



FCC VERIFICATION TEST REPORT

for

E.P.LIGHT

Model: A60

Other models see the list on Page 3 of the report

Prepared for: Shenzhen EP Culture & Technology Co., Ltd
701, Zhenye building B, 2014 Bao'an S Rd, Guiyuan St, LuoHu District,
Shenzhen
Prepared by: Shenzhen EZT Testing Technology Co.,Ltd
Room 912, Juntaihao Business Center, Yongfu Road 120, Fuyong Town,
Baoan District, Shenzhen City.

Tel: +86-0755-33150178
Fax: +86-0755-23218109

Report Number: EZT180403006FR
Date of Test: Mar.28,2018-Apr.03,2018
Date of Issue: Apr.03,2018

Tested By Mark Dan.
Mark Dan

Reviewed By Steven
Steven

The results detailed in this test report relate only to the specific sample(s) tested. It is the Application's responsibility to ensure that all production units are manufactured with equivalent EMC characteristics. This report is not to be reproduced except in full, without written approval from EZT Testing Technology



Table of contents

1.0 General Information	3
1.1 Client Information	3
1.2 General Description of E.U.T.	3
1.3 Test Facility:	4
2.0 List of Measurement Equipment	5
2.1 Conducted Emission Test	5
2.2 Radiated Emission Test	5
3.0 Technical Details	6
3.1 Investigations Requested	6
3.2 Test Standards	6
3.3 Measurement Uncertainty	6
4.0 Power Line Conducted Emission Test	7
4.1 Schematics of the test	7
4.2 Test Method and test Procedure	7
4.3 EUT Operating Condition	8
4.4 Test Equipment	8
4.5 Power line conducted Emission Limit	8
4.6 Photo documentation of the test set-up	8
4.7 Test specification:	8
4.8 Test result	8
5.0 Radiated Emission Test	11
5.1 Test Method and test Procedure:	11
5.2 EUT Operating Condition	12
5.3 Radiated Emission Limit	12
5.4 Photo documentation of the test set-up	12
5.5 Test Equipment:	12
5.6 Test specification:	12
5.7 Test result	12
6.0 FCC Label	15
7.0 Photos of testing	16
8.0 Photo of EUT	17



Report No.: EZT180403006FR

1.0 General Information

1.1 Client Information

Application:	Shenzhen EP Culture & Technology Co., Ltd
Address of Application:	701, Zhenye building B, 2014 Bao'an S Rd, Guiyuan St, LuoHu District, Shenzhen
Manufacturer:	Dongguan Mingyan Electronic Technology Co., Ltd.
Address of Manufacturer:	8th Floor, Building A, No. 36, Xintang Section, Lianma Road, Xintang Village, Dalingshan Town, Dongguan

1.2 General Description of E.U.T.

Product Name:	E.P.LIGHT
Model:	A60
Additional Model:	ST64, T45
Trade Mark:	E.P.LIGHT
Power Supply:	100-240V~ 50/60Hz 3W
Model Difference:	All models have same diagram circuit, PCB layout, except different model names



Report No.: EZT180403006FR

1.3 Test Facility:

Name of Test Lab:	Shenzhen EZT Testing Technology Co., Ltd
Address of Test Lab:	Room 912,Juntaihao Business Center, Yongfu Road 120, Fuyong Town, Baoan District, Shenzhen City.
Telephone:	+86-0755-33150178
Fax:	+86-0755-23218109



Report No.: EZT180403006FR

2.0 List of Measurement Equipment

2.1 Conducted Emission Test

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
EMI Test Receiver	ESCS30	1102.4500.30	RS	Oct. 24, 2017	Oct. 23, 2018
LISN	LS16C	10010947251	AFJ	Oct. 24, 2017	Oct. 23, 2018

2.2 Radiated Emission Test

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
EMI Test Receiver	ESVD	1026.5506.10	RS	Oct. 24, 2017	Oct. 23, 2018
Spectrum Analyzer	FSEM	1079.8500.30	RS	Oct. 24, 2017	Oct. 23, 2018
Coaxial Switch	MP59B	M70585	ANRITSU	N/A	N/A
Amplifier	8447D	2727A05017	HP	Oct. 24, 2017	Oct. 23, 2018
Bilog Antenna	VULB9163	9163/340	Schwarebeck	Oct. 24, 2017	Oct. 23, 2018



3.0 Technical Details

3.1 Investigations Requested

Perform Electromagnetic Interference [EMI] tests for FCC Requirement.

