

FCC PART 18 TEST REPORT

For

Jiangxi Midea Guiya Green Lighting Electrical Co., Ltd.

Guixi Industrial District, Guixi, Jiangxi, China

FCC ID: VGZT3FS13-26GU

Report Type: Original Report	Product Type: CFL
Test Engineer: Yoully Ao <i>Yoully Ao</i>	
Report Number: RSZ111110552-00	
Report Date: 2012-04-05	
Reviewed By: Lisa Zhu <i>[Signature]</i> EMC Engineer	
Test Laboratory: Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn	

Note: This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP*, or any agency of the Federal Government.

* This report contains data that are not covered by the NVLAP accreditation and are marked with an asterisk "★" (Rev.2)

TABLE OF CONTENTS

GENERAL INFORMATION	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE.....	3
RELATED SUBMITTAL(S)/GRANT(S)	3
TEST METHODOLOGY	3
TEST FACILITY	3
SYSTEM TEST CONFIGURATION	5
JUSTIFICATION.....	5
EUT EXERCISE SOFTWARE.....	5
SPECIAL ACCESSORIES	5
EQUIPMENT MODIFICATIONS.....	5
EXTERNAL CABLE	5
CONFIGURATION OF TEST SETUP.....	5
BLOCK DIAGRAM OF TEST SETUP.....	6
FCC §18.307 - AC LINE CONDUCTED EMISSIONS.....	7
APPLICABLE STANDARD.....	7
MEASUREMENT UNCERTAINTY	7
EUT SETUP	7
EMI TEST RECEIVER SETUP	8
TEST PROCEDURE.....	8
TEST EQUIPMENT LIST AND DETAILS	8
TEST RESULTS SUMMARY	8
TEST DATA.....	9
FCC §18.305 – FIELD STRENGTH	15
MAGNETIC FIELD EMISSION LIMIT (FCC PART 18 305(B))	15
MEASUREMENT UNCERTAINTY	15
EUT SETUP	15
EMI TEST RECEIVER SETUP AND SPECTRUM ANALYZER SETUP	16
TEST PROCEDURE.....	16
CORRECTED AMPLITUDE CALCULATION	16
TEST EQUIPMENT LIST AND DETAILS	16
TEST DATA.....	16
PRODUCT SIMILARTITY DECLARATION LETTER.....	18

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The Jiangxi Midea Guiya Green Lighting Electrical Co., Ltd's model: MDT3FS13GU24, MDT3FS18GU24 and MDT3FS26GU24 (FCC ID: VGZT3FS13-26GU) (the "EUT") in this report were CFL, model MDT3FS13GU24 was measured approximately: 7.9 cm (D) x 7.2 cm (H), model MDT3FS18GU24 was measured approximately 7.9 cm (D) x 7.8 cm (H), model MDT3FS26GU24 was measured approximately: 7.9 cm (D) x 9.0 cm (H), the rated input voltage: AC 120V/60Hz.

Note: The serial product, model MDT3FS13GU24, MDT3FS18GU24 and MDT3FS26GU24 are electrically identical, they have the same PCB layout and schematic, the differences among them are the power and model number, which was explained in the attached declaration letter.

** All measurement and test data in this report was gathered from production sample serial number: 1111019 (Assigned by BACL, Shenzhen). The EUT was received on 2011-11-10.*

Objective

This test report is prepared on behalf of Jiangxi Midea Guiya Green Lighting Electrical 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 determine the compliance of EUT with FCC Part 18.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with MP-5, FCC Methods of Measurements of Radio Noise Emissions from ISM Equipment, February 1986. All measurement was performed at Bay Area Compliance Laboratories Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at <http://ts.nist.gov/Standards/scopes/2007070.htm>

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

No exercise software was used.

Special Accessories

No special accessory was used.

