TEST REPORT

Reference No.	:	WTU21U04029208E
Applicant	:	PhotonTek Hoticultural Lighting
Address	:	Ewropa Business centre, Level 3-701, Dun Karm Street Birkirkara, BKR 9034, Malta
Manufacturer	:	PhotonTek Hoticultural Lighting
Address	:	Ewropa Business centre, Level 3-701, Dun Karm Street Birkirkara, BKR 9034, Malta
Product	:	LED Luminaires
Model(s)	:	XT 1000W CO2 PRO
Standards	:	FCC PART15 SUBPART B: 2017
Date of Receipt sample	:	Dec.22, 2020
Date of Test	:	Dec.22, 2020 to Dec.23, 2020
Date of Issue	:	Apr.08, 2021
Test Result	:	**Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company.

The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:
Waltek Testing Group (Suzhou) Co., Ltd.
NO.4499, Wuzhong Avenue, Hengjing Street, Wuzhong Economic Development Zone, Suzhou,Jiang Su, China
Tel :+86-512-66552666
Fax:+86-512-66032668
Mail:suz@waltek.com.cn

Compiled by:

Tina Zhang

Tina Zhang

Approved by:

Fish Yu

1 Contents

Page

2 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTU21U04029208E	Dec.22, 2020	Dec.22, 2020 to Dec.23, 2020	Apr.08, 2021	Original	/	Vaild

3 General Information

3.1 General Description of E.U.T.

Product Name	:	LED Luminaires
Model No.	:	XT 1000W CO2 PRO
Remark	:	This derived report is based on original report WTU20U12098805E to change applicant、manufacturer and model.

3.2 Details of E.U.T.

Ratings	:	AC 120-277V, 50/60Hz, 1000W

3.3 Description of Support Units

The EUT has been tested as an independent unit. XT 1000W CO2 PRO is the test sample. The test were performed in the condition of AC 120V/60Hz and AC 277V/60Hz input.

3.4 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test Lab: N/A

Lab address: N/A

Test items: N/A

3.5 Abnormalities from Standard Conditions

None.

4 Test Summary

Test Item	Test Requirement	Test Result
AC Power Line Conducted Emission (150kHz to 30MHz)	FCC PART 15, SUBPART B	Pass
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B	Pass

Remark:

Pass	Test item meets the requirement
Fail	Test item does not meet the requirement
N/A	Test case does not apply to the test object

5 Equipment Used during Test

5.1 Equipment List

☒ Radiated Emission					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Due**
1.	EMI Test Receiver	R&S	ESCI	101346	2021.04.13
2.	Broadband Antenna	SCHWARZBECK	VULB9163	VULB 9163-580	2021.04.21
3.	Preamplifier	SCHWARZBECK	BBV 9743	9743-0069	2021.03.28
☒Conducted Emission					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Due**
1.	Test Receiver	ROHDE& SCHWARZ	ESCI	101297	2021.04.13
2.	Two-Line V-Network	ROHDE& SCHWARZ	ENV216	101538	2021.03.28
3.	Manual RF SW	ESE	RSU-A41	-	N/A
4.	LISN	Schwarzbeck	NSLK8128	8128-308	2021.03.28

5.2 Measurement Uncertainty

Parameter	**Uncertainty (Note 1)**
Temperature	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions	±2.66dB
Radiated Emission(30MHz~1GHz)	±4.75dB

Note 1: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

6 Emission Test Results

6.1 Conducted Emission at the mains terminals, 150kHz to 30MHz

Test Requirement ..... : FCC PART 15, SUBPART B

Test Method..... : ANSI C63.4

Test Result..... : Pass

Test Limit..... : FCC PART 15, SUBPART B Section 15.107

Frequency Range..... : 150kHz to 30MHz

Class ..... : Class B

Limit .....

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15–0.5	66 to 56*	56 to 46*
0.5–5	56	46
5–30	60	50

6.1.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 20°C

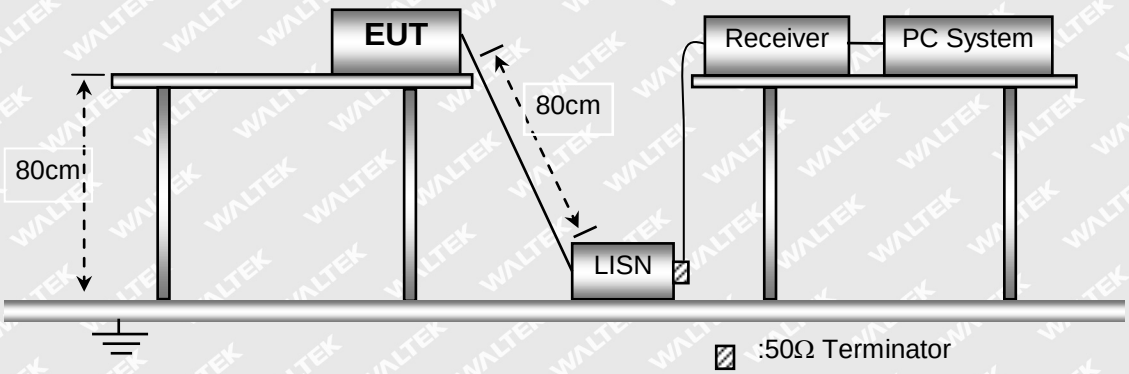
Humidity..... : 40%RH

Atmospheric Pressure..... : 101.6 kPa

EUT Operation..... : Lighting mode

6.1.2 Block Diagram of Test Setup

The Mains Terminals Disturbance Voltage tests were performed in accordance with the FCC PART 15, SUBPART B



