


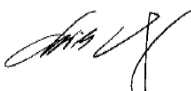
FCC PART 18

EMI MEASUREMENT AND TEST REPORT

for
Shang Hai Ming Dai Electrics & Appliance Co., Ltd
2481jiatang Road, Jiading District, Shanghai City, China.

FCC ID: VCZMSGMS

July 08, 2009

Product Name:	Self-Ballasted Lamp
Model No:	MSG13W/MS13W/MS15W
Sample Received Date:	Jun 27, 2009
Test Performed Date:	July 03, 2009
Test Engineer:	Paul Tan 
Reviewed By:	Chris Zeng 
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Note: This test report is specially limited to the above client company and product model only. It may not be duplicated without prior written consent of BEST Test Service Shenzhen Co., Ltd. This test report contains data that are not covered by NVLAP accreditation. This report **must not** be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The Shang Hai Ming Dai Electrics & Appliance Co., Ltd 's model MSG13W/MS13W/MS15W or the "EUT" as referred to in this report is Self-Ballasted Lamp, rated input voltage: AC 120V/60Hz, operation frequency between 40 KHz to 60 KHz.

Model	MSG13W	Electrical Power	13W
Model	MS13W	Electrical Power	13W
Model	MS15W	Electrical Power	15W

The test data was only good for the test sample. It may have deviation for other test sample.

Objective

The following test report is prepared on behalf of Shang Hai Ming Dai Electrics & Appliance Co., Ltd . in accordance with Part 2, Subpart J, and Part 18, Subparts A, B, and C of the Federal Communication Commissions rules and regulations.

The objective of the manufacturer is to demonstrate compliance with FCC Part 18 limit requirements for Industrial, Scientific, and Medical Equipment.

Related Submittal(s)/Grant(s)

No Related Submittals.

Test Methodology

All measurements contained in this report were conducted with MP-5 1986, FCC Method of measurements of radio noise emission from Industrial, Scientific and Medical equipments.

Test Facility

All measurement facilities used to collect the data are located at Huatongwei Building , Keji Rd, 12 S, high-Tech Park, Nanshan District, Shenzhen, China.

The sites are constructed in conformance with the requirements of ANSI C63.7/634 and CISPR 22, The site was accredited by FCC (662850), A2LA(2243.01) and CNAL (L1225)

SYSTEM TEST CONFIGURATION

Justification

The EUT was tested under normal mode as used by a common (typical) user.

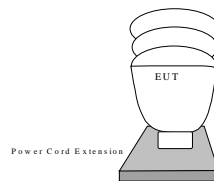
Schematics / Block Diagram

N/A.

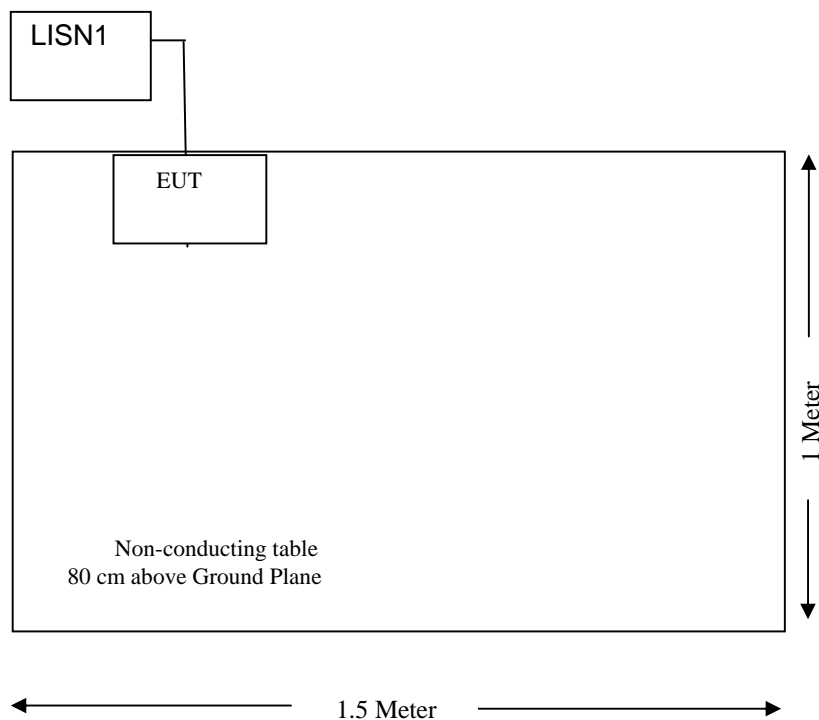
Equipment Modifications

No modifications were made by BEST TEST SERVICE (SHENZHEN) CO., LTD. to ensure the EUT to comply with the application limits and requirements.

