



# TEST REPORT

**Reference No.**..... : WTU21U04029219E  
**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**..... : ICES-005 Issue 5:2018  
**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.

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## 2 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTU21U04029219E	Dec.22, 2020	Dec.22, 2020 to Dec.23, 2020	Apr.08, 2021	Original	/	Valid

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### 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  
WTU20U12098806E 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)	ICES-005 Issue 5:2018	Pass
Radiated Emission (30MHz to 1GHz)	ICES-005 Issue 5:2018	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

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## 5 Equipment Used during Test

### 5.1 Equipment List

<input checked="" type="checkbox"/> 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
<input checked="" type="checkbox"/> 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~6GHz)	±4.75dB

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

### 5.3 Test Mode

Test Item	Test Mode	Test Voltage
AC Power Line Conducted Emission (150kHz to 30MHz)	Lighting mode	AC 120V/60Hz AC 277V/60Hz
Radiated Emissions (30MHz-1GHz)	Lighting mode	AC 120V/60Hz AC 277V/60Hz





## 6 Emission Test Results

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

**Test Requirement** ..... : ICES-005 Issue 5:2018  
**Test Method**..... : ANSI C63.4  
**Test Result**..... : Pass  
**Test Limit**..... : ICES-005 Issue 5:2018, Section 5.5, Table 2  
**Frequency Range**..... : 150kHz to 30MHz  
**Class** ..... : Class B

**Limit** .....

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

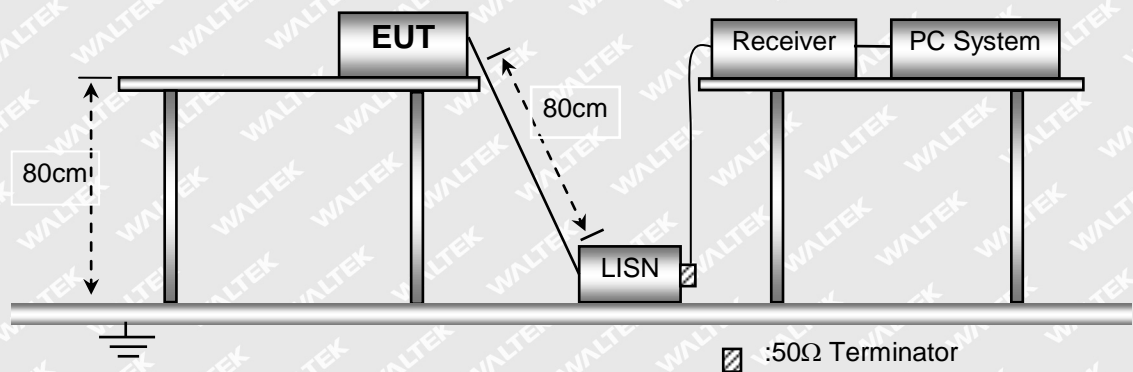
#### 6.1.1 E.U.T. Operation

**Operating Environment:**

**Temperature** ..... : 24°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 ICES-005 Issue 5:2018





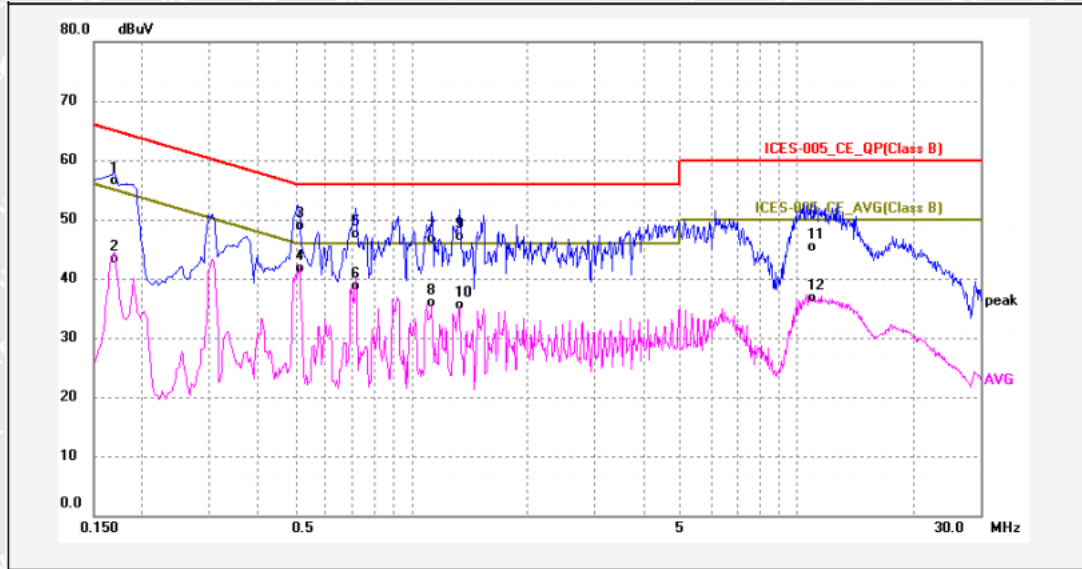
### 6.1.3 Measurement Data

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:

