MRT Technology (Suzhou) Co., Ltd
Phone: +86-512-66308358
Fax: +86-512-66308368
Web: www.mrt-cert.com

Report No.: 1406ESU02401
Report Version: V01
Issue Date: 06-16-2014

MEASUREMENT REPORT

FCC Part 18 Subpart C: 2013

FCC ID: 2AA551112611265

Applicant: Shanghai Senben Lighting Technology Incorporated Company

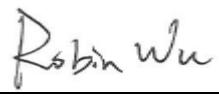
Product: FACTORY LAMP

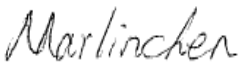
Model No.: SBD1112-YQL65, SBF6112-YQL65

Standards: FCC Part 18 Subpart C: 2013
MP5: 1986

Result: Complies

Test Date: June 09 ~ 14, 2014

Reviewed By : 
(Robin Wu)

Approved By : 
(Marlin Chen)

Revision History

Report No.	Version	Description	Issue Date
1406ESU02401	Rev. 01	Initial report	06-16-2014

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Description Page

1. General Information

1.1. Applicant

Shanghai Senben Lighting Technology Incorporated Company
Zone B, Block 2, No. 4800, Baoqian Highway, Jiading District, Shanghai City, China

1.2. Manufacturer

Shanghai Senben Lighting Technology Incorporated Company
Zone B, Block 2, No. 4800, Baoqian Highway, Jiading District, Shanghai City, China

1.3. Feature of Product

Product Name	FACTORY LAMP
FCC ID	2AA551112611265
Model No.	SBD1112-YQL65, SBF6112-YQL65
Model Difference	The structure and power are the same, but different in appearance.
Working Frequency	280kHz
Working Voltage	AC 120V, 60Hz

Note: The Lights belong to Consumer equipment, so the corresponding limits are presented according to FCC Part 18 Subpart C. This test report has assessed the Model No.: SBF6112-YQL65

1.4. Testing Facility

Test Site	MRT Technology (Suzhou) Co., Ltd
Test Site Location	D8 Building, Youxin Industrial Park, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
Registration No.	809388

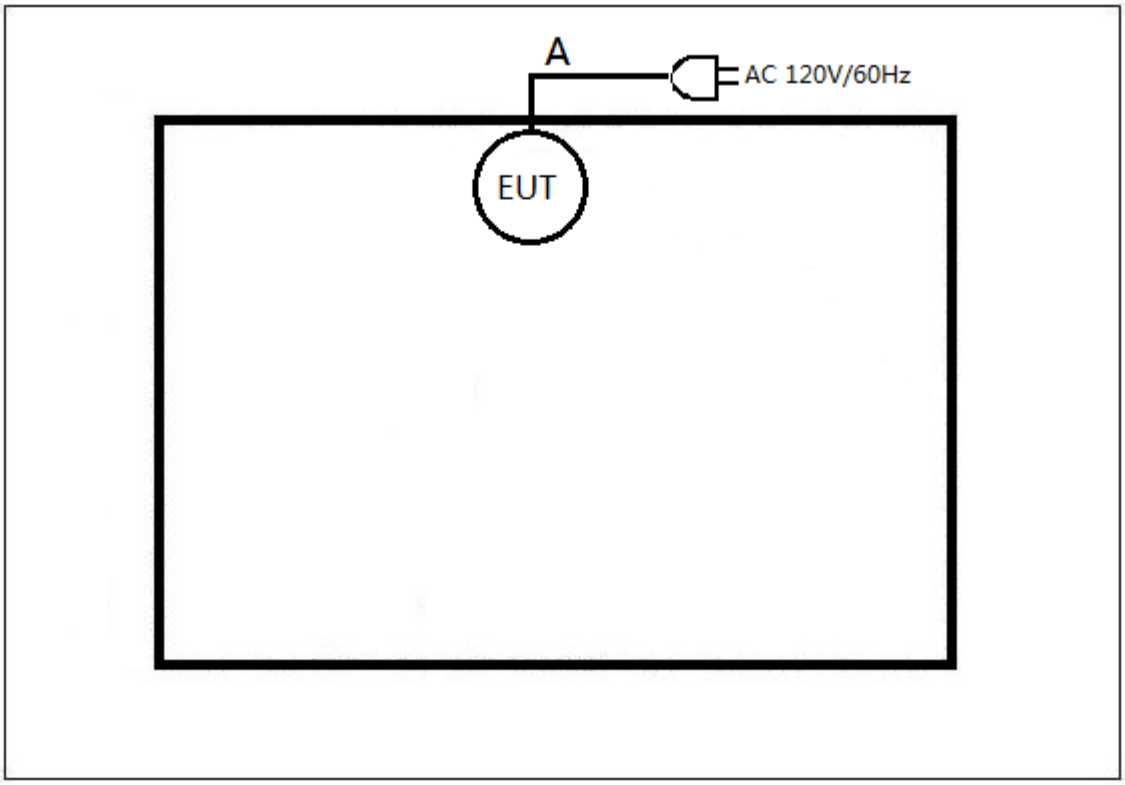
2. Test Configuration of Equipment Under Test

