FCC PART 15B

TEST REPORT

For

BAREBONES SYSTEMS, LLC.

1215 East Wilmington Avenue-Ste. 140 Salt Lake City, UT 84106

Tested Model: LIV-264
Multiple Model: LIV-265

Report Type:	**Product Type:**
Original Report	EDISON PENDANT LIGHT

Report Number:	RDG200527030-00
Report Date:	2020-06-06
Reviewed By:	Jerry Zhang EMC Manager Jerry Zhang
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:	EDISON PENDANT LIGHT/ EDISON STRINGT LIGHT
EUT Model:	LIV-264
Multiple Model:	LIV265
Rated Input Voltage:	5Vac from adapter
The Highest Operating Frequency:	<108 MHz
Serial Number:	200527030
EUT Received Date:	2020/5/27
EUT Received Status:	Good

Note: The series product, models *LIV-264, LIV265*are electrically identical, we selected *LIV-264* for fully testing, the details of the differences between them were explained in the attached declaration letter.

Objective

This report is prepared on behalf of ***BAREBONES SYSTEMS,LLC.*** in accordance with Part 2, Part J, and Part 15, Subpart A and B of the Federal Communications Commission's rules..

The objective is to determine the compliance of EUT with:
FCC Part 15B Class B.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

Measurement Uncertainty

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.55 dB,200M~1GHz: 5.92 dB,1G~6GHz: 4.98 dB, 6G~18GHz: 5.89 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Temperature	±1℃
Humidity	±5%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier : CN0022.

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "△ ". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

This report cannot be reproduced except in full, without prior written approval of the Company.

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk "★ ".

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was test in On mode.

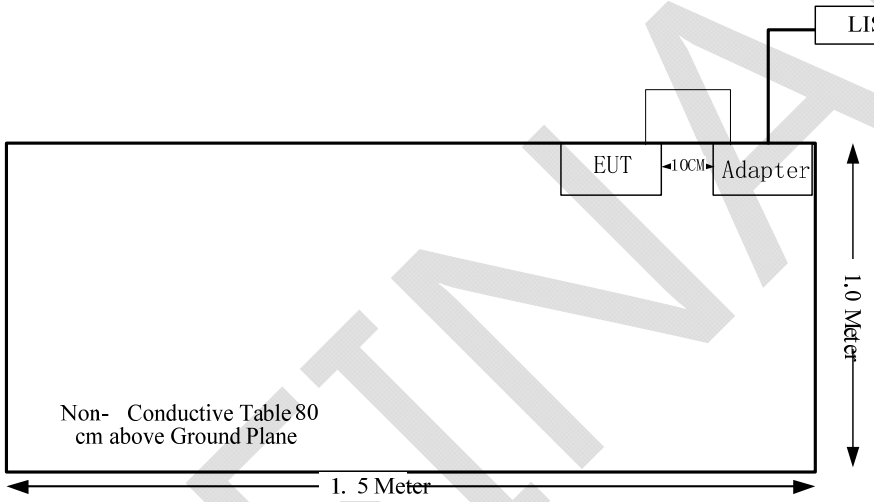
Equipment Modifications

No modification was made to the EUT.

EUT Exercise Software

No EUT software was used for testing.

Block Diagram of Test Setup



Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Dongang	Adapter	N/A	N/A

Support Cable List and Details

Cable Description	Shielding Cable	Ferrite Core	Length (m)	From Port	To
USB Cable	No	No	1	Adapter	EUT

Test Equipment List

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted emission					
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-01	2019-09-05	2020-09-05
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
R&S	LISN	ENV 216	101614	2019-09-12	2020-09-12
R&S	EMI Test Receiver	ESCI	101121	2020-05-09	2021-05-09
Radiated emissions below 1GHz					
R&S	EMI Test Receiver	ESCI	100224	2019-09-12	2020-09-12
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Sunol Sciences	Antenna	JB3	A060611-2	2017-08-25	2020-08-25
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2019-09-05	2020-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-02	2019-09-05	2020-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0530-01	2019-09-24	2020-09-24
Sonoma	Amplifier	310N	185914	2019-10-13	2020-10-13

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Environmental Conditions

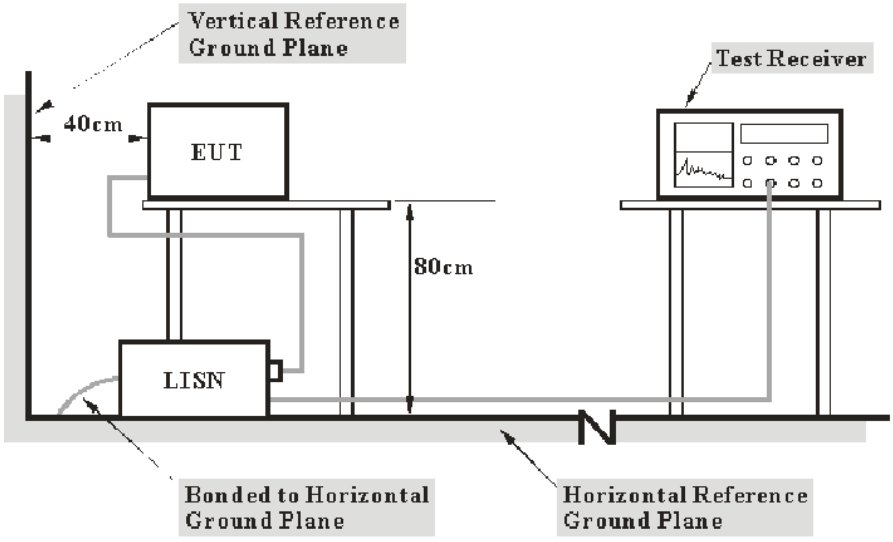
Temperature:	25.1~26.6 °C
Relative Humidity:	56~67%
ATM Pressure:	100.4~100.5kPa
Tester:	Jackson Zhang, Barry Yang
Test Date:	2020.05.29~2020.06.01

SUMMARY OF TEST RESULTS

SN	Rule and Clause	Description of Test	Test Result
1	FCC §15.107	Conducted emissions	Compliance
2	FCC §15.109	Radiated emissions	Compliance

1 - CONDUCTED EMISSIONS

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 per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15 B Class B limits.