Configuration of Test System



Test Setup Block Diagram



CONDUCTED EMISSIONS TEST DATA

Applicable Standard

For the following equipment, when designed to be connected to the public utility (AC) power line 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. Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal using a 50 μ H/50 ohms line impedance stabilization network (LISN).

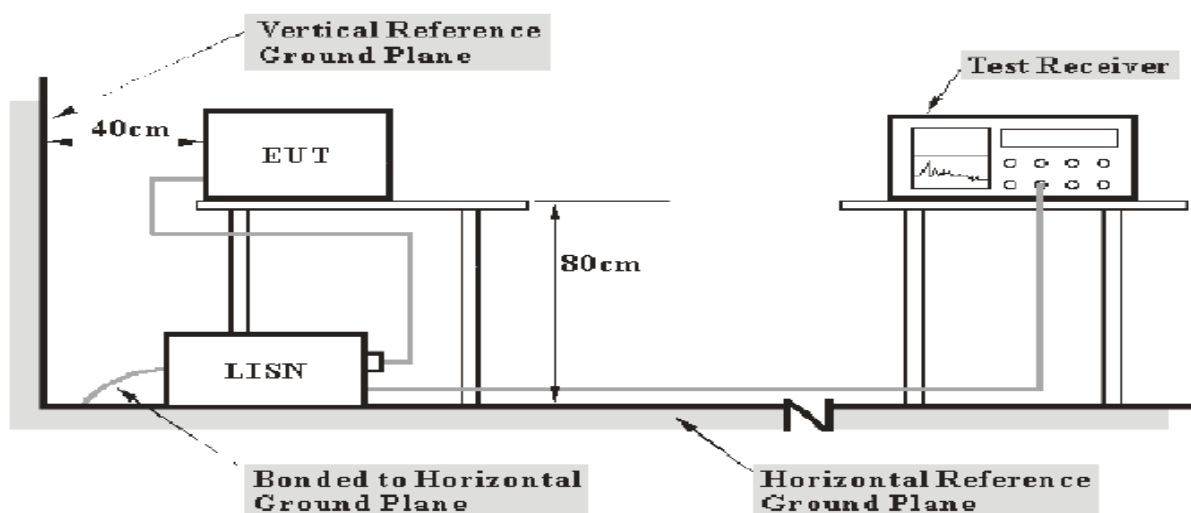
Frequency Range (MHz)	Max RF Voltage (μ V)	Max RF Voltage (dBuV)
Non-consumer equipment		
0.45 to 1.6	1,000	60.0
1.6 to 30	3,000	69.0
Consumer equipment		
0.45 to 2.51	250	48.0
2.51 to 3.0	3000	69.0
3.0 to 30	250	48.0

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMI. The factors contributing to uncertainties are EMI Test Receiver, cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMI Measurements, the best estimate of the uncertainty of any conducted emissions measurement at BEST TEST SERVICE (SHENZHEN) CO., LTD. is ± 2.0 dB.

EUT Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with MP-5 measurement procedure. The specification used was the FCC Part 18 limits.

The EUT was connected to the power cord extension and placed on the left of the back edge on the test table.

The power cord extension was connected with 120 VAC/60 Hz power source.

Test Equipments

Manufacturer	Description	Model	Serial Number	Cal. Date	Cal. Due. Date
ROHDE & SCHWARZ	EMI TEST RECEIVER	ESCS30	100038	2008-08-05	2009-08-05
ROHDE & SCHWARZ	L.I.S.N	ESH2-Z5	100028	2008-08-05	2009-08-05
ROHDE & SCHWARZ	Pulse Limiter	ESHSZ2	100044	2008-08-05	2009-08-05

Statement of traceability: BEST attests that all calibrations have been performed per the CNAL /A2LA requirements, traceable to NIM China

Test Procedure

During the conducted emission test, the power cord of the power cord extension was connected to the auxiliary outlet of the first LISN.

