TECHNICAL REPORT

Report No.:	FCC 1802058
File reference No:	2018-02-26
Applicant:	Barebones Living
Product:	Beacon
Brand Name:	Barebones
Model No.:	LIV-295/296/297
Test Standards:	FCC Part 15 Subpart B: 2016
Test result:	It is herewith confirmed and found to comply with the requirements set up by ANSI C63.4&FCC Part 15 regulations for the evaluation of electromagnetic compatibility

Approved By

Terry Tong

Manager

Dated: February 26, 2018

Results appearing herein relate only to the sample tested
The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TESTING LABORATORIES.

Room 512-519, 5/F., East Tower,Building 4, Anhua Industrial Zone, Futian District, Shenzhen, Guangdong China

Tel (755) 83448688 Fax (755) 83442996 Email: info@timeway-lab.com

Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 899988.

IC- Registration No.: IC5205A-01

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration IC No.: 5205A-01.

VCCI- Registration No.: R-3015 and C-3332

The EMC Laboratory has been registered and fully described in a report filed with the (VCCI) Voluntary Control Council for Interference. The acceptance letter from the VCCI is maintained in our files. Registration IC No.: R-3015 and C-3332

Content

1.0 General Details

1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TESTING LABORATORIES.

Address: 128 National road 104, Aojiang Electromechanical Industry Zone,Pingyang, Wenzhou, Zhejiang, China.

Telephone: (755) 83448688

Fax: (755) 83442996

1.2 Applicant Details

Applicant: Barebones Living

Address: 1215 East Wilmington Avenue,Suite 140,Salt Lake City,Utah,USA

Telephone: --

Fax: --

1.3 Description of EUT

Product: Beacon

Manufacturer: Ningbo Hisheen Electrical Co., Ltd

Address: Xidian Industry Area, Ninghai, Ningbo

Brand Name: Barebones

Model Number: LIV-295/296/297

Additional Model Number: --

Rating: --

Remark: --

1.4 Submitted Sample

1 Sample

1.5 Test Duration

Date of Receipt of Test Item: February 24, 2018

Date of Test: February 24, 2018 ~ February 26, 2018

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions Uncertainty =4.7dB

1.7 Test Engineer

The sample tested by

Print Name: Leo Lau

2.0 List of Measurement Equipment

2.1 Conducted Emission Test

Name	Model No.	Serial No.	Manufacturer	Calibration Date	Calibration Cycle
EMI Test Receiver	ESH3	860905/006	RS	2017.06.11	1Year
Spectrum Analyzer	ESA-L1500A	US37451154	HP	2017.06.11	1Year
PULSE LIMITER	ESH3-Z2	100281	RS	2017.06.11	1Year
LISN	ESH3-Z5	100294	RS	2017.06.11	1Year
LISN	ESH3-Z5	100253	RS	2017.06.11	1Year

2.2 Radiated electromagnetic disturbance test

Name	Model No.	Serial No.	Manufacturer	Calibration Date	Calibration Cycle
EMI Test Receiver	ESVD	100008	RS	2017.06.11	1Year
Coaxial Switch	MP59B	M70585	ANRITSU	N/A	N/A
Spectrum Analyzer	8595E	3441A00893	HP	2017.06.11	1Year
Amplifier	8447D	2727A05017	HP	2017.06.11	1Year
Bilog Antenna	VULB9163	9163/340	Schwarebeck	2017.06.11	1Year

2.3 Auxiliary Equipment

Name	Model No.	Serial No.	Manufacturer	Calibration Date	Calibration Cycle
LCD Display	--	--	LG	--	--

3.0 Technical Details

3.1 Investigations Requested

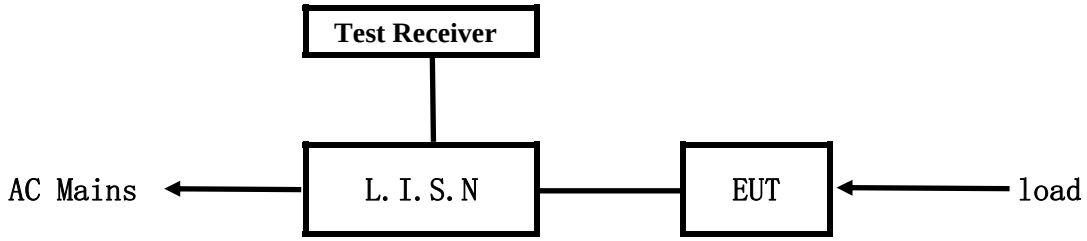
Perform Electromagnetic Interference [EMI] tests for FCC Requirement.