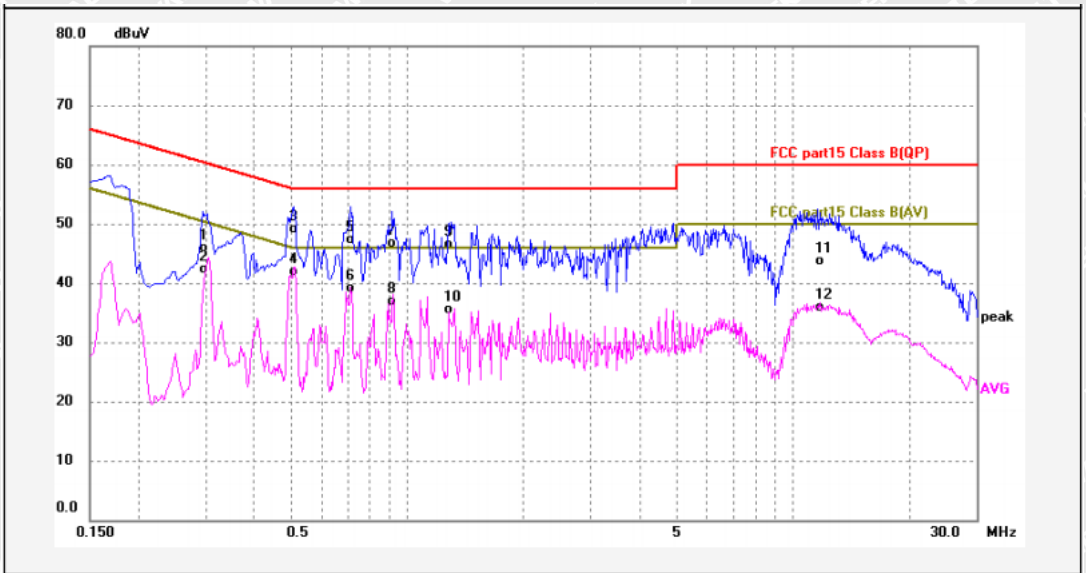
6.1.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

6.1.4 Mains Terminals Disturbance Voltage Test Data

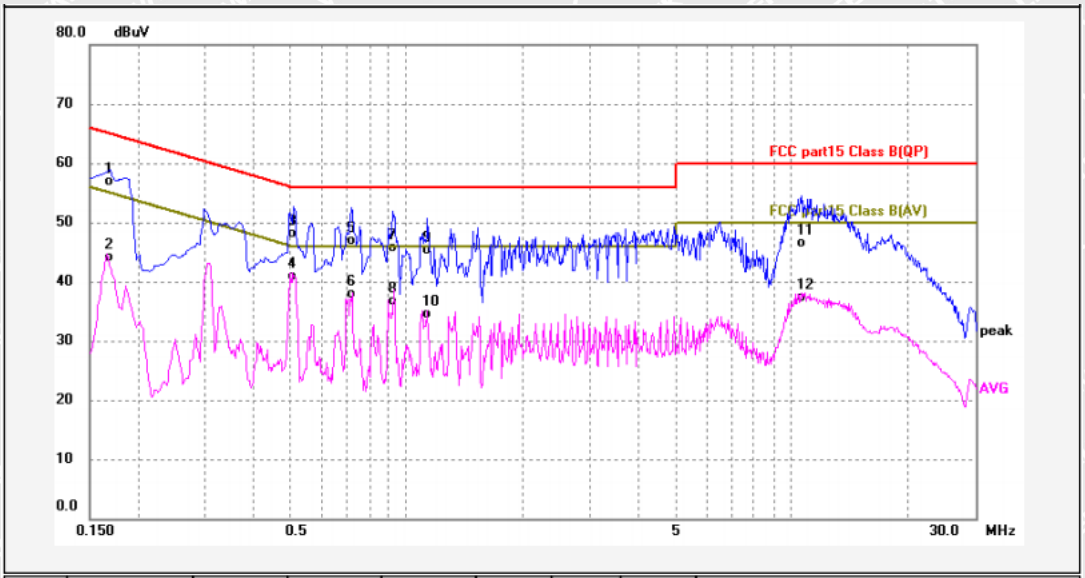
AC 120V/60Hz

Live Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.2940	26.37	19.61	45.98	60.41	-14.43	QP	
2	0.2940	22.79	19.61	42.40	50.41	-8.01	AVG	
3	0.5100	29.53	19.62	49.15	56.00	-6.85	QP	
4	0.5100	22.26	19.62	41.88	46.00	-4.12	AVG	
5	0.7140	27.74	19.64	47.38	56.00	-8.62	QP	
6	0.7140	19.55	19.64	39.19	46.00	-6.81	AVG	
7	0.9180	27.07	19.64	46.71	56.00	-9.29	QP	
8	0.9180	17.24	19.64	36.88	46.00	-9.12	AVG	
9	1.2980	26.82	19.64	46.46	56.00	-9.54	QP	
10	1.2980	15.87	19.64	35.51	46.00	-10.49	AVG	
11	11.6820	23.73	19.93	43.66	60.00	-16.34	QP	
12	11.6820	15.89	19.93	35.82	50.00	-14.18	AVG	