Maximizing procedure was performed on the six (6) highest emissions to ensure that the EUT is compliant with all installation combination.

All data was recorded in the peak detection mode. Quasi-peak readings were only performed when an emission was found to be marginal (within 4 dB μ V of specification limits). Quasi-peak readings are distinguished with a "Qp".

The EUT was tested under the normal modes during the final qualification test to represent the worst-case results.

Summary of Test Results

Pass

The EUT complied with the FCC 18 Conducted margin for industry, scientific and medical device, and with the worst margin reading of:

4.8 dB μ V at 0.508 MHz in the Neutral mode for MSG13W

11.9 dB μ V at 0.780 MHz in the live mode for MS13W

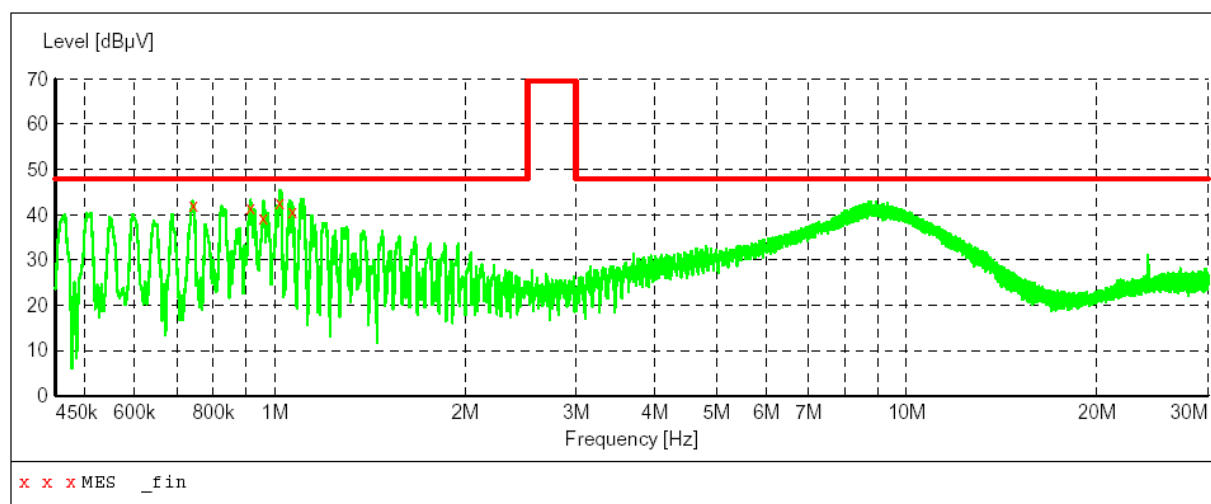
4.5 dB μ V at 0.884 MHz in the live mode for MS15W

Conducted Emissions Test Data and Plots**BEST TEST SERVICE SHENZHEN CO.,LTD****Voltage Mains Test FCC PART 18**

EUT: Self-Ballasted Lamp M/N:MSG13W
Manufacturer: Mingdai
Operating Condition: ON
Test Site: 3# SHIELDED ROOM
Operator: BYRON
Test Specification: AC 120V/60Hz
Comment:
Start of Test: 7/3/2009

SCAN TABLE: "FCC 18 LIGHT FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT:**

