ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CERTIFICATION

Test report file number	**: E028R-031**
Applicant	**: Q POWER CO.**
Address	**: 576, Gajwa1-Dong, Seo-Gu, Inchon, 404-251, Korea**
Manufacturer	**: Shanghai Luxiang Lighting Co., Ltd.**
Address	**: No. 90, Shengli Road Quingpu Town Shanghai China**
Type of Equipment	**: 13W COMPACT FLUORESCENT LAMP (RF Lighting Device)**
FCC ID	**: QLG13W-INM2347**
Model / Type No.	**: 13W-QL13SW**
Serial number	**: N/A**
Total page of Report	**: 11 pages (including this page)**
Date of Incoming	**: April 26, 2002**
Date of issuing	**: August 19, 2002**

SUMMARY

The equipment complies with the requirements of ***FCC CFR 47 PART 18 CONSUMER DEVICES.***

This test report contains only the results of a single test of the sample supplied for the examination. It is not a general valid assessment of the features of the respective products of the mass-production.

Prepared by: G. W. Lee/ Assistant Chief Engineer, EMC Div.

Reviewed by: Y. K. Kwon/ Chief Engineer, EMC Div.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

ONETECH Corp. ONETECH Corp.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

CONTENTS

Page

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

1. VERIFICATION OF COMPLIANCE

-. APPLICANT : Q POWER CO.

-. ADDRESS : 576, Gajwa1-Dong, Seo-Gu, Inchon, 404-251, Korea

-. CONTACT PERSON : Mr. Jung-Min, Jeong / Engineer

-. TELEPHONE NO : +82-31-383-9259

-. FCC ID : QLG13W-INM2347

-. MODEL NO/NAME : 13W-QL13SW

-. SERIAL NUMBER : N/A

-. DATE : August 19, 2002

DEVICE TYPE	RF Lighting Device– CONSUMER DEVICE
E.U.T. DESCRIPTION	13W COMPACT FLUORESCENT LAMP
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	MP-5: 1986, ANSI C63.4
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 18
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

2. GENERAL INFORMATION

2.1 Product Description

The Q POWER CO., Model 13W-QL13SW (referred to as the EUT in this report) is a 13W COMPACT FLUORESCENT LAMP that uses a radio frequency. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Glass & Plastic
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	None
RF FREQUENCY	70 kHz
NUMBER OF LAYERS	1 Layer
POWER REQUIREMENT	AC120V, 60Hz, 13W
EXTERNAL CONNECTOR	None

Model Differences:

-. The difference(s) compared to the EUT is as follows: none

2.2 Related Submittal(s) / Grant(s)

Original submittal only

2.3 Test System Details

The model numbers for all the equipments which were used in the tested system is: none

2.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in MP-5/1986. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.5 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-080 Korea. Description details of test facilities were submitted to the Commission on January 18, 2002. (Registration Number: 92819)

3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
MAIN B'D	N/A	N/A	N/A

3.2 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
13W COMPACT FLUORESCENT LAMP (EUT)	N	N/A	1.2(P)

* The marked "(P)" means the Power Cable.

3.3 Equipment Modifications

To achieve compliance to consumer equipment levels, the following change(s) was made by ONETECH Corp. during compliance testing:

"There were no Modified items during EMI test"

3.4 Configuration of Test System

Line Conducted Test:

The EUT was connected to the power mains through a Line Impedance Stabilization Network (LISN). This provided 50-ohm coupling impedance for the measuring equipment. The length of the power cord in excess of 80cm, separating the EUT from the LISN, is folded back and forth forming a bundle, hanging approximately in the middle between ground plane and table. The EUT is placed 80cm from a floor earth-grounded conducting surface and is kept 40cm from vertical conducting plane that is bonded to the floor ground plane.

Both side of AC line were checked for maximum conducted interference. During this test, EUT was operating to simulating actual use. Emission levels are checked to see if equipment/cable placements are maximized according to MP-5/1986.

The bandwidth of test Receiver ESHS10 was set at 9 kHz.

Emissions that have peak value close to the specification limit are also measured in the quasi-peak detection mode to determine compliance.

The frequency range from 0.45 MHz to 30 MHz was checked. The test mode (ON) was done on conducted emission test and the results of the highest emissions are listed in Sec. 5.1.

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

Radiated Emission Test:

The EUT was placed on a wooded turn table which is 0.8 meter above a ground. The turn table is placed three meters away from the receiving antenna.

All equipment/cable are placed in a manner which tend maximize its emission characteristics in a typical application. This is accomplished by watching the analyzer while moving equipment/cables according to MP-5/1986.

The turn table was rotated 360 degrees to determine the position of the maximum emission level.

The receiving antenna was moved up and down between 1 to 4 meters above ground screen to find out the maximum emission level. Both vertical and horizontal polarizations of the antenna were set on measurement.

The bandwidth of test Receiver ESVS10 was set at 120 kHz.

The frequency range from 30 MHz to 1000 MHz was checked. The test mode (ON) was done on radiated emission test and the results of the highest emissions are listed in Sec. 5.2.