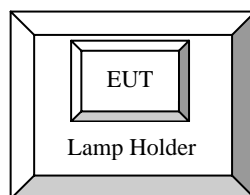
Equipment Modifications

No modification was made to the EUT tested.

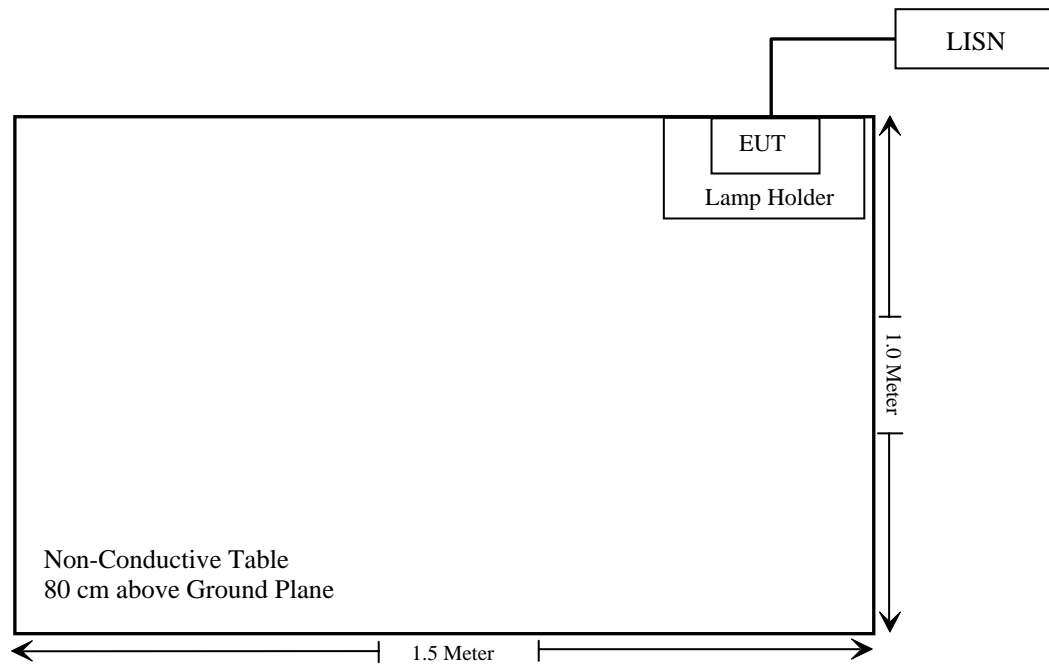
External Cable

Cable Description	Length (m)	From Port	To
Unshielded Detachable AC Power Cable	1.0	EUT	LISN

Configuration of Test Setup



Block Diagram of Test Setup



FCC §18.307 - AC LINE CONDUCTED EMISSIONS

Applicable Standard

Conduction limits. 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).

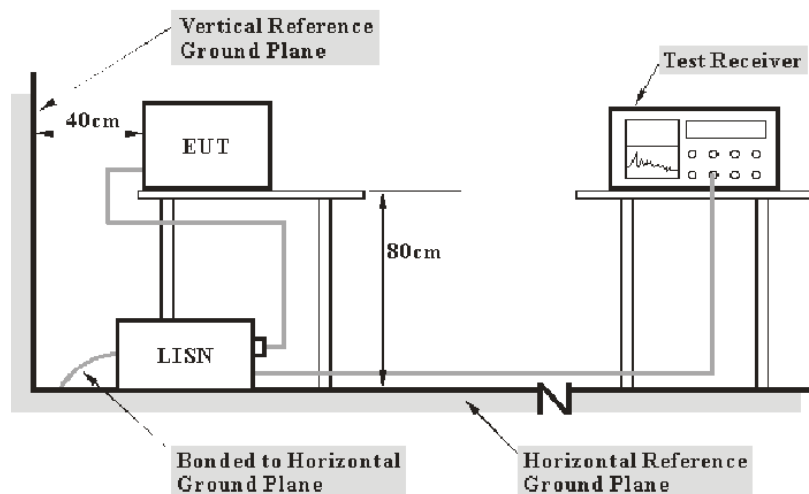
Frequency (MHz)	Maximum RF line voltage measured with a 50 μ H/50 ohm LISN (uV)
Non-consumer equipment:	
0.45 to 1.6	1,000
1.6 to 30	3,000
Consumer equipment:	
0.45 to 2.51	250
2.51 to 3.0	3,000
3.0 to 30	250