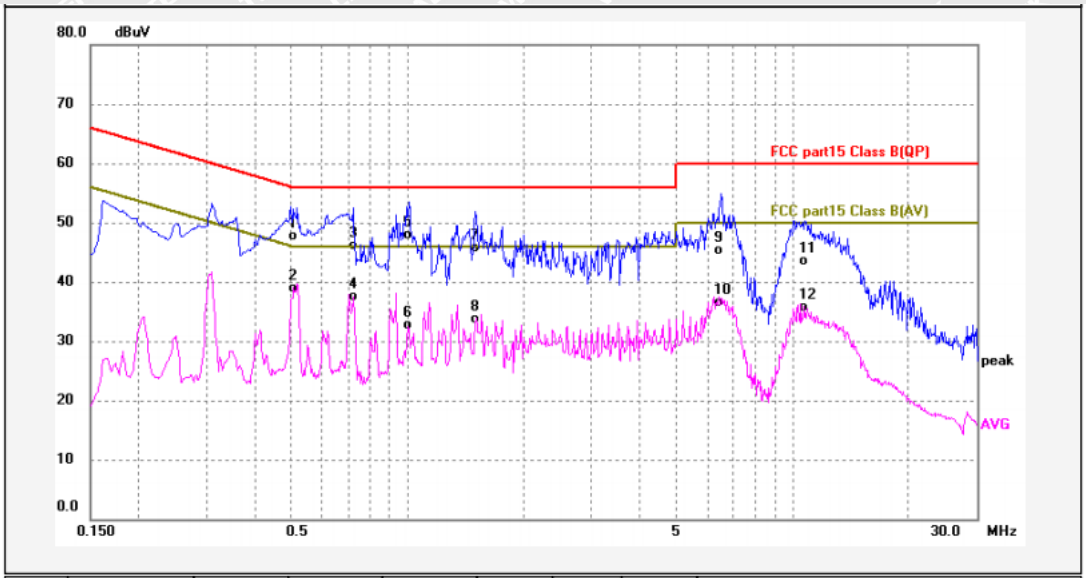
Neutral Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1700	37.28	19.58	56.86	64.96	-8.10	QP	
2	0.1700	24.58	19.58	44.16	54.96	-10.80	AVG	
3	0.5100	28.51	19.62	48.13	56.00	-7.87	QP	
4	0.5100	21.22	19.62	40.84	46.00	-5.16	AVG	
5	0.7180	27.22	19.63	46.85	56.00	-9.15	QP	
6	0.7180	18.19	19.63	37.82	46.00	-8.18	AVG	
7	0.9220	26.06	19.64	45.70	56.00	-10.30	QP	
8	0.9220	16.99	19.64	36.63	46.00	-9.37	AVG	
9	1.1300	25.74	19.64	45.38	56.00	-10.62	QP	
10	1.1300	14.95	19.64	34.59	46.00	-11.41	AVG	
11	10.6059	26.59	19.91	46.50	60.00	-13.50	QP	
12	10.6059	17.31	19.91	37.22	50.00	-12.78	AVG	

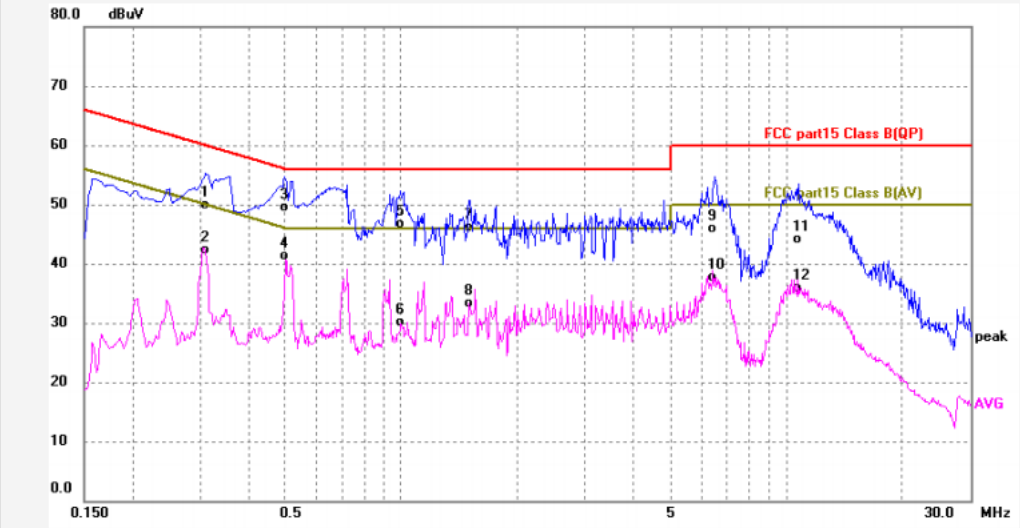
AC 277V/60Hz

Live Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.4980	37.81	9.95	47.76	56.03	-8.27	QP	
2	0.4980	28.92	9.95	38.87	46.03	-7.16	AVG	
3	0.7220	36.20	9.93	46.13	56.00	-9.87	QP	
4	0.7220	27.54	9.93	37.47	46.00	-8.53	AVG	
5	1.0060	38.08	9.90	47.98	56.00	-8.02	QP	
6	1.0060	22.88	9.90	32.78	46.00	-13.22	AVG	
7	1.5020	35.82	9.87	45.69	56.00	-10.31	QP	
8	1.5020	23.81	9.87	33.68	46.00	-12.32	AVG	
9	6.5220	35.61	9.74	45.35	60.00	-14.65	QP	
10	6.5220	26.81	9.74	36.55	50.00	-13.45	AVG	
11	10.7900	33.81	9.60	43.41	60.00	-16.59	QP	
12	10.7900	26.09	9.60	35.69	50.00	-14.31	AVG	