3.2 Test Standards

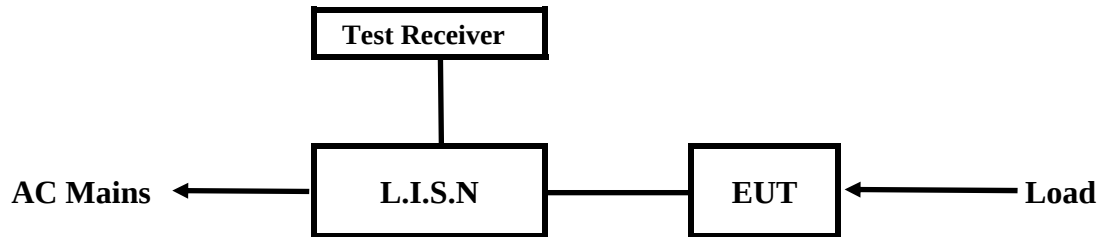
FCC Part 15 Subpart B:2013

3.3 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	MU
1.	Temperature	$\pm 0.1^{\circ}\text{C}$
2.	Humidity	$\pm 1.0\%$
3.	Spurious emissions, conducted	$\pm 3.70\text{dB}$
4.	All emissions, radiated	$\pm 4.50\text{dB}$

4.0 Power Line Conducted Emission Test

4.1 Schematics of the test



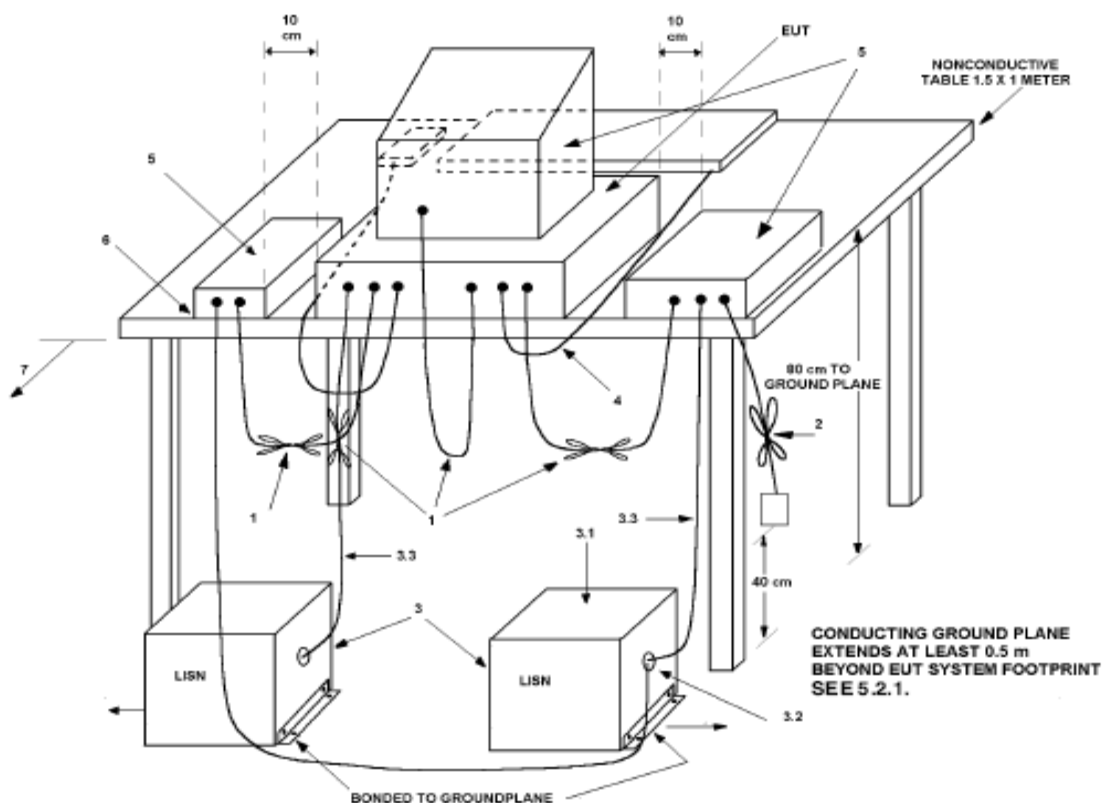
EUT: Equipment Under Test

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 –2014.

