

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
UNINTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 18 REQUIREMENT**

for

CFLs

M/N: 13W/ELS-U,13W/ELS-U/50K

FCC ID: WQD13WELS-U

Trade Name: Not Applicable

Report No.: SHEE080331259301-01

Issue Date: Oct. 30, 2008

Prepared for

**GREENLITE LIGHTING CORPORATION
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Prepared by

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1. General Information

Applicant: GREENLITE LIGHTING CORPORATION
102-115 Brunswick Blvd POINTE-CLAIRE, Quebec

Manufacturer: JIANGXI ELEGANT LIGHTING CO LTD
No. 713, Xihou St., Guixi, Jiangxi, China

Trade Name: Not Applicable

Product Name : CFLs

M/N: 13W/ELS-U, 13W/ELS-U/50K

Report No.: SHEE080331259301-01

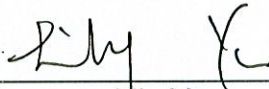
Date of Test: Apr. 01, 2008 to Aug. 31, 2008

We hereby certify that:

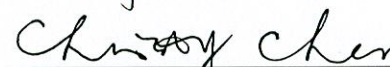
The above equipment was tested by Centre Testing International (CTI), The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 18.

The test results of this report relate only to the tested sample identified in this report.


Prepared by :


Lily Yan

Inspected by :


Christy Chen

Approved by:


Jacky Guo
General Manager

Date :

Oct. 30, 2008



2. Product Information

Product name: CFLs
Model name: 13W/ELS-U, 13W/ELS-U/50K
Trade name: Not Applicable
Technical data: T2 Spiral lamp 13W, AC 120V/60Hz
Model difference: The models 13W/ELS-U and 13W/ELS-U/50K are identical in schematic, PCB layout and appearance. And the tested model in the report is 13W/ELS-U.
Function: Lighting

3. Test Methodology

Both conducted and radiated tests were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at a distance 3 meters from the antenna to EUT.

4. Test Facility

The 3m Semi-Anechoic chamber test site and conducted measurement facility used to collect the radiated data is located on the address:

1F., Building C, Hongwei Industrial Zone 70 District., Baoan, Shenzhen, Guangdong, China.

The Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003 requirements. The test site Registration Number: 614926

5. Special Accessories

Not available for this EUT intended for grant.

6. Equipment Modifications

Not available for this EUT intended for grant.

7. Test Condition

7.1 Test Configuration

The device was configured for testing in a typical fashion (as a customer would normally use it). During the tests, the EUT and the supported equipments were installed to meet FCC requirement and operated in a manner which tends to maximize its emission level in a typical application.

7.2 Test Procedure

Conducted Emissions:

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4-2003, conducted emissions from the EUT are measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

Radiated Emissions:

The EUT is placed on a turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max emission, the relative positions of this hand-held transmitter (EUT) were rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4-2003.

7.3 EUT operation

EUT was tested according to the following operation modes provided by the specifications given by the manufacturer, and reported the worst emissions.

7.4 Peripherals / Support Equipment Used

Following peripheral devices and interface cables were connected during the measurement:

Type of Peripheral Equipment Used: None

Type of Cables Used: None

7.5 Limit

Conducted Emission:

According to section 18.307(c) Conducted Emission Limits is as following:

Frequency (MHz)	Maximum RF Line Voltage
	Q.P.(dBuV)
0.45-2.51	48
2.51-3.0	69.5
3.0-30	48

Radiated Emission:

According to section 18.305(c) Radiated Emission Limits is as following:

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBuV/m Q.P.)
30-88	3	40.0
88-216	3	43.5
216-1000	3	46.0

Remark:

1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

8. Summary of Test Results

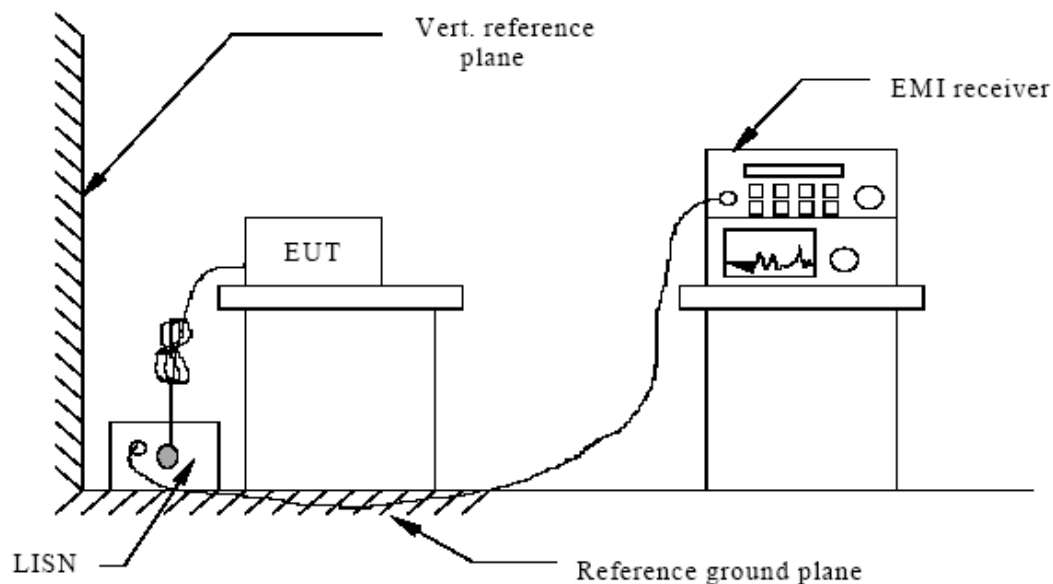
FCC Rules	Description Of Test	Result
§18.307(c)	Conducted Emission	Compliant
§18.305(c)	Radiated Emission	Compliant

9. Conducted Emissions Test

9.1 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane, connected to the LISN, and worked normally during the whole test.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. If the EUT emission level was less –6dB to the Q.P. limit in Peak mode, then the emission signal was re-checked using Q.P. detector.
4. Repeat above procedures until all frequencies measured were completed.

9.2 Test Set-up (Block Diagram of Configuration)



9.3 Measurement Equipment Used

Equipment Type	Manufacturer	Model Number	Serial Number	Last Calibration	Calibration Due
Receiver	R&S	ESCI	100435	01/29/2008	01/28/2009
LISN	ETS	3816	00060336	06/07/2008	06/06/2009

9.4 Measurement Results

Limit : FCC Part 18 Conduction
EUT : CFLs
M/N : 13W/ELS-U
Mode : Normal

Power : AC 120V/60Hz
Temperature : 24°C
Humidity : 53%
Tested by : Lily Yan

(The chart below shows the highest readings taken from the final data)

FCC Conducted Emission Test Result													
Frequency (MHz)	Reading Level (dBuV)			Correct Factor (dB)	Measurement (dBuV)			Limits (dBuV)		Margin		Result (P/F)	Remarks (L/N)
	Peak	Q.P.	Avg.		Peak	Q.P.	Avg.	Q.P.	Avg.	Q.P.	Avg.		
0.4500	19.50	13.36	--	21.62	41.12	34.98	--	48.00	--	-13.02	--	P	L
0.4820	18.08	11.56	--	21.60	39.68	33.16	--	48.00	--	-14.84	--	P	L
0.5299	15.94	9.93	--	21.56	37.50	31.49	--	48.00	--	-16.51	--	P	L
0.5660	14.01	12.48	--	21.55	35.56	34.03	--	48.00	--	-13.97	--	P	L
0.6860	17.80	13.88	--	21.53	39.33	35.41	--	48.00	--	-12.59	--	P	L
0.9260	20.65	18.44	--	21.57	42.22	40.01	--	48.00	--	-7.99	--	P	L
0.4500	22.64	16.51	--	21.62	44.26	38.13	--	48.00	--	-9.87	--	P	N
0.4900	19.30	13.50	--	21.59	40.89	35.09	--	48.00	--	-12.91	--	P	N
0.7220	14.73	12.87	--	21.53	36.26	34.40	--	48.00	--	-13.60	--	P	N
0.8220	15.33	11.63	--	21.55	36.88	33.18	--	48.00	--	-14.82	--	P	N
0.8500	16.67	12.56	--	21.56	38.23	34.12	--	48.00	--	-13.88	--	P	N
0.9380	15.82	13.68	--	21.56	37.38	35.24	--	48.00	--	-12.76	--	P	N

Freq.

