FCC PART 18

EMI MEASUREMENT AND TEST REPORT

for

GUANGDONG GANGFENG ELECTRICAL APPLIANCE CO LTD

LONGJIANG TOWN, SHUNDE DISTRICT, FOSHAN CITY, GUANGDONG, CHINA

FCC ID: ZUIGANGFENG001

Jul 27, 2011

Product Name:	Electronic Ballast
Model No:	120-2G/17EC;120-2G/25EC
Test Engineer:	David Zhang David Zhang
Report No.:	BTR66.180.10.234.01
Sample Received Date:	Jul 22, 2011
Test Performed Date:	Jul 22, 2011
Reviewed By:	Steven Hsu Steven Hsu
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NVLAP LAB CODE 200770-0

Efficient Lighting Initiative

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The GUANGDONG GANGFENG ELECTRICAL APPLIANCE CO LTD's model 120-2G/17EC;120-2G/25EC or the "EUT" as referred to in this report is Electronic Ballast, rated input voltage: AC 120V/60Hz, operation frequency between 40 KHz to 60 KHz.

Model	120-2G/17EC	Electrical Power	2×17W
Model	120-2G/25EC	Electrical Power	2×25W

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 GUANGDONG GANGFENG ELECTRICAL 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, and 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.

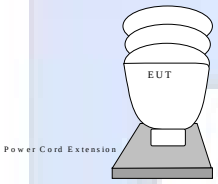
Schematics / Block Diagram

N/A.

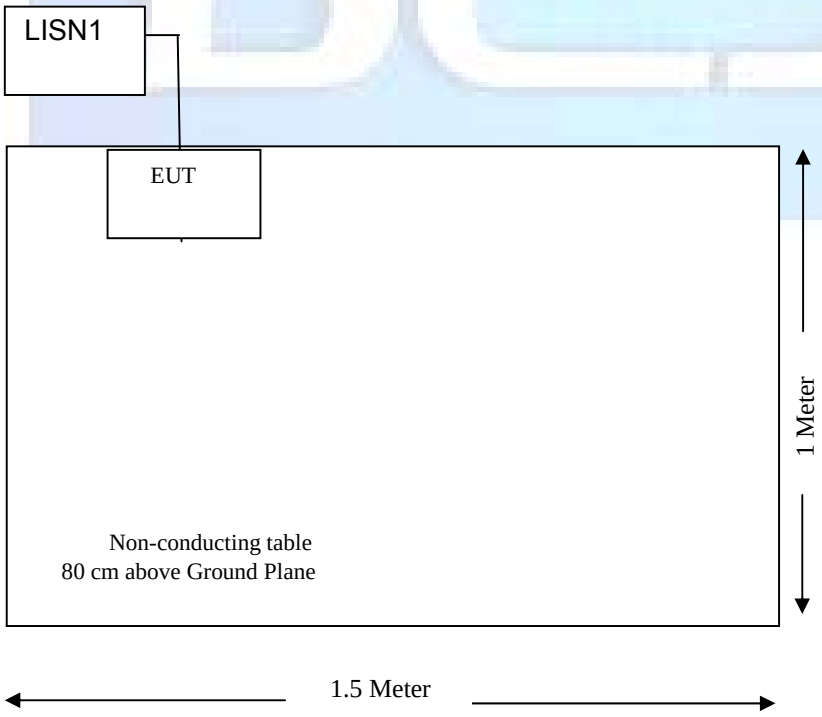
Equipment Modifications

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 μH/50 ohms line impedance stabilization network (LISN).