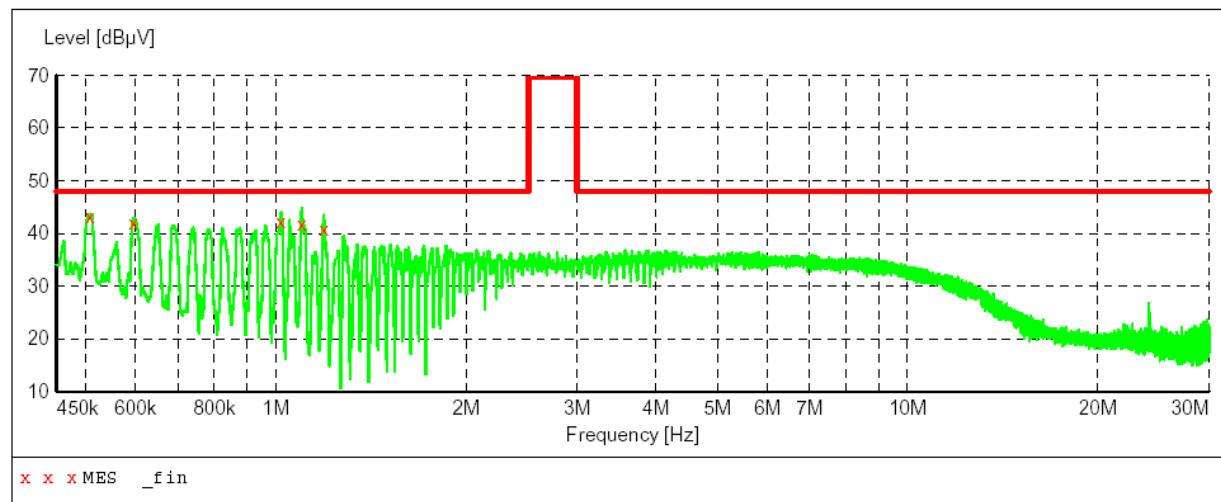
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.744000	42.00	10.4	48	5.9	QP	L1	GND
0.916000	41.50	10.4	48	6.4	QP	L1	GND
0.960000	39.30	10.5	48	8.6	QP	L1	GND
1.020000	42.80	10.5	48	5.1	QP	L1	GND
1.068000	40.80	10.5	48	7.1	QP	L1	GND

BEST TEST SERVICE SHENZHEN CO.,LTD**Voltage Mains Test FCC PART 18**

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Comment:
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**MEASUREMENT RESULT:**

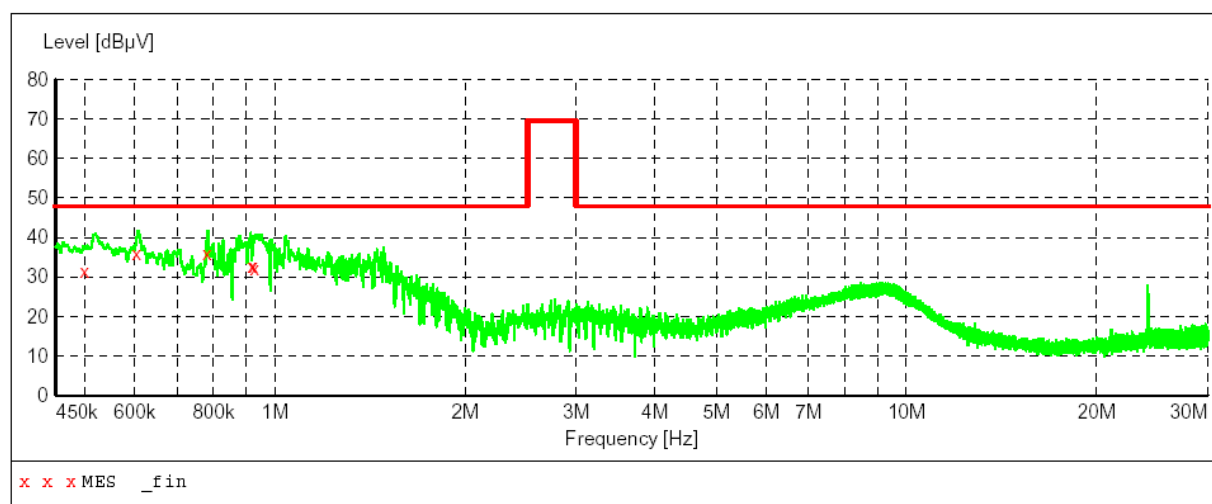
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.508000	43.10	10.4	48	4.8	QP	N	GND
0.596000	42.10	10.4	48	5.8	QP	N	GND
1.020000	42.30	10.5	48	5.6	QP	N	GND
1.100000	41.80	10.5	48	6.1	QP	N	GND
1.192000	40.90	10.5	48	7.0	QP	N	GND

BEST TEST SERVICE SHENZHEN CO.,LTD**Voltage Mains Test FCC PART 18**

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Manufacturer: Mingdai
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**MEASUREMENT RESULT:**