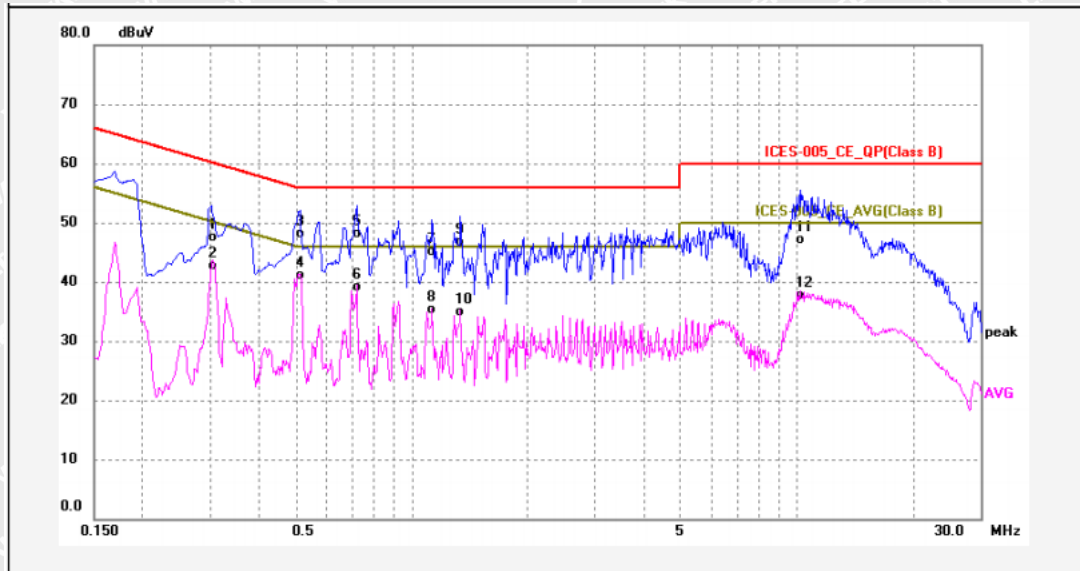


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1700	36.94	19.59	56.53	64.96	-8.43	QP	
2	0.1700	23.66	19.59	43.25	54.96	-11.71	AVG	
3	0.5100	29.19	19.62	48.81	56.00	-7.19	QP	
4	0.5100	22.15	19.62	41.77	46.00	-4.23	AVG	
5	0.7180	27.95	19.64	47.59	56.00	-8.41	QP	
6	0.7180	19.10	19.64	38.74	46.00	-7.26	AVG	
7	1.1340	27.14	19.64	46.78	56.00	-9.22	QP	
8	1.1340	16.18	19.64	35.82	46.00	-10.18	AVG	
9	1.3380	27.46	19.64	47.10	56.00	-8.90	QP	
10	1.3380	15.91	19.64	35.55	46.00	-10.45	AVG	
11	11.1220	25.40	19.93	45.33	60.00	-14.67	QP	
12	11.1220	16.76	19.93	36.69	50.00	-13.31	AVG	