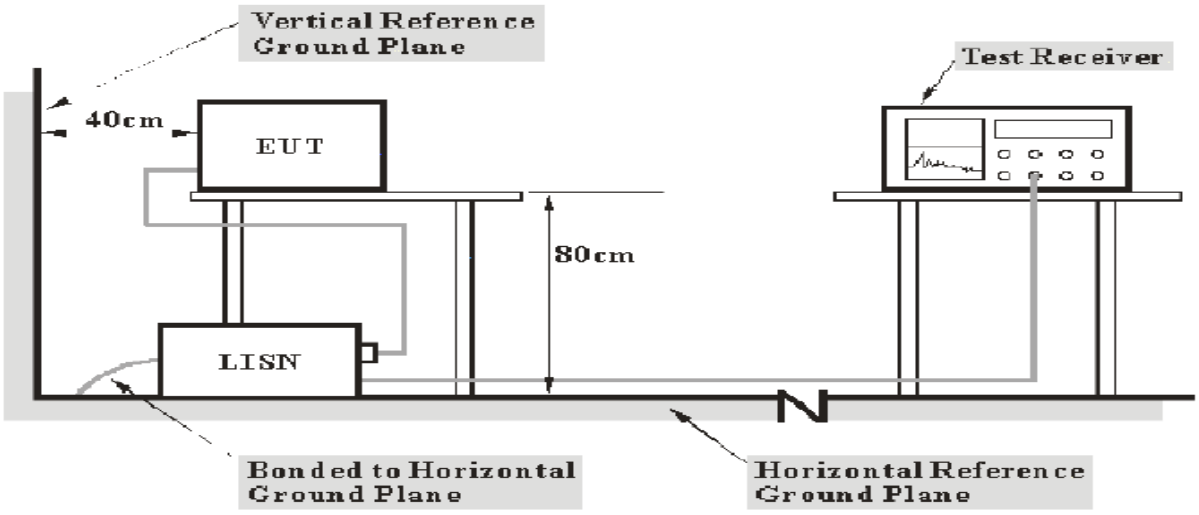
Frequency Range (MHz)	Max RF Voltage (uV)	Max RF Voltage (dBuV)
Non-consumer equipment		
0.45 to 1.6	1,000	60.0
1.6 to 30	3,000	69.0
Consumer equipment		
0.45 to 2.51	250	48.0
2.51 to 3.0	3000	69.0
3.0 to 30	250	48.0

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	2010-08-05	2011-08-05
ROHDE & SCHWARZ	L.I.S.N	ESH2-Z5	100028	2010-08-05	2011-08-05
ROHDE & SCHWARZ	Pulse Limiter	ESHSZ2	100044	2010-08-05	2011-08-05

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 dBμV of specification limits). Quasi-peak readings are distinguished with a "**Qp**".

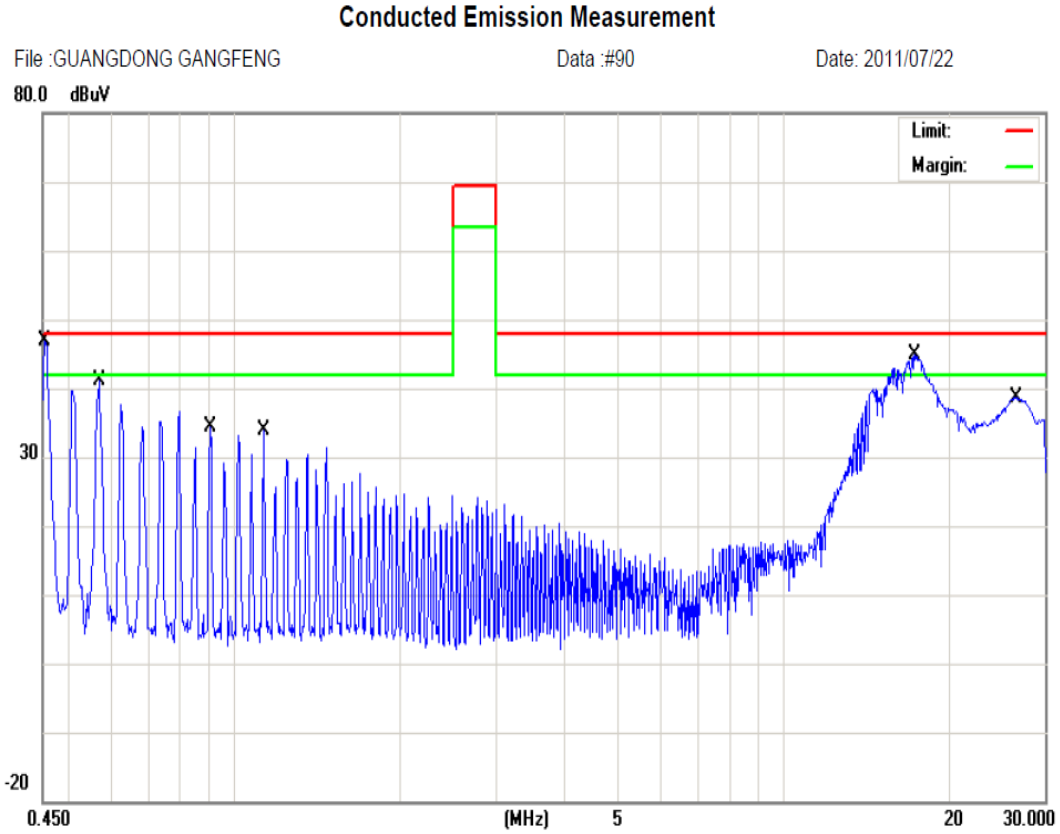
The EUT was tested under the normal modes during the final qualification test to represent the worst-case results.