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. is 2.4 dB (k=2, 95% level of confidence).

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: 1986 measurement procedure. Specification used was with the FCC Part 18 limits.

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

The EUT was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 450 kHz to 30 MHz.

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

<u>Frequency Range</u>	<u>IFBW</u>
450 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the EUT was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-Peak detection mode.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	830245/006	2012-03-03	2012-03-02
Rohde & Schwarz	L.I.S.N.	ESH2-Z5	892107/021	2011-03-09	2012-03-08

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 18, with the worst margin reading of:

9.02 dB at 0.595 MHz in the Neutral conducted mode for model MDT3FS13GU24

2.44 dB at 1.025 MHz in the Neutral conducted mode for model MDT3FS18GU24

6.99 dB at 0.940 MHz in the Line conducted mode for model MDT3FS26GU24

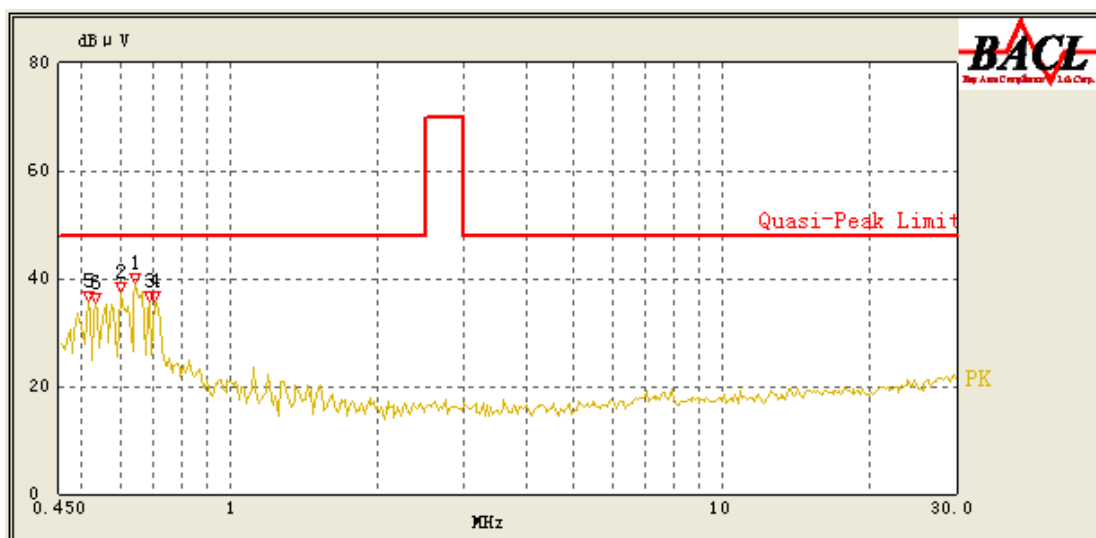
Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