2.1. Test Mode

Final Test Mode	
Test Mode	Mode 1: Power On

2.2. Configuration of Tested System

Connection Diagram



Cable Type		Cable Description
A	Power Cable	1.5m

2.3. Accessories Description

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
N/A	N/A	N/A	N/A	N/A

2.4. Tested Software

Not Applicable.

3. Test Summary

Normative References	Test Description	Test Result (Pass/Fail)
FCC Part 18 Subpart C: 2013 MP5: 1986	Conducted Emission	Pass
FCC Part 18 Subpart C: 2013 MP5: 1986	Radiated Emission	Pass

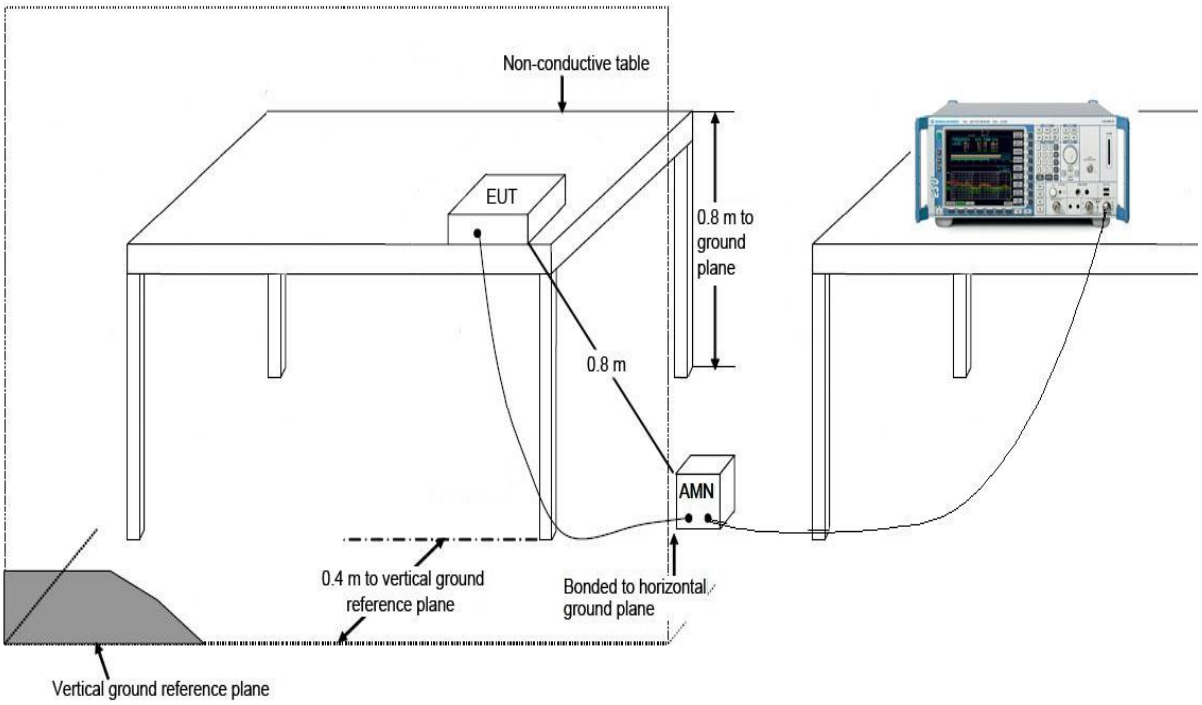
