

TEST REPORT

Product Name : Foot Massager
Model Number : RF663
FCC ID : 2A6T5RF663

Prepared for : Lishui RiFeng Electric Appliance Co., Ltd
Address : No. 295, Longqing Road, Shuige Industrial Zone, Lishui City, Zhejiang Province

Prepared by : EMTEK (SHENZHEN) CO., LTD.
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Report Number : ENS2205090100W00301R
Date(s) of Tests : July 13, 2022 to August 07, 2022
Date of issue : August 07, 2022

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TEST REPORT DESCRIPTION

Applicant : Lishui RiFeng Electric Appliance Co., Ltd
Address : No. 295, Longqing Road, Shuige Industrial Zone, Lishui City, Zhejiang Province
Manufacturer : Lishui RiFeng Electric Appliance Co., Ltd
Address : No. 295, Longqing Road, Shuige Industrial Zone, Lishui City, Zhejiang Province
EUT : Foot Massager
Model Name : RF663
Trademark : N/A

Measurement Procedure Used:

FCC Rules and Regulations Part 15:2017 Subpart B
ANSI C63.4-2014

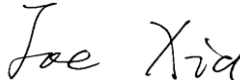
ICES-003: Information Technology Equipment (including Digital Apparatus) Issue 7(10-2020)

The device described above is tested by EMTEK (SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (SHENZHEN) CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment under Test) is technically compliant with the FCC requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK (SHENZHEN) CO., LTD.

Date of Test : July 13, 2022 to August 07, 2022

Prepared by : 
Una yu /Editor

Reviewer : 
Joe Xia/Supervisor

Approved & Authorized Signer : 
Lisa Wang/Manager



Modified Information

Version	Report No.	Revision Data	Summary
Ver.1.0	ENS2205090100W00301R	/	Original Version



1. SUMMARY OF TEST RESULTS

EMISSION		
Description of Test Item	Standard & Limits	Results
Conducted Disturbance at Mains Terminals	FCC Part 15, Subpart B- Section 15.107, Class B ANSI C63.4-2014	Pass
Radiated Disturbance	FCC Part 15, Subpart B- Section 15.109, Class B ANSI C63.4-2014	Pass
Note: N/A is an abbreviation for Not Applicable.		



2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : Foot Massager

Model Number : RF663

Serial number : 1#

Power supply : DC 24V from adapter

Adapter : Model: XH2400-2000
Input: AC 100-240V, 50/60Hz, 1.5A
Output: DC 24V, 2A

Applicant : Lishui RiFeng Electric Appliance Co., Ltd

Address : No. 295, Longqing Road, Shuige Industrial Zone, Lishui City, Zhejiang Province

Manufacturer : Lishui RiFeng Electric Appliance Co., Ltd

Address : No. 295, Longqing Road, Shuige Industrial Zone, Lishui City, Zhejiang Province

2.2. Description of Support Device

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/
/	/	/	/
/	/	/	/

Notes:

- 1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

2.3. Independent Operation Modes

- A. On
 - 1. Working
- B. Stand-By
- C. Off

2.4. Test Manner

Test Items	Test Voltage	Operation Modes	Worst case
Power Line Conducted Emission	AC 120V/60Hz	Mode A	Mode A.1
Radiated Emission (Up to 1GHz)	AC 120V/60Hz	Mode A	Mode A.1
Radiated Emission (Above 1GHz)	AC 120V/60Hz	Mode A	Mode A.1

2.5. Description of Test Facility

Site Description	
EMC Lab.	: Accredited by CNAS The Certificate Registration Number is L2291. The Laboratory has been assessed and proved to be in compliance with CNAS-CL01 (identical to ISO/IEC 17025:2017) Accredited by FCC Designation Number: CN1204 Test Firm Registration Number: 882943 Accredited by A2LA The Certificate Number is 4321.01. Accredited by Industry Canada The Conformity Assessment Body Identifier is CN0008
Name of Firm	: EMTEK (SHENZHEN) CO., LTD.
Site Location	: Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

2.6. Test Software

Item	Software
Conducted Emission	: EMTEK(Ver.CON-03A1)-Shenzhen
Radiated Emission	: EMTEK(Ver.RA-03A1)-Shenzhen

2.7. Measurement Uncertainty

Test Item	Uncertainty
Conducted Emission Uncertainty	: 3.16dB(9k~150kHz Conduction 2#) 2.90dB(150k-30MHz Conduction 2#)
Radiated Emission Uncertainty (3m Chamber)	: 3.78dB (30M~1GHz Polarize: H) 4.27dB (30M~1GHz Polarize: V) 4.46dB (1~6GHz)

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Power Line Conducted Emission Measurement

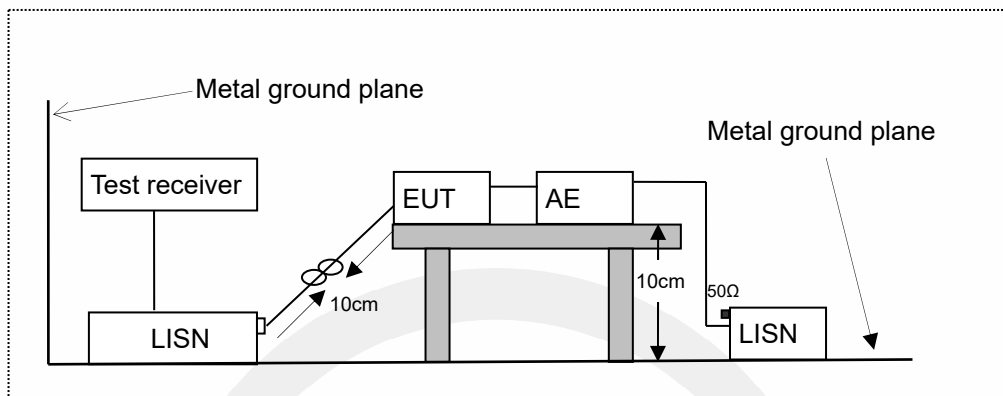
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	Rohde & Schwarz	ESCI	101384	May 14, 2022	1 Year
AMN	Rohde & Schwarz	ENV216	101161	May 14, 2022	1 Year
AMN	Kyoritsu	KNW-407	8-1492-9	May 14, 2022	1 Year

3.2. For Radiated Emission Measurement

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Pre-Amplifier	HP	8447F	2944A07999	May 14, 2022	1 Year
EMI Test Receiver	Rohde & Schwarz	ESCI	101414	May 14, 2022	1 Year
Bilog Antenna	Schwarzbeck	VULB9163	712	July 05, 2021	2 Year
Horn antenna	Schwarzbeck	BBHA9120D	9120D-1178	Aug.22, 2021	2 Year
Pre-Amplifier	Lunar EM	LNA1G18-48	J101113101000 1	May 14, 2022	1 Year

4. POWER LINE CONDUCTED EMISSION MEASUREMENT

4.1. Block Diagram of Test Setup



LISN: Line Impedance Stabilization Network

AE: Associated equipment

EUT: Equipment under test

4.2. Limits

FCC Part 15, Subpart B, Class B

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

NOTE1-The lower limit shall apply at the transition frequencies.
NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

4.3. Test Procedure

The EUT was placed on a desk 0.1 m height from the metal ground plane and 0.4 m from the conducting wall of the shielding room and it was kept at least 0.8 m from any other grounded conducting surface. The size of the table will nominally be 1.5 m x1.0 m.