Neutral Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.3100	39.82	10.03	49.85	59.97	-10.12	QP	
2	0.3100	32.26	10.03	42.29	49.97	-7.68	AVG	
3	0.4980	39.51	10.04	49.55	56.03	-6.48	QP	
4	0.4980	31.29	10.04	41.33	46.03	-4.70	AVG	
5	0.9980	36.75	9.97	46.72	56.00	-9.28	QP	
6	0.9980	20.05	9.97	30.02	46.00	-15.98	AVG	
7	1.5060	36.13	9.99	46.12	56.00	-9.88	QP	
8	1.5060	23.26	9.99	33.25	46.00	-12.75	AVG	
9	6.5220	35.80	10.05	45.85	60.00	-14.15	QP	
10	6.5220	27.66	10.05	37.71	50.00	-12.29	AVG	
11	10.7739	34.22	9.89	44.11	60.00	-15.89	QP	
12	10.7739	25.95	9.89	35.84	50.00	-14.16	AVG	

6.2 Radiation Emission, 30MHz to 1000MHz

Test Requirement..... : FCC PART 15, SUBPART B

Test Method..... : ANSI C63.4

Test Limit ..... FCC PART 15, SUBPART B Section 15.109

Test Result..... : Pass

Frequency Range ..... : 30MHz to 1000MHz

Class..... : Class B

Limit..... :

Frequency (MHz)	Distance (Meter)	Limit (dBμV/m) Quasi-peak
30 to 88	3	40
88 to 216	3	43.5
216 to 960	3	46
960 to 1000	3	54

6.2.1 E.U.T. Operation

Operating Environment:

Temperature..... : 26°C

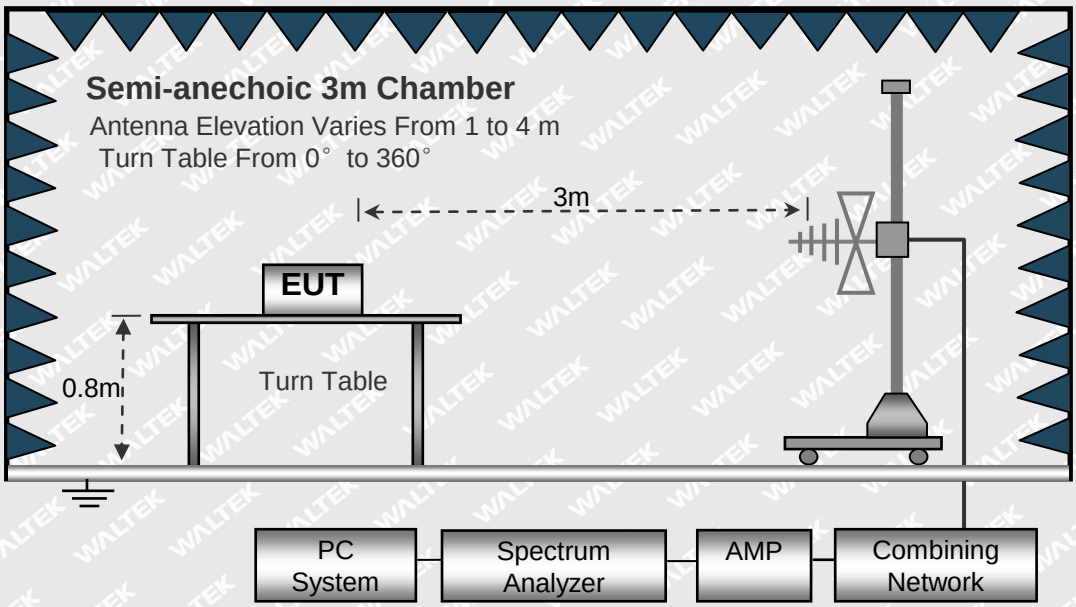
Humidity ..... : 54%RH

Atmospheric Pressure..... : 101.1kPa

EUT Operation..... : Lighting mode

6.2.2 Block Diagram of Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4.



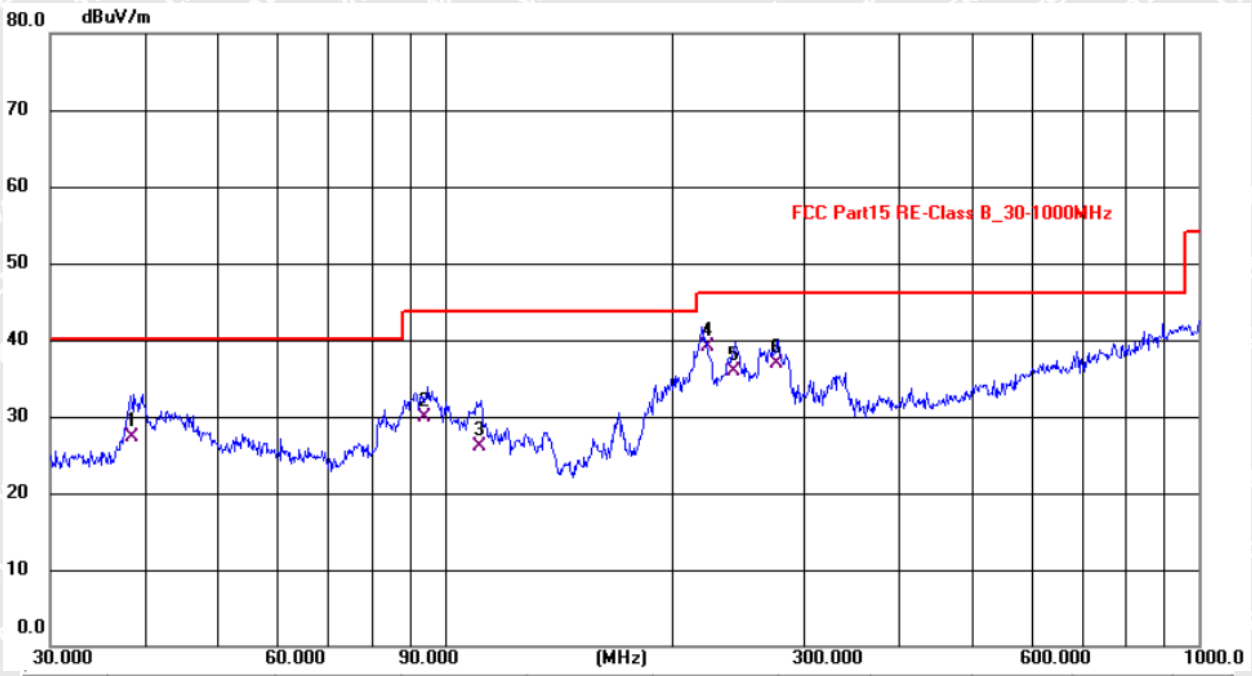
6.2.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Quasi-peak measurements were performed if peak emissions were within 6dB of the Quasi-peak limit line.

6.2.4 Radiated Emission Test Data, 30MHz to 1000MHz

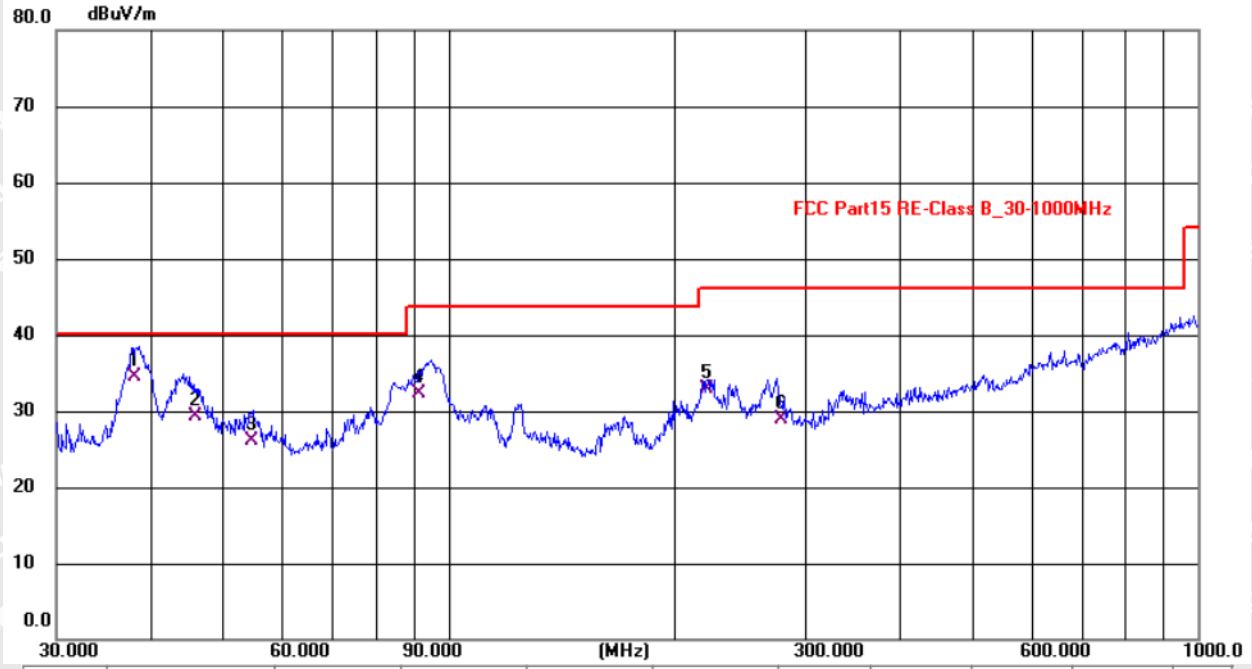
AC 120V/60Hz

Antenna Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1	38.3818	14.33	12.97	27.30	40.00	12.70	QP	200	0	P
2	93.7830	17.41	12.55	29.96	43.50	13.54	QP	200	0	P
3	111.0180	14.02	12.12	26.14	43.50	17.36	QP	200	0	P
4 *	222.3503	26.01	13.05	39.06	46.00	6.94	QP	100	0	P
5	241.3922	21.48	14.33	35.81	46.00	10.19	QP	100	0	P
6	275.1734	22.29	14.66	36.95	46.00	9.05	QP	100	0	P

