


# FCC TEST REPORT

Product Name: Mobile UV Light Room Sterilizer

Trademark: 

Model Number: LYL-ZXC-S  
LYL-ZXC-D, LYL-ZXC-N01, LYL-ZXC-U, LYL-ZXC-Z, LYL-ZXC-H

Prepared For: GUANGDONG LIANGYUELIANG PHOTOELECTRIC TECHNOLOGY CO., LTD  
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Sample Received Date: Mar. 24, 2020

Sample tested Date: Mar. 24, 2020 to Mar. 30, 2020

Issue Date: Mar. 30, 2020

Report No.: BCTC2003001505E

Test Standards 47 CFR FCC Part 15 Subpart B

Test Results PASS

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Approved by:



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(Note: N/A means not applicable)

## 1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2003001505E	Mar. 30, 2020	Original	Valid

## 2. TEST SUMMARY

The Product has been tested according to the following specifications:

Standard	Test Item	Test result
FCC 15.107	Conducted Emission	Pass
FCC 15.109	Radiated Emission	Pass

### 3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

Test item	Value (dB)
Conducted Emission (150kHz-30MHz)	3.20
Radiated Emission(30MHz~1GHz)	4.80
Radiated Emission(1GHz~6GHz)	4.90

## 4. PRODUCT INFORMATION AND TEST SETUP

### 4.1 Product Information

**Ratings:** AC120V 60Hz

**Model difference:** All models are identical except for the appearance color, the test model is LYL-ZXC-S and the test results are applicable to other tests.

**Cable of Product**

No.	Cable Type	Quantity	Provider	Length (m)	Specification	Note
1	--	--	Applicant	---	Shielded	With a ferrite ring in mid Detachable
2	--	--	BCTC	--	Unshielded	--

### 4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

### 4.3 Support Equipment

No	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
1.	---	---	---	---	---	---

**Notes:**

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

### 4.4 Test Mode

Test item	Test Mode	Test Voltage
Conducted Emission (150KHz-30MHz) Class B	Working	AC 120V/60Hz*
Radiated mission(30MHz-1GHz) Class B	Working	AC 120V/60Hz

All test mode were tested and passed, only Conducted Emissions, Radiated Emissions shows (\*) is the worst case mode which were recorded in this report.

## 5. TEST FACILITY AND TEST INSTRUMENT USED

### 5.1 Test Facility

All measurement facilities used to collect the measurement data are located at BCTC Building & 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

### 5.2 Test Instrument Used

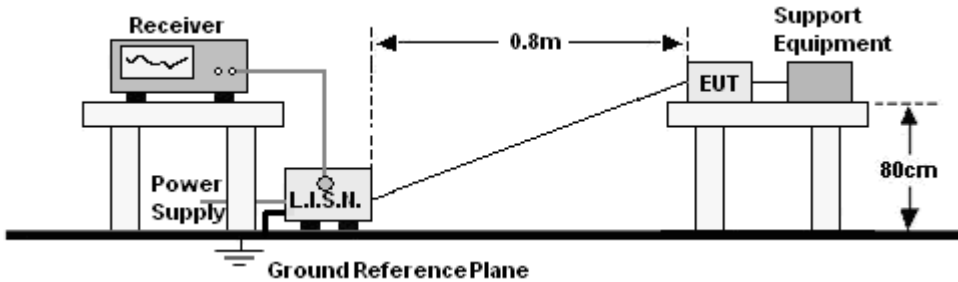
Disturbance voltages Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	Jun. 13, 2019	Jun.12, 2020
LISN	R&S	ENV216	101375	Jun. 13, 2019	Jun.12, 2020
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

Radiated disturbance Test (966 chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Jun. 19, 2018	Jun. 18, 2021
Receiver	R&S	ESR3	102075	Jun. 13, 2019	Jun. 12, 2020
Receiver	R&S	ESRP	101154	Jun. 13, 2019	Jun. 12, 2020
Amplifier	Schwarzbeck	BBV9744	9744-0037	Jun. 25, 2019	Jun. 24, 2020
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	VULB9163-942	Jun. 22, 2019	Jun. 21, 2020
Horn Antenna	SCHWARZBECK	BBHA9120 D	1201	Jun. 22, 2019	Jun. 21, 2020
Amplifier	Schwarzbeck	BBV9718	9718-309	Jun. 25, 2019	Jun. 24, 2020
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