The rear of the arrangement shall be flush with the back of the supporting tabletop unless that would not be possible or typical of normal use.

All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units.

Connect EUT to the power mains through a line impedance stabilization network (LISN). Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the

centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

All the support units are connecting to the other LISN.

The LISN provides 50 ohm coupling impedance for the measuring instrument.

Both sides of AC line were checked for maximum conducted interference.

The frequency range from 150 kHz to 30 MHz was sweep.

Set the test-receiver system to quasi peak detect function and average detect function, and to measure the conducted emissions values.

Test results were obtained from the following equation:

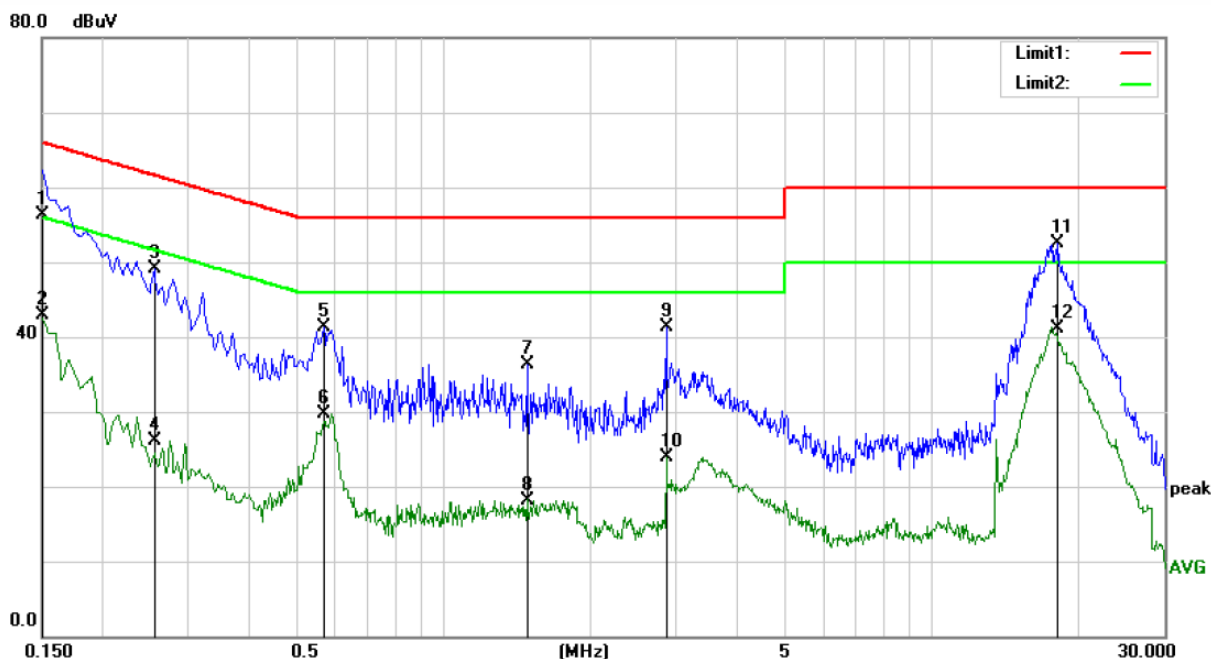
Emission Level (dB μ V) = LISN Factor (dB) + Cable Loss (dB) + Reading (dB μ V)

Margin (dB) = Emission Level (dB μ V) - Limit (dB μ V)

4.4. Measuring Results

Pass.





Site Conduction #1

Phase: **L1**

Temperature: 21

Limit: (CE)FCC PART 15 class B_QP

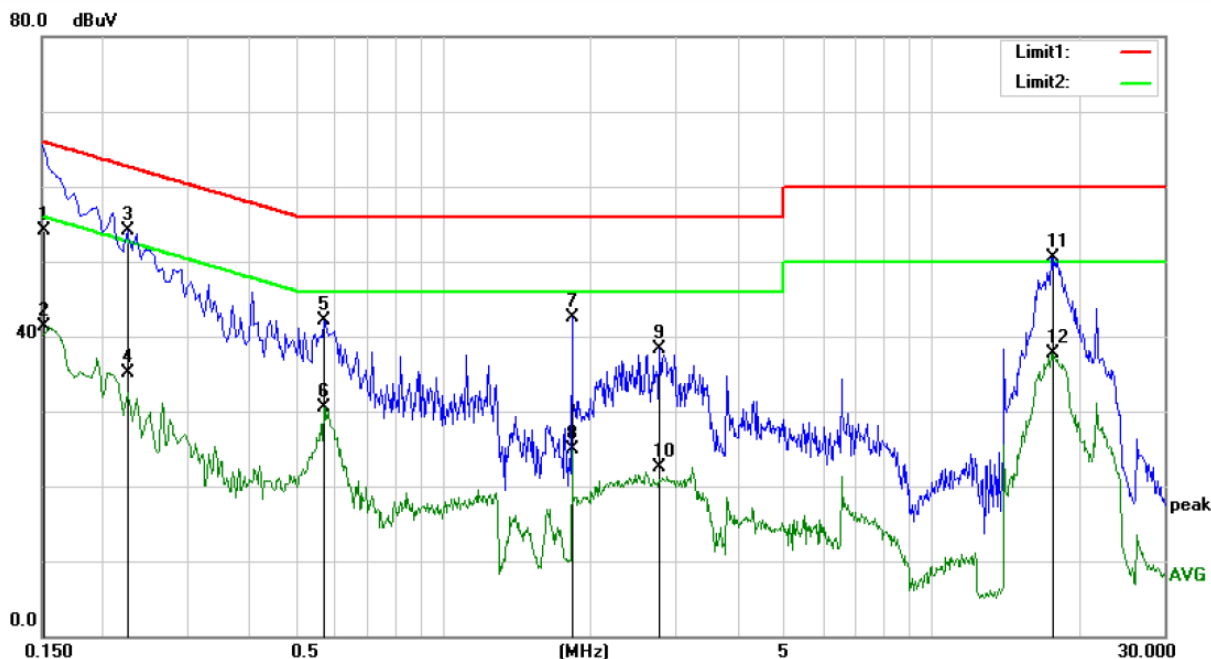
Power: AC 120V/60Hz

Humidity: 50 %

Mode: Working

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	46.86	9.44	56.30	66.00	-9.70	QP	
2		0.1500	33.37	9.44	42.81	56.00	-13.19	AVG	
3		0.2550	39.70	9.35	49.05	61.59	-12.54	QP	
4		0.2550	16.68	9.35	26.03	51.59	-25.56	AVG	
5		0.5700	32.04	9.28	41.32	56.00	-14.68	QP	
6		0.5700	20.37	9.28	29.65	46.00	-16.35	AVG	
7		1.4800	26.56	9.78	36.34	56.00	-19.66	QP	
8		1.4800	8.37	9.78	18.15	46.00	-27.85	AVG	
9		2.8550	31.40	9.82	41.22	56.00	-14.78	QP	
10		2.8550	14.14	9.82	23.96	46.00	-22.04	AVG	
11	*	18.1800	42.37	10.16	52.53	60.00	-7.47	QP	
12		18.1800	31.04	10.16	41.20	50.00	-8.80	AVG	