3.2 Test Standards

FCC Part 15 Subpart B: 2016

4.0 Conducted Power line Test

4.1 Schematics of the test



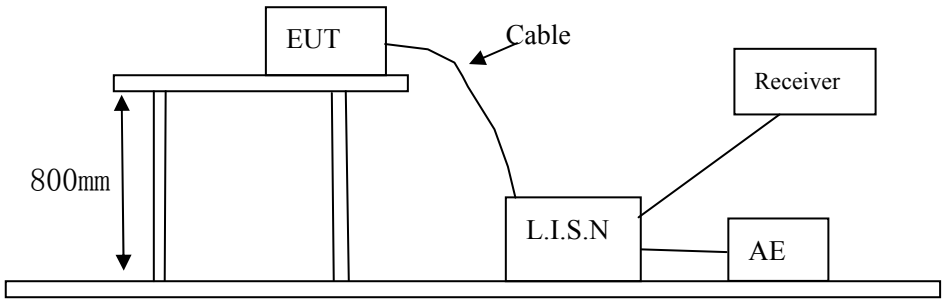
EUT: Equipment Under Test

4.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2014.The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2003.Cables and peripherals were moved to find the maximum emission levels for each frequency.

Test Voltage: 120V~, 60Hz

Block diagram of Test setup



4.3 Power line conducted Emission Limit

Frequency(MHz)	Class A Limits dB(μV)		Class B Limits dB(μV)	
	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
0.15 ～ 0.50	79.00	66.00	66.00～56.00*	56.00～46.00*
0.50 ～ 5.00	73.00	60.00	56.00	46.00
5.00 ～ 30.00	73.00	60.00	60.00	50.00

Notes: 1. *decreasing linearly with logarithm of frequency.

2. The tighter limit shall apply at the transition frequencies

4.4 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

A: Conducted Emission on Live Terminal (150kHz to 30MHz)

EUT Operating Environment

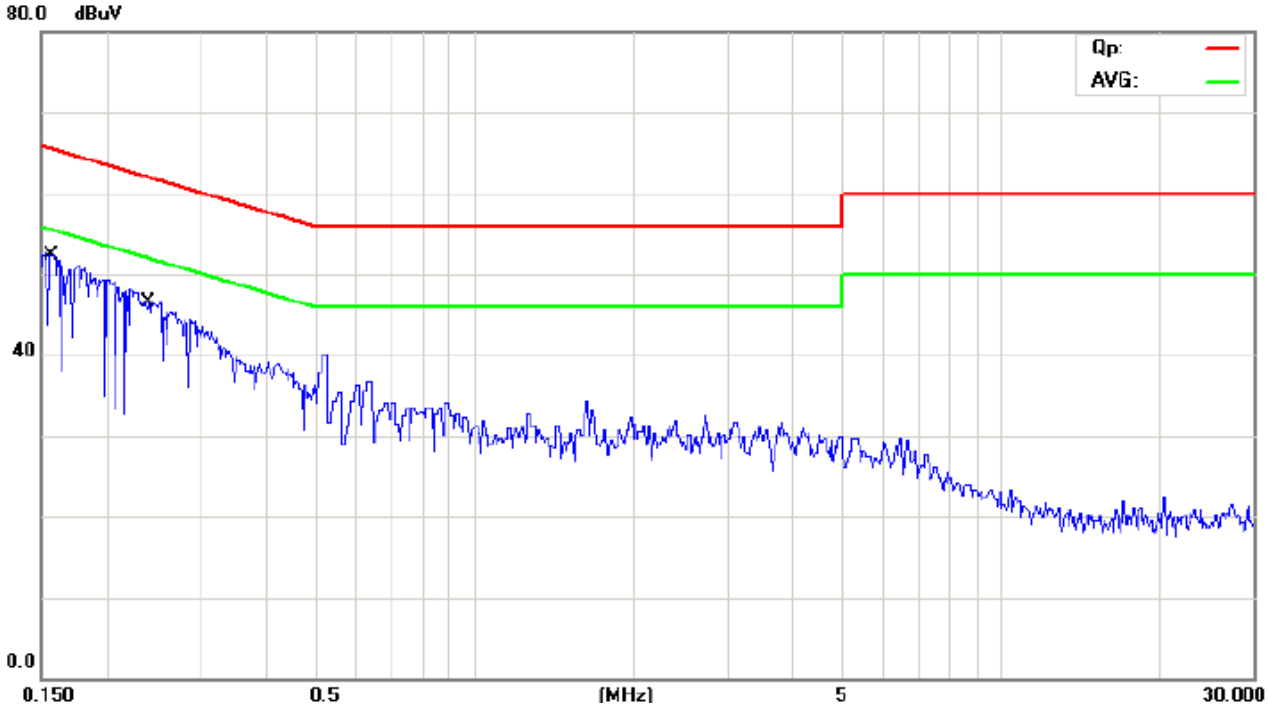
Temperature: 26℃ Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: ON