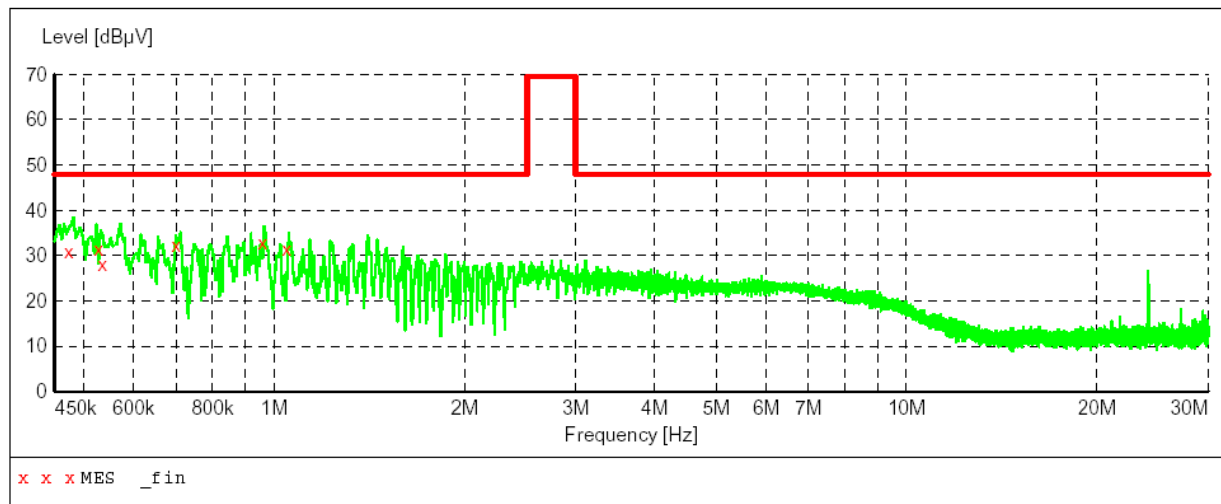
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.500000	31.40	10.4	48	16.5	QP	L1	GND
0.604000	35.90	10.4	48	12.0	QP	L1	GND
0.780000	36.00	10.4	48	11.9	QP	L1	GND
0.920000	32.60	10.5	48	15.3	QP	L1	GND
0.924000	32.60	10.5	48	15.3	QP	L1	GND
0.928000	32.10	10.5	48	15.8	QP	L1	GND

BEST TEST SERVICE SHENZHEN CO.,LTD**Voltage Mains Test FCC PART 18**

EUT: Self-Ballasted Lamp M/N:MS13W
Manufacturer: Mingdai
Operating Condition: ON
Test Site: 3# SHIELDED ROOM
Operator: BYRON
Test Specification: AC 120V/60Hz
Comment:
Start of Test: 7/3/2009

SCAN TABLE: "FCC 18 LIGHT FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT:**

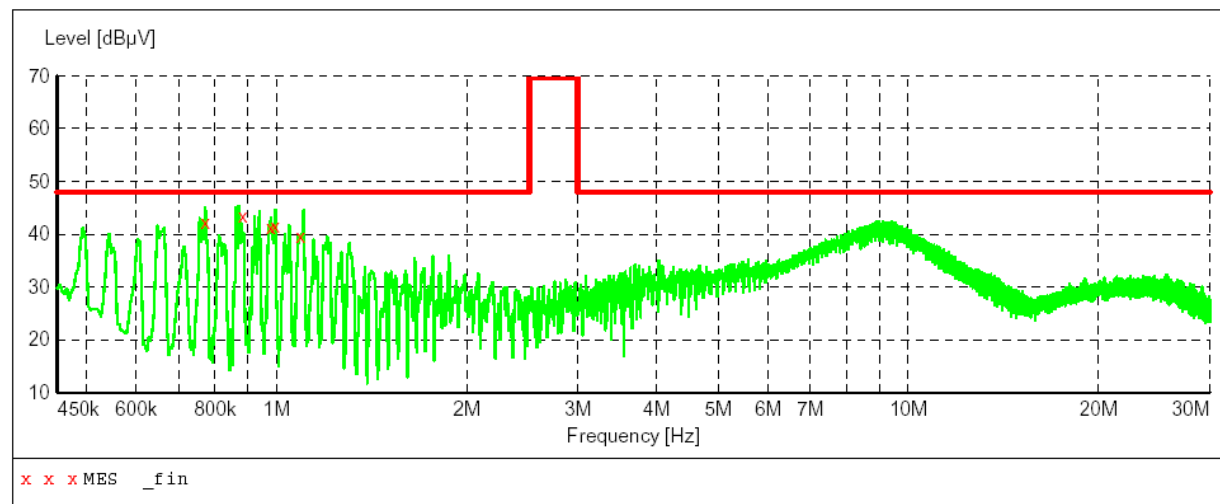
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.474000	30.90	10.4	48	17.0	QP	N	GND
0.528000	31.30	10.4	48	16.6	QP	N	GND
0.536000	28.00	10.4	48	19.9	QP	N	GND
0.700000	32.20	10.4	48	15.7	QP	N	GND
0.960000	32.80	10.5	48	15.1	QP	N	GND
1.048000	31.50	10.5	48	16.4	QP	N	GND