Reading level

Factor

Emission level

Limit

Margin

= Emission frequency in MHz

= Uncorrected Analyzer/Receiver reading

= Cable loss + insertion loss

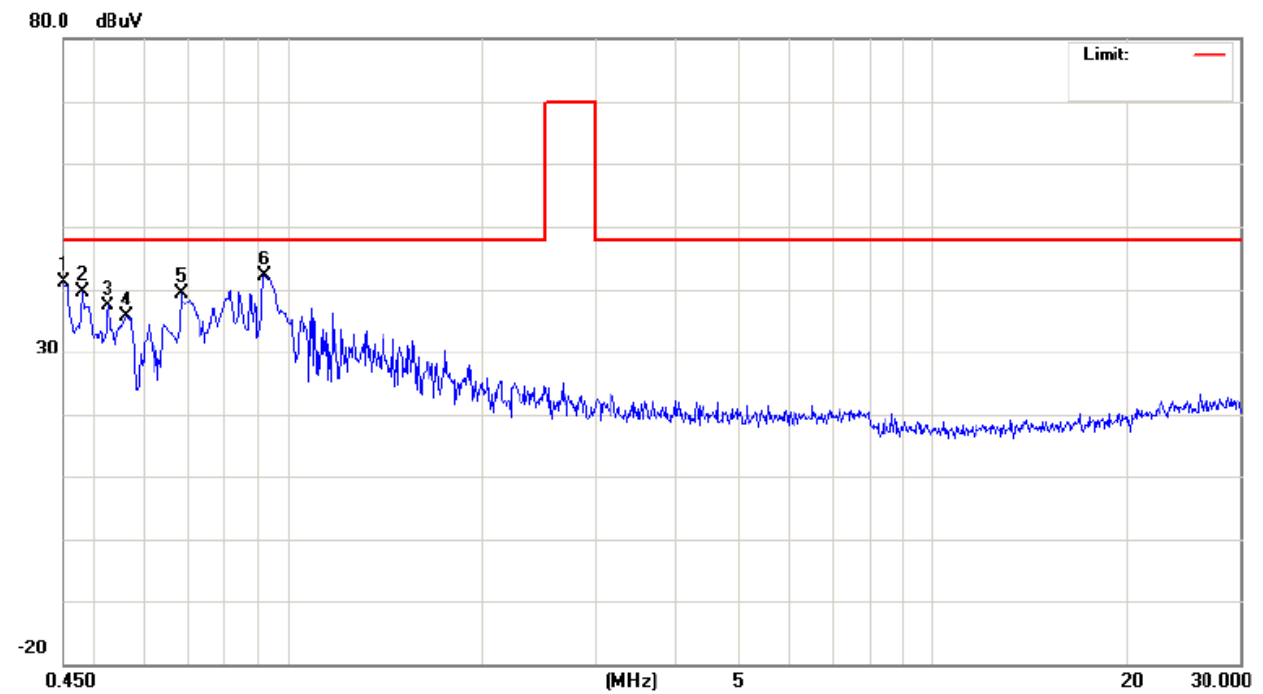
= Reading level + Factor

= Limit stated in standard

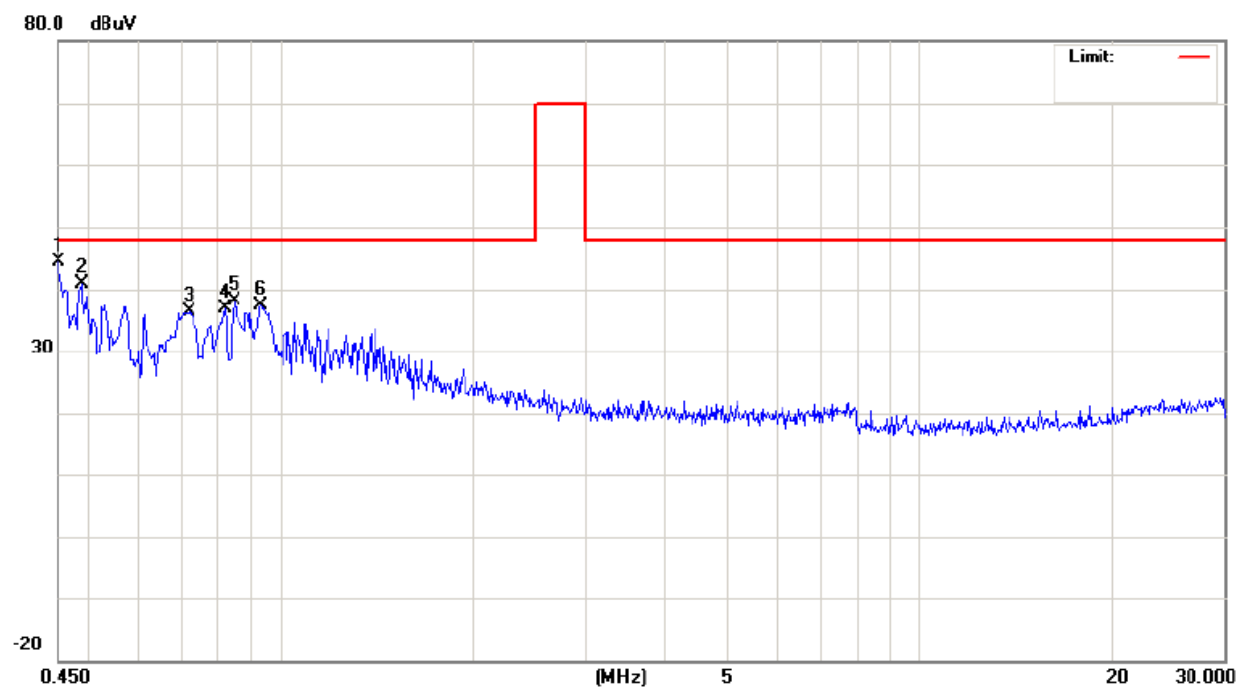
= Reading in reference to limit

Graph of Conducted Emissions:

L: (normal Mode)



N: (normal Mode)