## 6. CONDUCTED EMISSION AT THE MAINS TERMINALS TEST

### 6.1 Block Diagram Of Test Setup

For mains ports:



### 6.2 Limit

Limits for Class B devices

(MHz)	Limits dB( $\mu$ V)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56*	56 to 46*
0,50 to 5	56	46
5 to 30	60	50

Notes: 1. \*Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

### 6.3 Test procedure

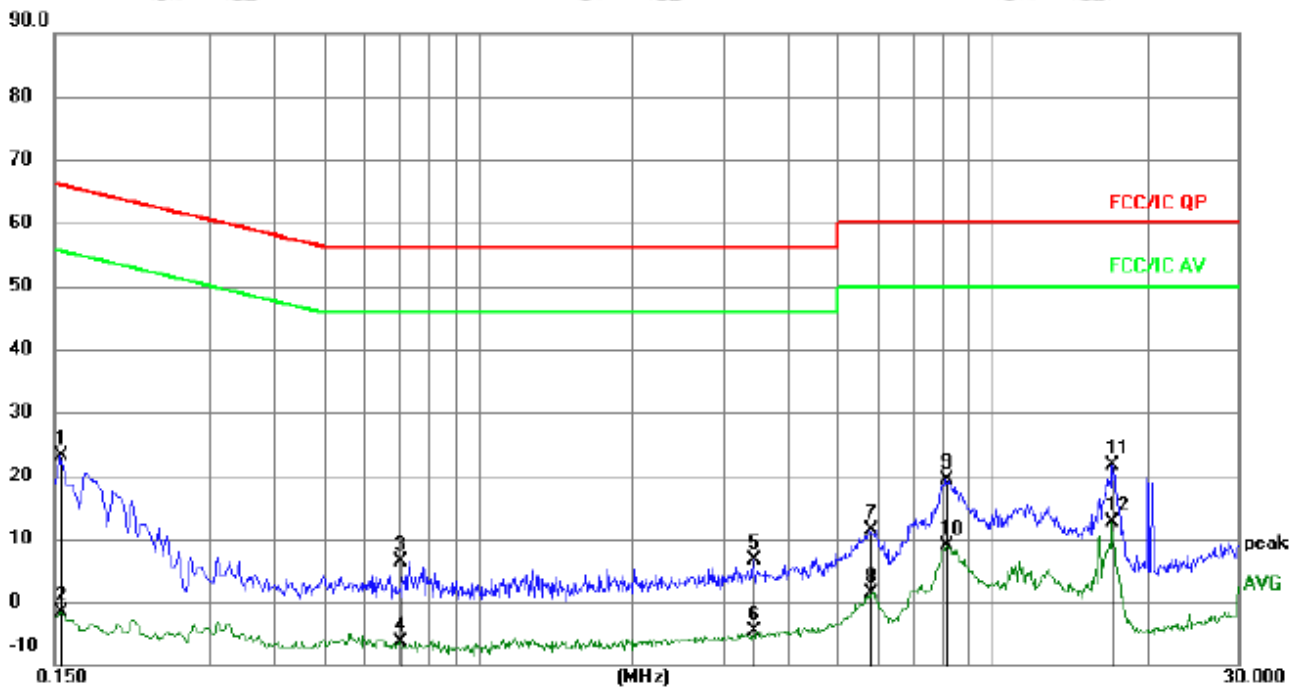
For mains ports:

- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.



