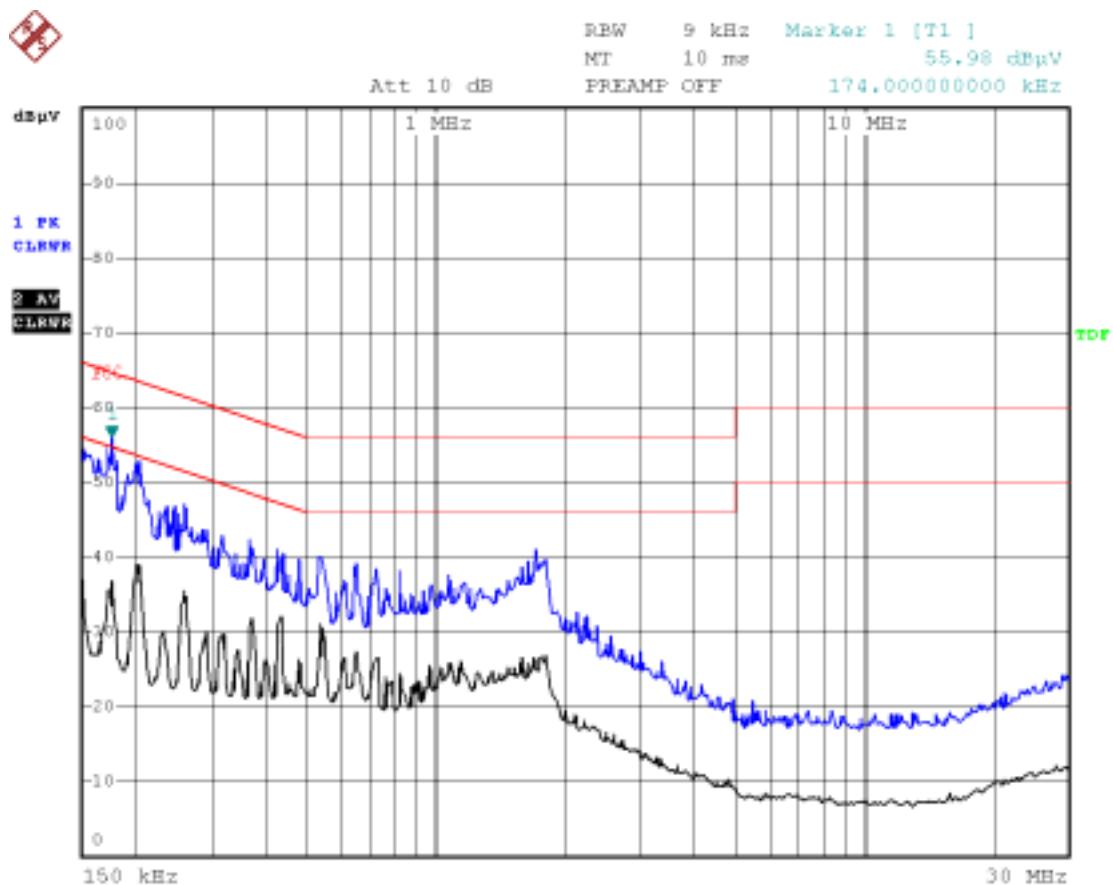
Date: 25.MAR.2006 17:35:05

## Live Line For DEC3H Series 30W



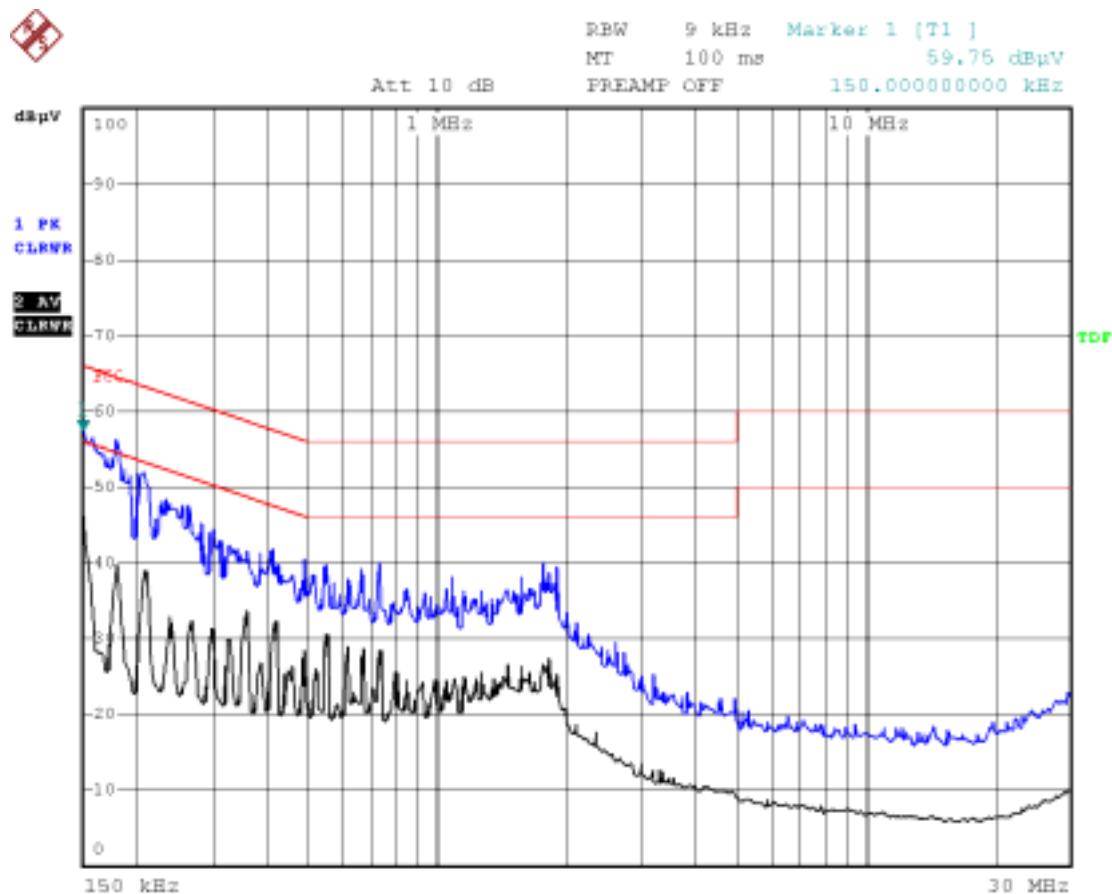
1

Date: 25.MAR.2006 17:44:31

**Neutral Line For DEC3H Series 30W**

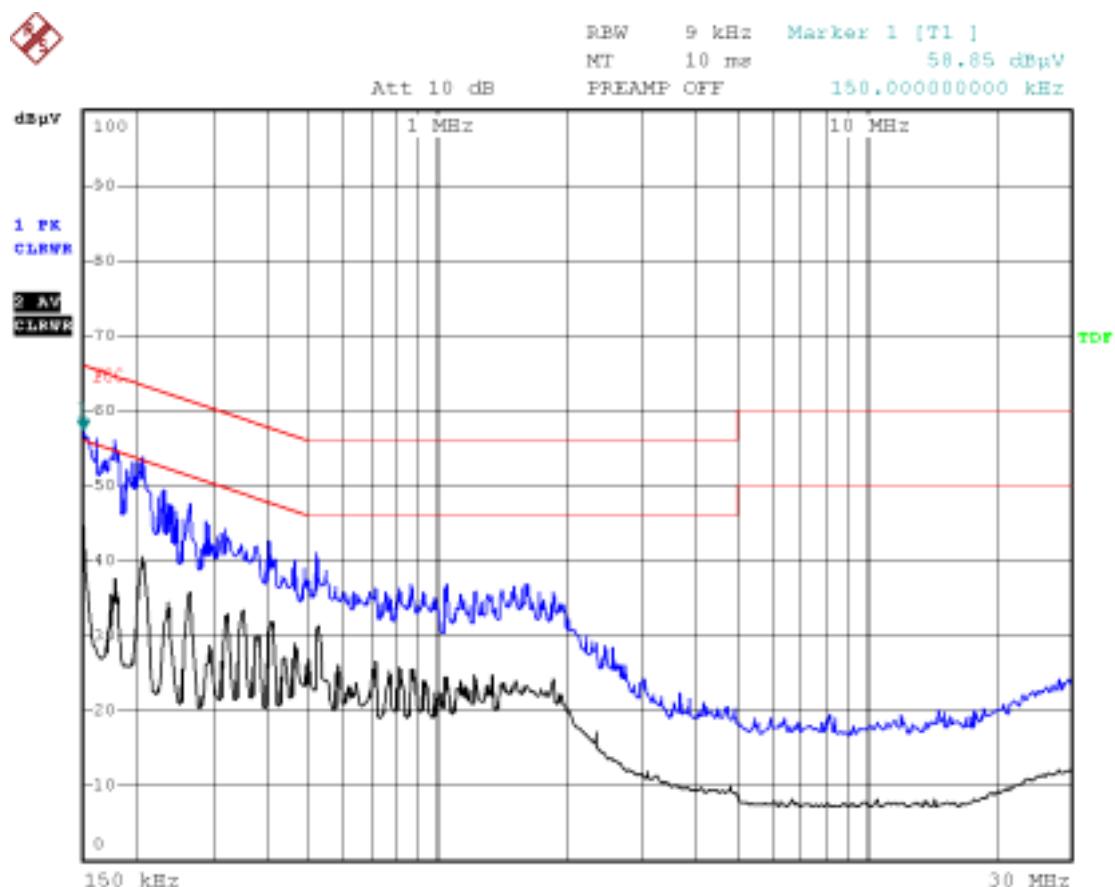
1

Date: 25.MAR.2006 17:41:21

**Live Line For DEC3H Series 32W**

1

Date: 25.MAR.2006 17:50:05

**Neutral Line For DEC3H Series 32W**

1

Date: 25.MAR.2006 17:53:16

### 6.8.2 Conducted Emissions Test Data

#### DEC3H Series 28W

Freq. MHz	Line	QP Reading dBuV	Limit dBuV	Margin dB	AV Reading dBuV	Limit dBuV	Margin dB