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:

Conducted Emissions Test Data and Plots



Site 843 Shielded Room
Phase: *L1*
Temperature: 26

Limit: FCC Part 18 Conduction
Power: AC 120V/60Hz
Humidity: 60 %

EUT: Electronic Ballast

M/N: 120-2G/17EC

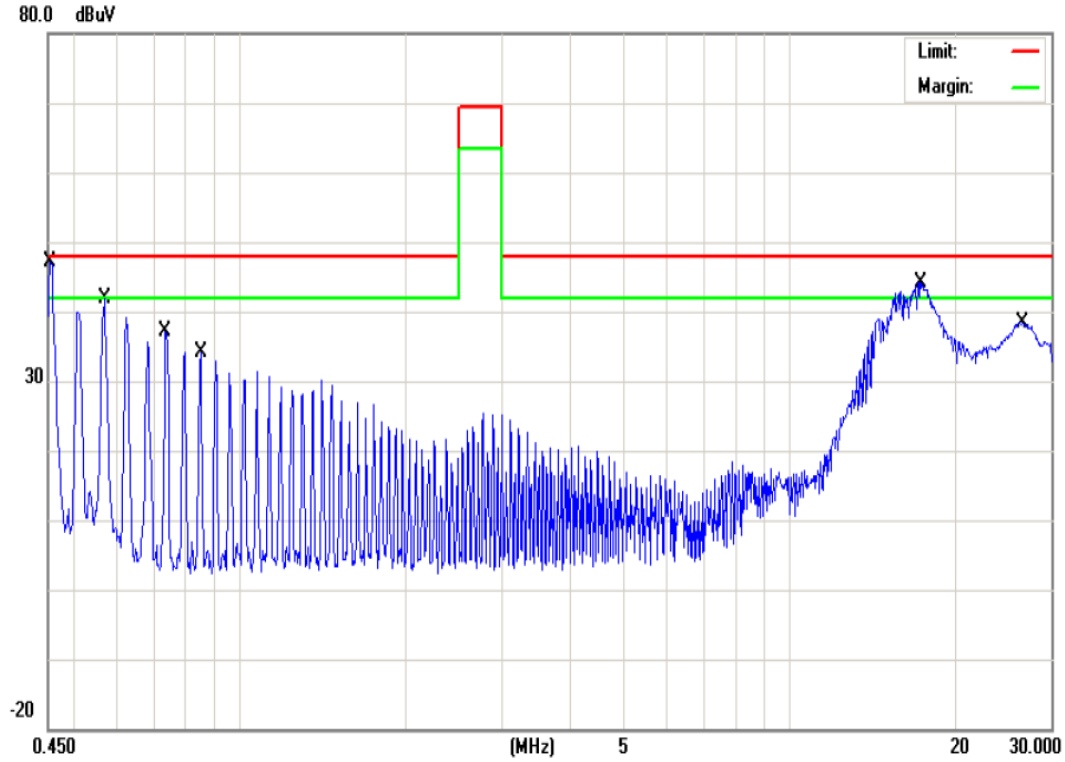
Mode: On

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.4540	46.02	0.00	46.02	48.00	-1.98	QP	
2		0.5700	40.17	0.00	40.17	48.00	-7.83	QP	
3		0.9100	32.67	0.00	32.67	48.00	-15.33	QP	
4		1.1380	31.80	0.00	31.80	48.00	-16.20	QP	
5	!	17.4020	43.04	0.00	43.04	48.00	-4.96	QP	
6		26.6180	36.38	0.00	36.38	48.00	-11.62	QP	