4. Conducted Emission

4.1. Limit of Conducted Emission

FCC Part 18 Subpart C Paragraph 18.307(c) Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.45 – 2.51	48	--
2.51 – 3.0	70	--
3.0 - 30	48	--

Note: The lower limit shall apply at the transition frequencies.

4.2. Test Setup



4.3. Test Procedure

The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)

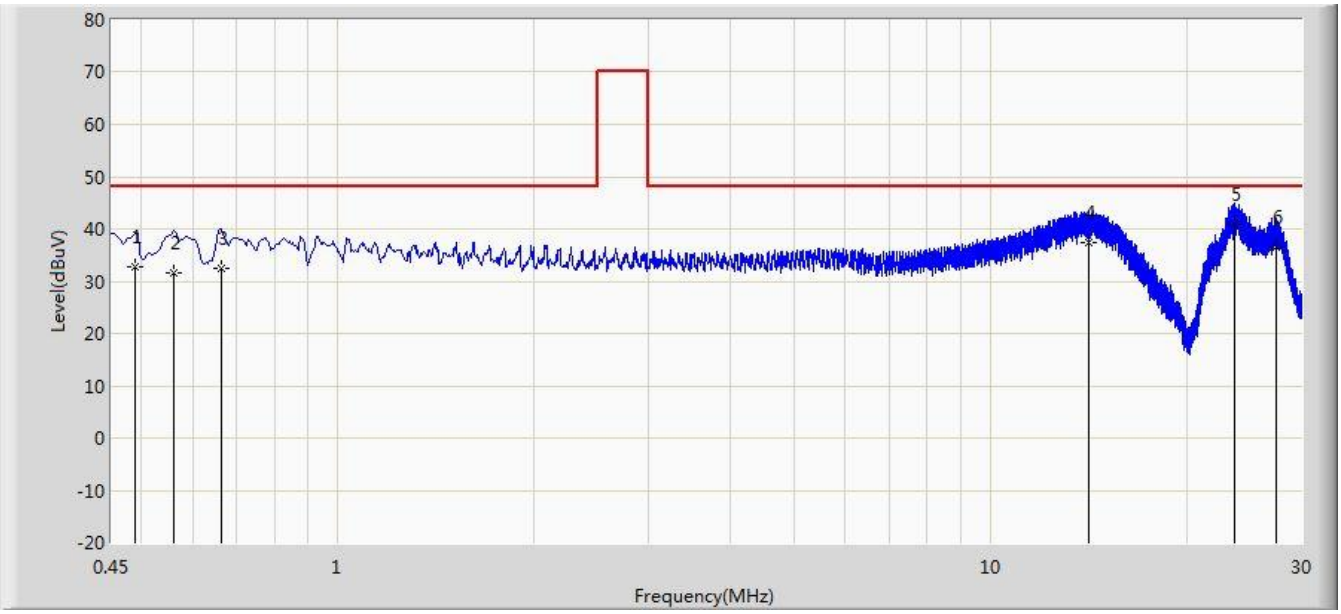
Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.

The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9KHz.