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

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

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

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

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

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result (QuasiPeak or Average) = Meter Reading + Corr.

Note:
Corr. = Cable loss + Factor of coupling device

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

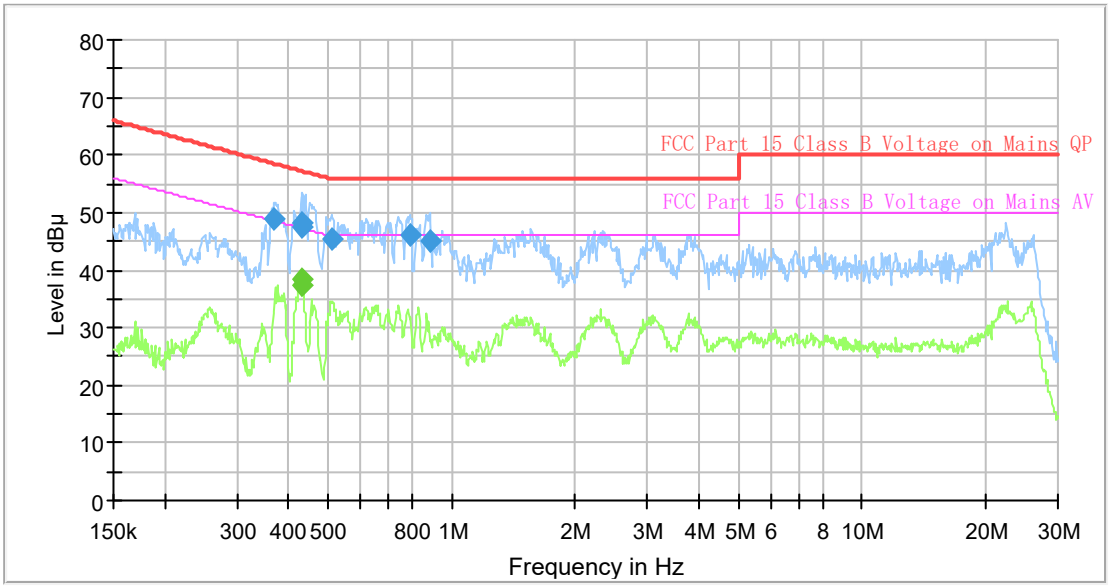
Margin = Limit – Result

Note: Except for the recorded frequency points (no more than 6), the remaining frequency points have a margin more than 10dB.

Test Data

Please refer to following table and plots:

Model Number:	LIV-264
Port:	L
Test Mode:	On
Power Source:	AC 120V/60Hz
Note:	

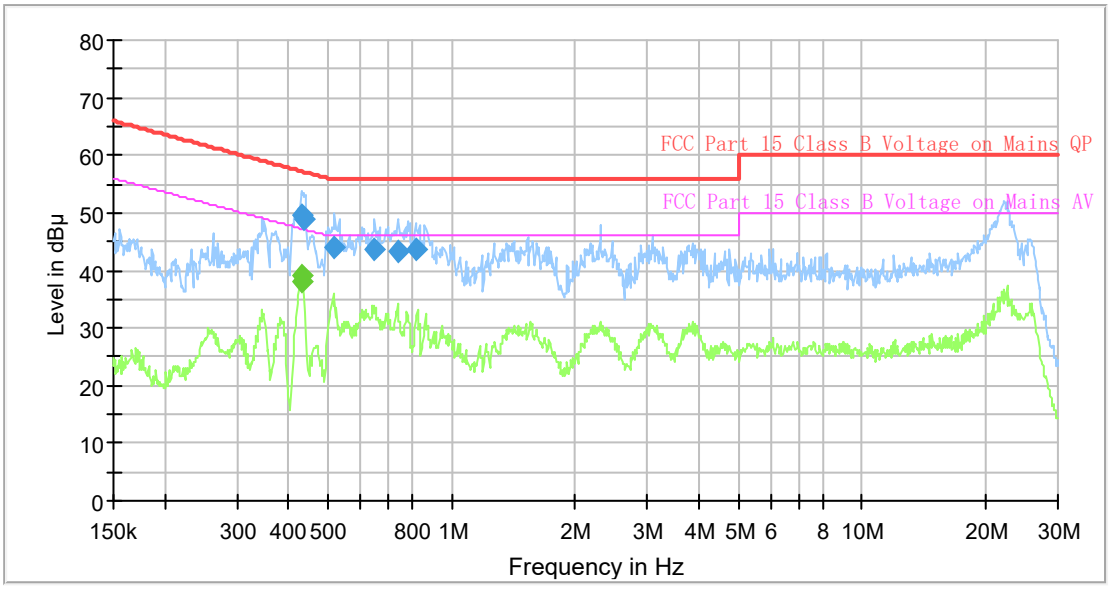


Final_Result

Frequency (MHz)	QuasiPeak (dB µ V)	Average (dB µ V)	Limit (dB µ	Margin (dB)	Bandwidth (kHz)	Line	Filter
0.369955	48.85	---	58.50	9.65	9.000	L1	ON
0.429665	---	38.29	47.26	8.97	9.000	L1	ON
0.429665	47.62	---	57.26	9.64	9.000	L1	ON
0.433973	---	37.54	47.18	9.64	9.000	L1	ON
0.433973	48.33	---	57.18	8.85	9.000	L1	ON
0.509069	45.52	---	56.00	10.48	9.000	L1	ON
0.789569	45.95	---	56.00	10.05	9.000	L1	ON
0.885542	44.99	---	56.00	11.01	9.000	L1	ON

Note: Except for the recorded frequency points(no more than 6), the remaining frequency points are all more than 10 dB.