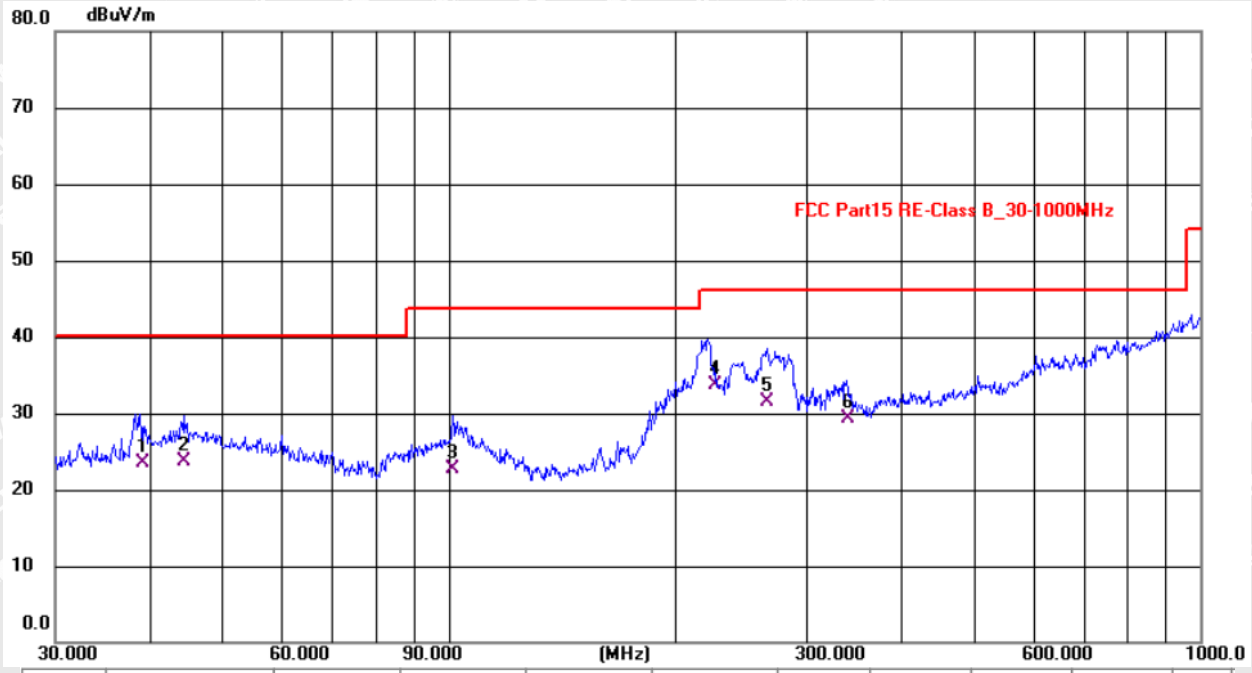
Antenna Polarization: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1 *	38.0961	21.57	12.87	34.44	40.00	5.56	QP	100	0	P
2	45.9952	14.88	14.48	29.36	40.00	10.64	QP	100	0	P
3	54.6148	12.65	13.43	26.08	40.00	13.92	QP	200	0	P
4	91.4430	20.03	12.26	32.29	43.50	11.21	QP	200	0	P
5	220.7471	19.96	12.87	32.83	46.00	13.17	QP	200	0	P
6	277.6939	14.20	14.72	28.92	46.00	17.08	QP	100	0	P