Site Conduction #1

Phase: **N**

Temperature: 21

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

Humidity: 50 %

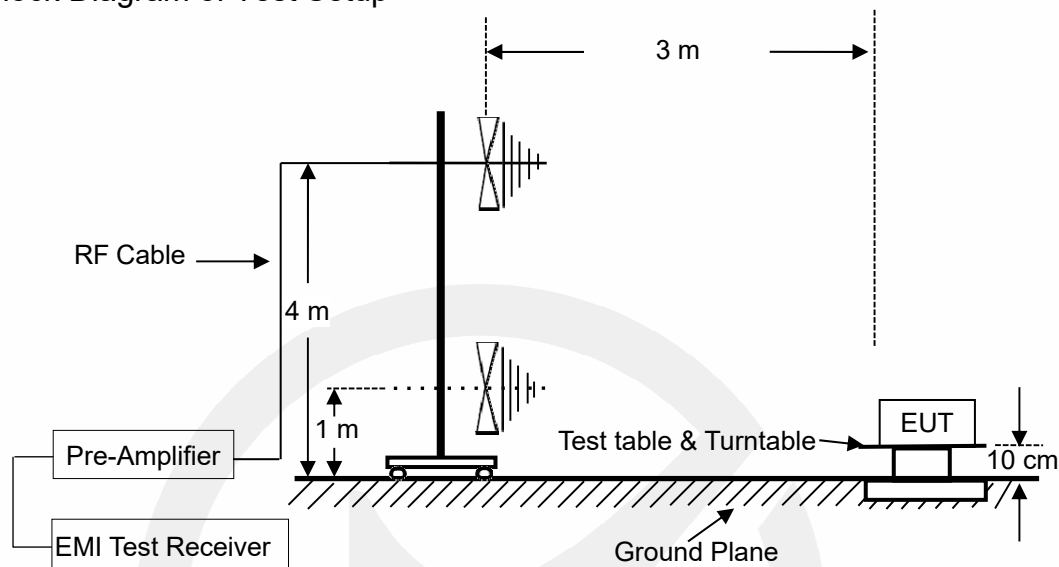
Mode: Working

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1516	44.66	9.44	54.10	65.91	-11.81	QP	
2		0.1516	31.83	9.44	41.27	55.91	-14.64	AVG	
3	*	0.2250	44.62	9.40	54.02	62.63	-8.61	QP	
4		0.2250	25.70	9.40	35.10	52.63	-17.53	AVG	
5		0.5700	32.77	9.28	42.05	56.00	-13.95	QP	
6		0.5700	21.29	9.28	30.57	46.00	-15.43	AVG	
7		1.8300	32.70	9.80	42.50	56.00	-13.50	QP	
8		1.8300	15.18	9.80	24.98	46.00	-21.02	AVG	
9		2.7700	28.45	9.82	38.27	56.00	-17.73	QP	
10		2.7700	12.66	9.82	22.48	46.00	-23.52	AVG	
11		17.7800	40.35	10.16	50.51	60.00	-9.49	QP	
12		17.7800	27.54	10.16	37.70	50.00	-12.30	AVG	

5. RADIATED EMISSION MEASUREMENT (UP TO 1GHz)

5.1. Block Diagram of Test Setup



5.2. Radiated Limit

FCC Part 15, Subpart B, Class B

Frequency MHz	Distance Meters	Field Strengths Limit	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

5.3. Test Procedure

The EUT was placed on a non-conductive table whose total height equaled 10cm. All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The EUT was set 3 meters away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of

typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The bandwidth of the Receiver is set at 120 kHz.

Test results were obtained from the following equation:

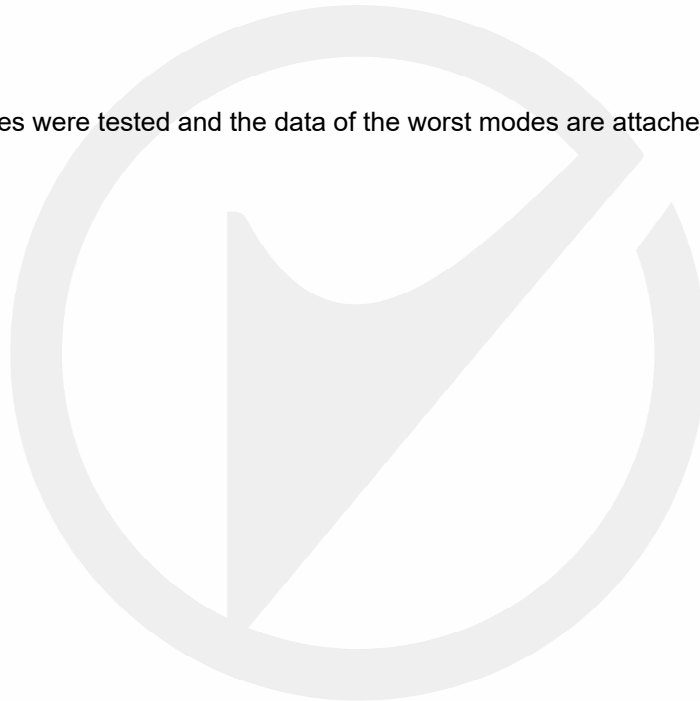
Emission level (dB μ V/m) = Antenna Factor - Amp Factor + Cable Loss + Reading