4.4. Test Result

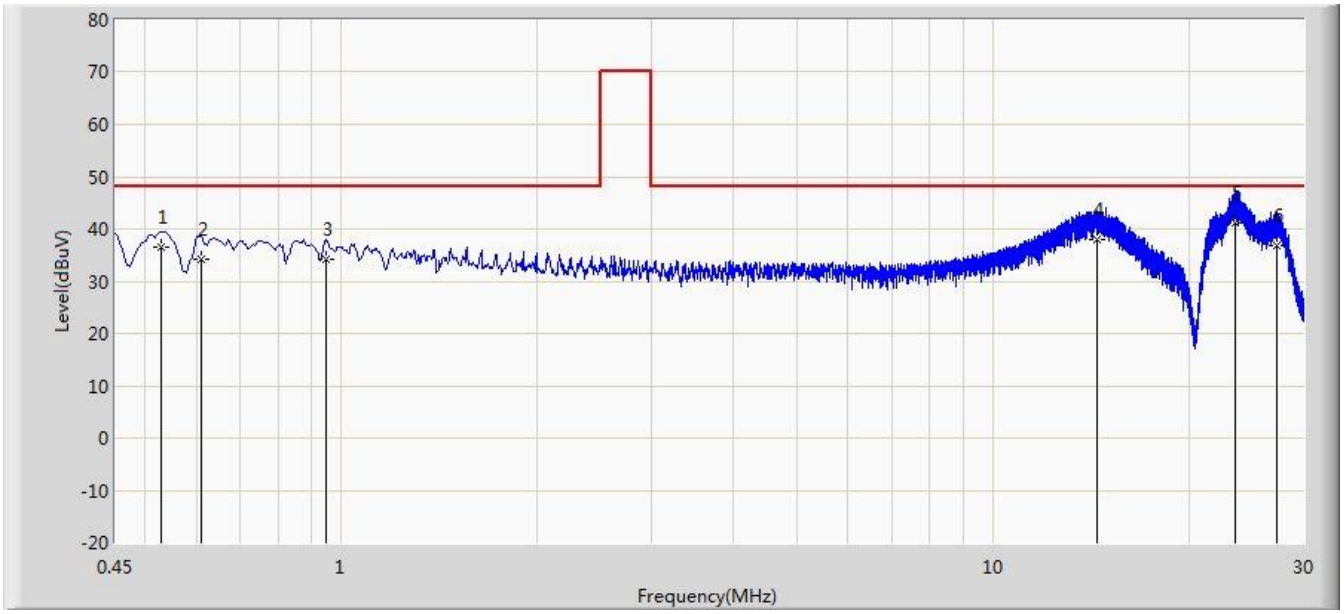
Tested By	Line Chen	Test Data	2014/06/09 - 14:51
Site	SR2	Power	AC 120V/60Hz
Limit	FCC_Part18_ RF lighting_ CE_ Main	Polarity	Line
AMN	LISN_101683-FILTER ON	Test Mode	Mode 1
EUT	FACTORY LAMP	EUT Model	SBF6112-YQL65



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	AMN Factor (dB)	Cable Loss (dB)	Type
1			0.490	32.655	22.497	-15.345	48.000	10.142	0.016	QP
2			0.562	31.685	21.551	-16.315	48.000	10.118	0.017	QP
3			0.662	32.383	22.300	-15.617	48.000	10.066	0.017	QP
4			14.170	37.496	27.429	-10.504	48.000	9.767	0.299	QP
5			23.742	40.836	30.643	-7.164	48.000	9.817	0.375	QP
6			27.394	36.582	26.337	-11.418	48.000	9.806	0.439	QP

Remarks: Measure Level (dBuV) = Reading Level (dBuV) + AMN Factor (dB) + Cable Loss (dB)

Tested By	Line Chen	Test Data	2014/06/09 - 14:59
Site	SR2	Power	AC 120V/60Hz
Limit	FCC_Part18_ RF lighting_ CE_ Main	Polarity	Neutral
AMN	LISN_101683-FILTER ON	Test Mode	Mode 1
EUT	FACTORY LAMP	EUT Model	SBF6112-YQL65



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	AMN Factor (dB)	Cable Loss (dB)	Type
1			0.530	36.587	26.417	-11.413	48.000	10.153	0.016	QP
2			0.610	34.290	24.164	-13.710	48.000	10.109	0.017	QP
3			0.946	34.182	24.244	-13.818	48.000	9.920	0.018	QP
4			14.494	37.960	27.868	-10.040	48.000	9.815	0.277	QP
5			23.590	41.138	30.874	-6.862	48.000	9.890	0.374	QP
6			27.314	36.793	26.430	-11.207	48.000	9.933	0.430	QP