0.158000	Live	57.07	65.57	8.5	38.66	55.57	16.91
0.209000	Live	52.04	63.24	11.2	36.21	53.24	16.4
0.378000	Live	39.87	58.32	18.45	28.82	48.32	19.5
0.154000	Neutral	55.65	65.78	10.13	33.05	55.78	22.73
0.367000	Neutral	43.07	58.57	15.5	33.81	48.57	14.76
0.542000	Neutral	36.15	56.00	19.85	26.33	46.00	19.67

#### DEC3H Series 30W

Freq. MHz	Line	QP Reading dBuV	Limit dBuV	Margin dB	AV Reading dBuV	Limit dBuV	Margin dB
0.168000	Live	56.47	65.06	8.59	35.66	55.06	9.40
0.200000	Live	52.14	63.61	11.47	37.21	53.61	16.4
0.362000	Live	43.37	58.68	15.31	30.82	48.68	17.86
0.174000	Neutral	55.98	64.77	8.79	36.05	54.77	18.72
0.208000	Neutral	52.07	63.28	11.21	37.81	53.28	15.47
0.337000	Neutral	52.15	63.28	11.13	37.33	53.28	15.95

#### DEC3H Series 32W

Freq. MHz	Line	QP Reading dBuV	Limit dBuV	Margin dB	AV Reading dBuV	Limit dBuV	Margin dB
0.15000	Live	59.75	66.00	6.25	45.30	56.00	10.70
0.224000	Live	59.14	62.67	3.53	37.21	52.67	15.46
0.436000	Live	38.37	57.14	18.77	31.82	47.14	15.32
0.150000	Neutral	58.85	66.00	7.15	40.05	56.00	15.95
0.348000	Neutral	41.07	59.01	18.01	32.81	49.01	16.20
0.536000	Neutral	40.15	56.00	15.85	29.33	46.00	16.67