Equipment Level: Class B

Results: pass

Please refer to following diagram for individual



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1568	39.00	11.01	50.01	65.63	-15.62	QP	
2		0.1568	5.70	11.01	16.71	55.63	-38.92	AVG	
3		0.2397	31.10	11.09	42.19	62.11	-19.92	QP	
4		0.2397	3.40	11.09	14.49	52.11	-37.62	AVG	

B: **Conducted Emission on Neutral Terminal (150kHz to 30MHz)**

EUT Operating Environment

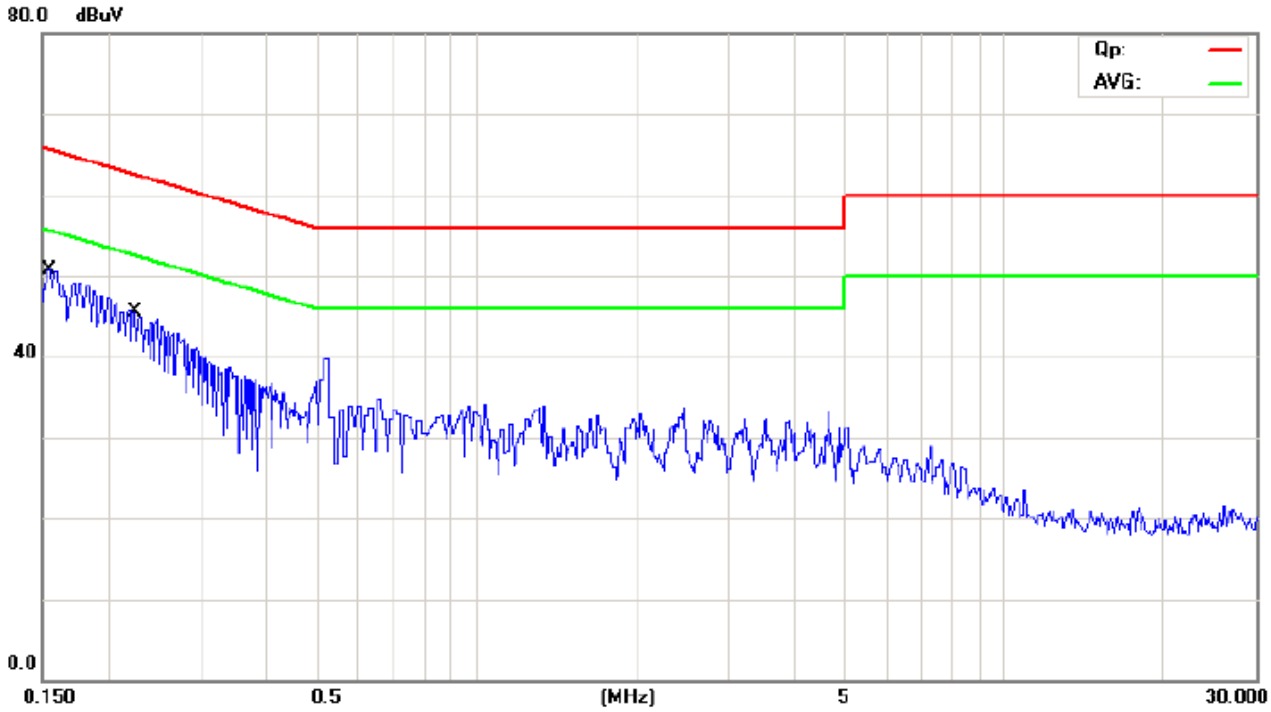
Temperature: 26℃ Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: ON

Equipment Level: Class B

Results: pass

Please refer to following diagram for individual



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1547	37.70	11.00	48.70	65.74	-17.04	QP	
2		0.1547	10.40	11.00	21.40	55.74	-34.34	AVG	
3		0.2261	31.00	11.08	42.08	62.59	-20.51	QP	
4		0.2261	7.80	11.08	18.88	52.59	-33.71	AVG	