**Neutral Line:**

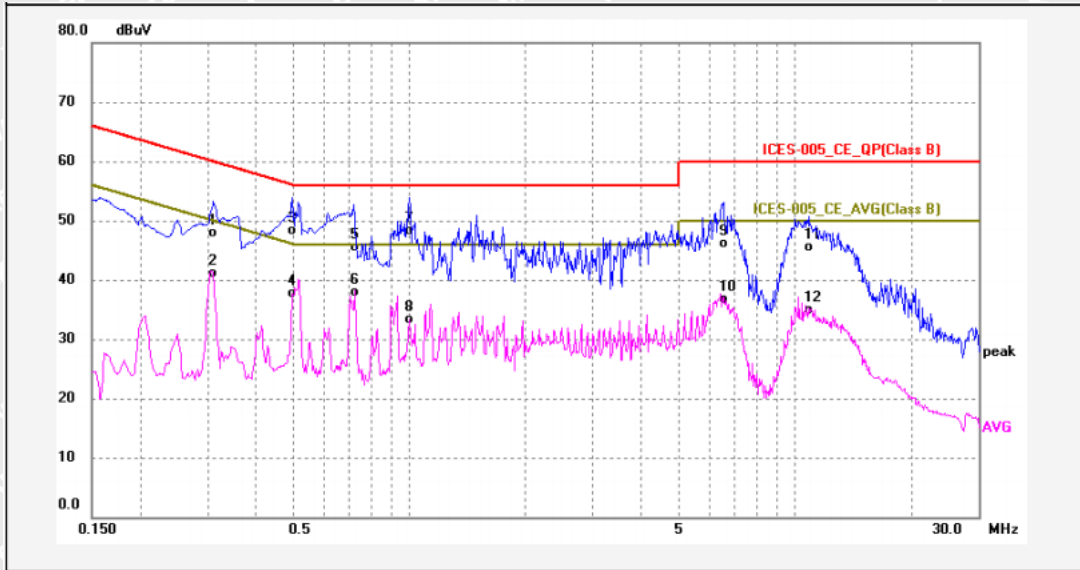


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.3020	28.00	19.60	47.60	60.19	-12.59	QP	
2	0.3020	23.14	19.60	42.74	50.19	-7.45	AVG	
3	0.5140	28.52	19.62	48.14	56.00	-7.86	QP	
4	0.5140	21.43	19.62	41.05	46.00	-4.95	AVG	
5	0.7220	28.39	19.63	48.02	56.00	-7.98	QP	
6	0.7220	19.57	19.63	39.20	46.00	-6.80	AVG	
7	1.1340	25.53	19.64	45.17	56.00	-10.83	QP	
8	1.1340	15.57	19.64	35.21	46.00	-10.79	AVG	
9	1.3420	27.09	19.64	46.73	56.00	-9.27	QP	
10	1.3420	15.25	19.64	34.89	46.00	-11.11	AVG	
11	10.2260	27.18	19.90	47.08	60.00	-12.92	QP	
12	10.2260	17.74	19.90	37.64	50.00	-12.36	AVG	



**AC 277V/60Hz**

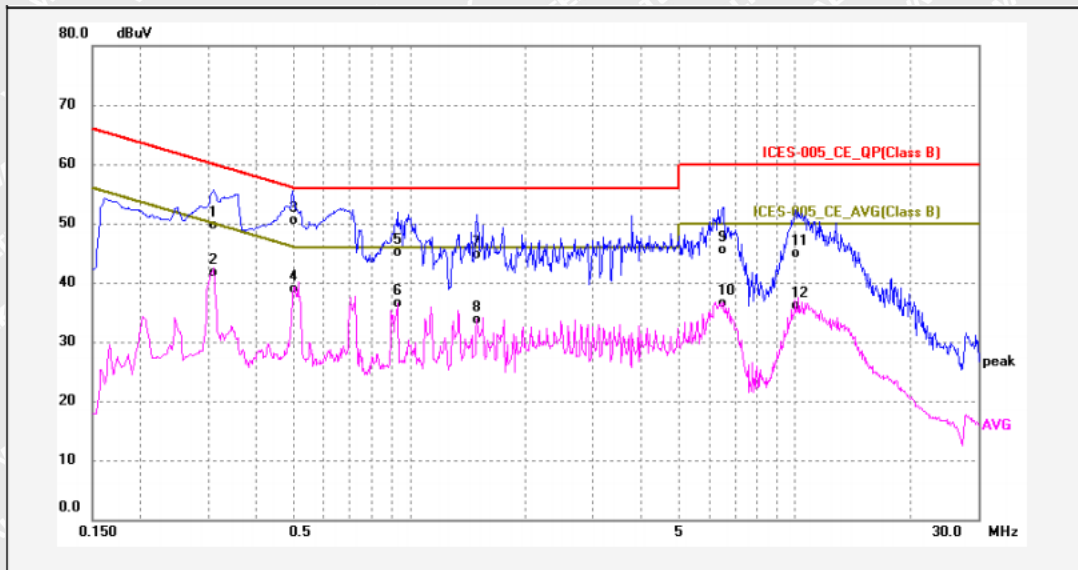
**Live Line:**



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.3100	37.88	9.98	47.86	59.97	-12.11	QP	
2	0.3100	31.03	9.98	41.01	49.97	-8.96	AVG	
3	0.4980	38.31	9.95	48.26	56.03	-7.77	QP	
4	0.4980	27.74	9.95	37.69	46.03	-8.34	AVG	
5	0.7180	35.62	9.93	45.55	56.00	-10.45	QP	
6	0.7180	28.03	9.93	37.96	46.00	-8.04	AVG	
7	1.0020	38.49	9.90	48.39	56.00	-7.61	QP	
8	1.0020	23.47	9.90	33.37	46.00	-12.63	AVG	
9	6.5380	36.34	9.74	46.08	60.00	-13.92	QP	
10	6.5380	27.04	9.74	36.78	50.00	-13.22	AVG	
11	10.8979	35.83	9.59	45.42	60.00	-14.58	QP	
12	10.8979	25.25	9.59	34.84	50.00	-15.16	AVG	