Test Voltage: 120V~, 60Hz

Block diagram of Test setup





4.3 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2014

- 1) Setup the EUT and simulators as shown on the following
- 2) Enable AF signal and confirm EUT active to normal condition

4.4 Test Equipment

Please refer to the Section 2

4.5 Power line conducted Emission Limit

Frequency(MHz)	Class A Limits (dBμV)		Class B Limits (dBμV)	
	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
0.15 ~ 0.50	79.0	66.0	66.0~56.0*	56.0~46.0*
0.50 ~ 5.00	73.0	60.0	56.0	46.0
5.00 ~ 30.00	73.0	60.0	60.0	50.0

- Notes:
1. *Decreasing linearly with logarithm of frequency.
 2. The tighter limit shall apply at the transition frequencies

4.6 Photo documentation of the test set-up

Please refer to the Section 7

4.7 Test specification:

Environmental conditions: Temperature: 26° C Humidity: 51% Atmospheric pressure: 103kPa

Frequency range: 0.15 MHz – 30 MHz

4.8 Test result

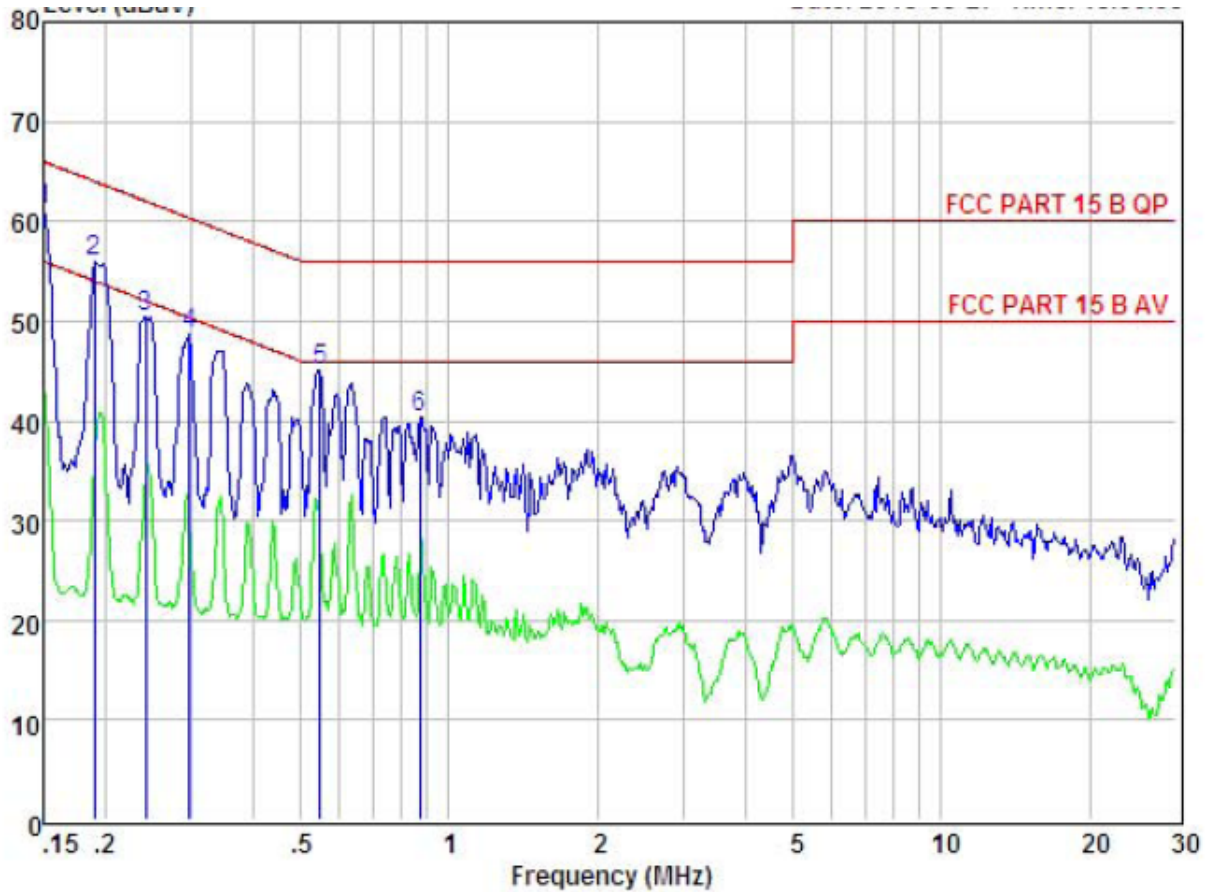
The requirements are fulfilled

Remarks: According to the FCC part 15 Subpart B:2013



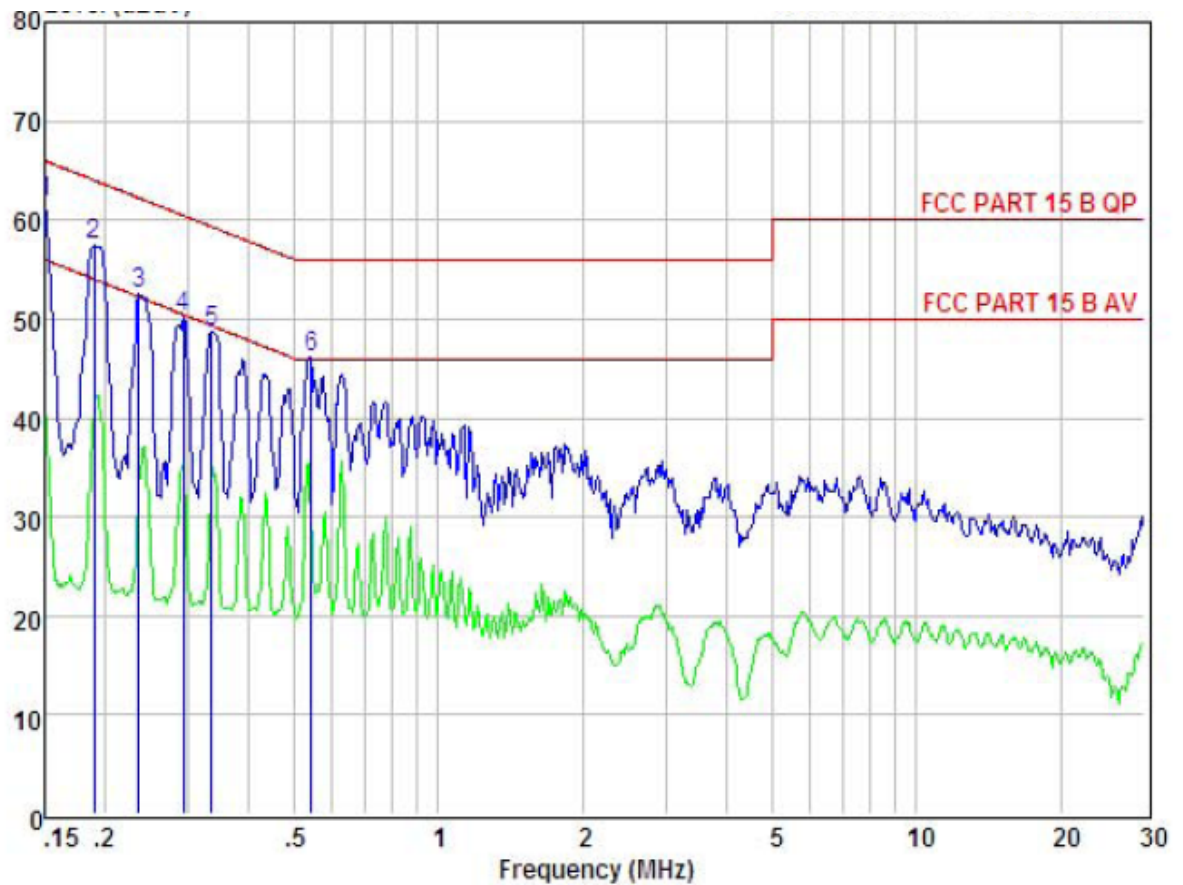
Report No.: EZT180403006FR

A Conducted Emission on Line Terminal of the power line (150kHz to 30MHz)