Conducted Emission Measurement

File :GUANGDONG GANGFENG Data :#91 Date: 2011/07/22



Site 843 Shielded Room Phase: N Temperature: 26

Limit: FCC Part 18 Conduction Power: AC 120V/60Hz Humidity: 60 %

EUT: Electronic Ballast

M/N: 120-2G/17EC

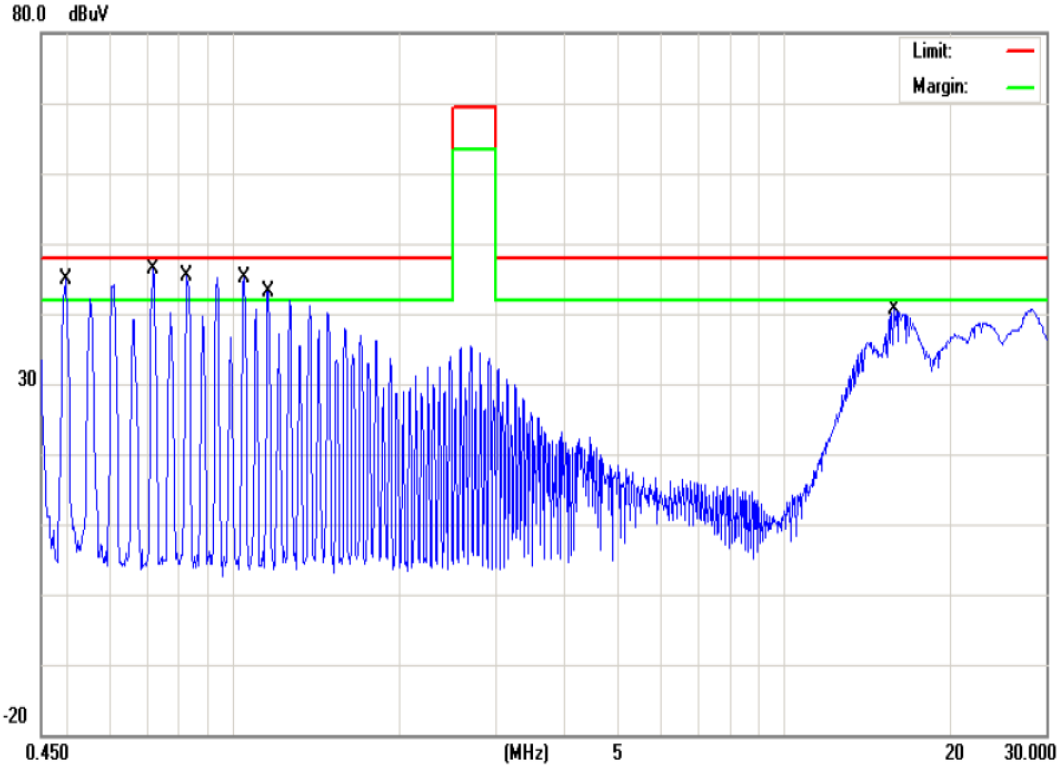
Mode: on

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.4540	46.45	0.00	46.45	48.00	-1.55	QP	
2		0.5700	40.48	0.00	40.48	48.00	-7.52	QP	
3		0.7380	35.72	0.00	35.72	48.00	-12.28	QP	
4		0.8540	33.04	0.00	33.04	48.00	-14.96	QP	
5	!	17.3980	42.09	0.00	42.09	48.00	-5.91	QP	
6		26.6180	36.18	0.00	36.18	48.00	-11.82	QP	