4. Equipment Limitations

4.1 Conducted Emission Limits

RF lighting devices Conduction limits: Maximum RF line voltage measured with a 5uH/50 ohm LISN.

Frequency (MHz)	Emissions (uV)	Emissions (dBuV/m)
Non-consumer equipment		
0.45 - 1.6	1000	60.0
1.6 - 30	3000	69.5
Consumer equipment		
0.45 - 30	250	48

4.2 Radiated Emission Limits

Radiated field strength limits for RF lighting devices.

Frequency (MHz)	Distance (Meters)	Radiated (dBuV/m)
Non-consumer equipment		
30-88	3	48.5
88-216	3	54
216-1000	3	57
Consumer equipment		
30-88	3	40
88-216	3	43.5
216-1000	3	46

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

5. FINAL RESULT OF MEASURMENT

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level.

5.1 Conducted Emission Test

Humidity Level : 51 % Temperature : 20°C

Limits apply to : FCC CFR 47, PART 18, SUBPART C, SECTION 18.307 (c)

Type of Test : CONSUMER EQUIPMENT

Result : PASSED BY –3.93 dB at 0.53 MHz

EUT : 13W COMPACT FLUORESCENT LAMP Date: May 24, 2002

Operating Condition : Power ON (normal mode)

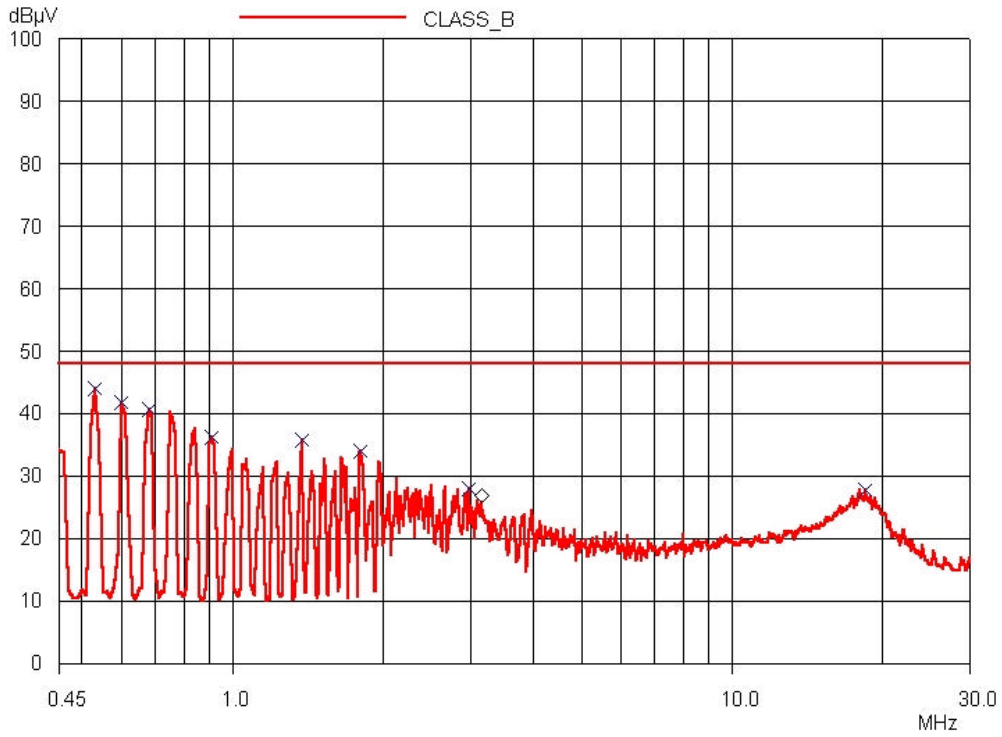
Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

Power Line Conducted Emission			**FCC PART 18**	
Frequency (MHz)	**Amplitude (dBuV)**	**Conductor**	**Limit (dBuV)**	**Margin (dB)**
0.53	44.07	HOT	48.00	-3.93
0.60	41.73	HOT	48.00	-6.27
0.67	41.05	NEUTRAL	48.00	-6.95
0.83	39.03	NEUTRAL	48.00	-8.97
0.98	37.79	NEUTRAL	48.00	-10.21
1.38	35.73	HOT	48.00	-12.27