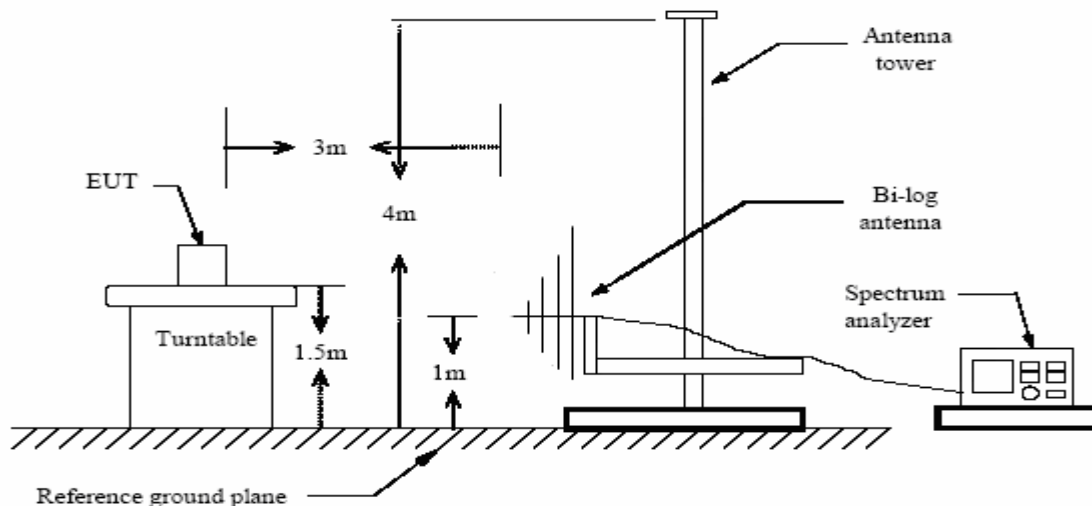
10. Radiated Emission Test

10.1 Measurement Procedure

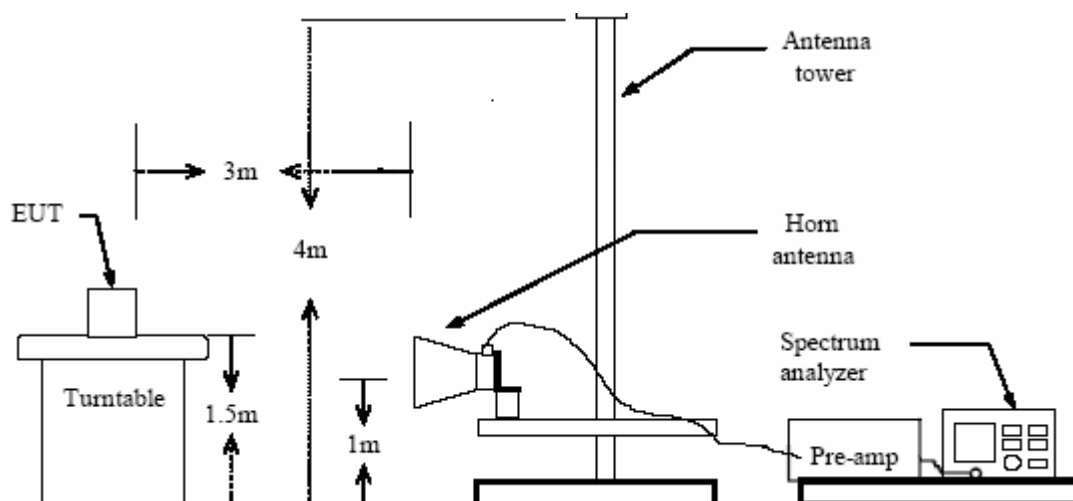
1. The EUT was placed on a turn table which is 0.8m above ground plane, and worked normally during the whole test.
2. Maximum procedure was performed on the twelve highest emissions to ensure EUT compliance.
3. If the EUT emission level was less -6dB to the Q.P. limit in Peak mode, then the emission signal was re-checked using Q.P. detector.
4. Repeat above procedures until all frequencies measured were completed.

10.2 Test Set-up (Block Diagram of Configuration)

A. Radiated Emission Test Set-Up, Frequency below 1000MHz



B. Radiated Emission Test Set-Up, Frequency above 1000MHz



10.3 Measurement Equipment Used

Equipment Type	Manufacturer	Model Number	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4443A	MY46185649	06/29/2008	06/28/2009
Biconilog Antenna	ETS	3142C	920250	05/30/2008	05/29/2009
ETS Horn Antenna	ETS	3117	57410	05/30/2008	05/29/2009
Multi device Controller	ETS	2090	00057230	06/07/2008	06/06/2009

10.4 Measurement Results

Limit : FCC Part 18 Radiation **Power** : AC 120V/60Hz