Model Number:	LIV-264
Port:	N
Test Mode:	On
Power Source:	AC 120V/60Hz
Note:	



Final_Result

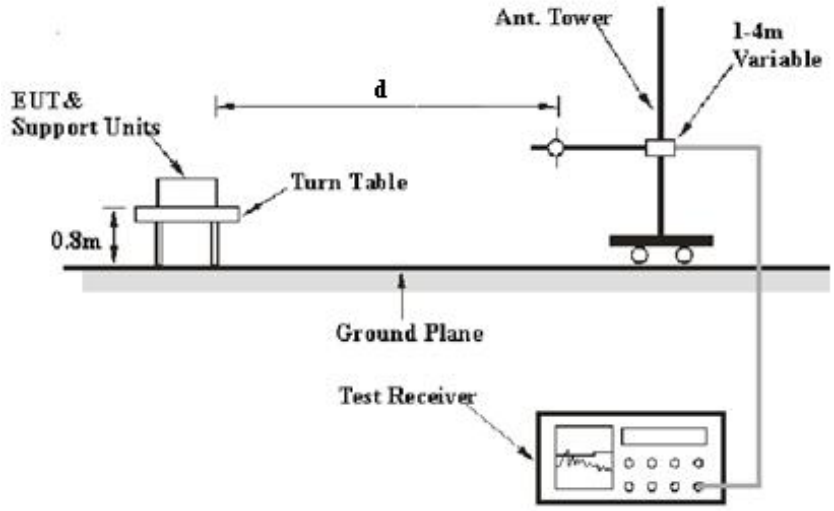
Frequency (MHz)	QuasiPeak (dB µ V)	Average (dB µ V)	Limit (dB µ	Margin (dB)	Bandwidth (kHz)	Line	Filter
0.429665	49.51	---	57.26	7.75	9.000	N	ON
0.431814	---	39.07	47.22	8.15	9.000	N	ON
0.433973	---	38.20	47.18	8.98	9.000	N	ON
0.436143	49.03	---	57.13	8.10	9.000	N	ON
0.519327	43.99	---	56.00	12.01	9.000	N	ON
0.650000	43.66	---	56.00	12.34	9.000	N	ON
0.739999	43.44	---	56.00	12.56	9.000	N	ON
0.817621	43.67	---	56.00	12.33	9.000	N	ON

Note: Except for the recorded frequency points(no more than 6), the remaining frequency points are all more than 10 dB.

2 – RADIATED EMISSIONS

EUT Setup

Below 1GHz:



The radiated emission tests were performed at the 3 meters distance, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 1GHz.

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

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP

Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

If the maximized peak measured value complies with under the QP limit more than 6dB, then it is unnecessary to perform QP measurement.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Meter Reading+ Corrected

Note:
Corrected = Antenna Factor + Cable Loss - Amplifier Gain
or
Corrected = Antenna Factor + Cable Loss + Insertion loss of attenuator - Amplifier Gain

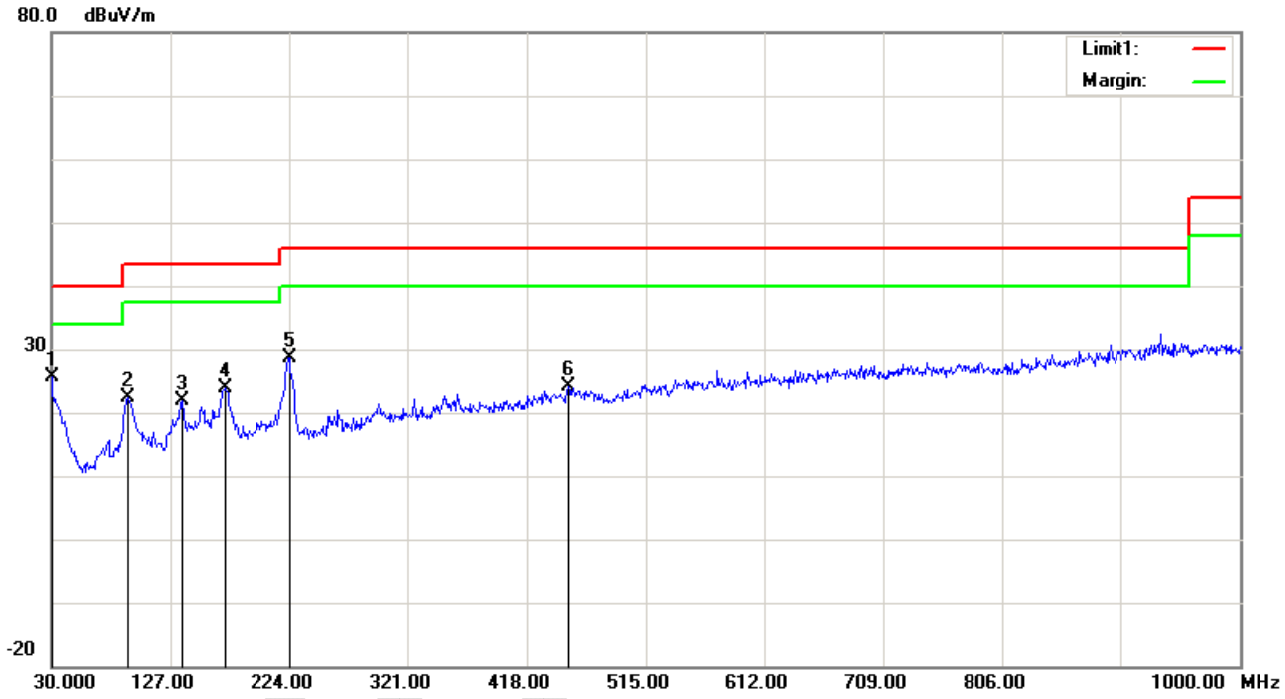
The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Result