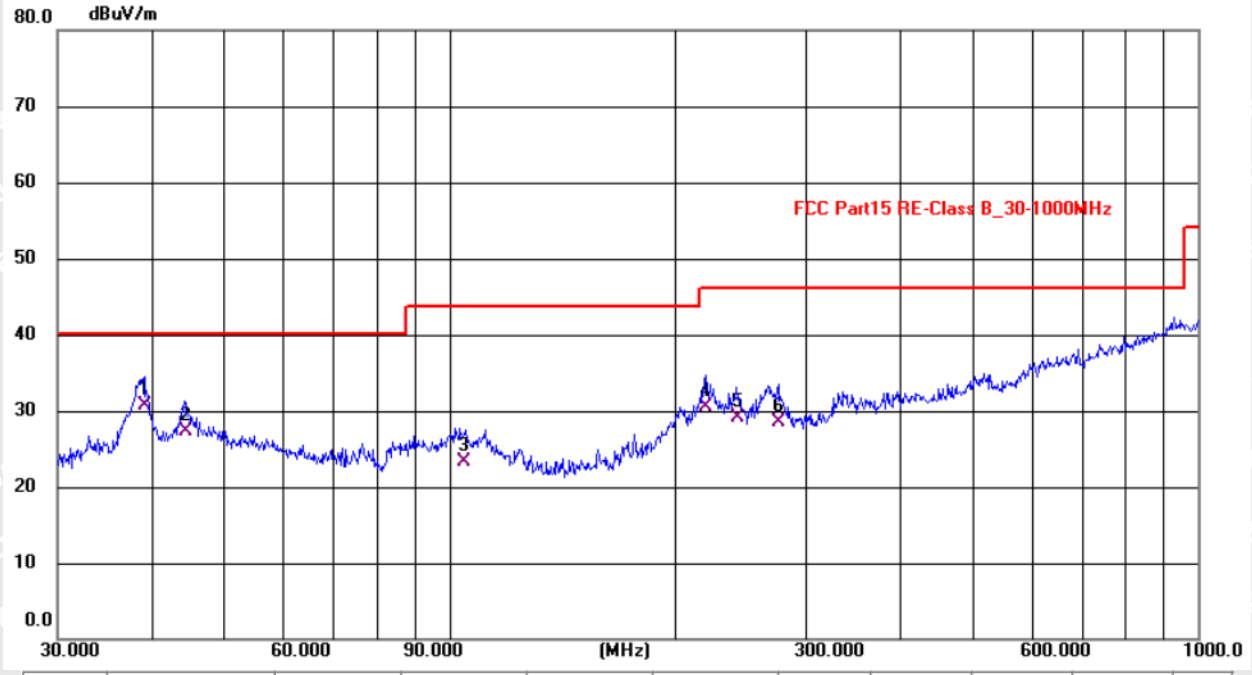
AC 277V/60Hz

Antenna Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1	39.0962	10.36	13.22	23.58	40.00	16.42	QP	100	0	P
2	44.4308	9.25	14.39	23.64	40.00	16.36	QP	200	0	P
3	101.2885	9.68	12.99	22.67	43.50	20.83	QP	200	0	P
4 *	225.9271	20.43	13.37	33.80	46.00	12.20	QP	200	0	P
5	265.6757	16.91	14.62	31.53	46.00	14.47	QP	200	0	P
6	338.4001	11.95	17.26	29.21	46.00	16.79	QP	100	0	P

