

# FCC Part 18

## Measurement and Test Report

For

### Feit Electric Company

4901 Gregg Road Pico Rivera CA USA

**FCC ID: SYWFT0532**

<b>Test Standards:</b>	<u>FCC Part 18</u>
<b>Product Description:</b>	<u>CFL</u>
<b>Tested Model:</b>	<u>ES23H</u>
<b>Report No.:</b>	<u>STR13048387I</u>
<b>Tested Date:</b>	<u>2013-04-20 to 2013-04-25</u>
<b>Issued Date:</b>	<u>2013-04-26</u>
<b>Tested By:</b>	<u>Seven Song / Engineer</u>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd

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## 1. GENERAL INFORMATION

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### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: Feit Electric Company  
Address of applicant: 4901 Gregg Road Pico Rivera CA USA

Manufacturer: Feit Electric Company  
Address of manufacturer: 4901 Gregg Road Pico Rivera CA USA

<b>General Description of EUT</b>	
Product Name:	CFL
Model No.:	ES23H
Adding Models:	ES9H, ES13H, ES18H
<i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance, model name and power of others models listed in the report are different from main-test model ES23H, but the circuit and the electronic construction do not change. Test data is gathered form the product which has a maximum power.</i>	

<b>Technical Characteristics of EUT</b>	
Rated Voltage:	AC120V, 60Hz
Rated Current:	/
Operating Frequency:	40-60kHz

## 1.2 Test Standards

The following report is prepared on behalf of Feit Electric Company in accordance with FCC Part 18, Subpart C, and section 18.307 and 18.311 of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 18, Subpart C, and section 18.307 and 18.311 of the Federal Communication Commissions rules.

**Maintenance of compliance** is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

## 1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

## 1.4 Test Facility

- **FCC – Registration No.: 994117**

SEM.Test Compliance Services 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 and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**

The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Electronics Service Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C (518101)

## 1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Lighting	AC120V,60Hz

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
/	/	/	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
AC Power Cable	1.5	Unshielded	Without Core

## 2. SUMMARY OF TEST RESULTS

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FCC RULES	DESCRIPTION OF TEST	RESULT
§ 18.307 (c)	Conducted Emission	Compliant
§ 18.305 (c)	Radiated Emission	N/A

### 3. CONDUCTED EMISSION

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#### 3.1 Standard Applicable

According to FCC Part 18.307(c), the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies shall not exceed the limits in the following tables:

Frequency (MHz)	Maximum RF line voltage measured with a 50 uH/50 ohm LISN (uV)
Non-consumer equipment	
0.45 to 1.6	1,000
1.6 to 30	3,000
Consumer equipment:	
0.45 to 2.51	250
2.51 to 3.0	3,000
3.0 to 30	250

#### 3.2 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is  $\pm 2.88$  dB.

#### 3.3 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2013-03-28	2014-03-27
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2013-03-28	2014-03-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2013-03-28	2014-03-27

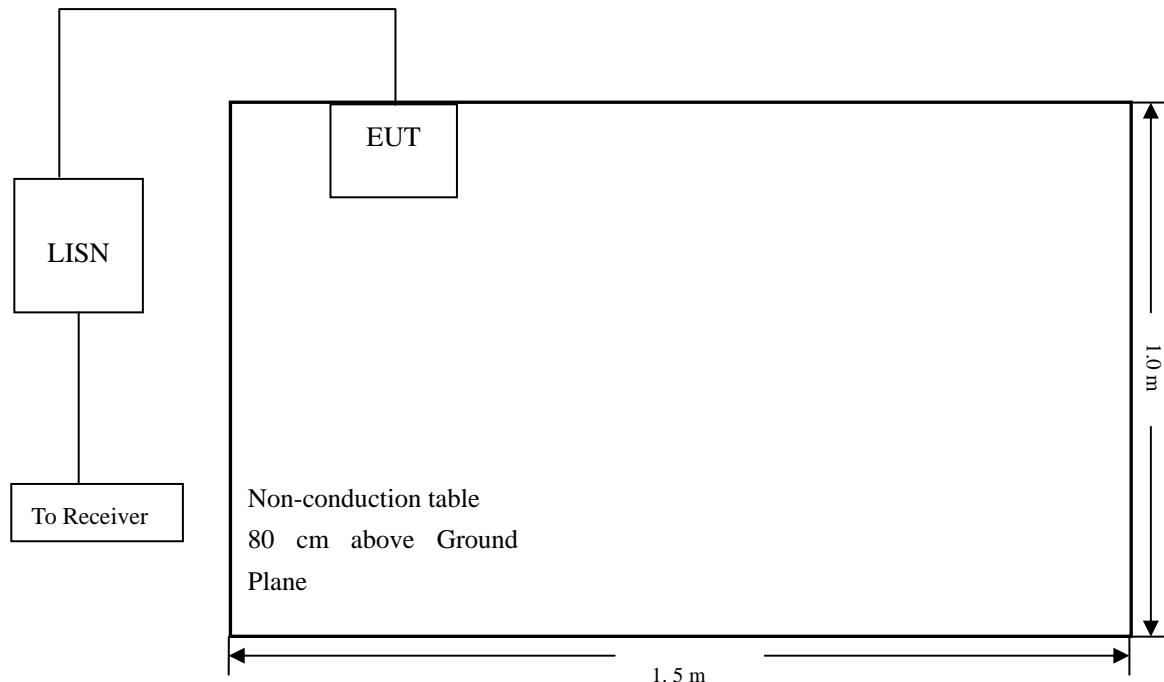
#### 3.4 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 18.307 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