Condition : FCC PART 15 B QP POL: LINE Temp:23.7 °C Hum:51 %
EUT :
Model No :
Test Mode :
Power :
Test Engineer:
Remark :

Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.150	51.25	0.03	-9.72	0.10	61.10	66.00	-4.90	Peak
2	0.190	46.08	0.03	-9.72	0.10	55.93	64.02	-8.09	Peak
3	0.242	40.60	0.03	-9.72	0.10	50.45	62.04	-11.59	Peak
4	0.297	38.75	0.03	-9.72	0.10	48.60	60.32	-11.72	Peak
5	0.546	35.28	0.03	-9.72	0.10	45.13	56.00	-10.87	Peak
6	0.871	30.57	0.04	-9.71	0.10	40.42	56.00	-15.58	Peak

**B Conducted Emission on Neutral Terminal of the power line (150kHz to 30MHz)**

Condition : FCC PART 15 B QP POL: NEUTRAL Temp:23.7 °C Hum:51 %
EUT :
Model No :
Test Mode :
Power :
Test Engineer:
Remark :

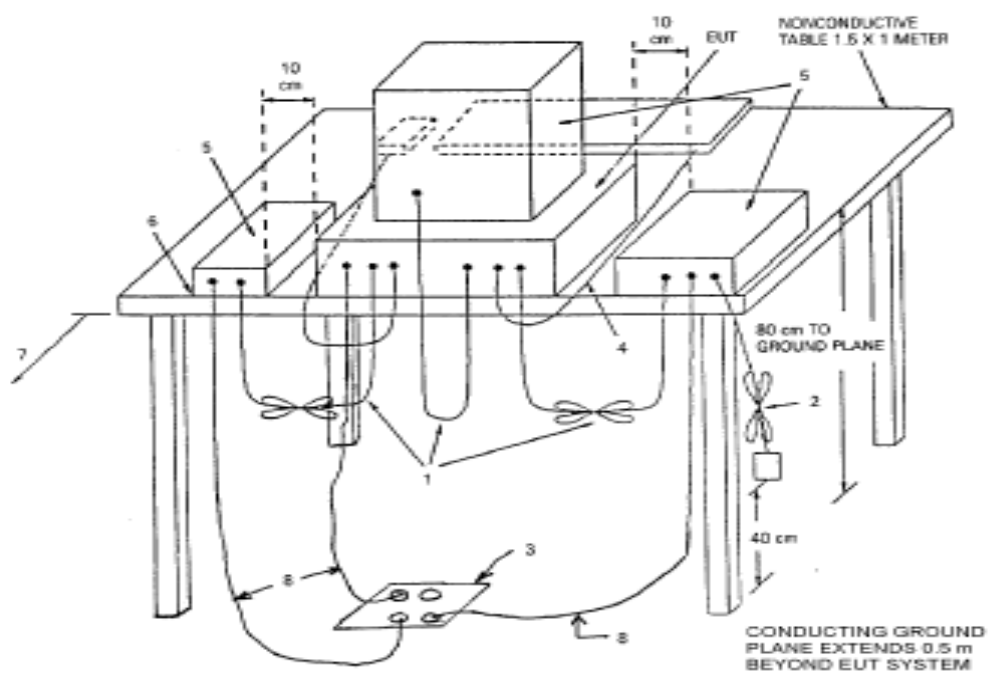
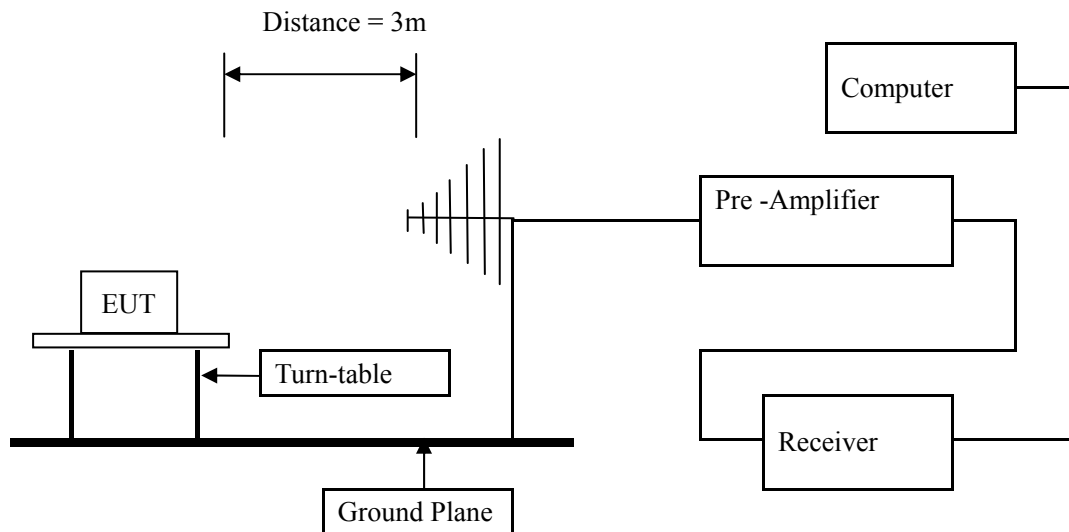
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.150	51.95	0.03	-9.72	0.10	61.80	66.00	-4.20	Peak
2	0.190	47.61	0.03	-9.72	0.10	57.46	64.02	-6.56	Peak
3	0.237	42.66	0.03	-9.72	0.10	52.51	62.22	-9.71	Peak
4	0.292	40.25	0.03	-9.72	0.10	50.10	60.46	-10.36	Peak
5	0.336	38.84	0.03	-9.72	0.10	48.69	59.31	-10.62	Peak
6	0.541	36.32	0.03	-9.72	0.10	46.17	56.00	-9.83	Peak