## 7 Photographs of Testing

### 7.1 Conducted Emission Test View For DEC3H Series 28W



### 7.2 Conducted Emission Test View For DEC3H Series 30W



### 7.3 Conducted Emission Test View For DEC3H Series 32W



## 8 Photographs - Constructional Details

### 8.1 EUT - Front View For DEC3H Series 28W



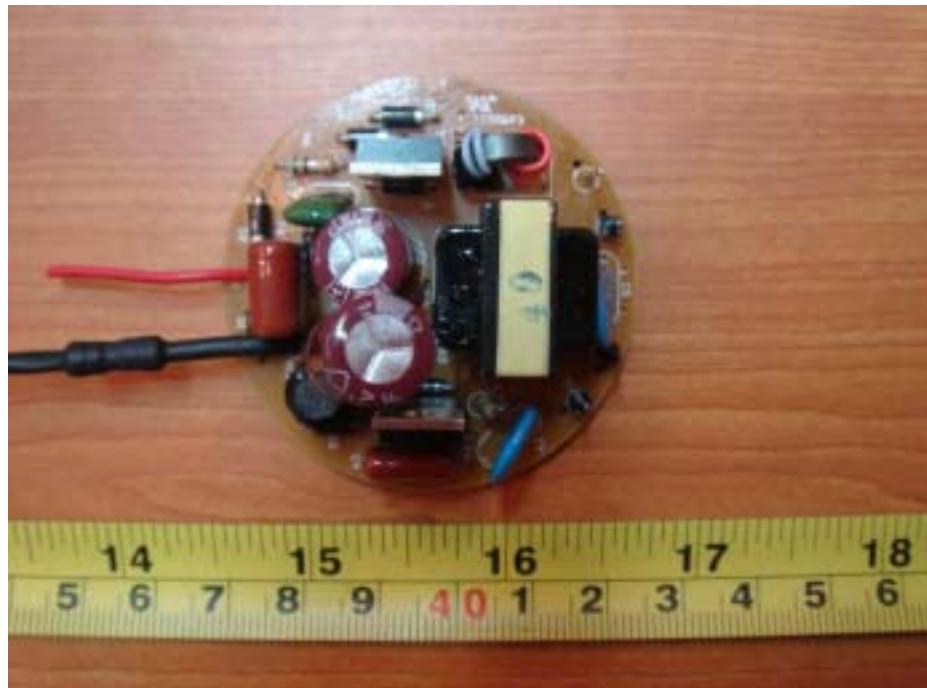
### 8.2 EUT - Front View For DEC3H Series 30W



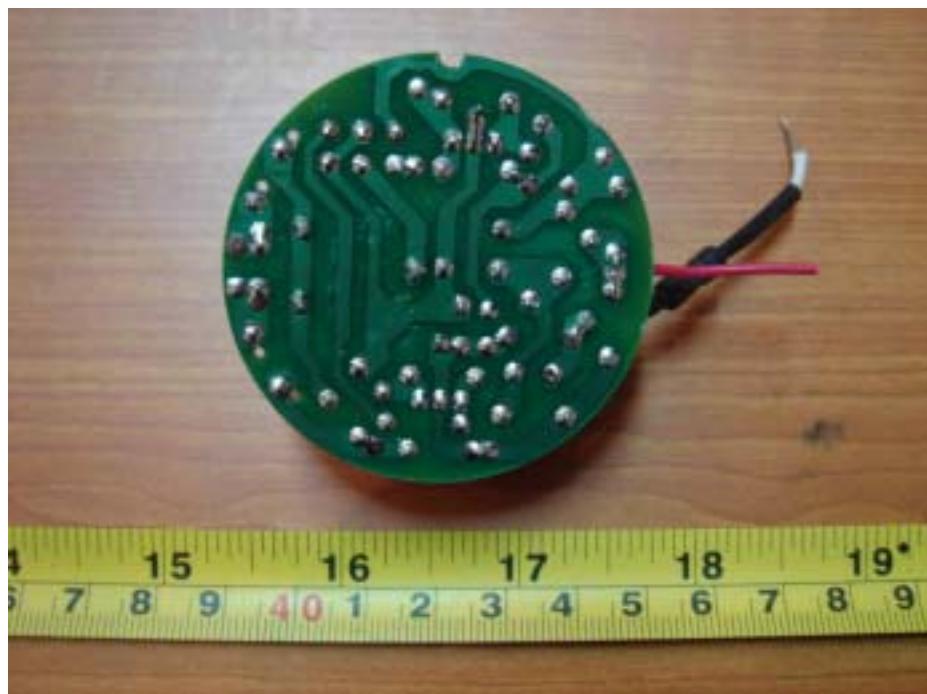
### 8.3 EUT - Front View For DEC3H Series 32W