### 3.5 Basic Test Setup Block Diagram



### 3.6 Environmental Conditions

Temperature:	25° C
Relative Humidity:	54%
ATM Pressure:	1016 mbar

### 3.7 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency ..... 450 kHz  
Stop Frequency ..... 30 MHz  
Sweep Speed ..... Auto  
IF Bandwidth ..... 10 kHz  
Quasi-Peak Adapter Bandwidth ..... 9 kHz  
Quasi-Peak Adapter Mode ..... Normal

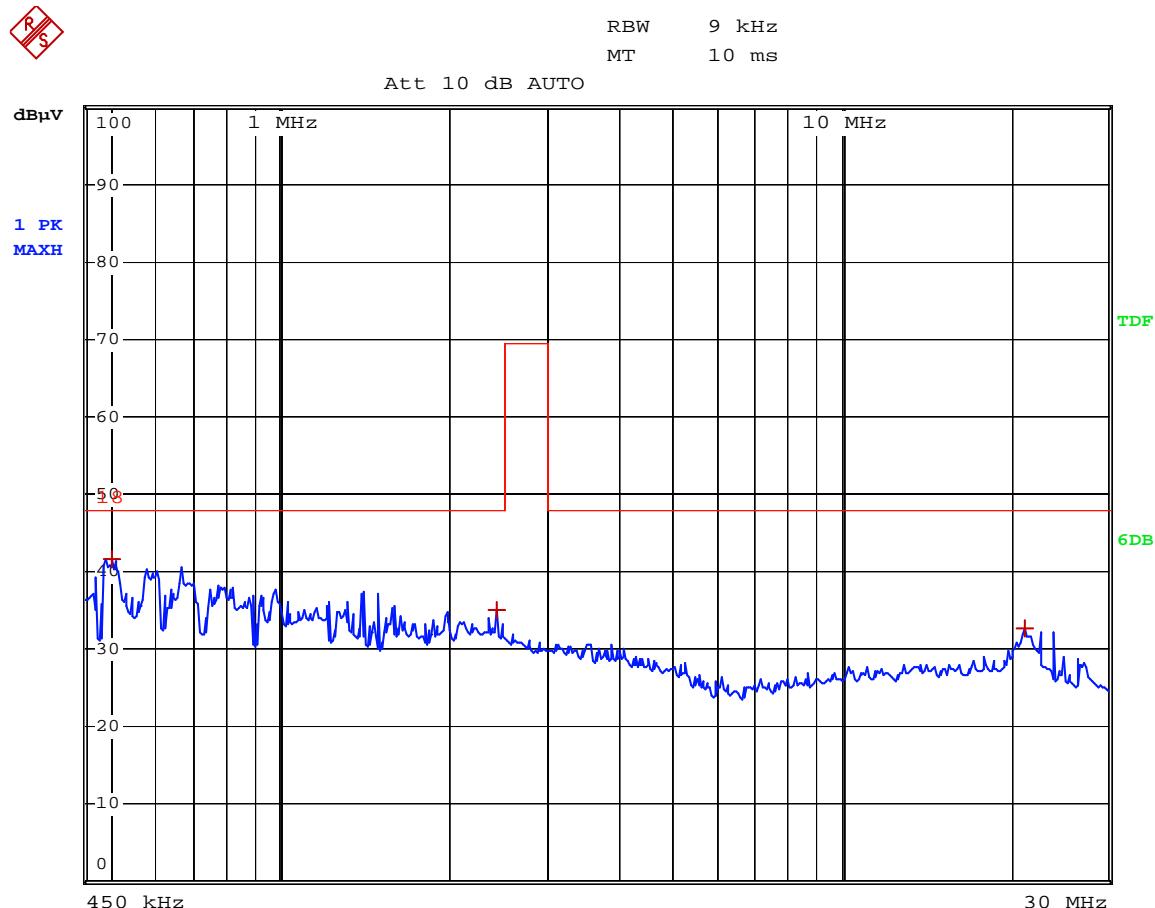
### 3.8 Summary of Test Results/Plots

According to the data in this section, the EUT complied with the FCC Part 18C Conducted margin for a RF lighting device, with the *worst* margin reading of:

**-5.25 dB at 0.490 MHz in the Line, Peak detector, 0.15-30MHz**

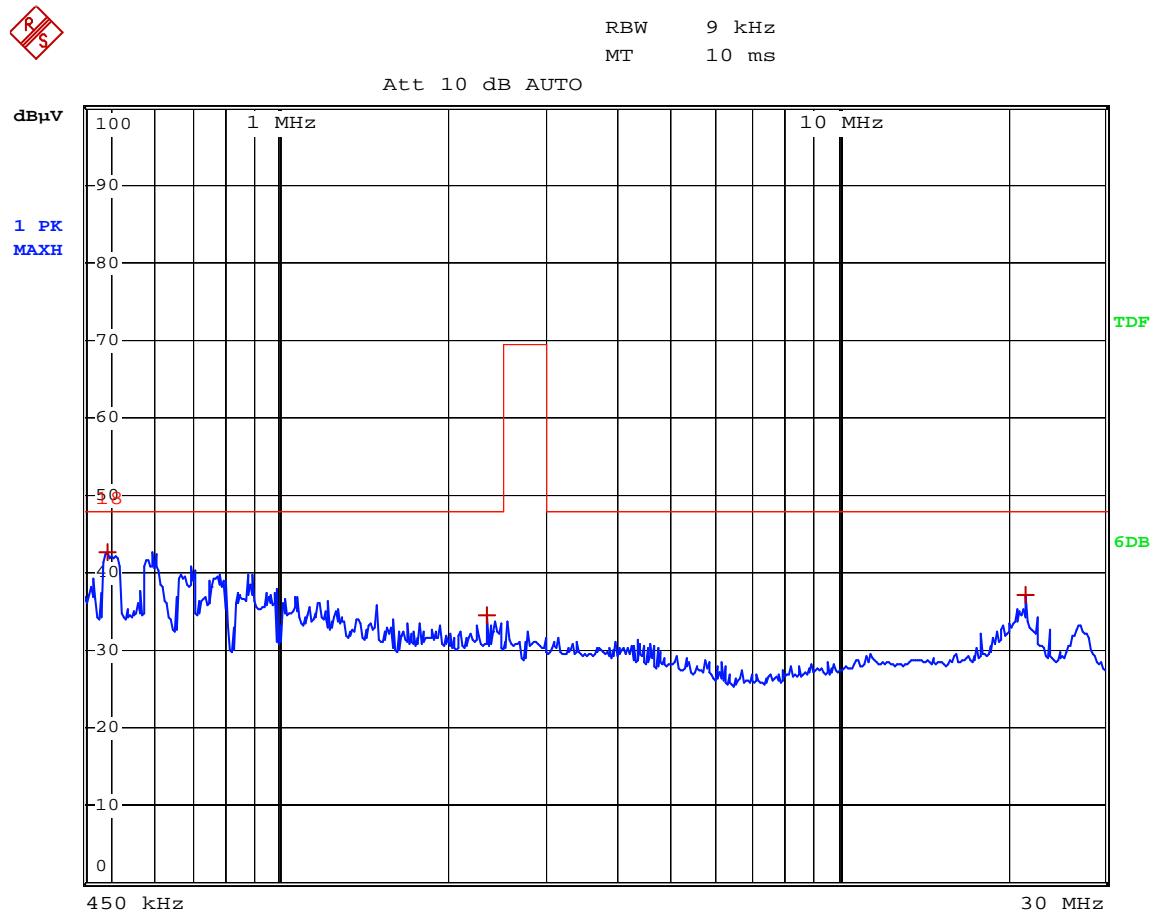
**Plot of Conducted Emissions Test Data**EUT: *CFL*Tested Model: *ES23H*Operating Condition: *Lighting*

Comment:

Test Specification: *Neutral*

EDIT PEAK LIST (Prescan Results)			
Trace1:	18		
Trace2:	---		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dB $\mu$ V	DELTA LIMIT dB
1 Max Peak	498 kHz	41.70	-6.19
1 Max Peak	2.426 MHz	35.13	-12.76
1 Max Peak	21.294 MHz	32.64	-15.25

Test Specification: Line



EDIT PEAK LIST (Prescan Results)					
Trace1:	18	Trace2:	---	Trace3:	---
TRACE	FREQUENCY	LEVEL dBμV	DELTA	LIMIT dB	
1 Max Peak	490 kHz	42.64	-5.25		
1 Max Peak	2.35 MHz	34.59	-13.30		
1 Max Peak	21.542 MHz	37.13	-10.77		

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