5.0 Radiated Emission Test

5.1 Test Method and test Procedure:

- 1) The EUT was tested according to ANSI C63.4 –2014.
- 2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2014.
- 3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- 4) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup





5.2 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2014

5.3 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

- Note:
- 1) The frequency spectrum from 30MHz to 8GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120KHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK.
 - 2) Measurements were made at 3 meters.
 - 3) If measurement is not made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula $Ld1 = Ld2 * (d2/d1)$

5.4 Photo documentation of the test set-up

Please refer to the Section 7

5.5 Test Equipment:

Please refer to the Section 2

5.6 Test specification:

Environmental conditions: Temperature 26° C Humidity: 55% Atmospheric pressure: 103kPa

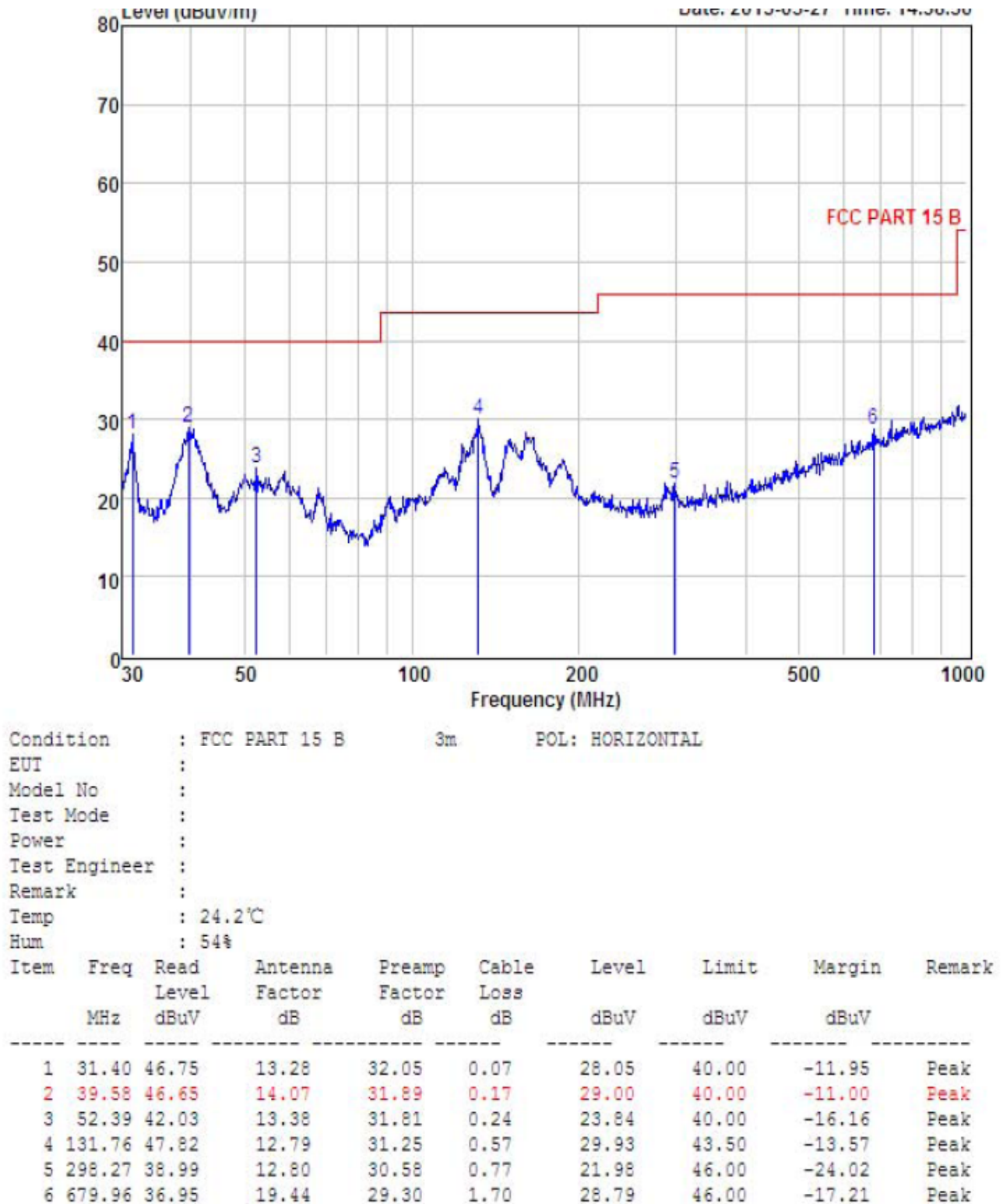
5.7 Test result

The requirements are fulfilled