Test Data

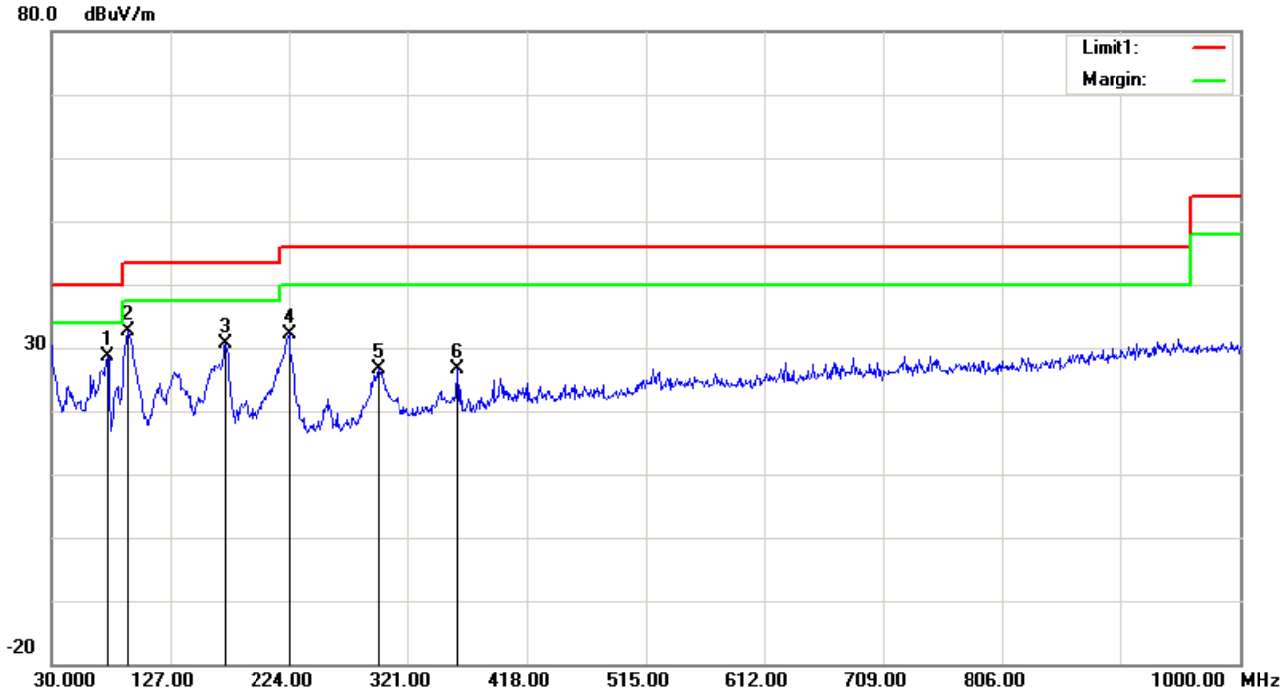
Please refer to following table and plots:

Condition:	FCC Part 15B Class B	**Polarization:**	Horizontal
EUT:	EDISON PENDANT LIGHT/ EDISON STRINGT LIGHT	**Power:**	DC 5V
Model:	LIV-264	**Distance:**	3m
Test Mode:	On		
Note:			