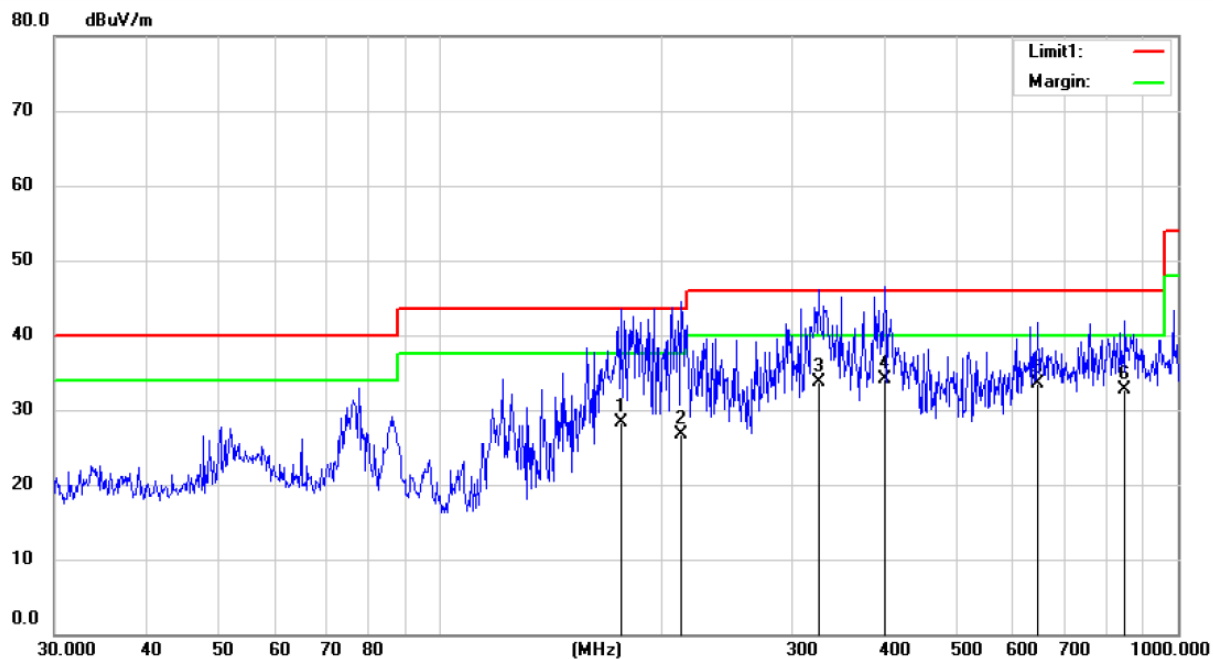
Margin (dB) = Emission Level (dB μ V/m) - Limit (dB μ V/m)

5.4. Measuring Results

PASS.

All the modes were tested and the data of the worst modes are attached the following pages.





Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 28.1 C

Limit: (RE)FCC PART 15 CLASS B

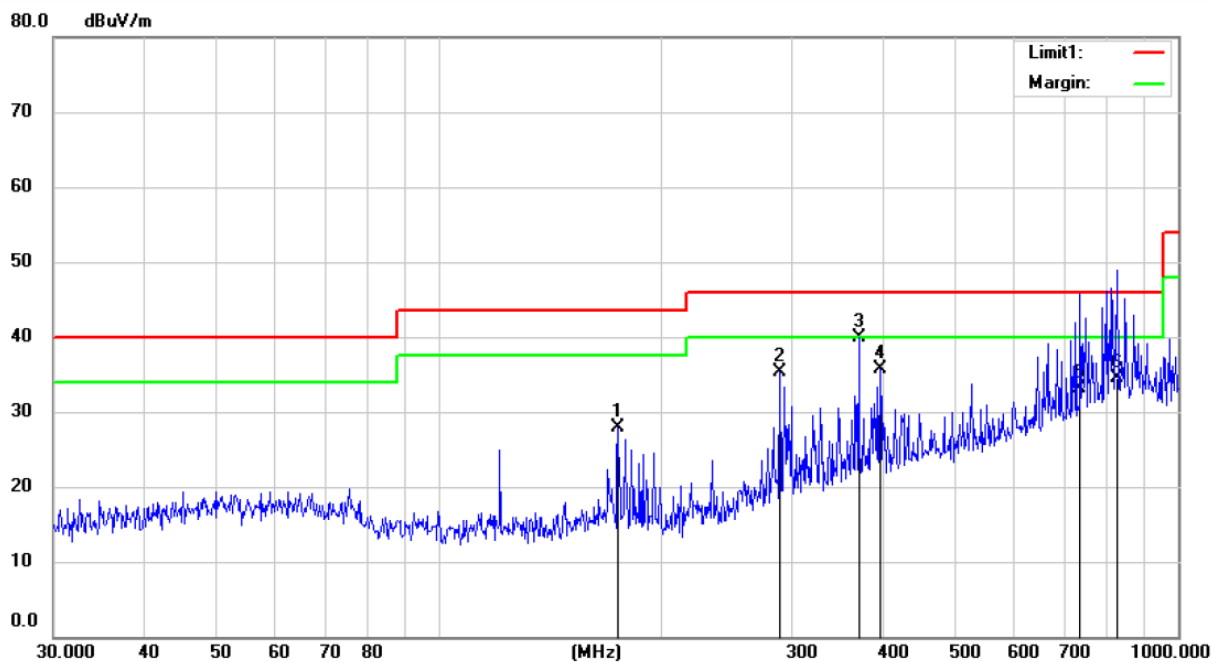
Power: AC 120V/60Hz

Humidity: 43 %

Mode: Working

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree
1		175.7286	37.94	-9.64	28.30	43.50	-15.20	QP		
2		212.5488	36.06	-9.26	26.80	43.50	-16.70	QP		
3		326.4532	38.13	-4.33	33.80	46.00	-12.20	QP		
4	*	400.7831	36.79	-2.59	34.20	46.00	-11.80	QP		
5		645.1195	31.84	1.76	33.60	46.00	-12.40	QP		
6		849.5445	26.07	6.73	32.80	46.00	-13.20	QP		



Site 3m Chamber #1

Polarization: **Horizontal**

Temperature: 28.1 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 43 %

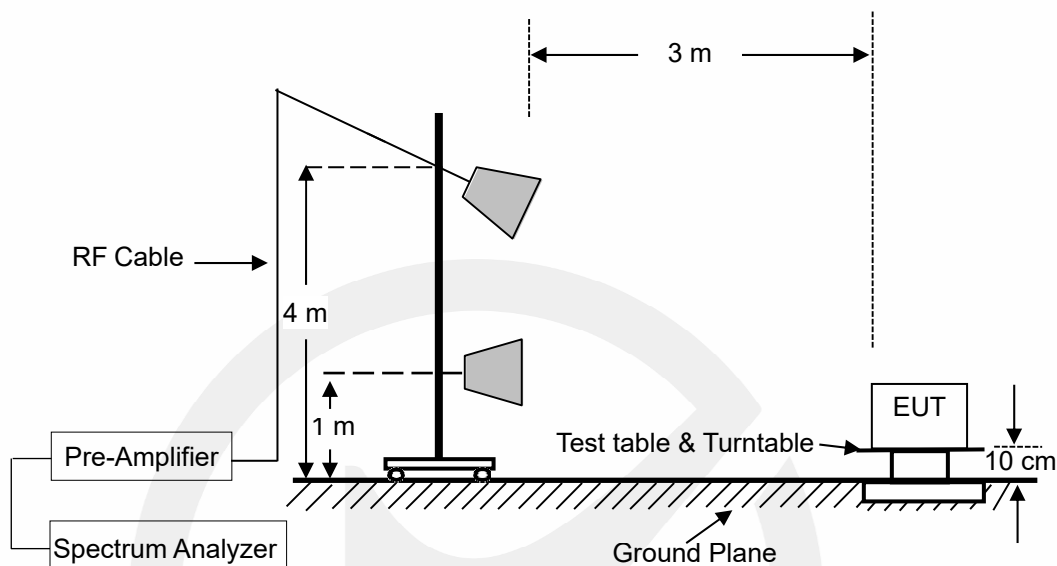
Mode: Working

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		174.4241	37.46	-9.64	27.82	43.50	-15.68	QP		
2		289.1288	40.58	-5.37	35.21	46.00	-10.79	QP		
3	*	370.0530	43.30	-3.45	39.85	46.00	-6.15	QP		
4		394.8545	38.38	-2.69	35.69	46.00	-10.31	QP		
5		737.0714	29.42	3.78	33.20	46.00	-12.80	QP		
6		828.5823	28.31	6.29	34.60	46.00	-11.40	QP		