### Neutral Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.3100	39.64	10.03	49.67	59.97	-10.30	QP	
2	0.3100	31.63	10.03	41.66	49.97	-8.31	AVG	
3	0.4980	40.42	10.04	50.46	56.03	-5.57	QP	
4	0.4980	28.89	10.04	38.93	46.03	-7.10	AVG	
5	0.9300	35.06	9.97	45.03	56.00	-10.97	QP	
6	0.9300	26.49	9.97	36.46	46.00	-9.54	AVG	
7	1.4980	34.71	9.99	44.70	56.00	-11.30	QP	
8	1.4980	23.76	9.99	33.75	46.00	-12.25	AVG	
9	6.5220	35.42	10.05	45.47	60.00	-14.53	QP	
10	6.5220	26.45	10.05	36.50	50.00	-13.50	AVG	
11	10.1140	34.91	9.98	44.89	60.00	-15.11	QP	
12	10.1140	26.10	9.98	36.08	50.00	-13.92	AVG	





## 6.2 Radiation Emission, 30MHz to 1000MHz

Test Requirement.....	: ICES-005 Issue 5:2018
Test Method.....	: ANSI C63.4
Test Limit .....	: ICES-005 Issue 5:2018, Section 5.5, Table 4
Test Result.....	: Pass
Frequency Range .....	: 30MHz to 1000MHz
Class.....	: Class B
Limit.....	:

Frequency (MHz)	Distance (Meter)	Limit (dB $\mu$ V/m)
		Quasi-peak
30 to 88	3	40
88 to 216	3	43.5
216 to 1000	3	46

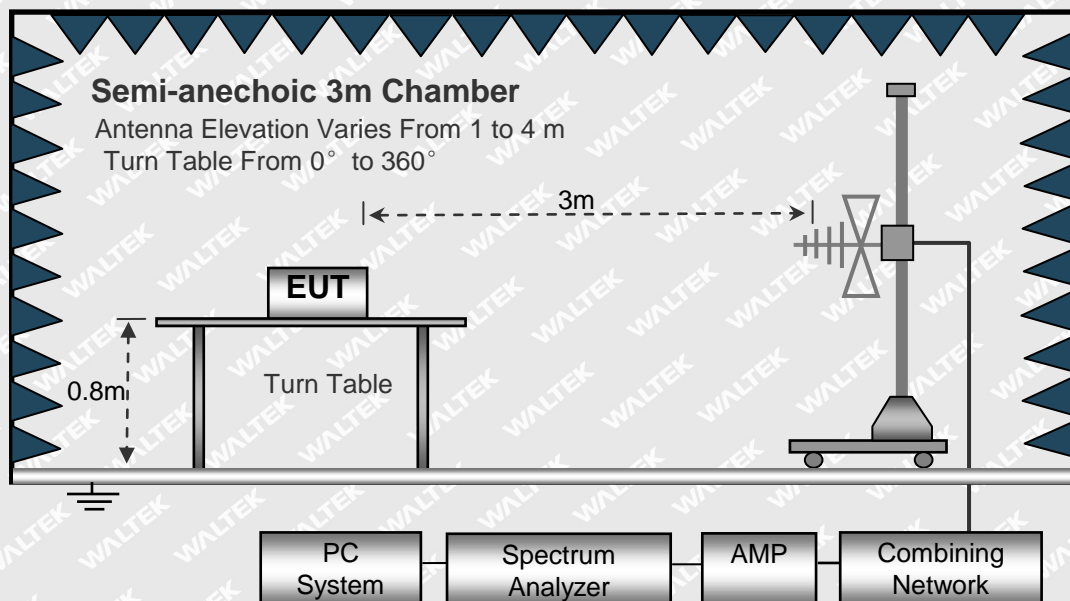
### 6.2.1 E.U.T. Operation

#### Operating Environment:

Temperature.....	: 26°C
Humidity .....	: 54%RH
Atmospheric Pressure.....	: 101 kPa
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 ICES-005 Issue 5:2018