EUT : CFLs **Temperature** : 26°C
M/N : 13W/ELS-U **Humidity** : 60%
Mode : Normal **Tested by** : Lily Yan

(The chart below shows the highest readings taken from the final data)

FCC Radiated Emission Test Result													
Frequency (MHz)	Reading Level (dBuv)			Correct Factor (dB)	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)		Result (P/F)	Remarks (H/V)
	Peak	Q.P.	Avg.		Peak	Q.P.	Avg.	Q.P.	Avg.	Q.P.	Avg.		
30.0000	7.48	--	--	17.63	25.11	--	--	40.00	--	<-10	--	P	H
104.3667	8.94	--	--	10.13	19.07	--	--	43.50	--	<-10	--	P	H
283.8167	8.23	--	--	15.16	23.39	--	--	46.00	--	<-10	--	P	H
408.3000	6.67	--	--	18.44	25.11	--	--	46.00	--	<-10	--	P	H
704.1500	9.30	--	--	24.72	34.02	--	--	46.00	--	<-10	--	P	H
911.0833	9.80	--	--	26.77	36.57	--	--	46.00	--	<-6	--	P	H
31.6767	9.05	--	--	16.67	25.72	--	--	40.00	--	<-10	--	P	V
44.5500	13.17	--	--	10.51	23.68	--	--	40.00	--	<-10	--	P	V
76.8833	15.21	--	--	8.64	23.85	--	--	40.00	--	<-10	--	P	V
104.3667	12.56	--	--	10.13	22.69	--	--	43.50	--	<-10	--	P	V
545.7167	10.05	--	--	21.36	31.41	--	--	46.00	--	<-10	--	P	V
930.4833	13.04	9.78	--	26.88	39.92	36.66	--	46.00	--	-9.34	--	P	V