5.0 Radiated Disturbance Test

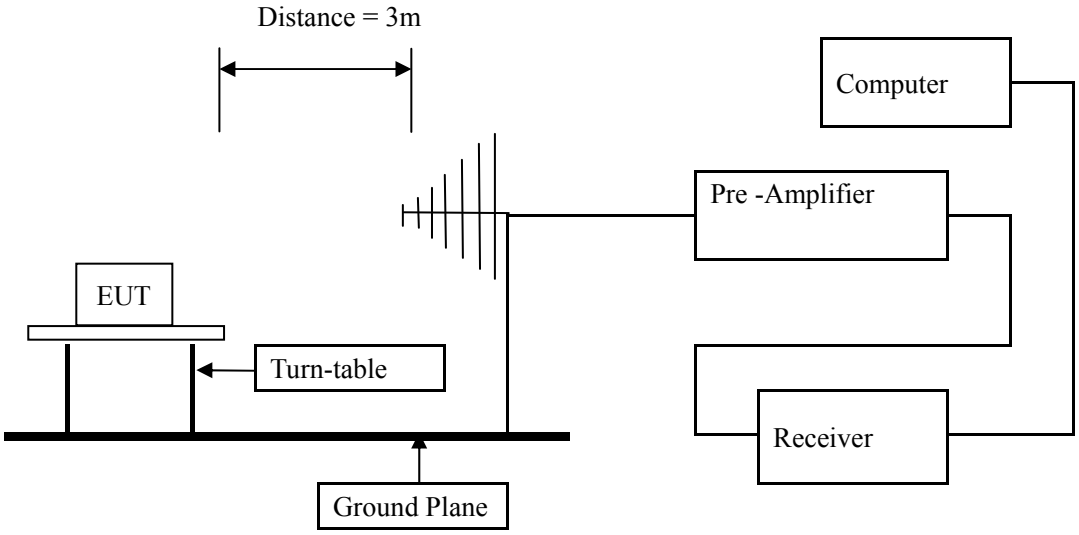
5.1 Schematics of the test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4 –2014, The frequency spectrum from 30MHz to 1GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak 0values with a resolution bandwidth of 120KHz. All readings are above 1GHz, peak values with a resolution bandwidth of 1MHz. Measurements were made at 3 meters.

Test Voltage: 120V~, 60Hz

Block diagram of Test setup



5.3 Radiated Emission Limit

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.00
88-216	3	43.50
216-960	3	46.00
Above 960	3	54.00

Note: The lower limit shall apply at the transition frequencies

5.4 Test result

The frequency spectrum from 30MHz to 1GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. All readings are above 1GHz, peak values with a resolution bandwidth of 1MHz. Measurements were made at 3 meters.

A: Radiated Disturbance (30MHz----1000MHz)