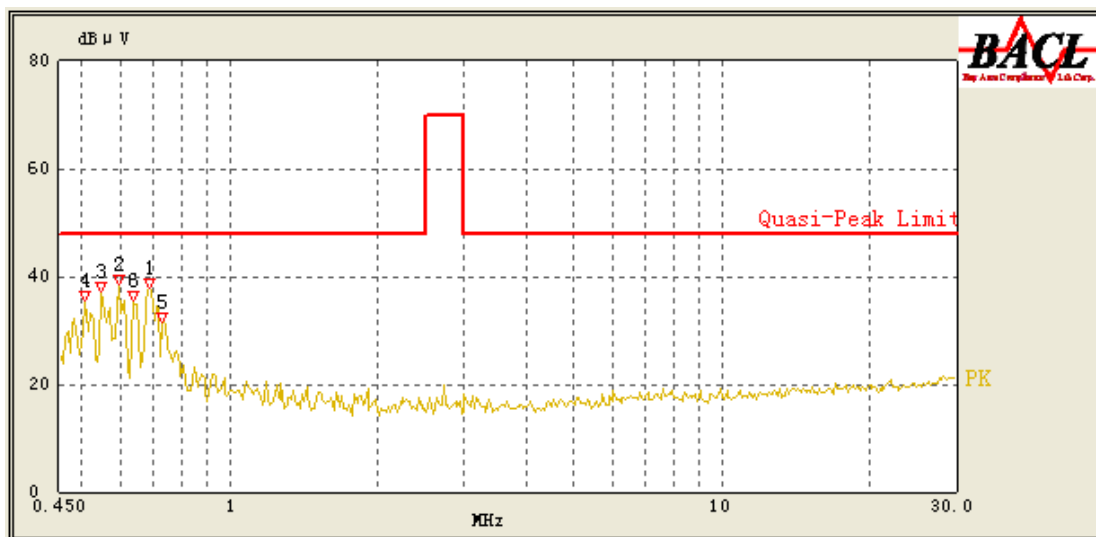
Testing was performed by Yoully Ao on 2011-12-08.

Test Mode: On (Model: MDT3FS13GU24)

AC 120V/60 Hz, Line:



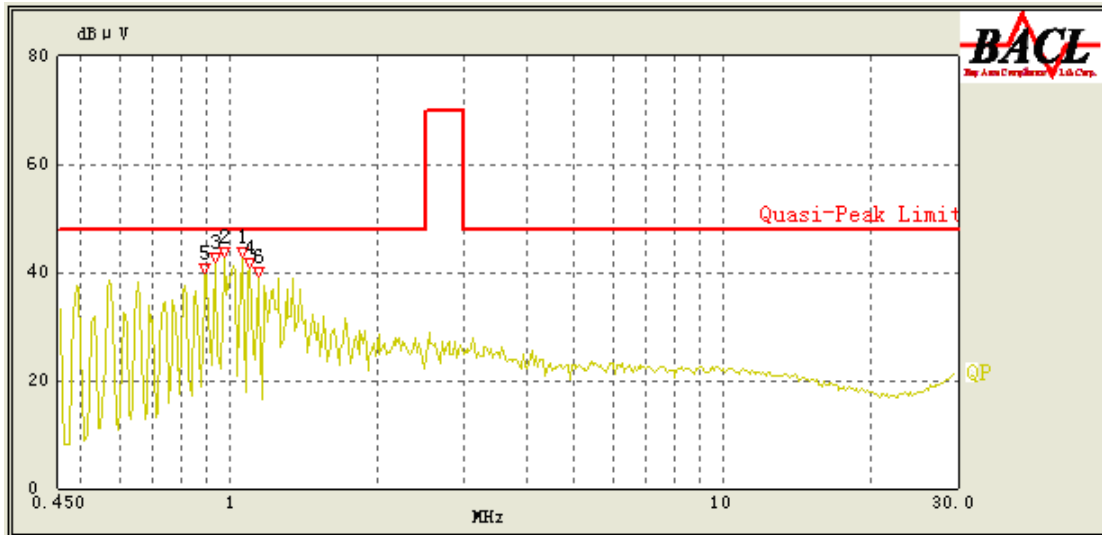
Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)
0.645	38.88	10.23	48.00	9.12
0.600	37.18	10.23	48.00	10.82
0.515	36.32	10.23	48.00	11.68
0.685	36.20	10.23	48.00	11.80
0.705	36.07	10.23	48.00	11.93
0.535	34.45	10.23	48.00	13.55