Conducted Emission Measurement

File :GUANGDONG GANGFENG Data :#85 Date: 2011/07/22



Site 843 Shielded Room Phase: *L1* Temperature: 26

Limit: FCC Part 18 Conduction Power: AC 120V/60Hz Humidity: 60 %

EUT: Electronic Ballast

M/N: 120-2G/25EC

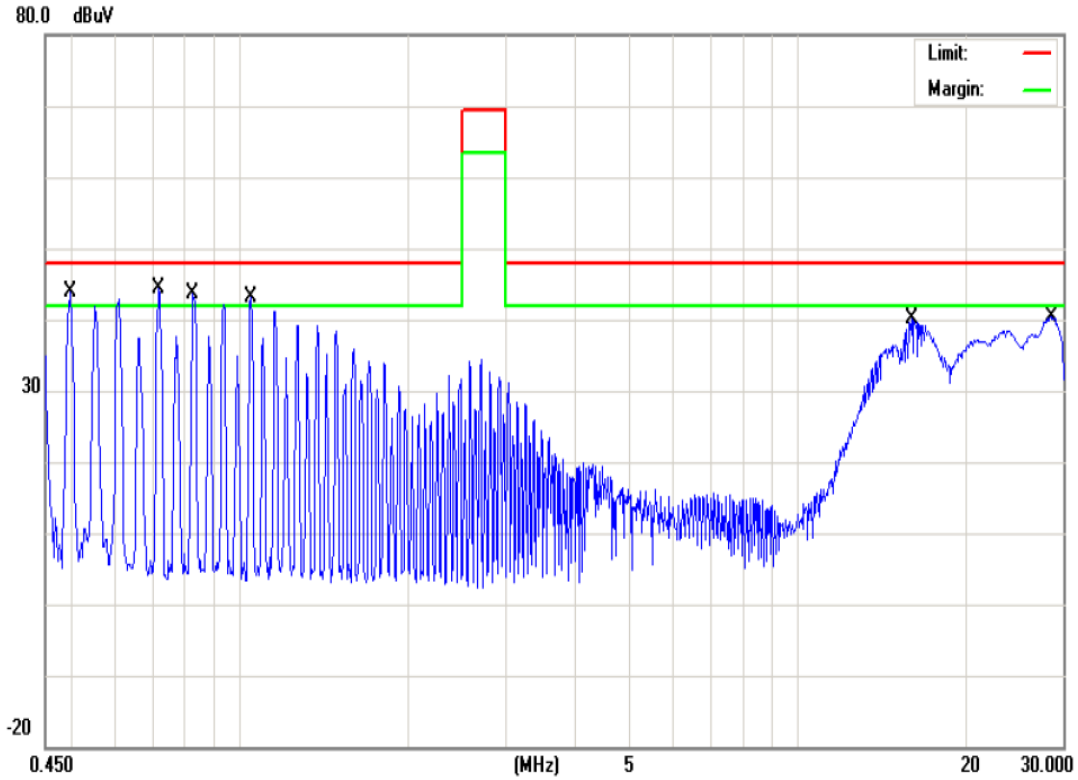
Mode: on

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	!	0.4980	44.00	0.00	44.00	48.00	-4.00	QP	
2	*	0.7180	45.40	0.00	45.40	48.00	-2.60	QP	
3	!	0.8300	44.65	0.00	44.65	48.00	-3.35	QP	
4	!	1.0540	43.79	0.00	43.79	48.00	-4.21	QP	
5		1.1660	41.73	0.00	41.73	48.00	-6.27	QP	
6		15.9700	38.56	0.00	38.56	48.00	-9.44	QP	

Conducted Emission Measurement

File :GUANGDONG GANGFENG Data :#84 Date: 2011/07/22



Site 843 Shielded Room Phase: N Temperature: 26

Limit: FCC Part 18 Conduction Power: AC 120V/60Hz Humidity: 60 %

EUT: Electronic Ballast

M/N: 120-2G/25EC

Mode: on

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	!	0.4980	43.15	0.00	43.15	48.00	-4.85	QP	
2	*	0.7180	43.72	0.00	43.72	48.00	-4.28	QP	
3	!	0.8300	42.90	0.00	42.90	48.00	-5.10	QP	
4		1.0540	41.96	0.00	41.96	48.00	-6.04	QP	
5		16.0860	37.99	0.00	37.99	48.00	-10.01	QP	
6		28.6820	38.75	0.00	38.75	48.00	-9.25	QP	