Remarks: Measure Level (dBuv) = Reading Level (dBuv) + AMN Factor (dB) + Cable Loss (dB)

5. Radiated Emission

5.1. Limit

FCC Part 18 Subpart C Paragraph 18.305(c)		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	3	40.0
88 - 216	3	43.5
216 - 1000	3	46.0

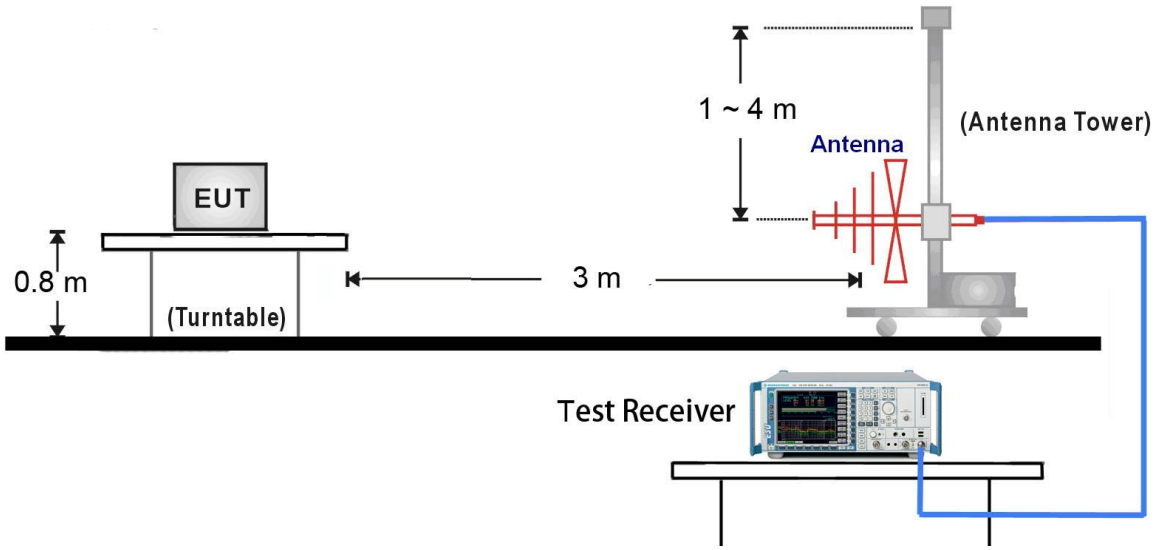
Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

5.2. Test Setup

30MHz ~ 1GHz Test Setup:



5.3. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Horizontal or vertical polarization of the antenna is set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated on radiated measurement.

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 - 108	1000
108 - 500	2000
500 - 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

On any frequency or frequencies below or equal to 1000 MHz, the radiated limits shown are based on measuring equipment employing a quasi-peak detector function and above 1000 MHz, the radiated limits shown are based measuring equipment employing an average detector function.

When average radiated emission measurement are included emission measurement Above 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