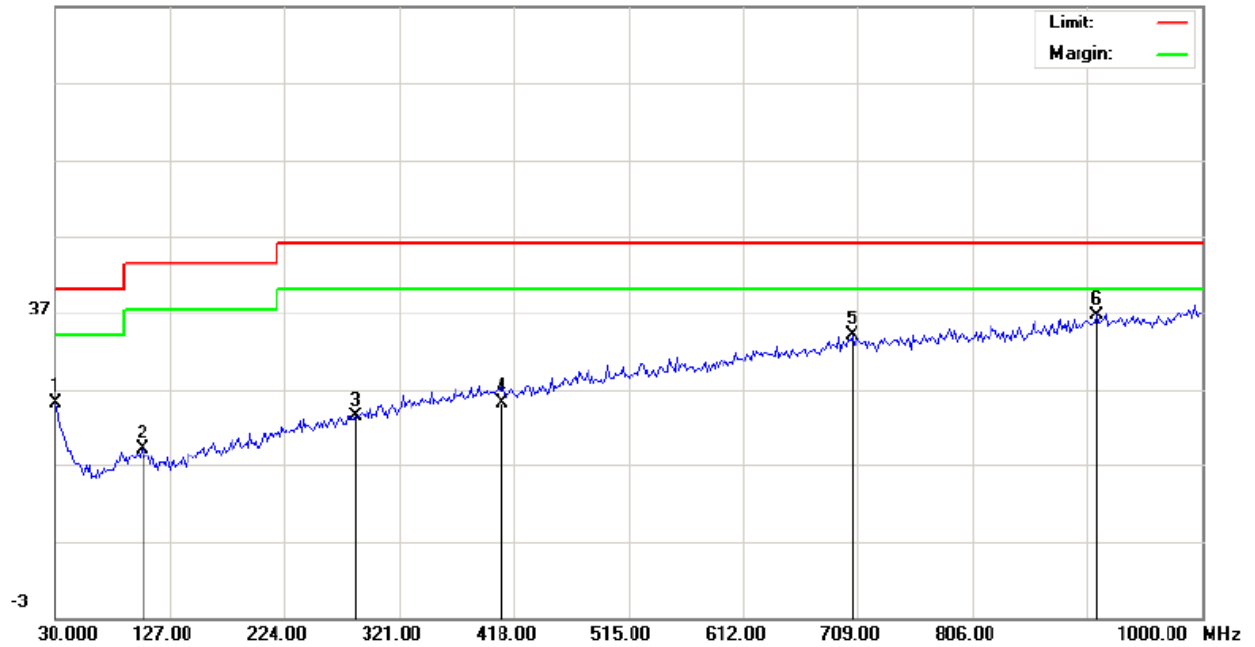
Freq. = Emission frequency in MHz
 Raw Data (dBuV/m) = Uncorrected Analyzer / Receiver reading
 Corr. Factor (dB) = Correction factors of antenna factor and cable loss
 Emiss. Leve = Raw reading converted to dBuV/m and CF added
 Limit dBuV/m = Limit stated in standard
 Margin dB = Reading in reference to limit
 PK = Peak Reading
 QP = Quasi-peak

Graph of Radiated Emissions:

H:(Antenna)

Below 1GHz(normal mode)