EUT Operating Environment

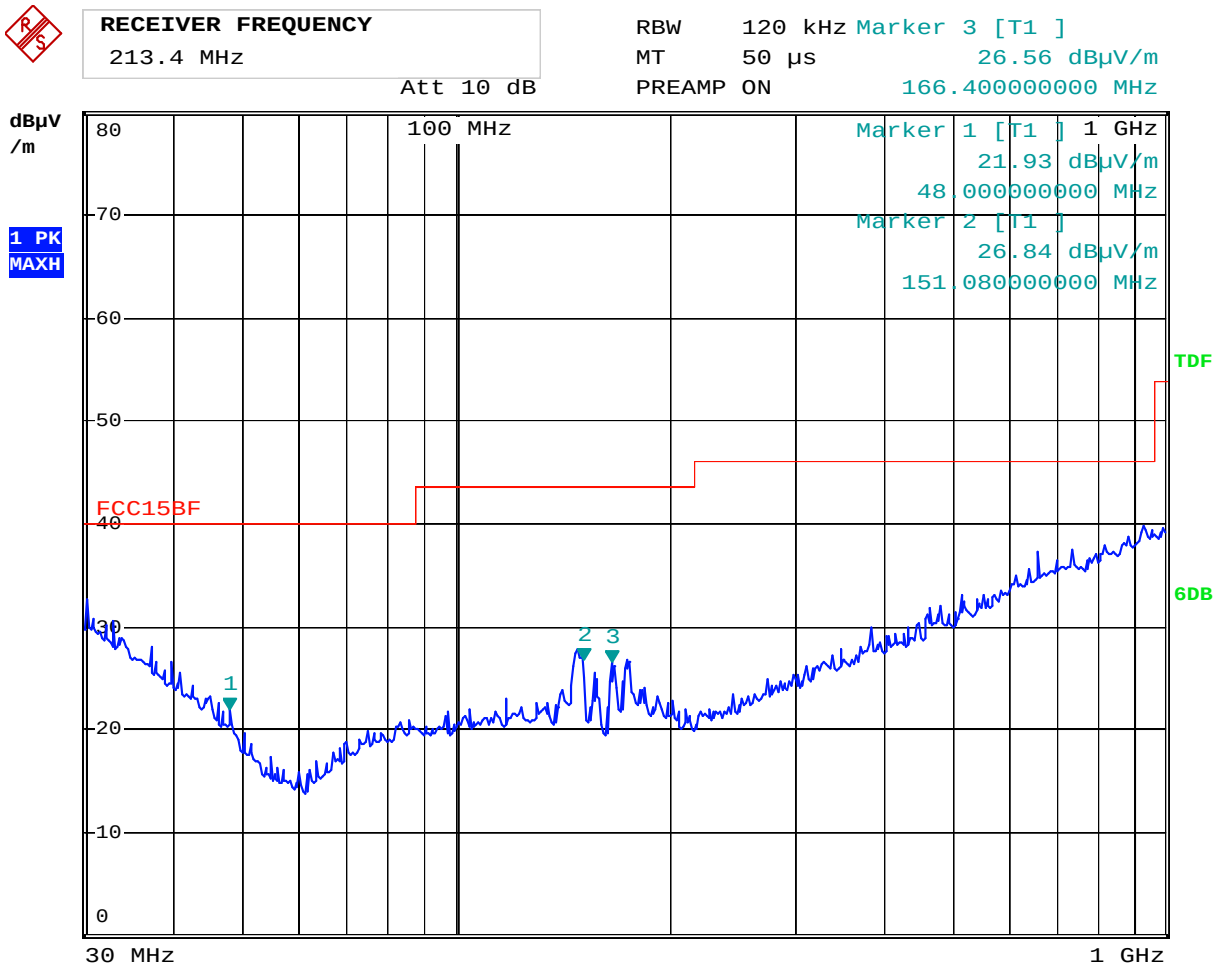
Temperature: 25℃ Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: ON

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



Date: 2.FEB.2016 09:37:52

Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
48.000	21.93	H	40.00
151.080	26.84	H	43.50
166.400	26.56	H	43.50

B: Radiated Disturbance (30MHz----1000MHz)

EUT Operating Environment

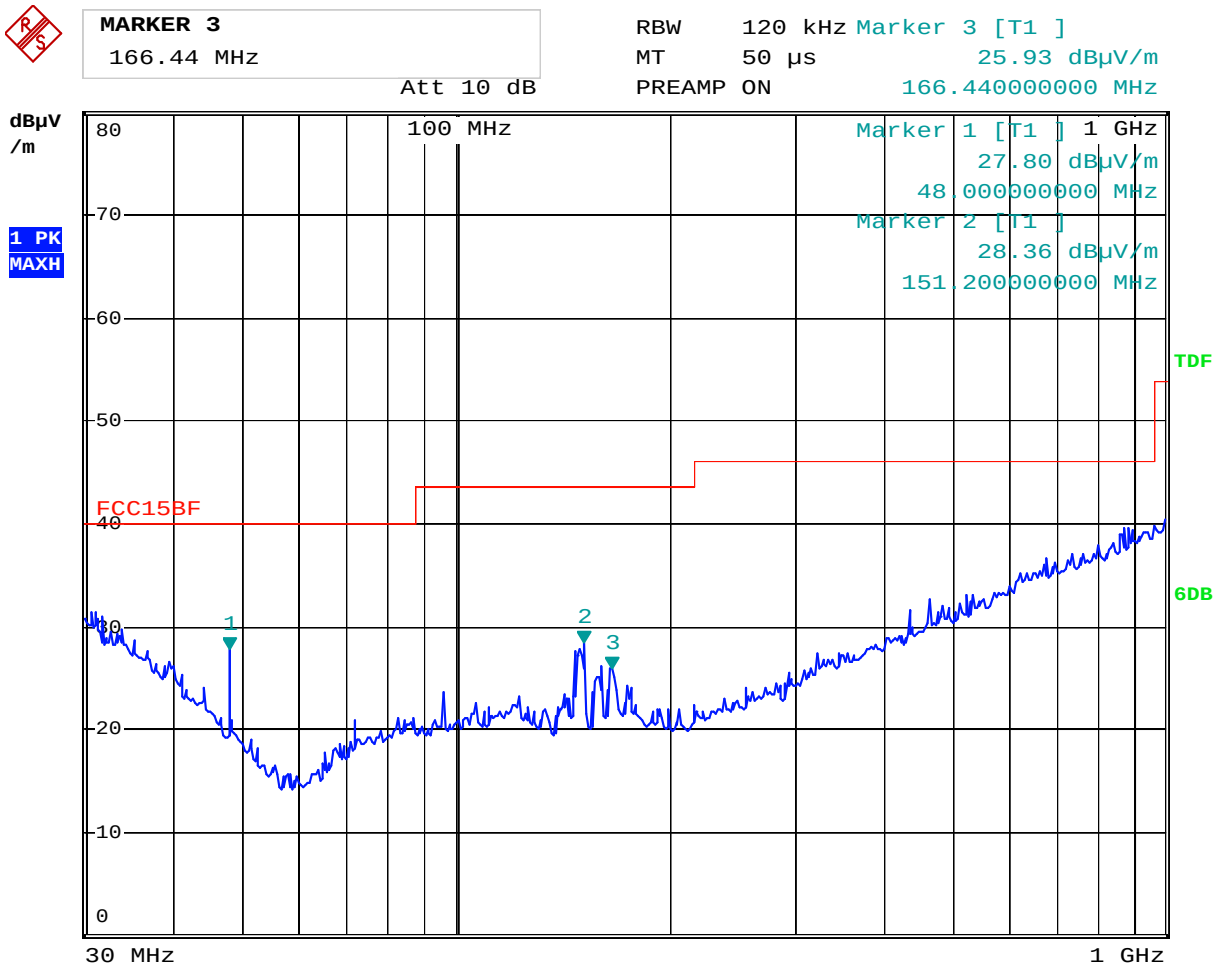
Temperature:25℃ Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: ON