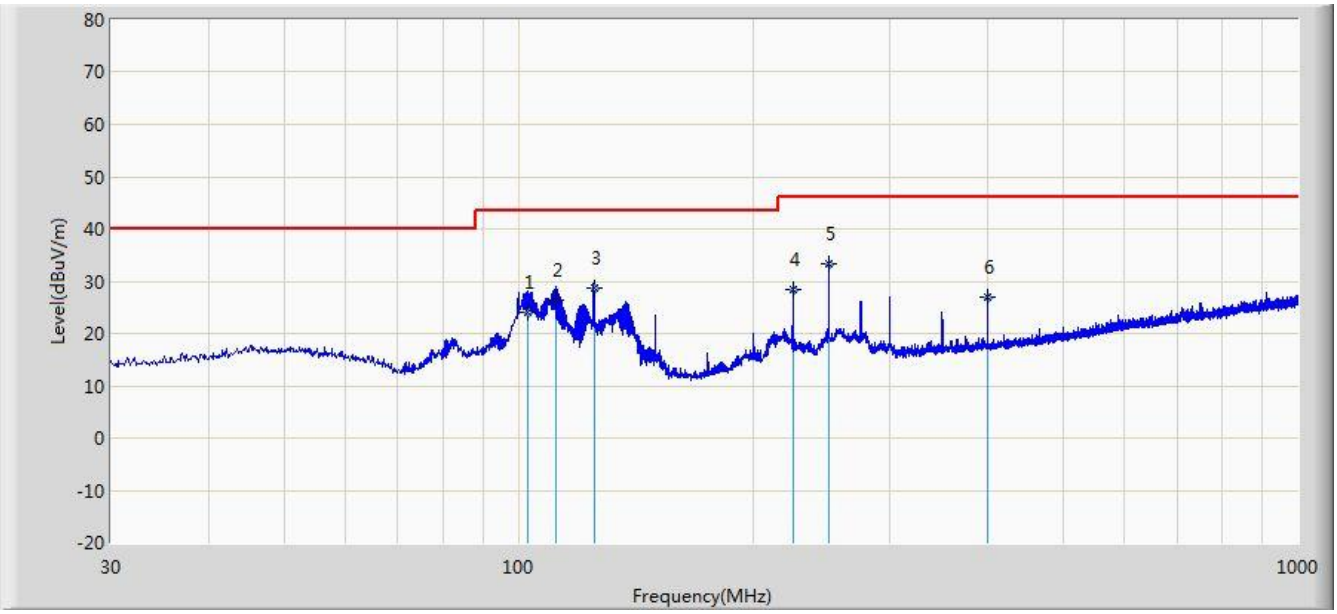
For class A, the measurement distance between the EUT and antenna is 10 meters for under 1GHz and above 1GHz.

For class B, the measurement distance between the EUT and antenna is 3 meters for under 1GHz and 3 meters for above 1GHz.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESR) is 120 kHz and above 1GHz is 1MHz.

5.4. Test Result

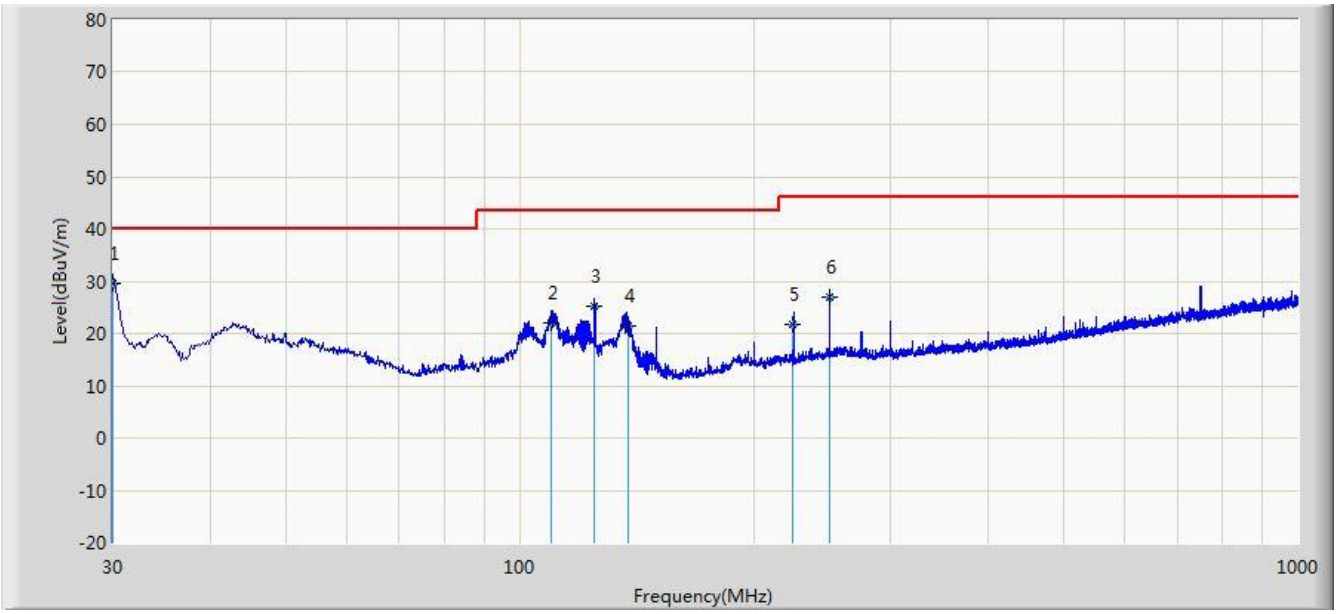
Tested By	Line Chen	Test Data	2014/06/14 - 16:44
Site	AC1	Power	AC 120V/60Hz
Limit	FCC_Part18_RF Lighting_ RE(3m)	Polarity	Horizontal
Antenna	VULB9162_0.03-8GHz	Test Mode	Mode 1
EUT	FACTORY LAMP	EUT Model	SBF6112-YQL65