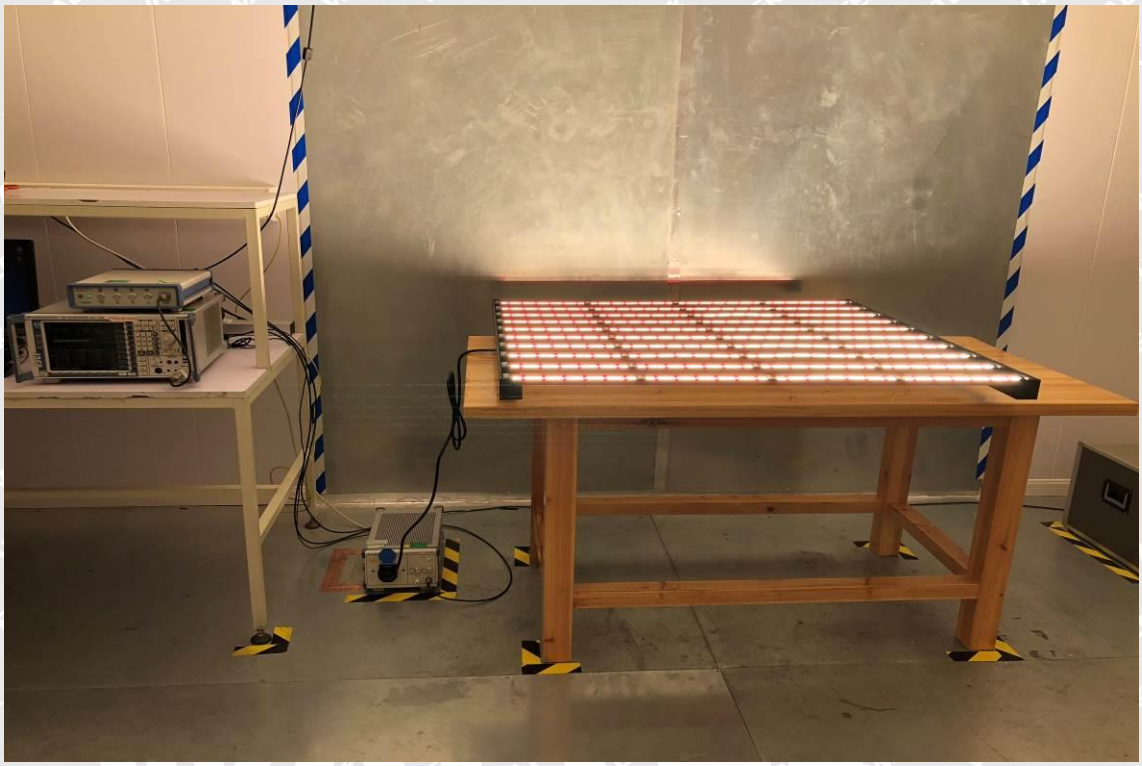
Antenna Polarization: Vertical

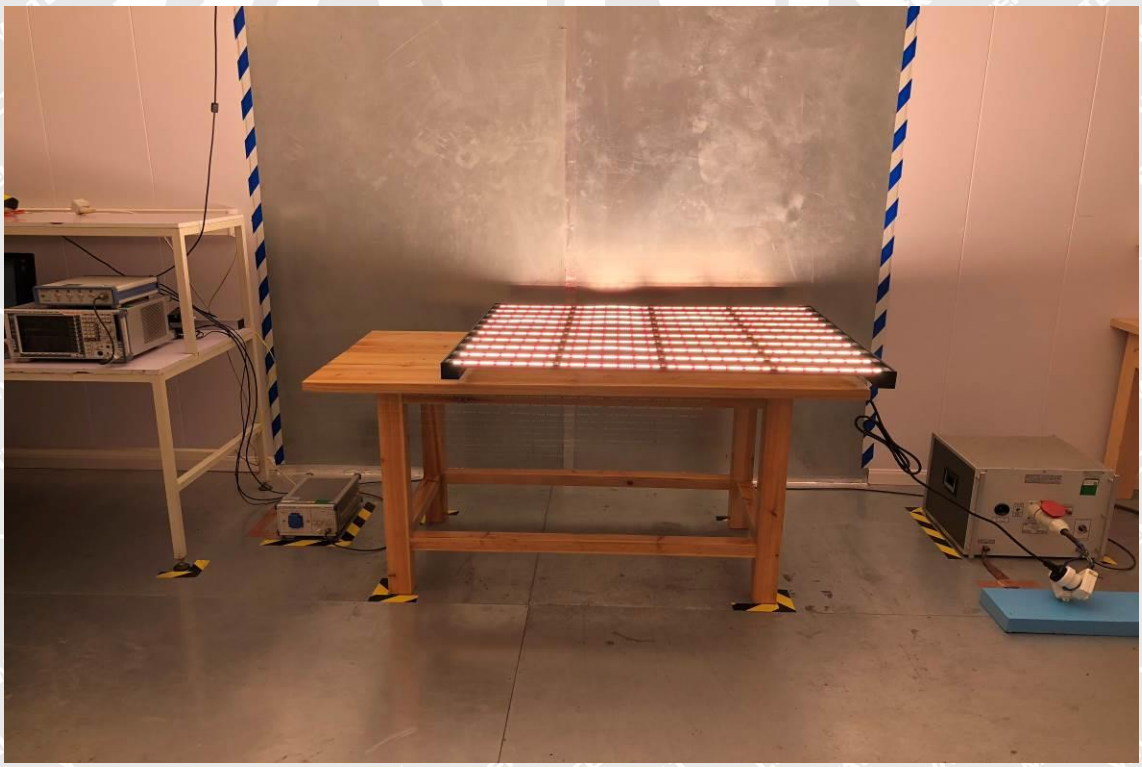


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1 *	39.1616	17.53	13.25	30.78	40.00	9.22	QP	200	0	P
2	44.2752	12.98	14.38	27.36	40.00	12.64	QP	200	0	P
3	104.2443	10.36	12.88	23.24	43.50	20.26	QP	200	0	P
4	219.8449	17.61	12.80	30.41	46.00	15.59	QP	200	0	P
5	241.6763	14.75	14.33	29.08	46.00	16.92	QP	200	0	P
6	275.1570	13.79	14.66	28.45	46.00	17.55	QP	200	0	P

7 Photographs – Test Setup

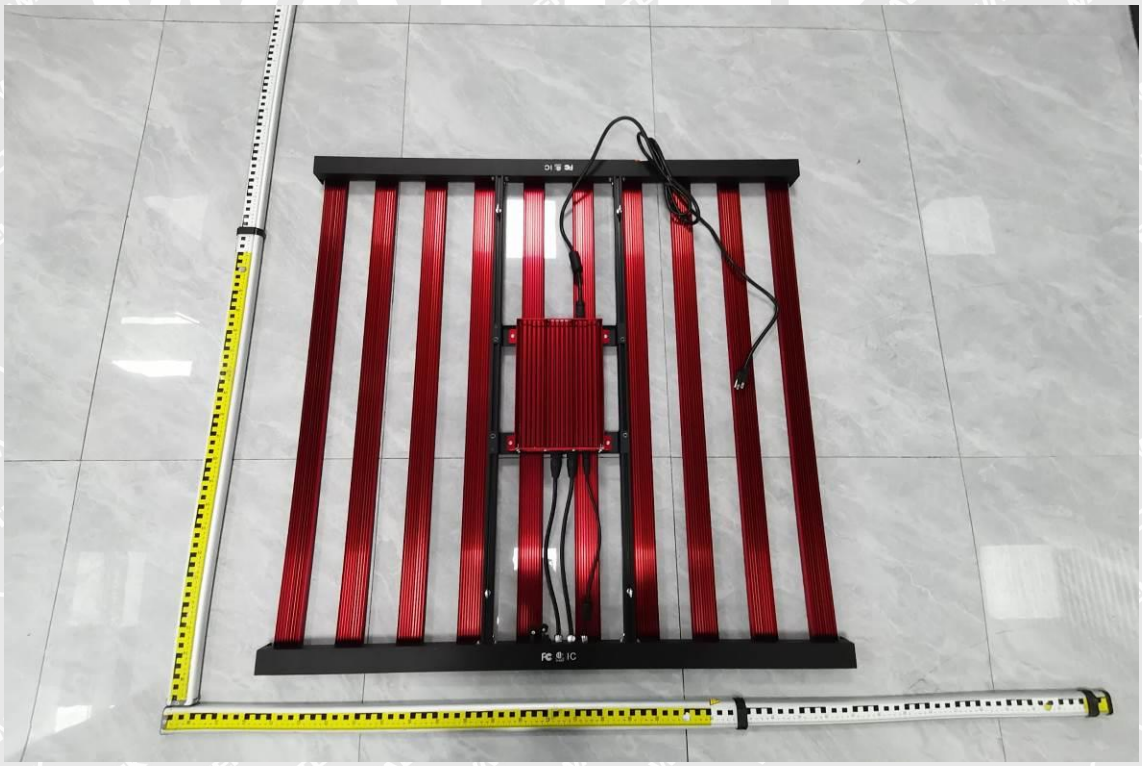
7.1 Photograph –Conducted Emission at the mains terminals Test Setup





7.2 Photograph –Radiated Emission Test Setup For 30MHz-1000MHz

8 Photographs – EUT View



======End of Report======