#### 8.4 PCB - Front View For DEC3H Series 28W



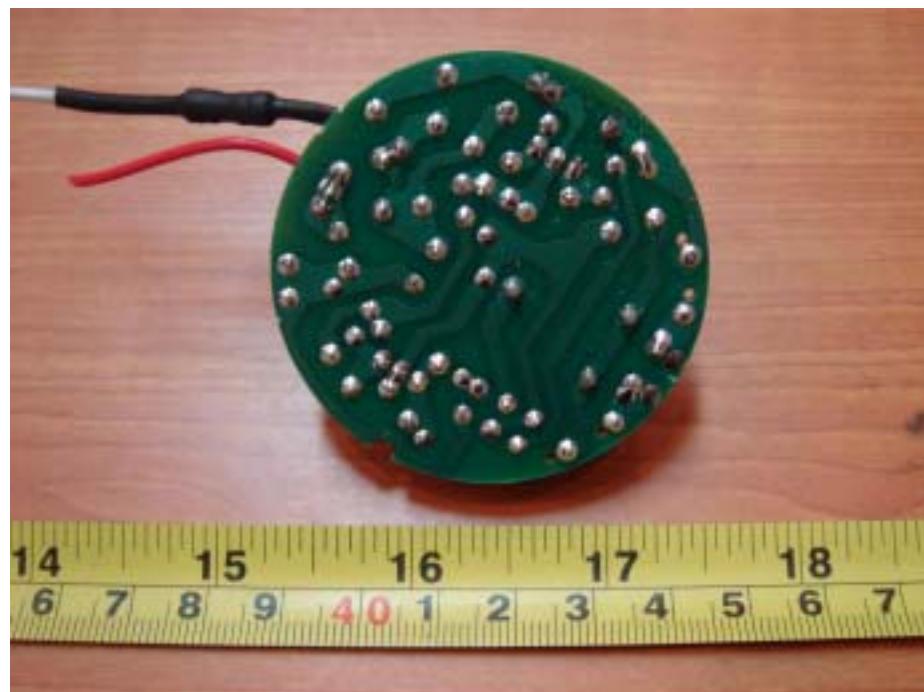
#### 8.5 PCB - Back View For DEC3H Series 28W