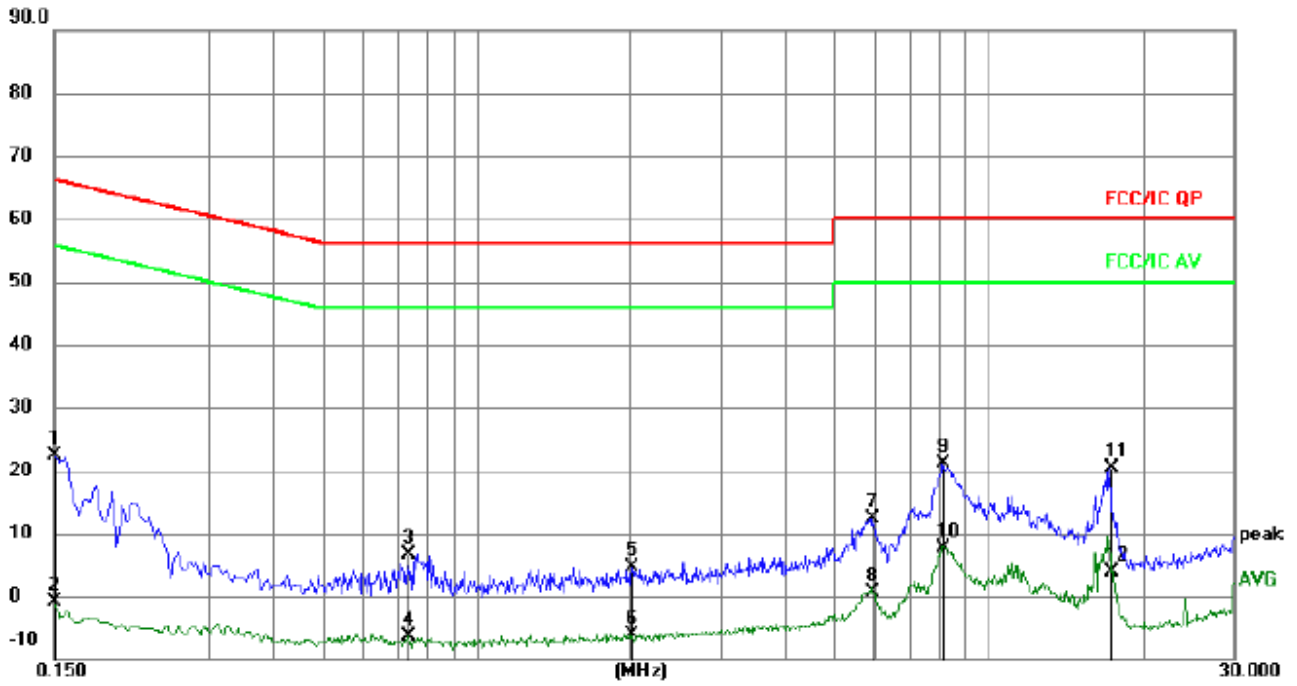
## 6.4 Test Result

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Line
Test Voltage :	AC 120V/60Hz	Test Mode:	Working



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz		dB	dBuV	dBuV	dB		
1		0.1545	13.57	9.51	23.08	65.75	-42.67	QP	
2		0.1545	-11.04	9.51	-1.53	55.75	-57.28	AVG	
3		0.7035	-3.19	9.65	6.46	56.00	-49.54	QP	
4		0.7035	-16.08	9.65	-6.43	46.00	-52.43	AVG	
5		3.4305	-3.05	9.69	6.64	56.00	-49.36	QP	
6		3.4305	-14.23	9.69	-4.54	46.00	-50.54	AVG	
7		5.7795	1.59	9.77	11.36	60.00	-48.64	QP	
8		5.7795	-8.35	9.77	1.42	50.00	-48.58	AVG	
9		8.1150	9.70	9.71	19.41	60.00	-40.59	QP	
10		8.1150	-0.88	9.71	8.83	50.00	-41.17	AVG	
11		17.0340	11.84	9.74	21.58	60.00	-38.42	QP	
12	*	17.0340	2.99	9.74	12.73	50.00	-37.27	AVG	

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Neutral
Test Voltage :	AC 120V/60Hz	Test Mode:	Working



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment			Detector	Comment
				dB	dBuV	dBuV	dB		
1		0.1500	12.74	9.52	22.26	66.00	-43.74	QP	
2		0.1500	-10.46	9.52	-0.94	56.00	-56.94	AVG	
3		0.7350	-3.00	9.64	6.64	56.00	-49.36	QP	
4		0.7350	-15.93	9.64	-6.29	46.00	-52.29	AVG	
5		2.0040	-4.96	9.59	4.63	56.00	-51.37	QP	
6		2.0040	-15.59	9.59	-6.00	46.00	-52.00	AVG	
7		5.9010	2.71	9.76	12.47	60.00	-47.53	QP	
8		5.9010	-9.23	9.76	0.53	50.00	-49.47	AVG	
9	*	8.1195	11.33	9.71	21.04	60.00	-38.96	QP	
10		8.1195	-2.00	9.71	7.71	50.00	-42.29	AVG	
11		17.2230	10.65	9.74	20.39	60.00	-39.61	QP	
12		17.2230	-5.97	9.74	3.77	50.00	-46.23	AVG	