AC 120V/ 60 Hz, Neutral:

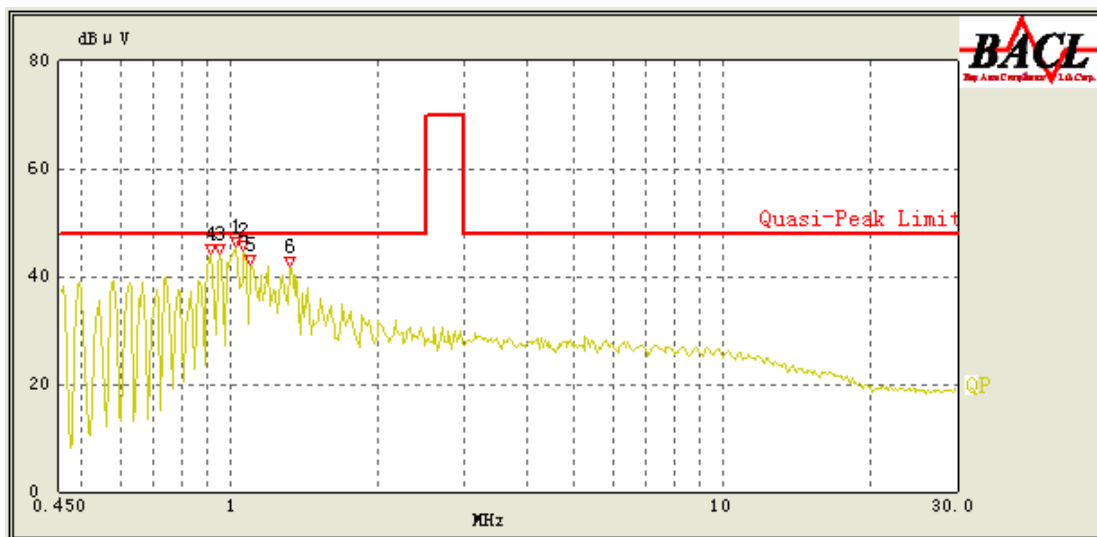
Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)
0.595	38.98	10.23	48.00	9.02
0.690	38.13	10.23	48.00	9.87
0.550	37.37	10.23	48.00	10.63
0.635	36.77	10.23	48.00	11.23
0.510	36.72	10.23	48.00	11.28
0.730	34.27	10.23	48.00	13.73

Test Mode: On (Model: MDT3FS18GU24)

AC 120V/60 Hz, Line:



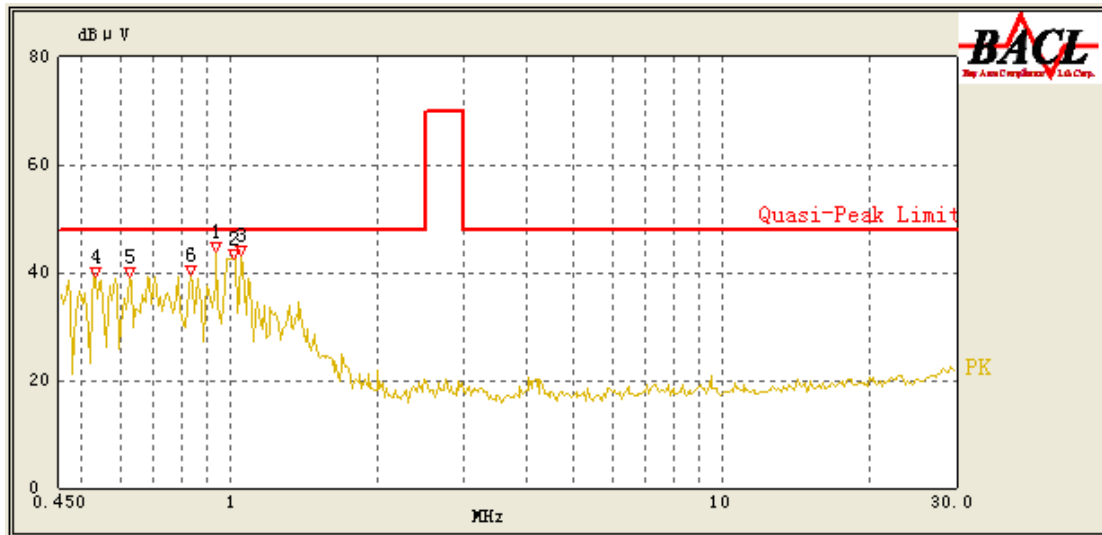
Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)
1.060	42.88	10.25	48.00	5.12
0.980	42.76	10.24	48.00	5.24
0.935	41.85	10.24	48.00	6.15
1.100	40.84	10.25	48.00	7.16
0.895	39.87	10.24	48.00	8.13
1.145	39.11	10.25	48.00	8.89