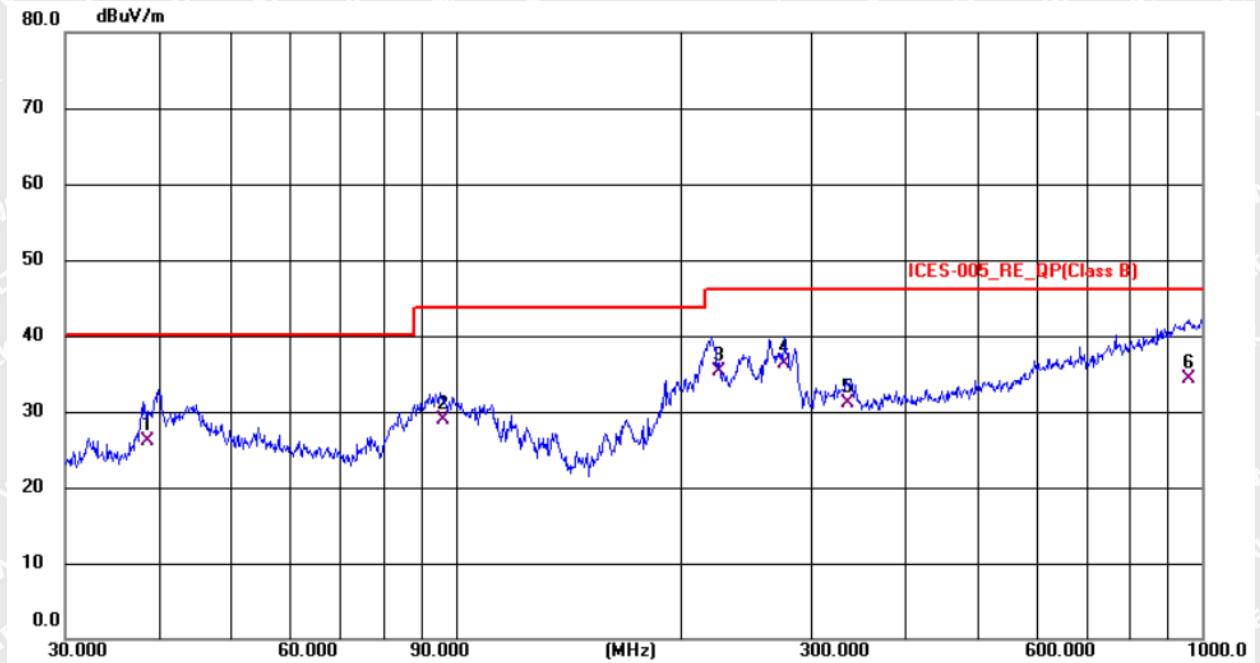
### 6.2.3 Measurement Data

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

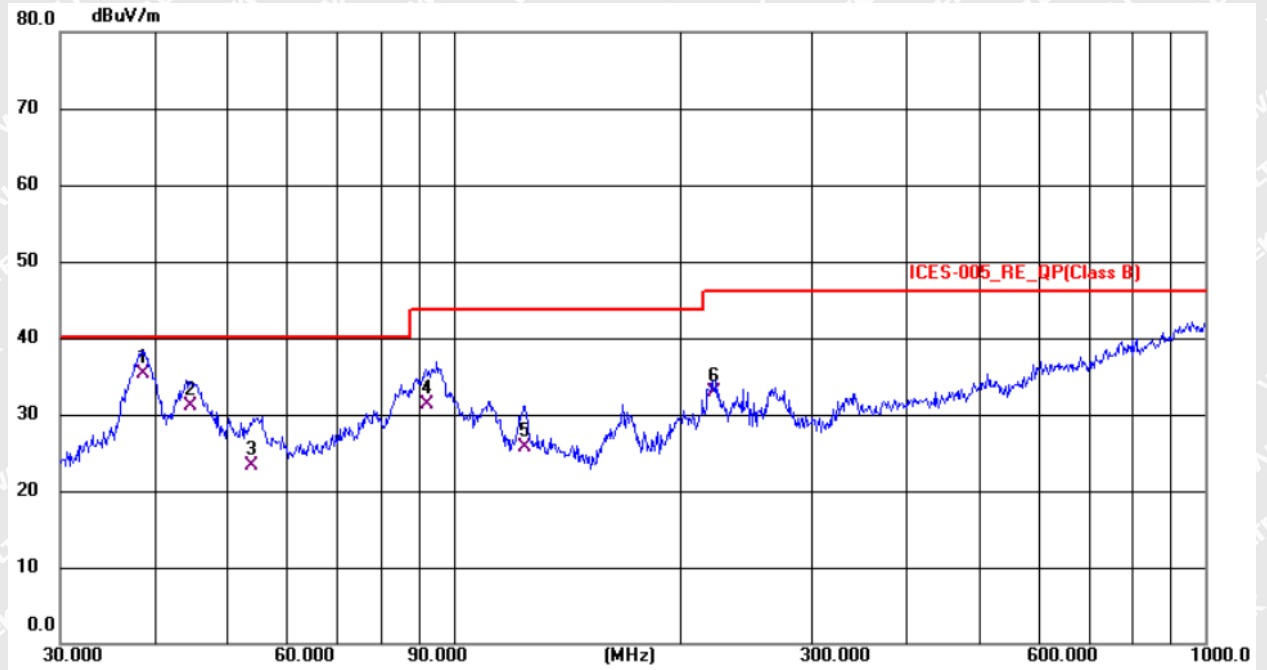
#### Antenna Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1	38.7192	13.01	13.09	26.10	40.00	13.90	QP	200	359	P
2	96.0720	16.23	12.77	29.00	43.50	14.50	QP	100	359	P
3	224.5649	22.12	13.28	35.40	46.00	10.60	QP	200	359	P
4 *	274.2336	21.68	14.66	36.34	46.00	9.66	QP	100	359	P
5	334.2616	14.14	17.00	31.14	46.00	14.86	QP	200	359	P
6	961.3843	6.11	28.26	34.37	46.00	11.63	QP	100	359	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 *	38.5609	22.19	13.04	35.23	40.00	4.77	QP	200	359	P
2	44.7402	16.66	14.41	31.07	40.00	8.93	QP	200	359	P
3	53.8644	9.86	13.51	23.37	40.00	16.63	QP	100	359	P
4	92.0330	18.95	12.33	31.28	43.50	12.22	QP	100	359	P
5	124.3580	15.51	10.13	25.64	43.50	17.86	QP	200	359	P
6	222.1334	19.89	13.02	32.91	46.00	13.09	QP	100	359	P