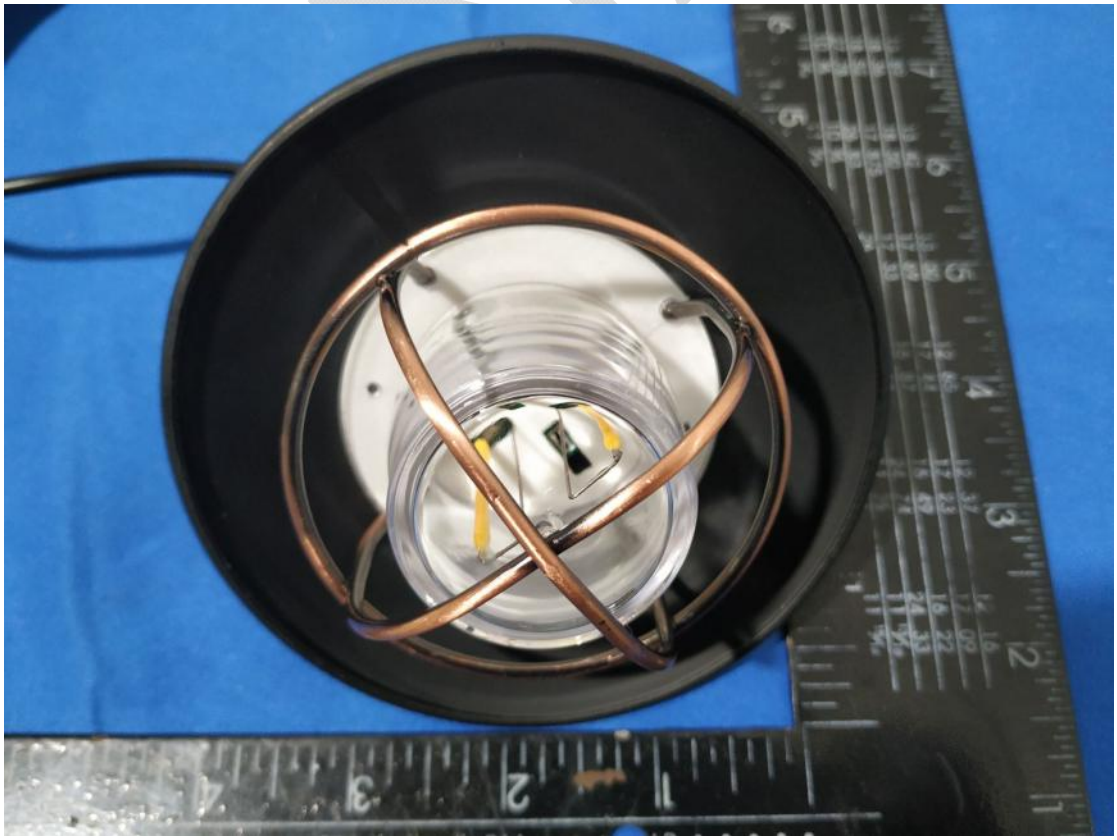
No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	30.0000	29.92	peak	-4.33	25.59	40.00	14.41
2	93.0500	37.41	peak	-14.99	22.42	43.50	21.08
3	136.7000	31.20	peak	-9.41	21.79	43.50	21.71
4	171.6200	33.44	peak	-9.58	23.86	43.50	19.64
5	224.0000	39.67	peak	-10.93	28.74	46.00	17.26
6	451.9500	28.42	peak	-4.27	24.15	46.00	21.85

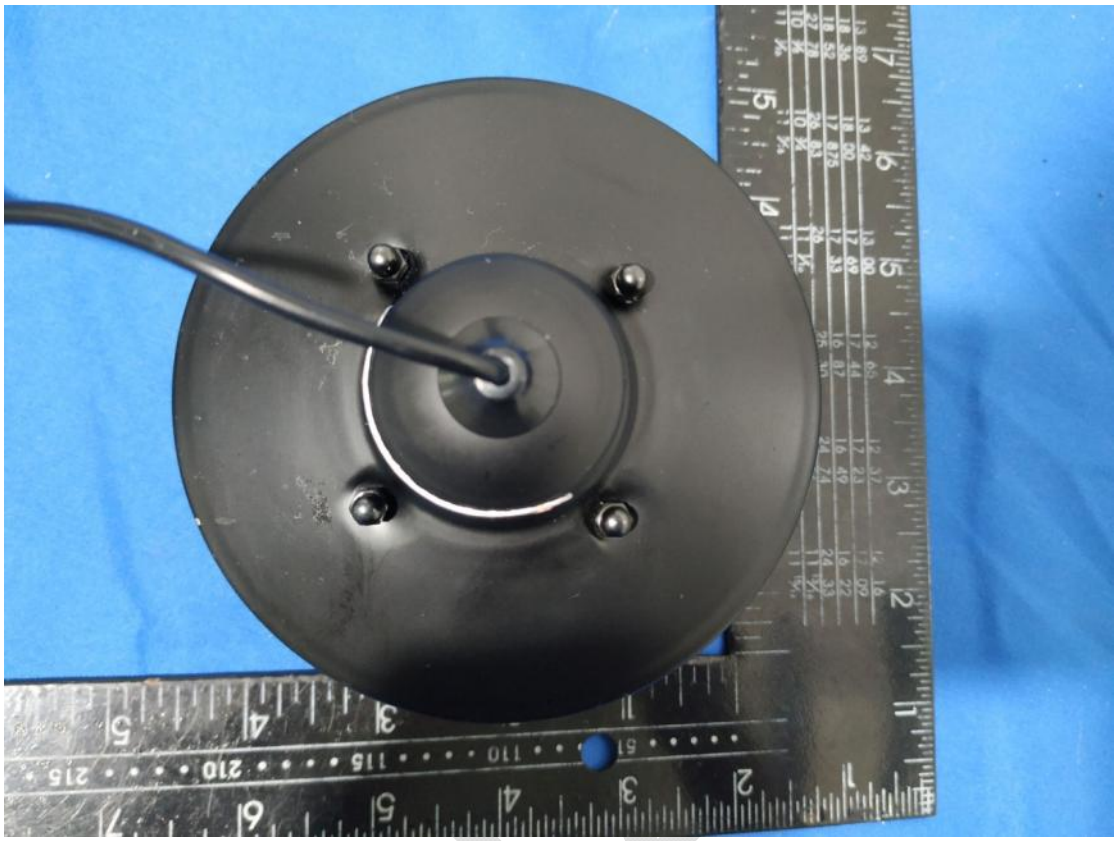
Condition:	FCC Part 15B Class B	**Polarization:**	Vertical
EUT:	EDISON PENDANT LIGHT/ EDISON STRINGT LIGHT	**Power:**	DC 5V
Model:	LIV-264	**Distance:**	3m
Test Mode:	On		
Note:			