AC 120V/ 60 Hz, Neutral:

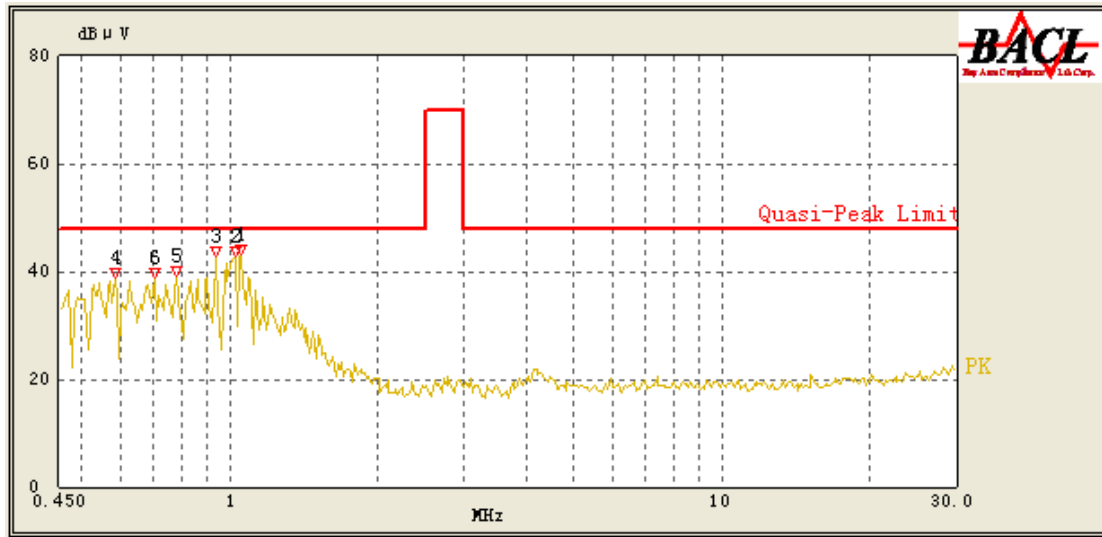
Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)
1.025	45.56	10.24	48.00	2.44
1.065	44.95	10.25	48.00	3.05
0.955	44.26	10.24	48.00	3.74
0.915	44.21	10.24	48.00	3.79
1.105	42.02	10.25	48.00	5.98
1.325	41.78	10.27	48.00	6.22

Test Mode: On (Model: MDT3FS26GU24)

AC 120V/60 Hz, Line:



Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)
0.940	41.01	10.24	48.00	6.99
1.055	40.59	10.24	48.00	7.41
1.020	40.19	10.24	48.00	7.81
0.835	39.08	10.24	48.00	8.92
0.535	38.90	10.23	48.00	9.10
0.625	38.66	10.23	48.00	9.34