Remarks: According to the FCC part 15 Subpart B:2013

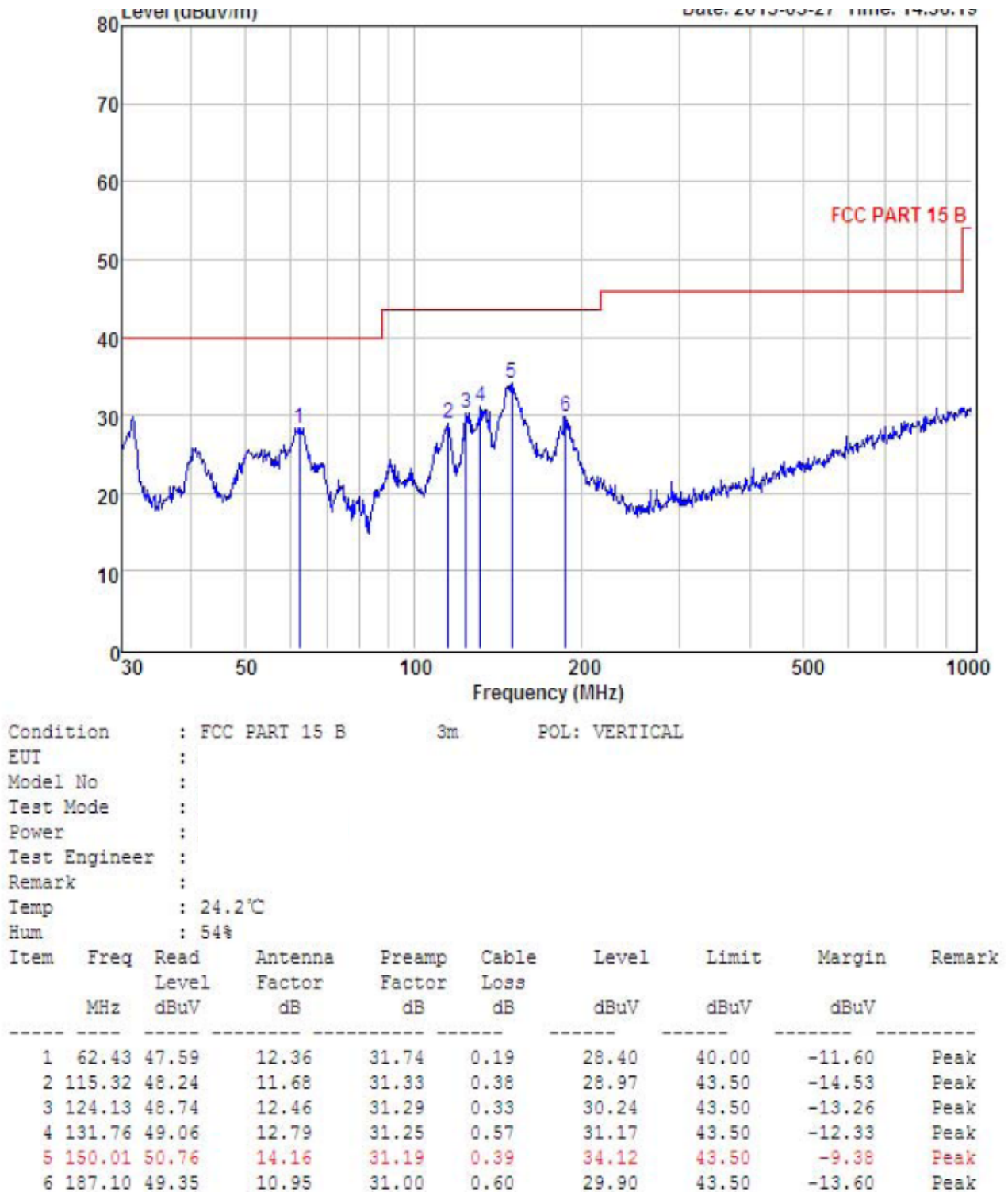


A. Radiated Emission In Horizontal (30MHz----1000MHz)





B. Radiated Emission In Vertical (30MHz----1000MHz)





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.

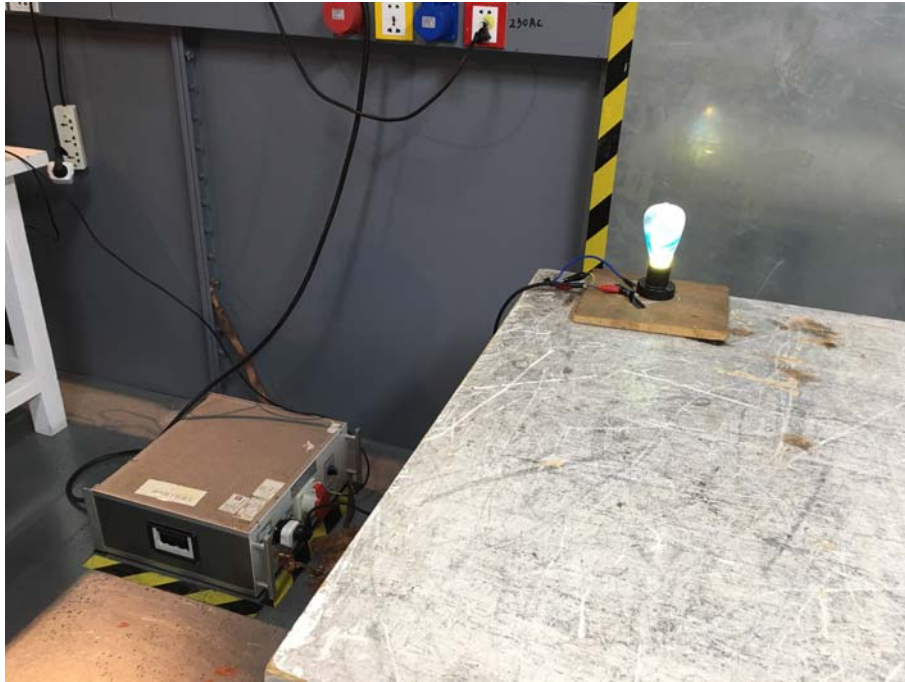
The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.



Mark Location: On the product body

7.0 Photos of testing

Conducted Emission Test View



Radiated Emission Test View



8.0 Photos of the EUT



--End of the report--