## AC 277V/60Hz

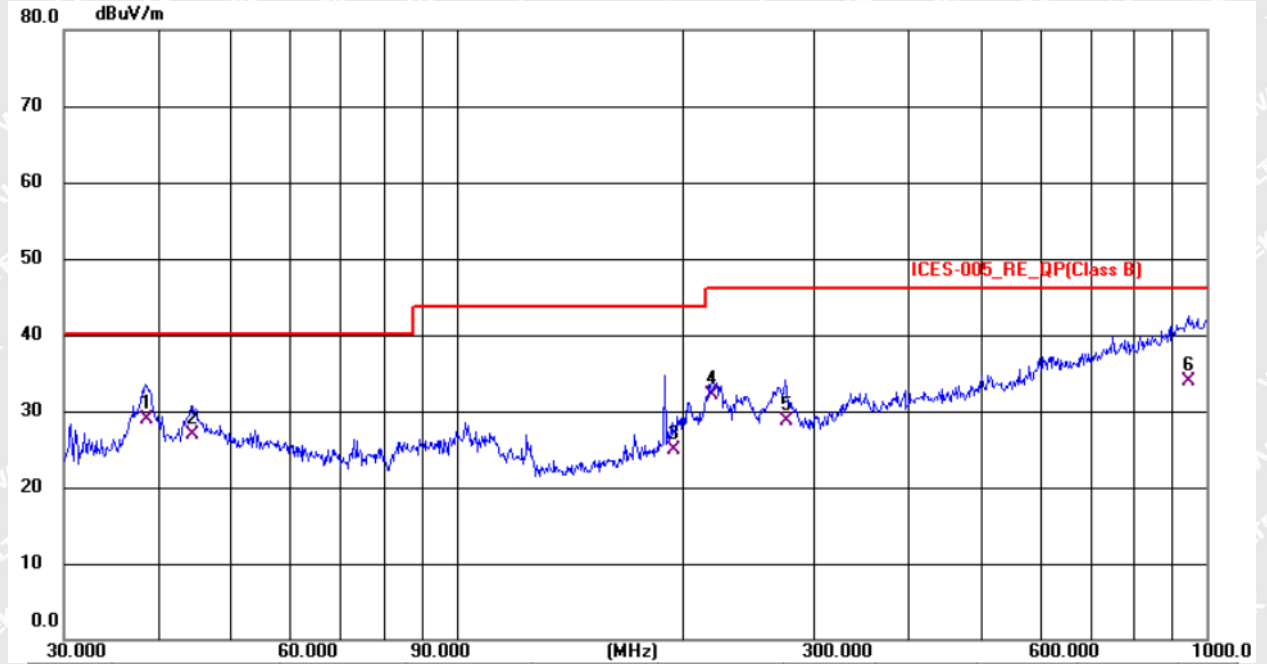
Antenna Polarization: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1	39.1391	10.63	13.24	23.87	40.00	16.13	QP	200	359	P
2	103.3121	11.51	12.92	24.43	43.50	19.07	QP	100	359	P
3 *	221.6553	25.09	12.98	38.07	46.00	7.93	QP	200	359	P
4	258.7505	20.55	14.43	34.98	46.00	11.02	QP	200	359	P
5	288.7317	16.57	15.73	32.30	46.00	13.70	QP	100	359	P
6	965.5571	6.11	28.12	34.23	46.00	11.77	QP	100	359	P