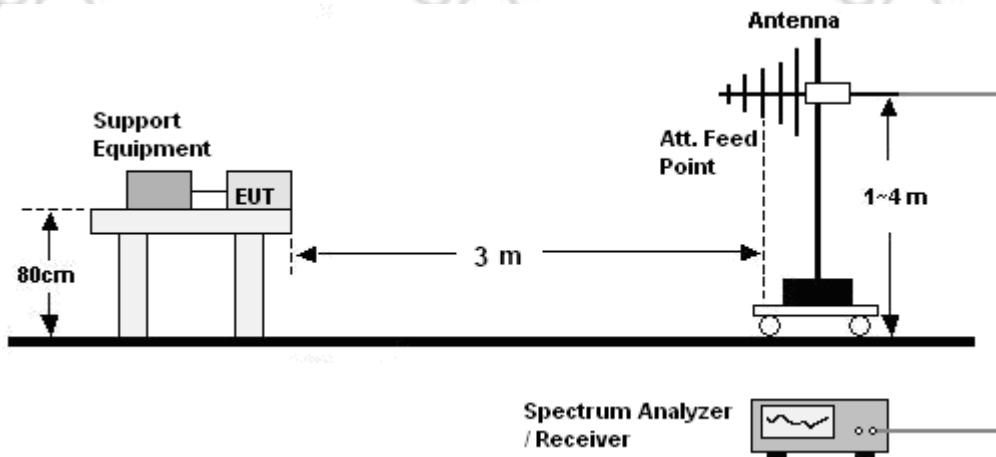
**Remark:**

- All readings are Quasi-Peak and Average values.
- Factor = Insertion Loss + Cable Loss.

## 7. RADIATION EMISSION TEST

### 7.1 Block Diagram Of Test Setup

30MHz ~ 1GHz:



### 7.2 Limit

Limits for Class B devices

Frequency (MHz)	limits at 3m dB( $\mu$ V/m)		
	QP Detector	PK Detector	AV Detector
30-88	40.0	--	--
88-216	43.5	--	--
216-960	46.0	--	--
960 to 1000	54.0	--	--
Above 1000	--	74.0	54.0