AC 120V/ 60 Hz, Neutral:

Frequency (MHz)	Corrected Amplitude (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)
1.055	40.75	10.24	48.00	7.25
1.025	40.23	10.24	48.00	7.77
0.940	39.87	10.24	48.00	8.13
0.780	38.99	10.24	48.00	9.01
0.585	38.58	10.23	48.00	9.42
0.705	37.85	10.23	48.00	10.15

FCC §18.305 – FIELD STRENGTH

Magnetic Field Emission Limit (FCC Part 18 305(b))

All emanations from Non-ISM frequency devices or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

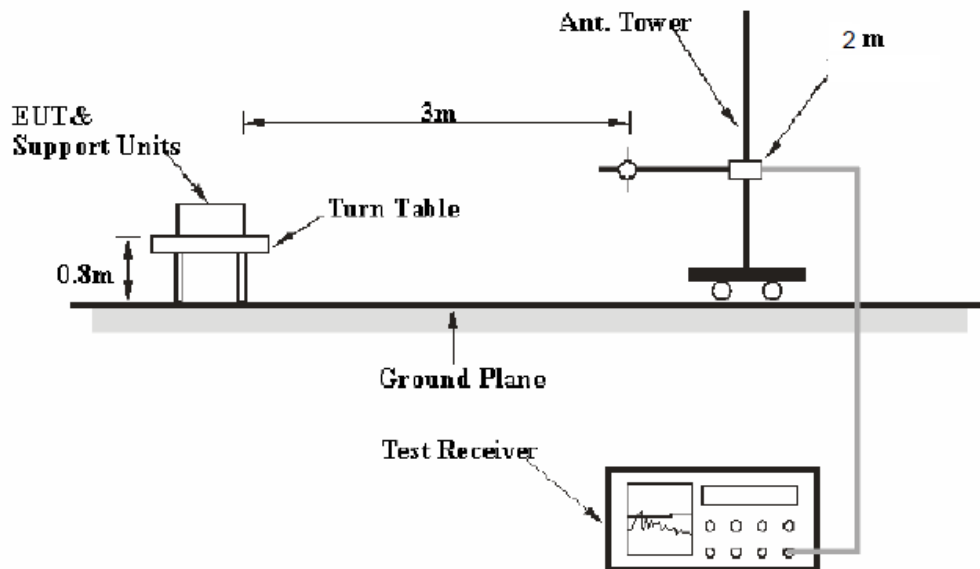
Frequency (MHz)	Field Strength Limits ($\mu\text{V/m}$)	Distance (m)	Converted Field Strength Limits By 3 Meters Measuring Distance dB ($\mu\text{V/m}$)
0.009~30	15	300	63.5

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 4.0 dB (k=2, 95% level of confidence).

EUT Setup



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the FCC MP - 5.

The EUT was connected to 120 VAC/60 Hz power source.

EMI Test Receiver Setup and Spectrum Analyzer Setup

The system was investigated from 9 kHz to 30 MHz.

During the radiated emission test, the EMI test receiver and Spectrum Analyzer were set with the following configurations:

<i>Frequency Range</i>	<i>R B/W</i>	<i>Video B/W</i>	<i>IF B/W</i>
9kHz– 150kHz	300 Hz	1 kHz	200Hz
150kHz– 30 MHz	10 kHz	30 kHz	9 kHz

Test Procedure

During the conducted emission test, the EUT was connected to the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-Peak detection mode.

Corrected Amplitude Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ETS-LINDGREN	Passive Loop Antenna	6512	00029604	2011-07-14	2012-07-13
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2011-11-11	2012-11-10

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	48 %
ATM Pressure:	100.0 kPa

The testing was performed by Yoully Ao on 2011-12-08.