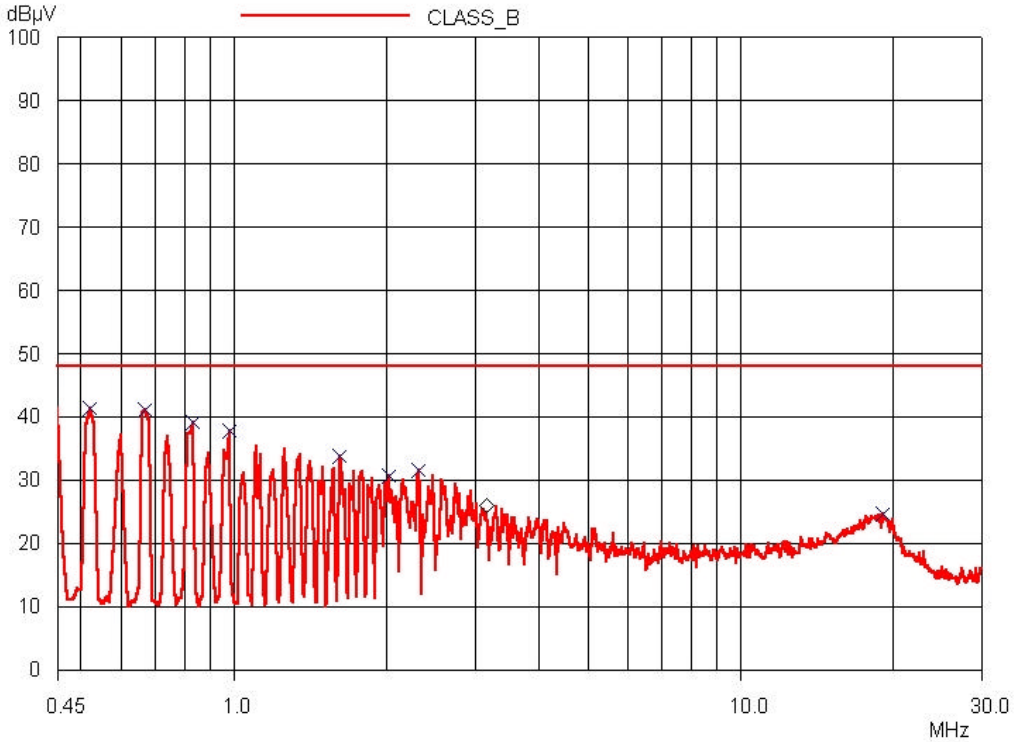
Line Conducted Emission Tabulated Data

Tested by: Young-Min Choi / Project Engineer

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



HOT LINE



NEUTRAL LINE

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

5.2 Radiated Emission Test

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

Humidity Level : 50 % Temperature : 22 °C

Limits apply to : FCC CFR 47, PART 18, SUBPART C, SECTION 18.305(c)

Type of Test : CONSUMER EQUIPMENT

Result : PASSED BY –11.63 dB at 762.00 MHz

EUT : 13W COMPACT FLUORESCENT LAMP Date: July 08, 2002

Operating Condition : Power ON (normal mode)

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)

Distance : 3 Meter

Radiated Emissions		Ant	Correction Factors		Total	FCC PART 18	
Freq. (MHz)	Amp. (dBuV)	Pol.	Ant. (dBuV/m)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
35.40	13.50	V	11.27	0.80	25.57	40.00	-14.43
41.85	12.80	V	10.80	0.84	24.44	40.00	-15.56
45.60	13.60	V	10.81	0.89	25.30	40.00	-14.70
49.20	11.70	V	10.79	0.92	23.41	40.00	-16.59
134.48	10.20	V	12.78	1.29	24.27	43.50	-19.23
171.02	9.80	V	15.78	1.43	27.01	43.50	-16.49
334.80	11.00	H	14.28	2.20	27.48	46.00	-18.52
462.60	11.40	H	16.63	2.58	30.61	46.00	-15.39
569.80	8.90	H	18.32	2.85	30.07	46.00	-15.93
674.40	9.80	H	20.73	3.18	33.71	46.00	-12.29
762.00	10.10	H	20.71	3.56	34.37	46.00	-11.63

Radiated Emissions Tabulated Data

Tested by: Young-Min Choi / Project Engineer

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+ Meter reading (dBuV)

+ Cable Loss (dB)

+ Antenna Factor (Loss) (dB/meter)

= Corrected Reading (dBuV/meter)

- Specification Limit (dBuV/meter)

= dB Relative to Spec (+/- dB)

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)

7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS 10	827864/005	OCT/01	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	APR/02	12MONTH	■
3.	Spectrum analyzer	HP	8568B	3109A05456	APR/02	12MONTH	■
4.	RF preselector	HP	85685A	3107A01264	APR/02	12MONTH	■
5.	Quasi-Peak Adapter	HP	85650A	3107A01542	APR/02	12MONTH	■
6.	Loop Antenna	EMCO	6502	9108-2668	DEC/01	12MONTH	
8.	Biconical antenna	EMCO	3104C	9109-4441 9109-4443 9109-4444	APR/02	12MONTH	■
9.	Log Periodic antenna	EMCO	3146	9109-3213 9109-3214 9109-3217	APR/02	12MONTH	■
10.	LISN	EMCO	3825/2	9109-1867 9109-1869	JUL/02	12MONTH	■
11.	Position Controller	EMCO	1090	9107-1038	N/A	N/A	■
12.	Turn Table	EMCO	1080-1.21	9109-1576	N/A	N/A	■
13.	Antenna Master	EMCO	1070-1	9109-1624	N/A	N/A	■

HEAD OFFICE : #505 SK APT. Factory 223-28, Sangdaewon 1 Dong, Jungwon-Gu, Seongnam-City, Kyunggi-Do, 462-121, Korea
(TEL: +82-31-746-8500, FAX: +82-31-746-8700)
EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)