**Antenna Polarization: Vertical**

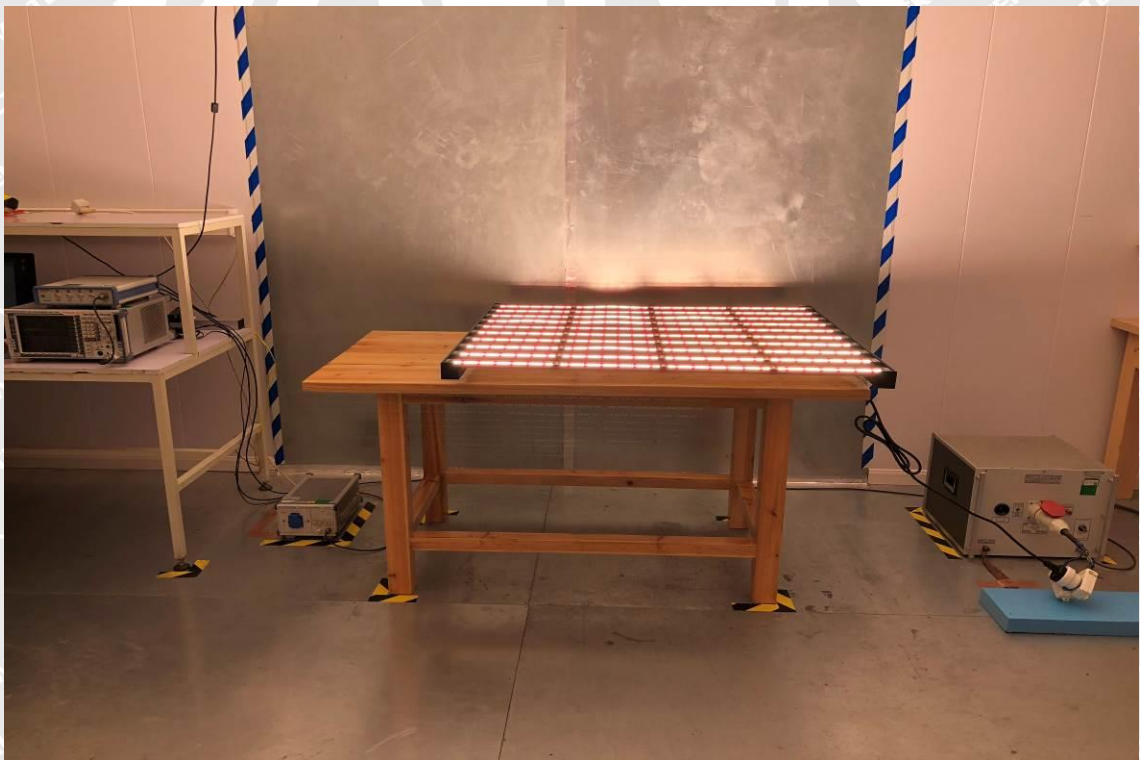
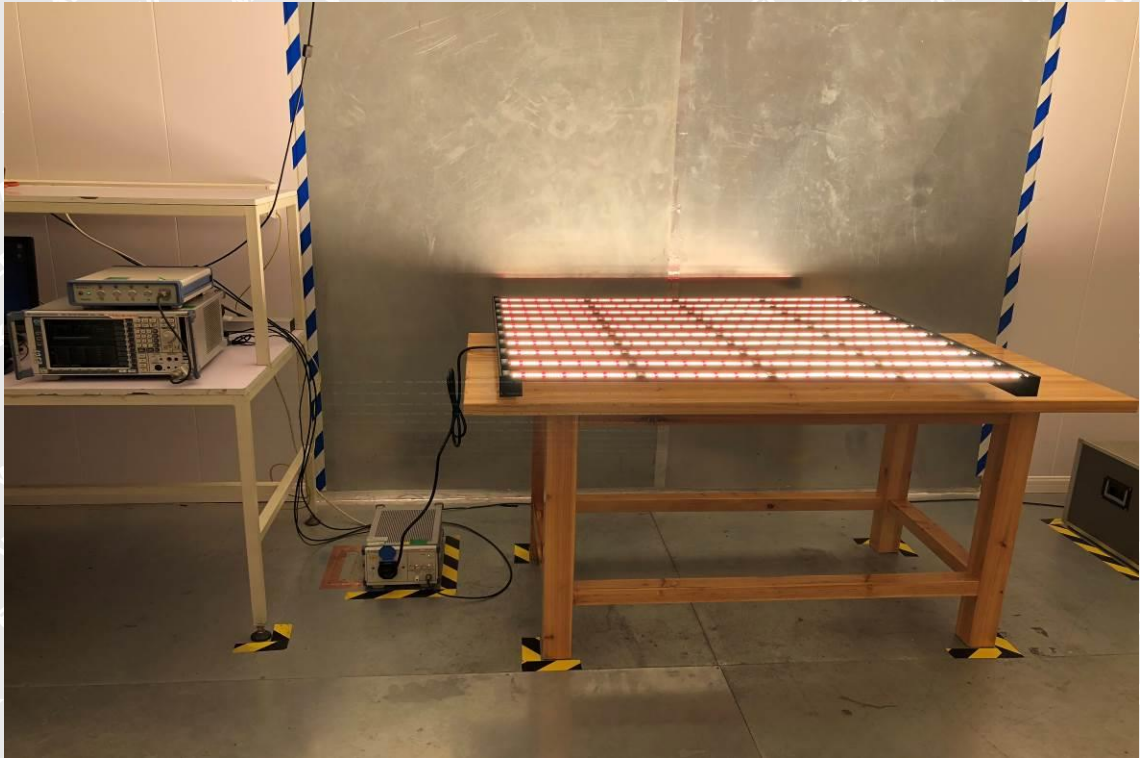