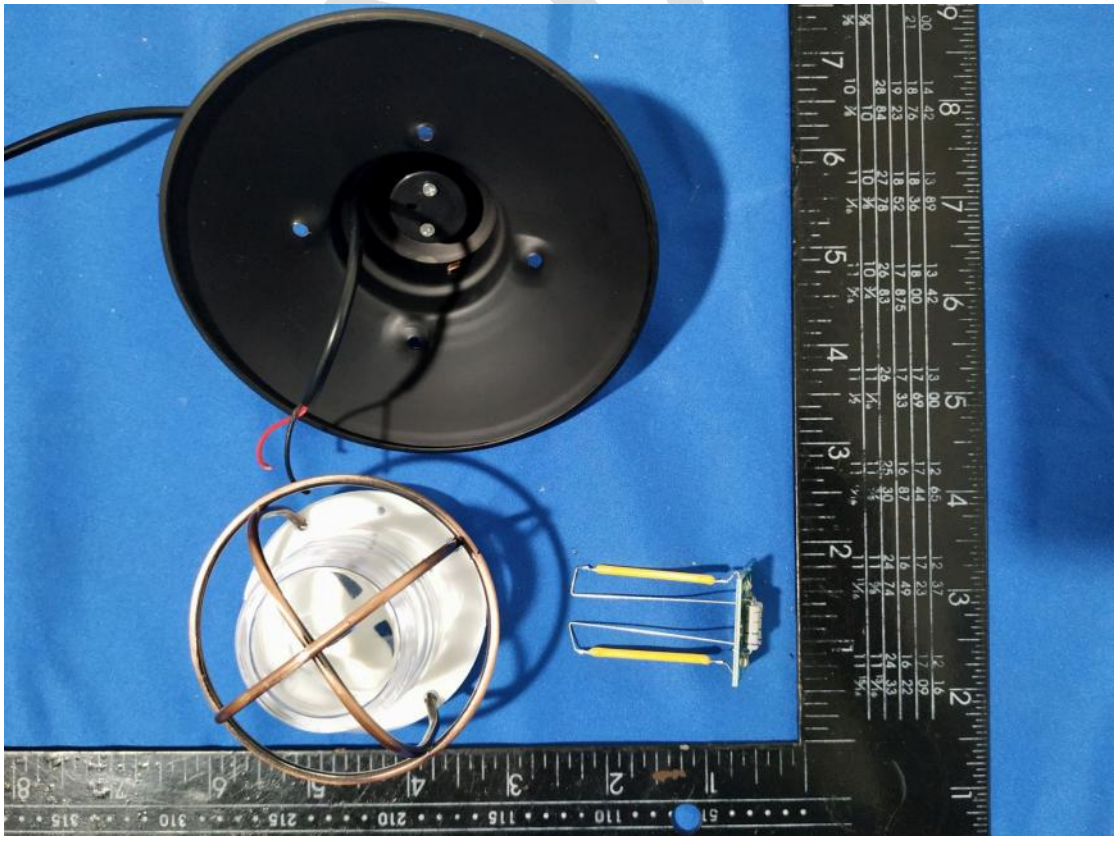


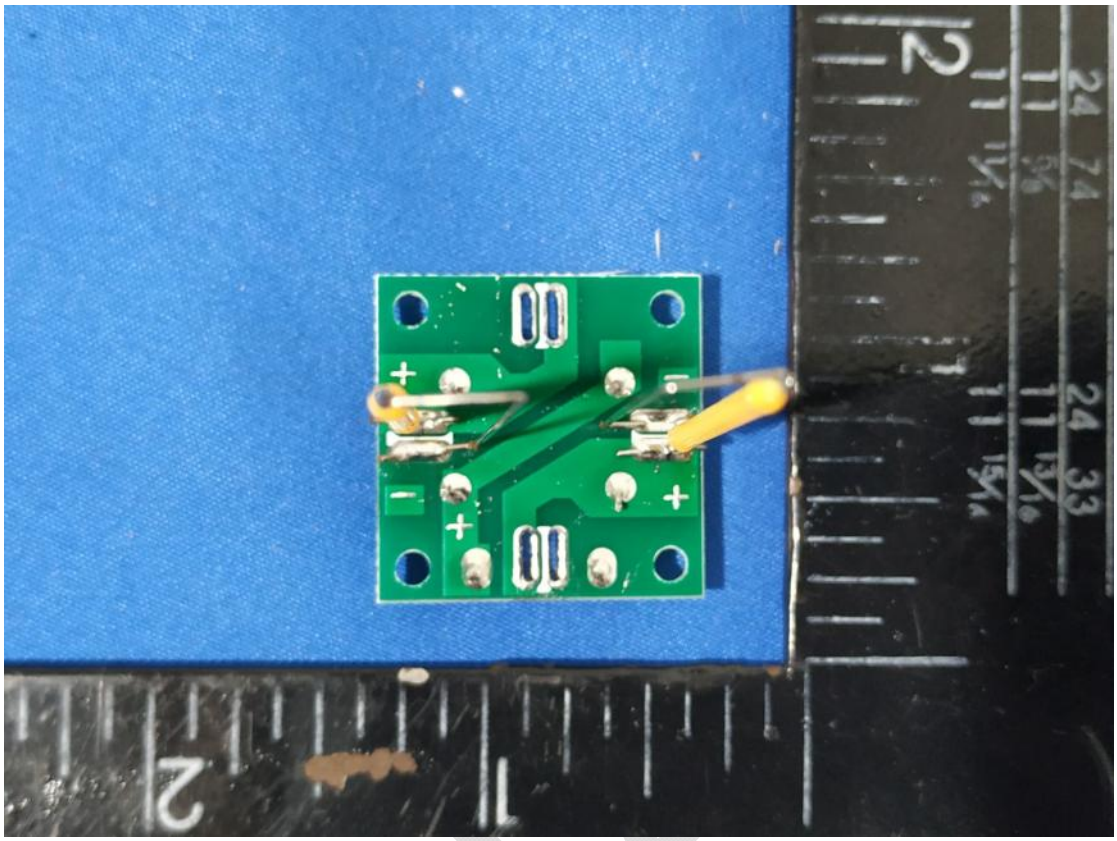
No.	Frequency (MHz)	Reading (dBµV)	Detector	Corrected (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
1	75.5900	44.99	peak	-16.25	28.74	40.00	11.26
2	92.0800	47.70	peak	-15.08	32.62	43.50	10.88
3	171.6200	40.11	peak	-9.58	30.53	43.50	12.97
4	224.0000	42.99	peak	-10.93	32.06	46.00	13.94
5	296.7500	34.30	peak	-7.69	26.61	46.00	19.39
6	361.7400	32.67	peak	-6.05	26.62	46.00	19.38