Test Mode: On

Model: MDT3FS13GU24

Frequency (MHz)	Reading (dBμA/m)	Detector (PK/QP/AV)	Direction (Degree)	Height (m)	Antenna Factor (dB S/m)	Cable Loss (dB)	Corrected Amplitude		Limit (dBμV/m)	Margin (dB)
							(dBμA/m)	(dBμV/m)		
0.0307	-47.15	QP	74.00	2.00	26.6	0.1	-20.45	31.05	63.5	32.45
0.0476	-39.09	QP	146.00	2.00	21.5	0.1	-17.49	34.01	63.5	29.49
0.0498	-38.25	QP	102.00	2.00	21.4	0.1	-16.75	34.75	63.5	28.75
0.0512	-41.32	QP	248.00	2.00	20.1	0.1	-21.12	30.38	63.5	33.12
0.0523	-43.17	QP	176.00	2.00	19.7	0.1	-23.37	28.13	63.5	35.37
0.0589	-40.98	QP	14.00	2.00	19.3	0.1	-21.58	29.92	63.5	33.58

Model: MDT3FS18GU24

Frequency (MHz)	Reading (dBμA/m)	Detector (PK/QP/AV)	Direction (Degree)	Height (m)	Antenna Factor (dB S/m)	Cable Loss (dB)	Corrected Amplitude		Limit (dBμV/m)	Margin (dB)
							(dBμA/m)	(dBμV/m)		
0.0318	-44.53	QP	185.00	2.00	26.7	0.1	-17.73	33.77	63.5	29.73
0.0423	-43.19	QP	185.00	2.00	23.4	0.1	-19.69	31.81	63.5	31.69
0.0435	-34.42	QP	190.00	2.00	23.2	0.1	-11.12	40.38	63.5	23.12
0.0451	-33.62	QP	190.00	2.00	21.6	0.1	-11.92	39.58	63.5	23.92
0.0462	-39.00	QP	191.00	2.00	21.0	0.1	-17.90	33.60	63.5	29.90
0.0506	-45.72	QP	191.00	2.00	20.2	0.1	-25.42	26.08	63.5	37.42

Model: MDT3FS26GU24

Frequency (MHz)	Reading (dBμA/m)	Detector (PK/QP/AV)	Direction (Degree)	Height (m)	Antenna Factor (dB S/m)	Cable Loss (dB)	Corrected Amplitude		Limit (dBμV/m)	Margin (dB)
							(dBμA/m)	(dBμV/m)		
0.0334	-45.54	QP	18.00	2.00	26.1	0.1	-19.34	32.16	63.5	31.34
0.0338	-43.23	QP	147.00	2.00	25.7	0.1	-17.43	34.07	63.5	29.43
0.0382	-44.53	QP	96.00	2.00	25.3	0.1	-19.13	32.37	63.5	31.13
0.0479	-33.67	QP	241.00	2.00	21.5	0.1	-12.07	39.43	63.5	24.07
0.0442	-39.06	QP	141.00	2.00	21.8	0.1	-17.16	34.34	63.5	29.16
0.0523	-47.24	QP	17.00	2.00	20.3	0.1	-26.84	24.66	63.5	38.84

Note: dBμV/m= dBμA/m+51.5

PRODUCT SIMILARTITY DECLARATION LETTER**Jiangxi Midea Guiya Green Lighting Electrical Co.,Ltd**

Add: Guixi Industrial District, Guixi, Jiangxi, China

Tel: 0701-3338713

Fax: 0701-3338767

Different Declaration

We, Jiangxi Midea Guiya Green Lighting Electrical Co., Ltd, declare that the CFL. The Model MDT3FS13GU24, MDT3FS18GU24, MDT3FS26GU24 were tested by BACL. They have the same circuit diagram, PCB layout in side and only different in the power. Thank you!

Model	Power
MDT3FS13GU24	13W
MDT3FS18GU24	18W
MDT3FS26GU24	26W

Date:2011-12-15

Sincerely.

Wei Zhang

Manager

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