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Ant Factor (dB/m)	Cable Loss (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1		102.636	23.920	11.000	-19.580	43.500	12.297	0.624	262.9	45	QP
2		111.613	26.376	14.000	-17.124	43.500	11.726	0.650	262.8	52	QP
3		125.014	28.760	18.500	-14.740	43.500	9.570	0.690	282.8	55	QP
4		225.004	28.270	15.800	-17.730	46.000	11.550	0.920	100	232	QP
5	*	250.009	33.280	20.000	-12.720	46.000	12.307	0.972	120.2	223	QP
6		400.055	26.819	10.600	-19.181	46.000	14.975	1.243	100	223	QP

Remarks: Measure Level (dBuV/m)= Reading Level (dBuV) + Ant Factor (dB/m) + Cable Loss (dB)

Tested By	Line Chen	Test Data	2014/06/14 - 16:44
Site	AC1	Power	AC 120V/60Hz
Limit	FCC_Part18_RF Lighting_ RE(3m)	Polarity	Vertical
Antenna	VULB9162_0.03-8GHz	Test Mode	Mode 1
EUT	FACTORY LAMP	EUT Model	SBF6112-YQL65



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Ant Factor (dB/m)	Cable Loss (dB)	Ant Pos (cm)	Table Pos (deg)	Type
1	*	30.000	29.600	17.700	-10.400	40.000	11.560	0.340	100	284	QP
2		109.783	22.160	9.480	-21.340	43.500	12.039	0.641	114	66.4	QP
3		124.684	25.180	14.870	-18.320	43.500	9.620	0.690	120	65.4	QP
4		137.640	21.323	12.004	-22.177	43.500	8.589	0.730	100	26.4	QP
5		224.752	21.870	9.410	-24.130	46.000	11.540	0.920	110.3	220	QP
6		249.841	26.816	13.540	-19.184	46.000	12.304	0.972	100	63.4	QP

Remarks: Measure Level (dBuV/m)= Reading Level (dBuV) + Ant Factor (dB/m) + Cable Loss (dB)

6. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Conducted Emission
The maximum measurement uncertainty is evaluated as: 9kHz~150kHz: 3.84dB 150kHz~30MHz: 3.46dB
Radiated disturbance
The maximum measurement uncertainty is evaluated as: Horizontal: 30MHz~300MHz: 4.07dB 300MHz~1GHz: 3.63 dB Vertical: 30MHz~300MHz: 4.18 dB 300MHz~1GHz: 3.60 dB

7. List of Measuring Instrument

Conducted Emission

Instrument	Manufacturer	Model No.	Serial No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	101209	1 year	2014/11/08
Two-Line V-Network	R&S	ENV216	101683	1 year	2014/11/08
Two-Line V-Network	R&S	ENV216	101684	1 year	2014/11/08
Temperature/Humidity Meter	Anymetre	TH101B	SR2-01	1 year	2014/11/15

Radiated disturbance

Instrument	Manufacturer	Model No.	Serial No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	101209	1 year	2014/11/08
Bilog Period Antenna	Schwarzbeck	VULB 9162	9162-047	1 year	2014/11/24
Temperature/Humidity Meter	Anymetre	TH101B	AC1-01	1 year	2014/11/15

The End