**Note:** The lower limit shall apply at the transition frequencies.

### 7.3 Test Procedure

#### **30MHz ~ 1GHz:**

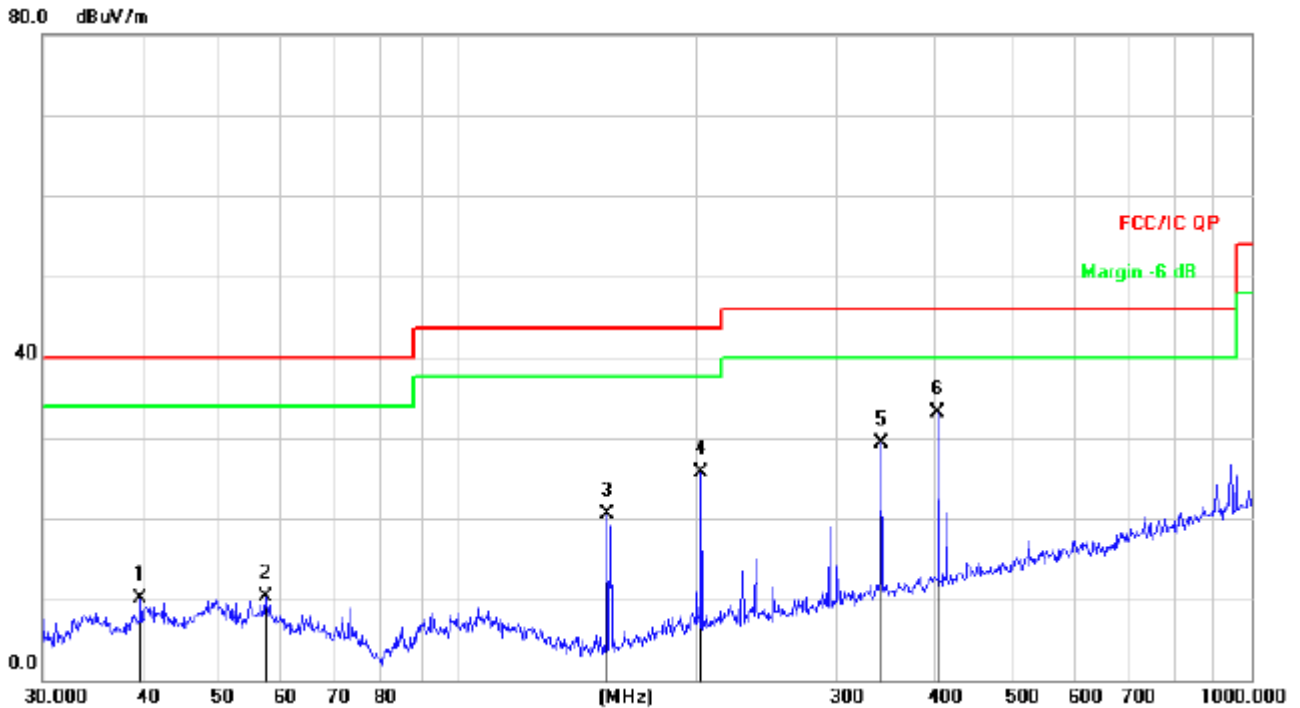
- a. The Product was placed on the nonconductive turntable 0.8 m above the ground at a chamber.
- b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- c. For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

#### Remark:

The highest frequency of the internal sources of the EUT is less than 108 MHz, so the measurement shall only be made up to 1 GHz.