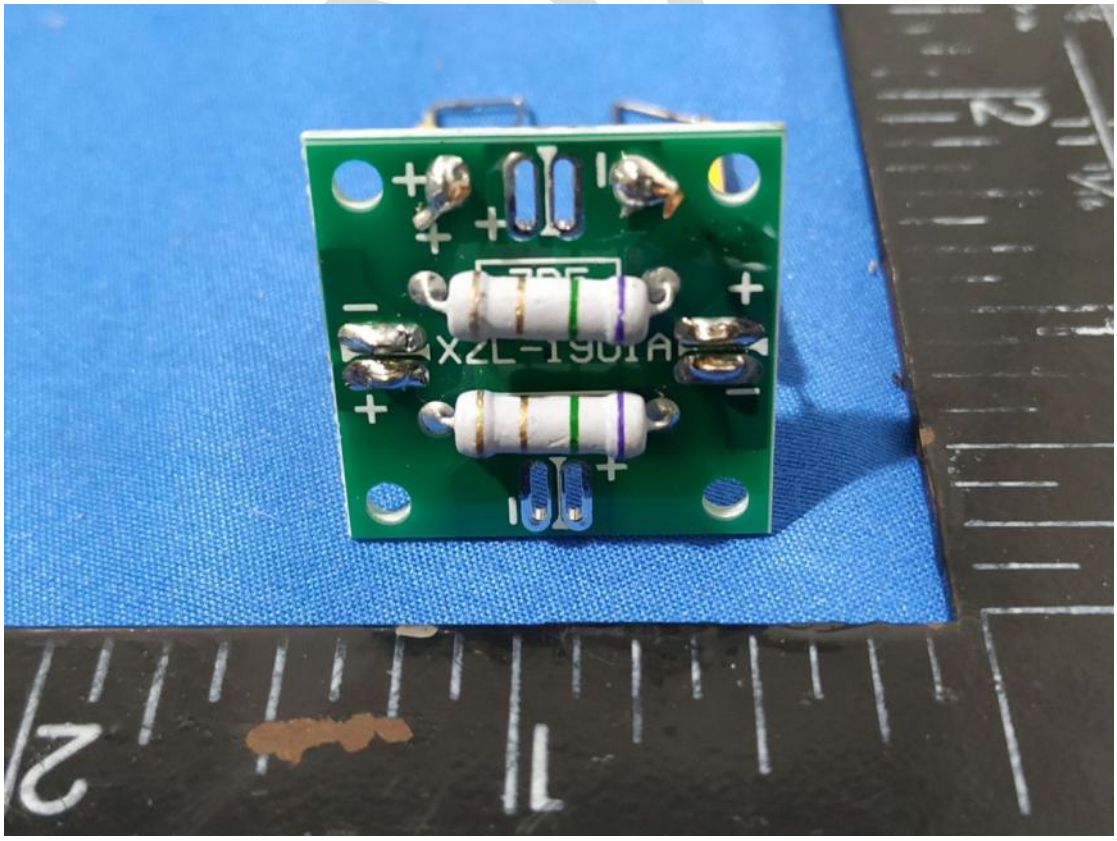
EXHIBIT A – EUT PHOTOGRAPHS

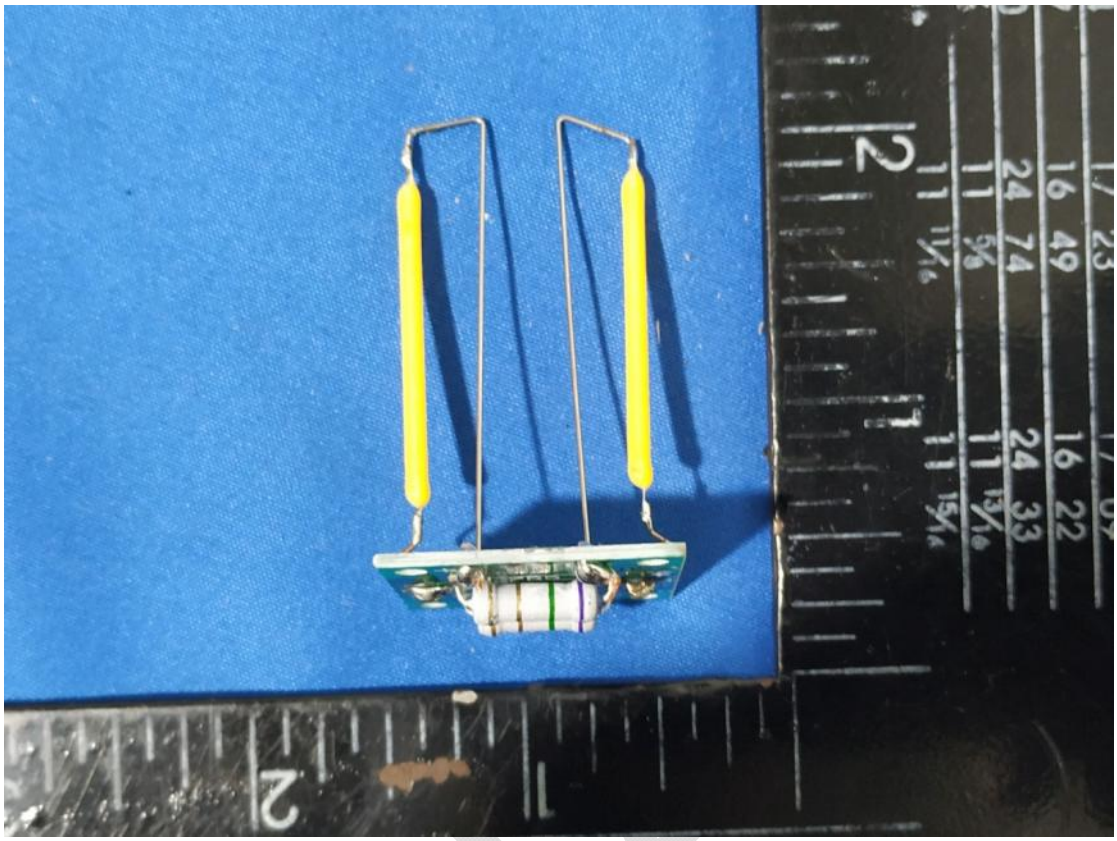









XZL-190TA



Port

EXHIBIT B – TEST SETUP PHOTOGRAPHS

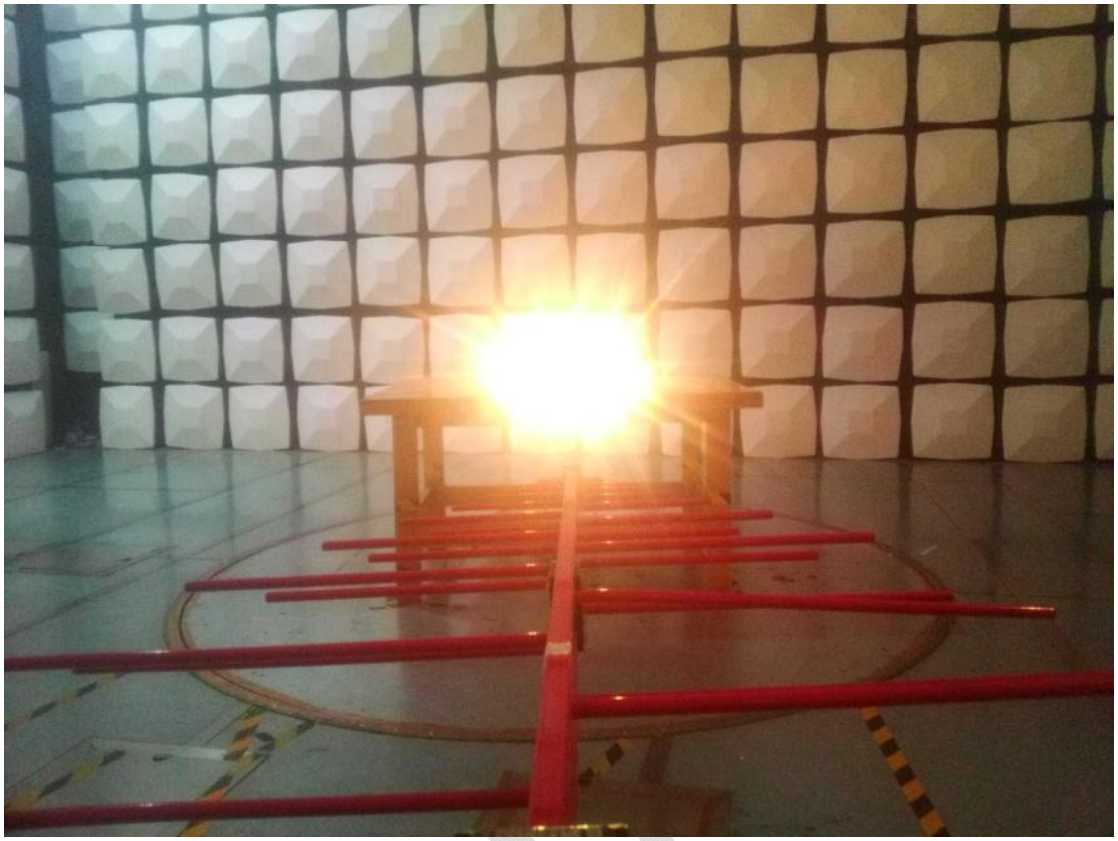
CE

CE front View

CE side View

RE

RE Below 1G front View



RE Below 1G rear View

DECLARATION LETTER

To Whom It May Concern,

We, BAREBONES SYSTEMS,LLC. , hereby declare that we have a product named as EDISON PENDANT LIGHT (Model number: LIV-264) was tested by BACL.

Meanwhile, we would like to list a series models (LIV265) product named as EDISON STRINGT LIGHT on reports and certificate.

All of the models are identical structure and material, just different product names and model names.

We confirm that all information above is true, and we'll be responsible for all the consequences. Please contact me if you have any question.

Signature: Beck

Printed Name:

Title: QA/QC

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