BEST TEST SERVICE SHENZHEN CO.,LTD**Voltage Mains Test FCC PART 18**

EUT: Self-Ballasted Lamp M/N:MS15W
Manufacturer: Mingdai
Operating Condition: ON
Test Site: 3# SHIELDED ROOM
Operator: BYRON
Test Specification: AC 120V/60Hz
Comment:
Start of Test: 7/3/2009

SCAN TABLE: "FCC 18 LIGHT FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT:**

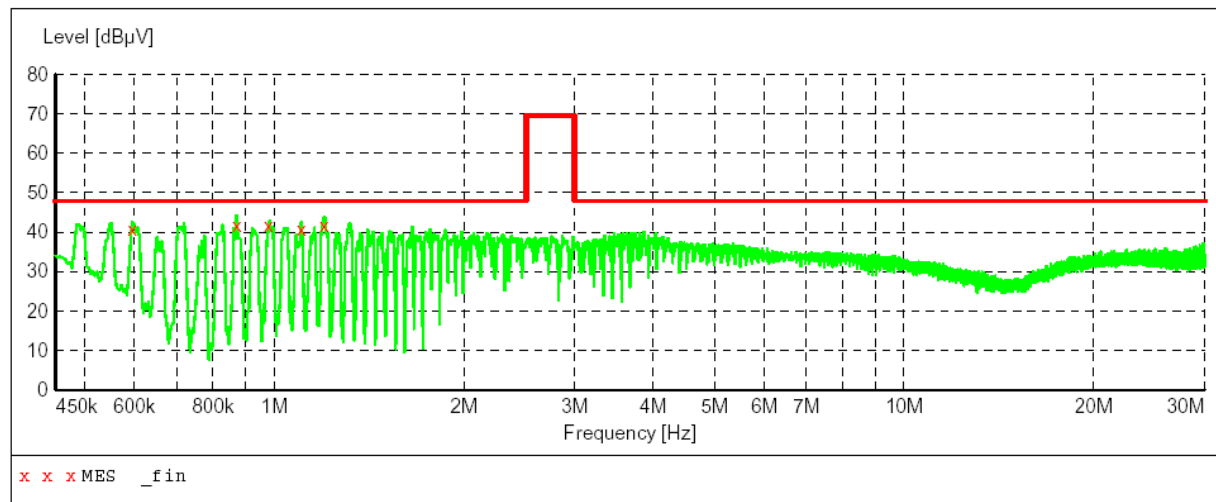
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.772000	42.20	10.4	48	5.7	QP	L1	GND
0.884000	43.40	10.4	48	4.5	QP	L1	GND
0.980000	41.30	10.5	48	6.6	QP	L1	GND
0.996000	41.50	10.5	48	6.4	QP	L1	GND
1.092000	39.50	10.5	48	8.4	QP	L1	GND

BEST TEST SERVICE SHENZHEN CO.,LTD**Voltage Mains Test FCC PART 18**

EUT: Self-Ballasted Lamp M/N:MS15W
Manufacturer: Mingdai
Operating Condition: ON
Test Site: 3# SHIELDED ROOM
Operator: BYRON
Test Specification: AC 120V/60Hz
Comment:
Start of Test: 7/3/2009

SCAN TABLE: "FCC 18 LIGHT FIN"

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT:**

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.596000	40.60	10.4	48	7.3	QP	N	GND
0.872000	41.70	10.4	48	6.2	QP	N	GND
0.980000	41.70	10.5	48	6.2	QP	N	GND
1.104000	40.80	10.5	48	7.1	QP	N	GND
1.200000	41.80	10.5	48	6.1	QP	N	GND