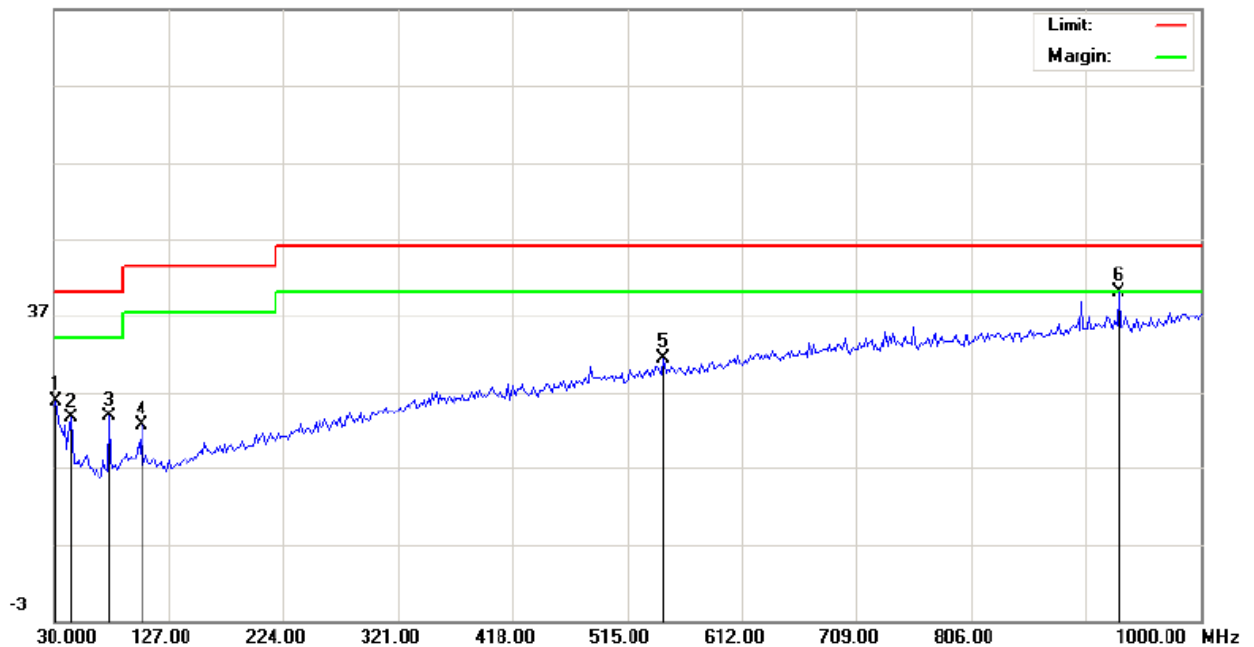
76.9 dBuV/m



V:(Antenna)

Below 1GHz(normal Mode)

76.9 dBuV/m



11. Measurement Uncertainty

Conduction Uncertainty : $\pm 2.8\text{dB}$

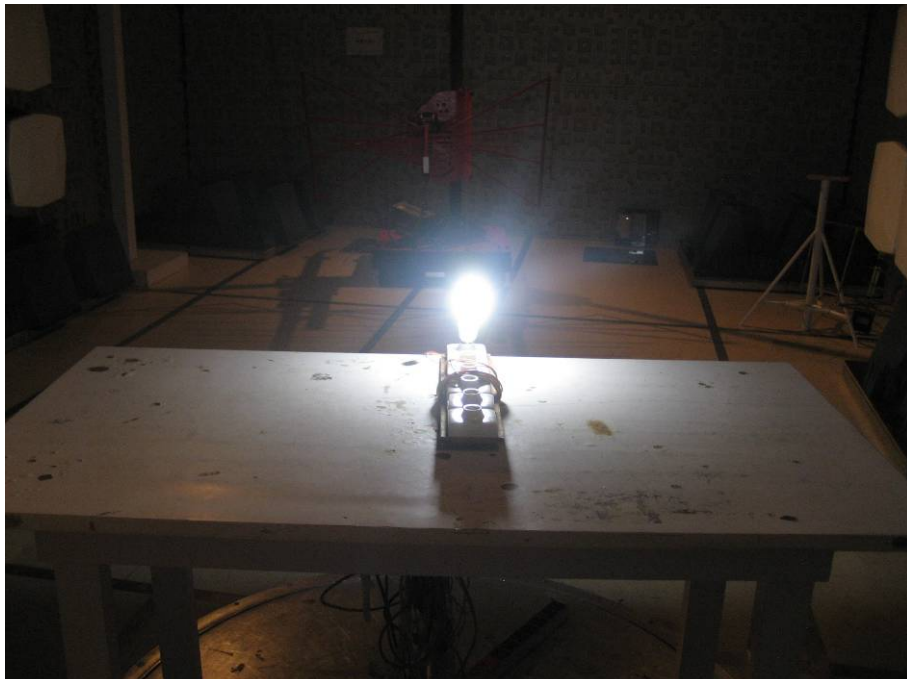
Radiation Uncertainty : $\pm 3.4\text{dB}$

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST



APPENDIX 2 EXTERNAL PHOTOGRAPHS OF EUT



Whole View of EUT (13W/ELS-U)



Whole View of EUT (13W/ELS-U/50K)
----End of the report----