6. RADIATED EMISSION MEASUREMENT (ABOVE 1GHz)

6.1. Block Diagram of Test Setup



6.2. Radiated Limit

FCC Part 15, Subpart B, Class B

Frequency range GHz	Average limit dB(μ V/m)	Peak limit dB(μ V/m)
Above 1000	54	74

Note: The highest internal source of an EUT is defined as the highest frequency generated or used in the device or on which the EUT operates or tunes. If the highest frequency of the internal sources of the EUT is less than 1.705 MHz, the measurement shall only be made up to 30 MHz. If the highest frequency of the internal sources of the EUT is between 1.705 MHz and 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz the measurement shall only be made up to 2 GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, whichever is less.

6.3. Test Procedure

The EUT was placed on a non-conductive table whose total height equaled 10cm. All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The EUT was set 3 meters away from the receiving antenna that was mounted on a non-conductive

mast. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with peak detector for peak values, and use RBW=1 MHz and VBW=10 Hz with peak detector for Average Values.

Test results were obtained from the following equation:

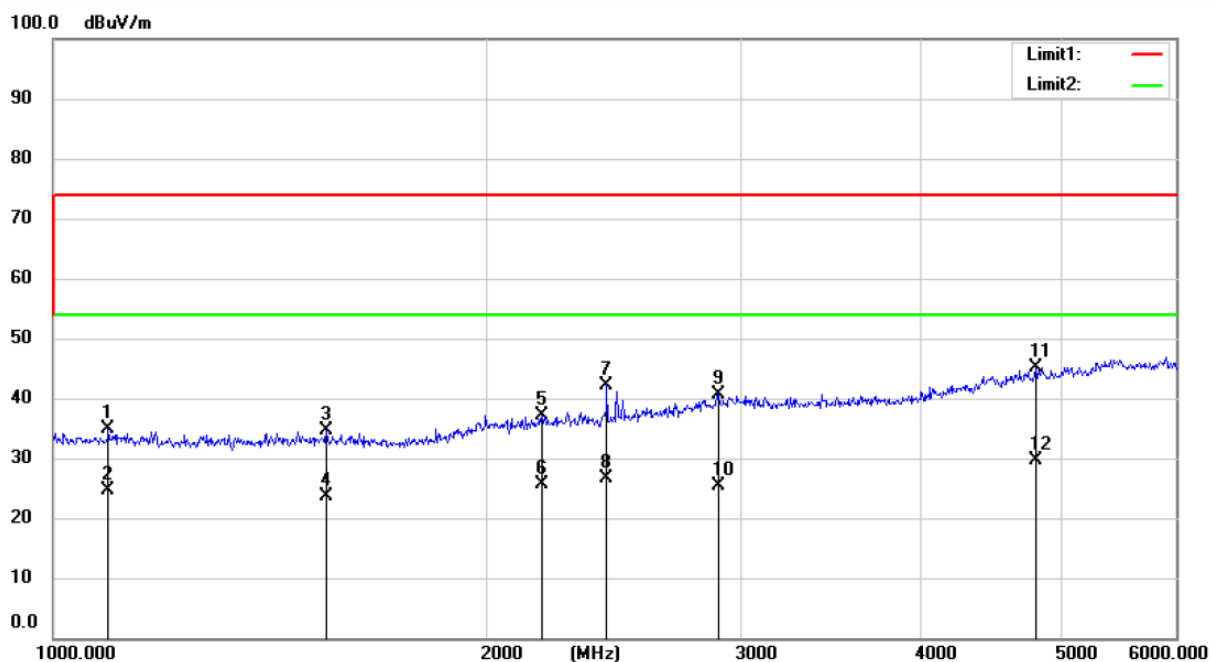
Emission level (dB μ V/m) = Antenna Factor - Amp Factor + Cable Loss + Reading

Margin (dB) = Emission Level (dB μ V/m) - Limit (dB μ V/m)

6.4. Measuring Results

PASS.

All the modes were tested and the data of the worst modes are attached the following pages.



Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 28.1 C

Limit: (RE)FCC PART 15 CLASS B

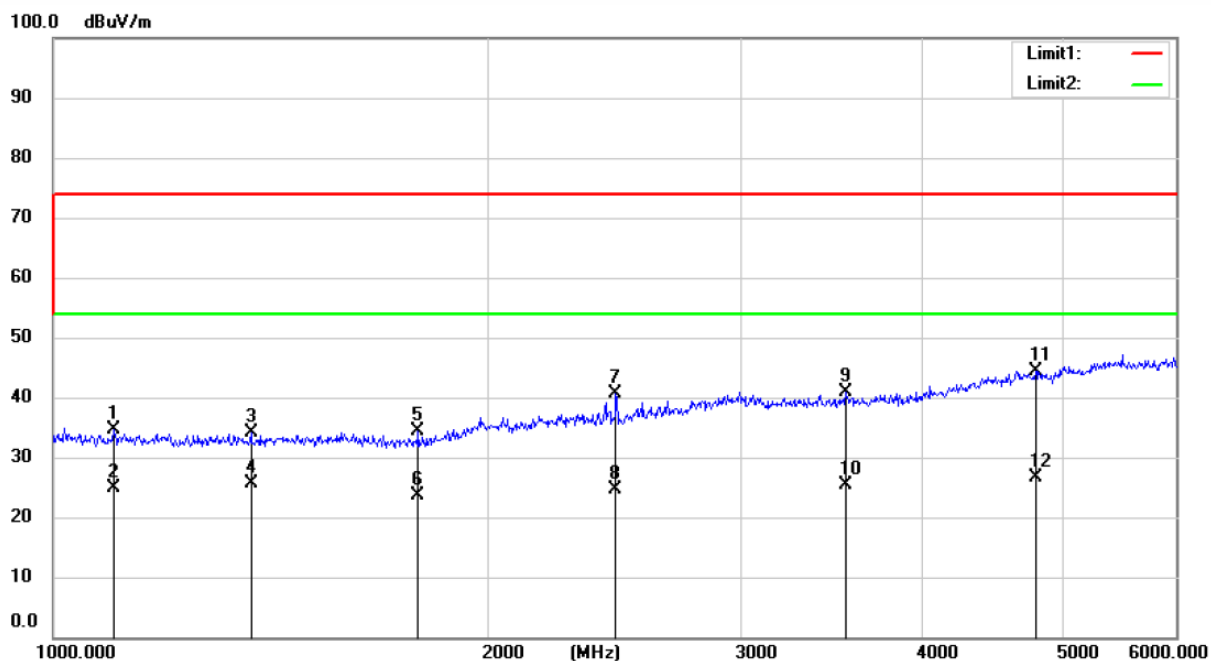
Power: AC 12V/60Hz

Humidity: 43 %

Mode:Working

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1092.499	48.36	-13.43	34.93	74.00	-39.07	peak		
2		1092.499	38.03	-13.43	24.60	54.00	-29.40	AVG		
3		1546.270	47.71	-13.19	34.52	74.00	-39.48	peak		
4		1546.270	36.79	-13.19	23.60	54.00	-30.40	AVG		
5		2182.151	48.08	-10.92	37.16	74.00	-36.84	peak		
6		2182.151	36.52	-10.92	25.60	54.00	-28.40	AVG		
7		2421.127	52.40	-10.24	42.16	74.00	-31.84	peak		
8		2421.127	36.84	-10.24	26.60	54.00	-27.40	AVG		
9		2889.102	49.31	-8.56	40.75	74.00	-33.25	peak		
10		2889.102	33.86	-8.56	25.30	54.00	-28.70	AVG		
11		4796.035	50.48	-5.23	45.25	74.00	-28.75	peak		
12	*	4796.035	34.83	-5.23	29.60	54.00	-24.40	AVG		



Site 3m Chamber #1

Polarization: **Horizontal**

Temperature: 28.1 C

Limit: (RE)FCC PART 15 CLASS B

Power: AC 12V/60Hz

Humidity: 43 %

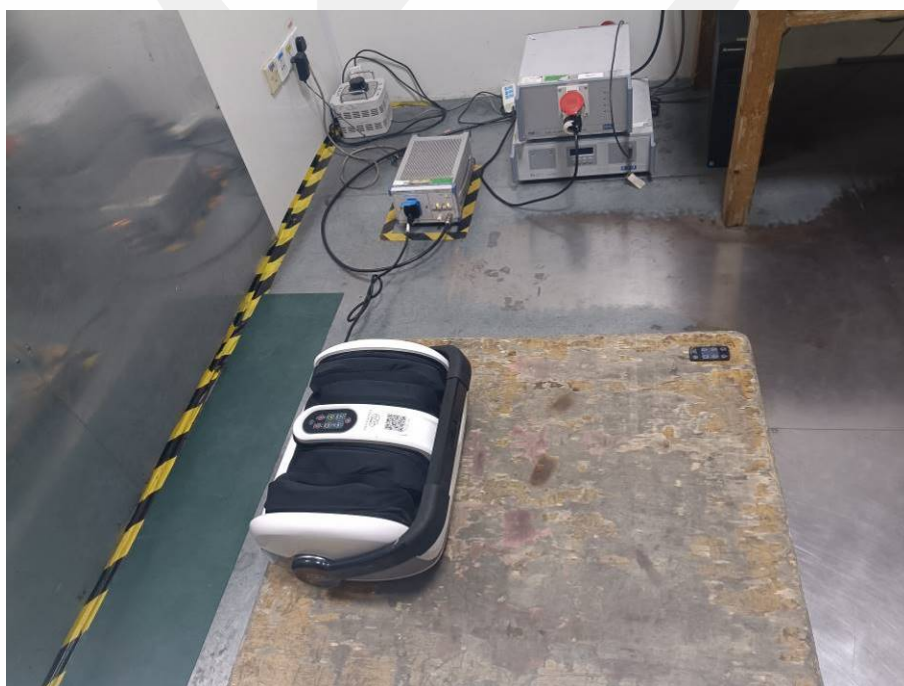
Mode: Working

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1103.319	48.12	-13.45	34.67	74.00	-39.33	peak		
2		1103.319	38.45	-13.45	25.00	54.00	-29.00	AVG		
3		1372.274	47.79	-13.64	34.15	74.00	-39.85	peak		
4		1372.274	39.24	-13.64	25.60	54.00	-28.40	AVG		
5		1791.393	46.71	-12.40	34.31	74.00	-39.69	peak		
6		1791.393	36.00	-12.40	23.60	54.00	-30.40	AVG		
7		2457.733	50.79	-10.14	40.65	74.00	-33.35	peak		
8		2457.733	34.74	-10.14	24.60	54.00	-29.40	AVG		
9		3548.589	49.86	-8.98	40.88	74.00	-33.12	peak		
10		3548.589	34.48	-8.98	25.50	54.00	-28.50	AVG		
11		4803.560	49.55	-5.21	44.34	74.00	-29.66	peak		
12	*	4803.560	31.81	-5.21	26.60	54.00	-27.40	AVG		

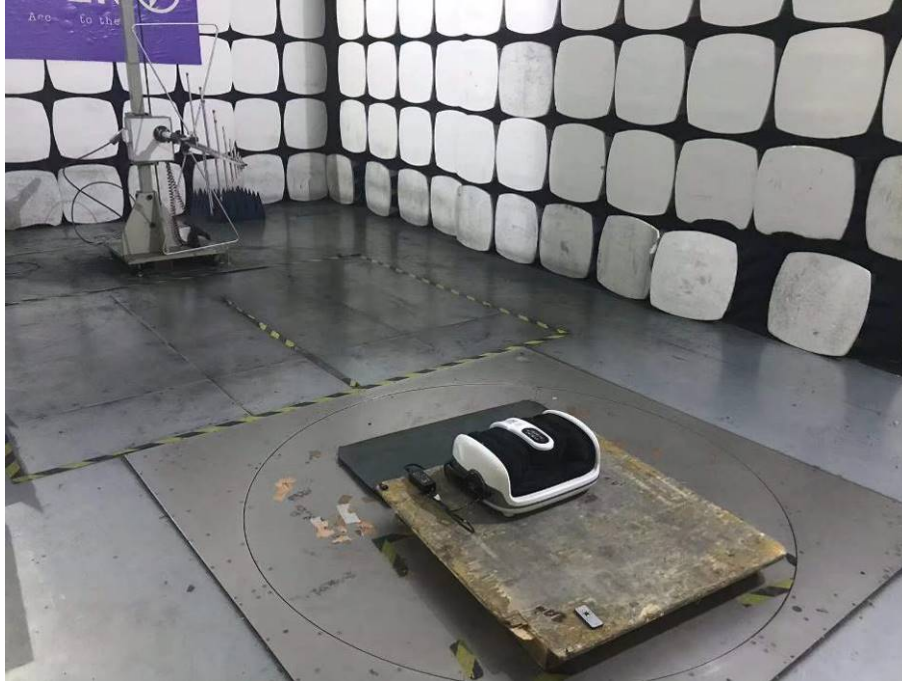
7. PHOTOGRAPHS

7.1.Photos of Conducted Emission Measurement



7.2. Photos of Radiation Emission Measurement

Spurious Emission Test Setup (Below 1GHz)



Spurious Emission Test Setup (Above 1GHz)



APPENDIX A: Label Requirements

(1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under part 73 of this chapter, land mobile operation under part 90 of this chapter, etc., shall bear the following statement in a conspicuous location on the device:

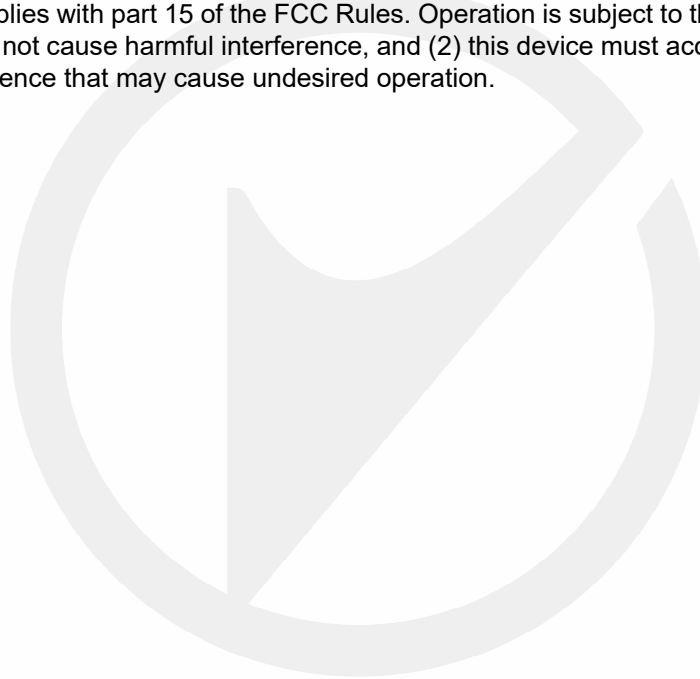
This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

(2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules for use with cable television service.

(3) All other devices shall bear the following statement in a conspicuous location on the device:

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.



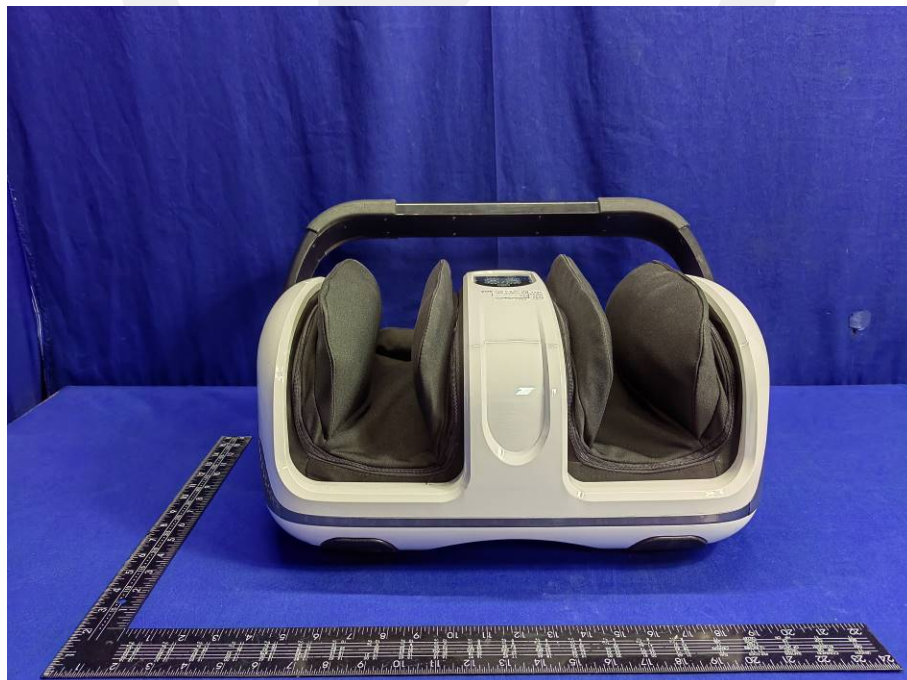
APPENDIX B: Warning Statement

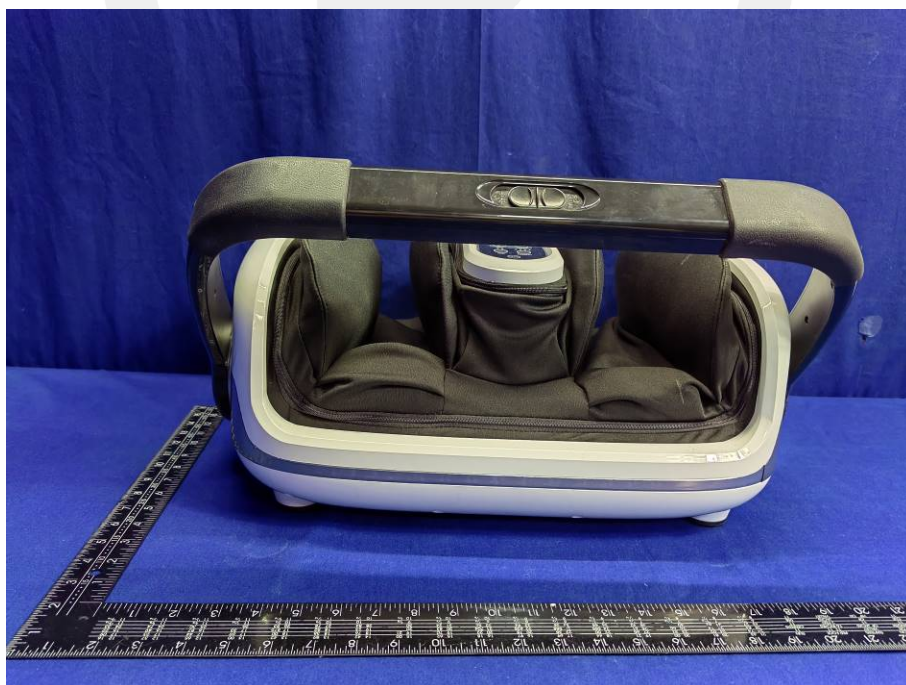
(a) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

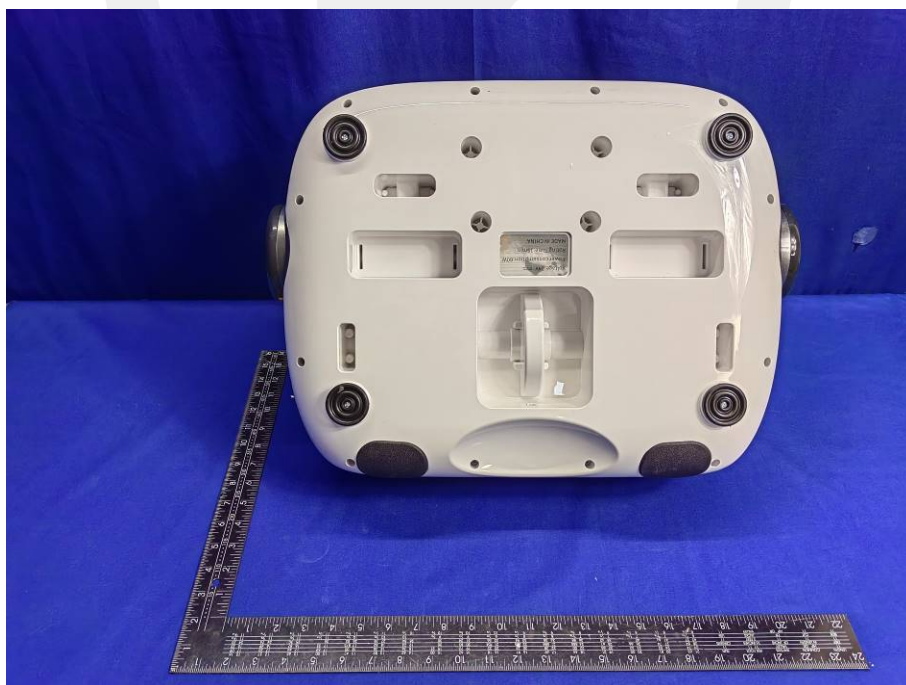
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