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



Date: 2.FEB.2016 09:36:25

Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
48.000	27.80	V	40.00
151.200	28.36	V	43.50
166.440	25.93	V	43.50

6.0 FCC Label

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location: On the product body

7.0 Photo of testing

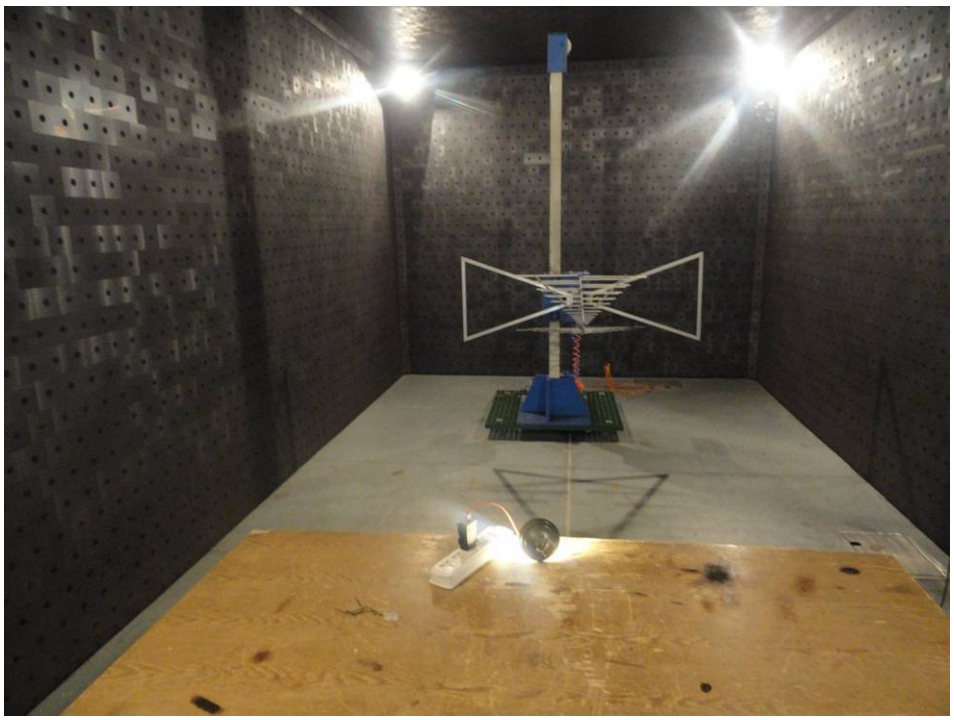
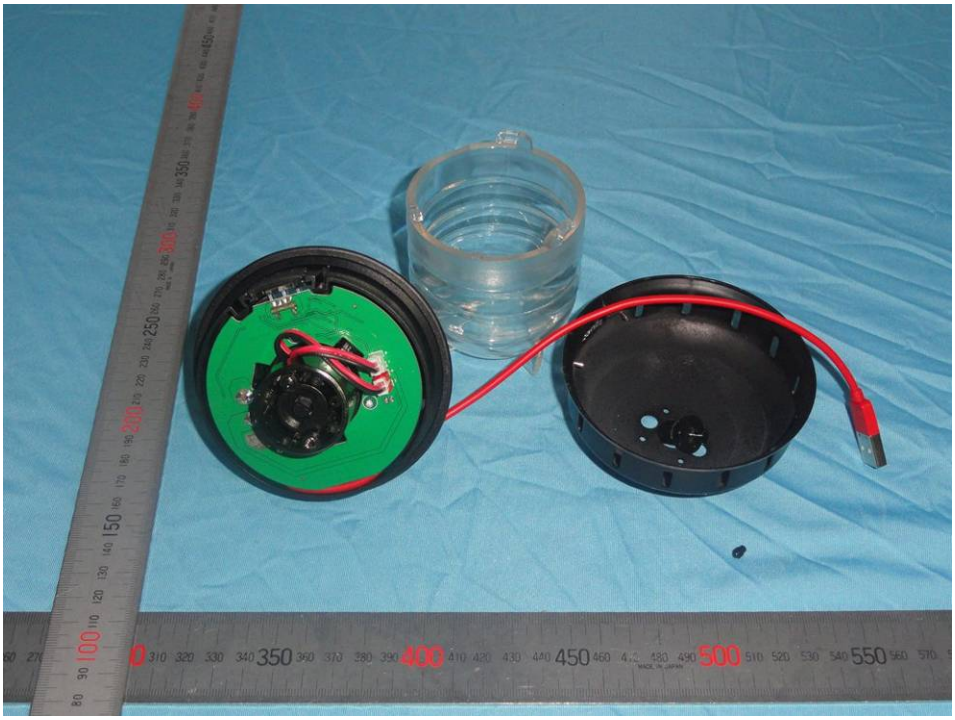
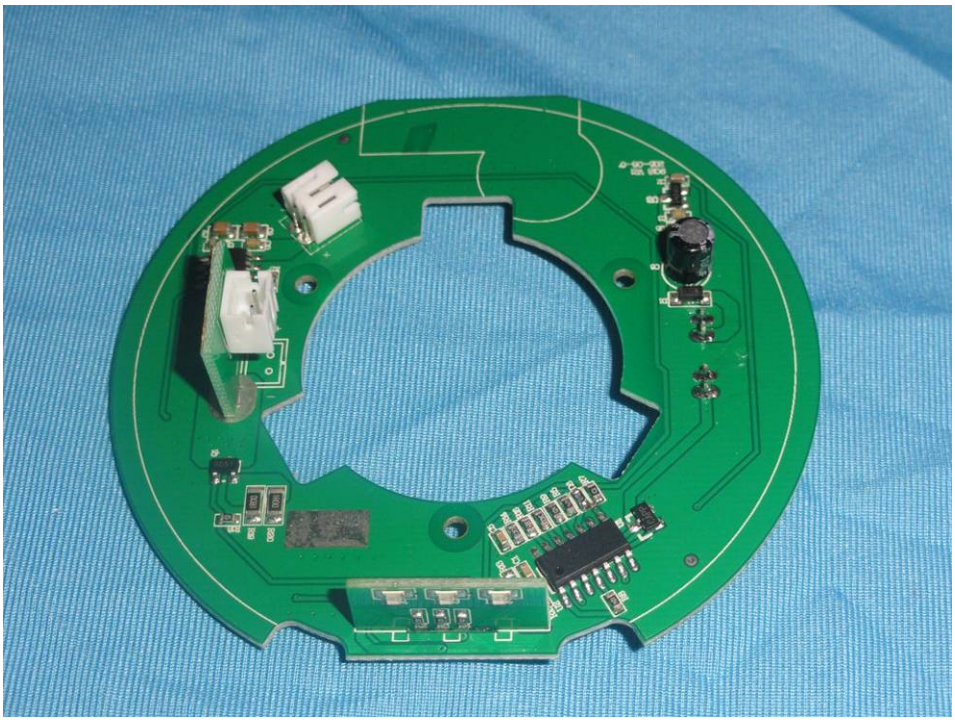
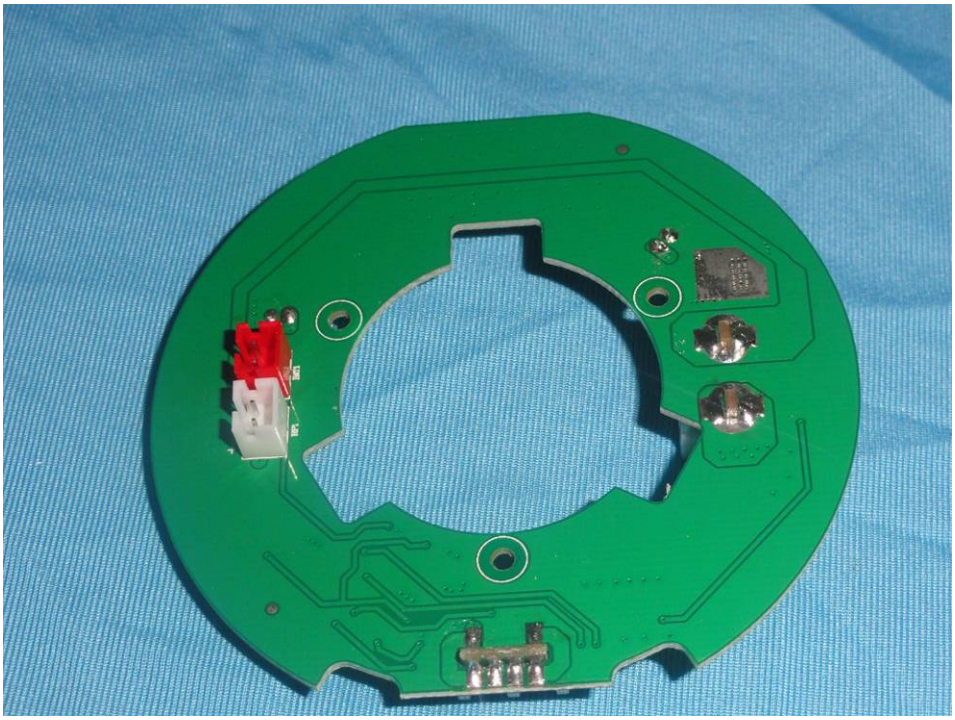