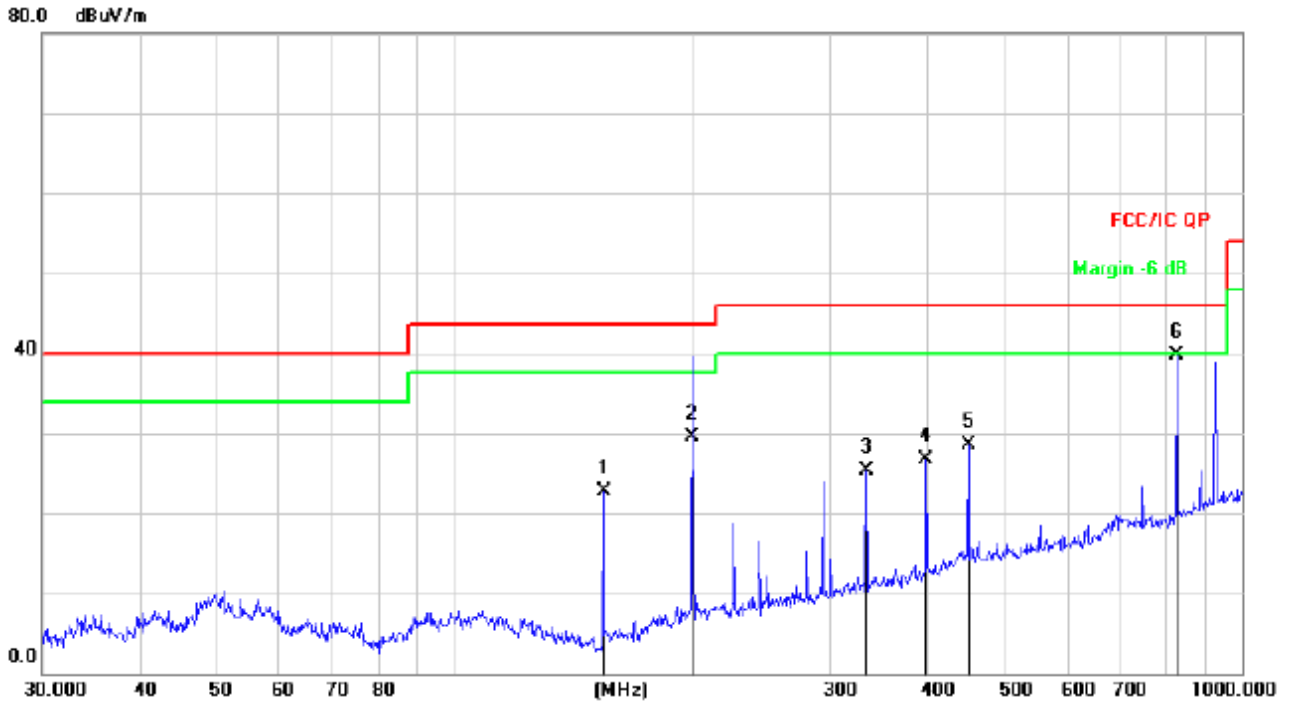
## 7.4 Test Result

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Horizontal
Test Voltage :	AC 120V/60Hz	Test Mode:	Working



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	cm	degree	Comment
1		39.8542	25.50	-15.44	10.06	40.00	-29.94	QP		
2		57.3923	25.84	-15.63	10.21	40.00	-29.79	QP		
3		154.2786	39.73	-19.23	20.50	43.50	-23.00	QP		
4		202.8104	41.97	-16.24	25.73	43.50	-17.77	QP		
5		341.9786	41.83	-12.45	29.38	46.00	-16.62	QP		
6	*	403.2500	44.13	-11.02	33.11	46.00	-12.89	QP		

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Vertical
Test Voltage :	AC 120V/60Hz	Test Mode:	Working



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	cm	degree	Comment
1		154.8204	42.23	-19.46	22.77	43.50	-20.73	QP		
2		200.6881	45.65	-16.12	29.53	43.50	-13.97	QP		
3		333.6867	37.91	-12.68	25.23	46.00	-20.77	QP		
4		397.6334	37.72	-11.06	26.66	46.00	-19.34	QP		
5		449.5558	37.62	-9.07	28.55	46.00	-17.45	QP		
6	*	827.4934	42.80	-3.14	39.66	46.00	-6.34	QP		

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

## 8. EUT PHOTOGRAPHS

EUT Photo 1



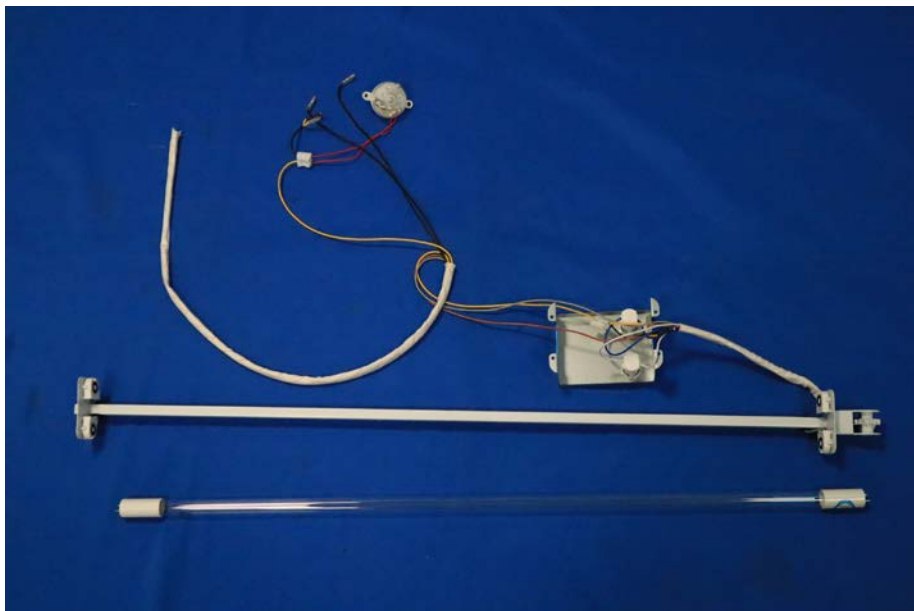
EUT Photo 2



**EUT Photo 3**



**EUT Photo 4**





## 9. EUT TEST SETUP PHOTOGRAPHS

Conducted emission



Radiated emission



\*\*\*\*\* END OF REPORT \*\*\*\*\*