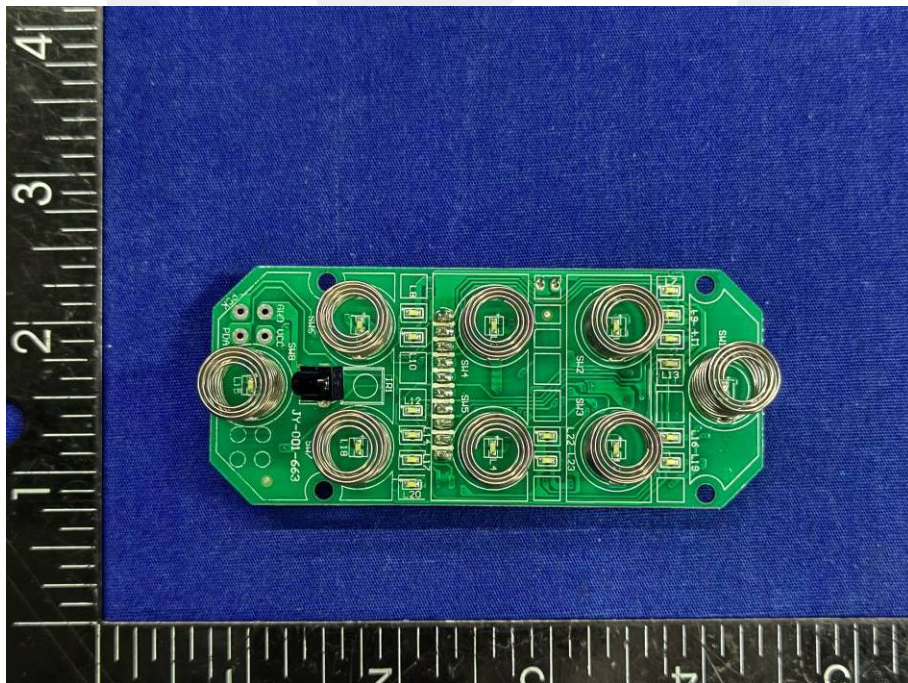
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

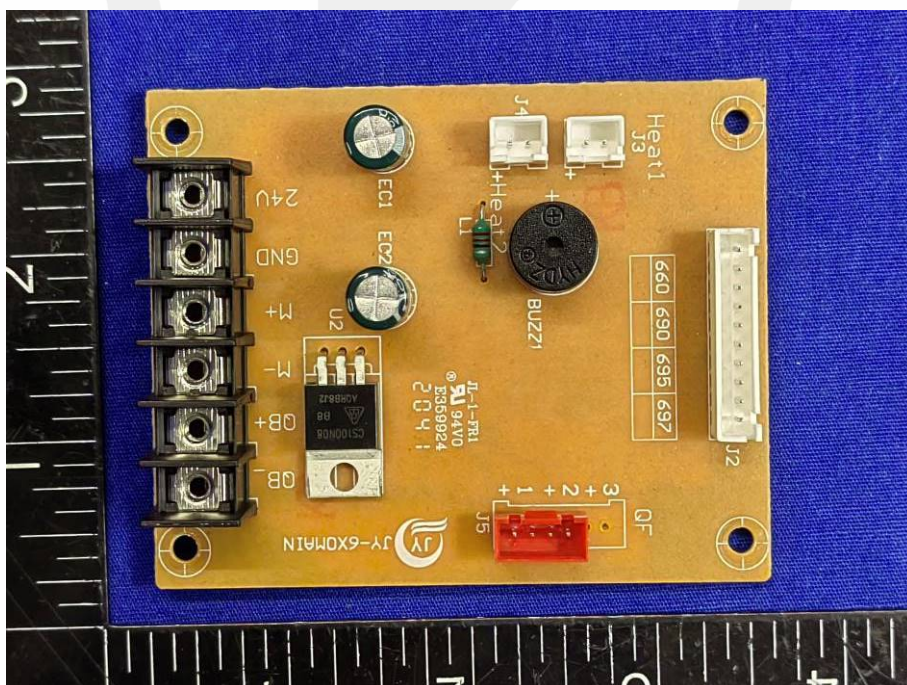
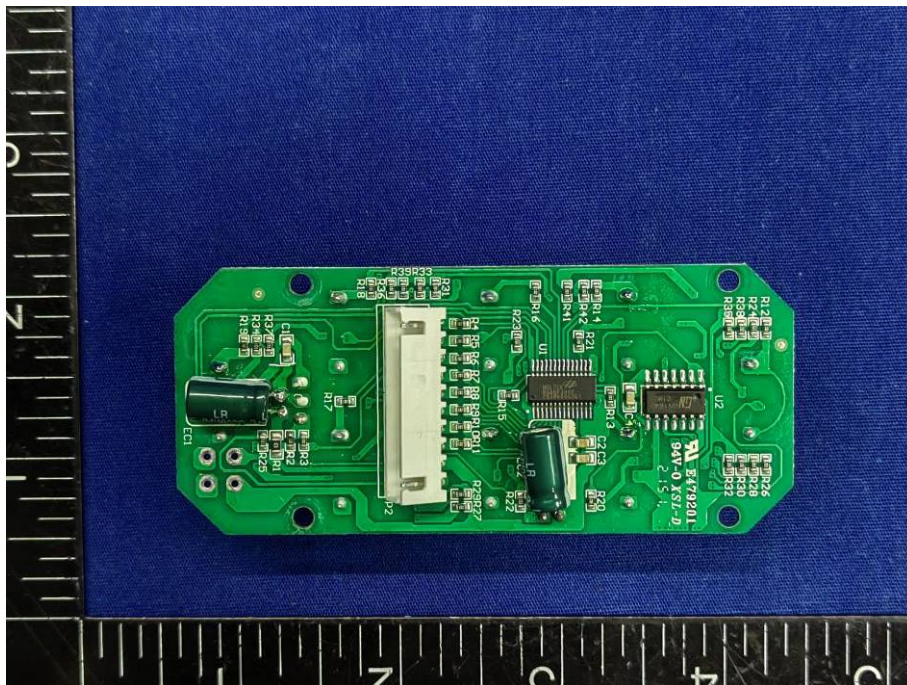
APPENDIX C: Photos of EUT













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