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F
1 *	38.5359	15.78	13.03	28.81	40.00	11.19	QP	100	359	P
2	44.3858	12.46	14.39	26.85	40.00	13.15	QP	100	0	P
3	194.5084	12.27	12.72	24.99	43.50	18.51	QP	200	0	P
4	218.6348	19.23	12.82	32.05	46.00	13.95	QP	200	359	P
5	274.7389	14.10	14.66	28.76	46.00	17.24	QP	200	359	P
6	944.6899	5.98	27.99	33.97	46.00	12.03	QP	100	359	P



## 7 Photographs – Test Setup

### 7.1 Photograph –Conducted Emission at the mains terminals Test Setup







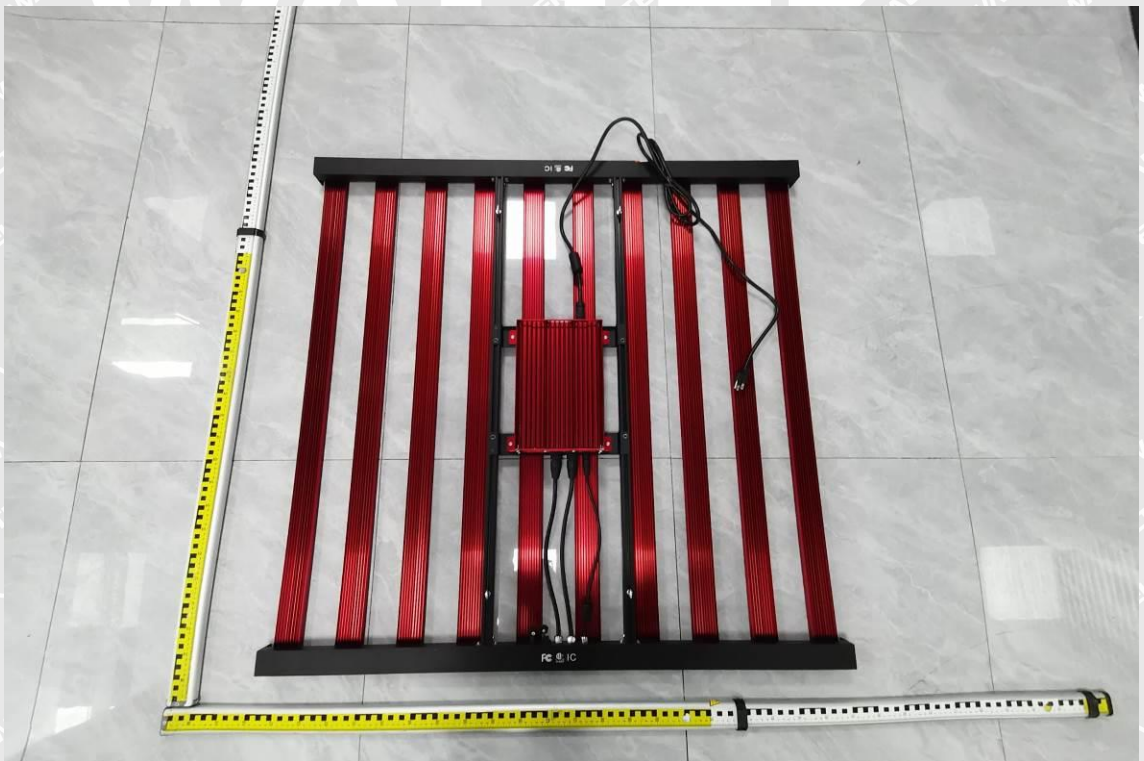
## 7.2 Photograph –Radiated Emission Test Setup For 30MHz-1000MHz



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### 8 Photographs – EUT View



====End of Report====