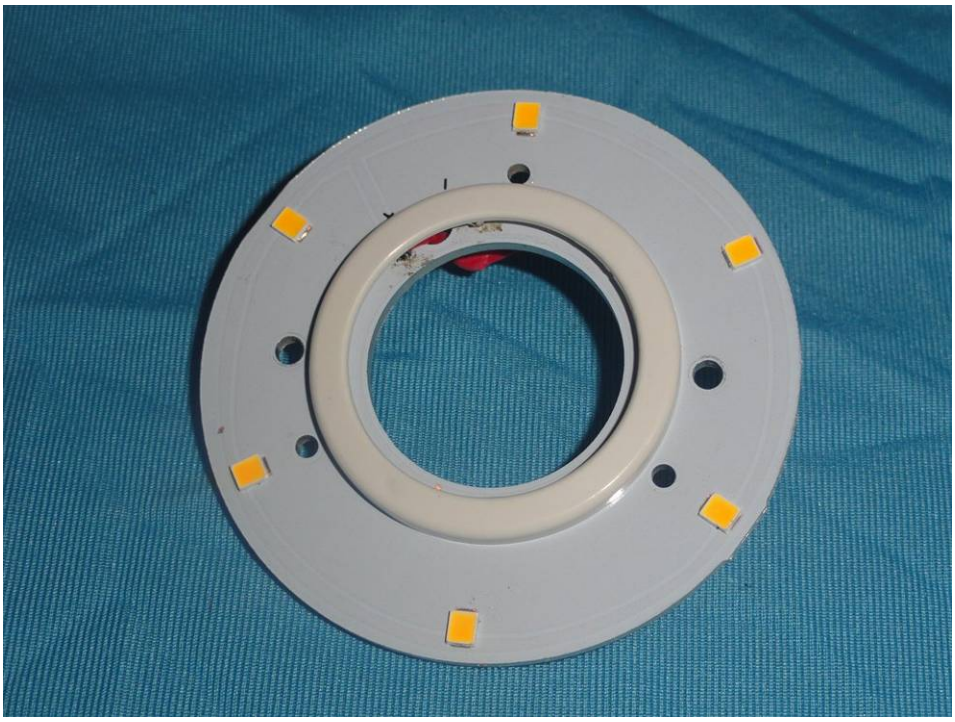
Photo for the EUT

Photo for the EUT









End of The Report