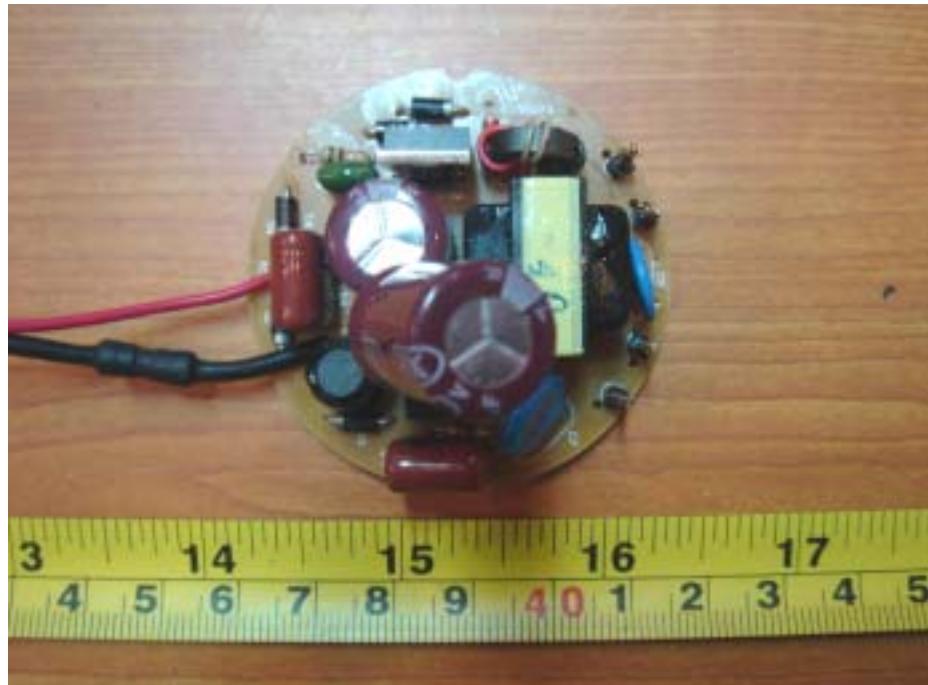
### 8.6 PCB - Front View For DEC3H Series 30W



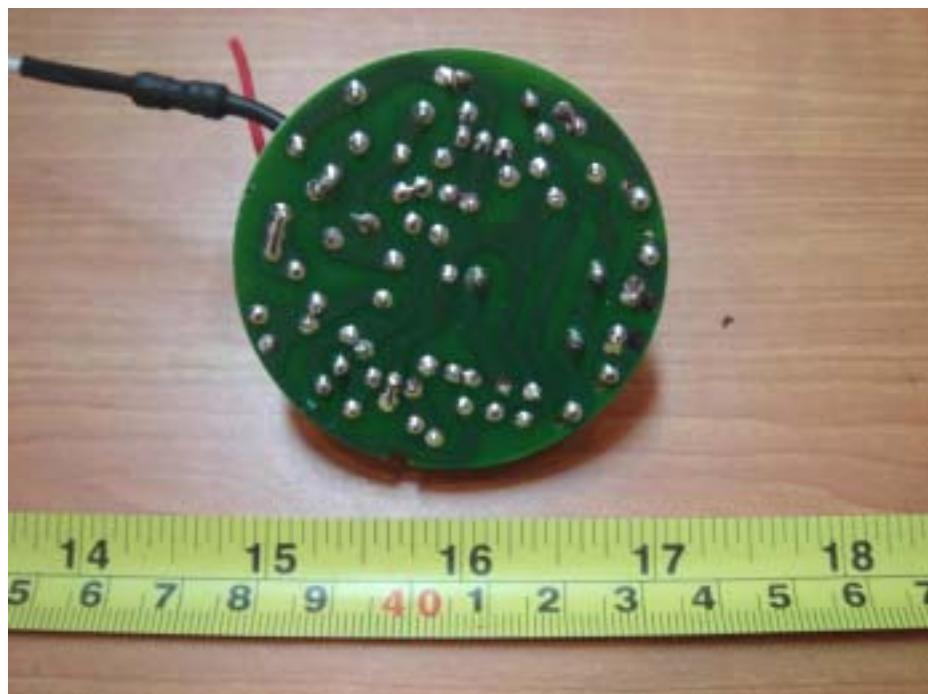
### 8.7 PCB - Back View For DEC3H Series 30W



### 8.8 PCB - Front View For DEC3H Series 32W



### 8.9 PCB - Back View For DEC3H Series 32W



## 9 FCC ID Label

This device complies with Part 18 of the FCC Rules. The Label must not be a stick-on paper. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT  
EUT Top View/ proposed FCC Mark Location

