

TEST REPORT

On behalf of
Artika for Living Inc.

LED Panel

Model No.:
15FLPR-SP3-XXX#YY

FCC ID : 2AUHG-15FLPR

Prepared For : Artika for Living Inc.
1756, 50th Avenue Montreal (Lachine), Quebec Canada
H8T 2V5

Prepared By : Audix Technology (Shanghai) Co., Ltd.
3F and 4F, 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai, China 200233

Tel: +86-21-64955500



TESTING
NVLAP LAB CODE 200371-0

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Date of Report : 2021.02.02

The statement is based on a single evaluation of samples of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

TABLE OF CONTENTS

Description	Page
Test Report	3
1 SUMMARY OF STANDARDS AND RESULTS	4
1.1 Description of Standards and Results.....	4
2 GENERAL INFORMATION.....	5
2.1 Description of Device (EUT)	5
2.2 Description of Test Facility	5
3 CONDUCTED EMISSION TEST	6
3.1 Test Equipment.....	6
3.2 Block Diagram of Test Setup	6
3.3 Conducted Emission Limits [FCC Part 15 Subpart B 15.107(a)]	6
3.4 Test Configuration.....	6
3.5 Operating Condition of EUT	7
3.6 Test Procedures	7
3.7 Test Results	7
4 RADIATED EMISSION TEST.....	9
4.1 Test Equipment.....	9
4.2 Block Diagram of Test Setup	9
4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)].....	10
4.4 Test Configuration.....	10
4.5 Operating Condition of EUT	10
4.6 Test Procedures	10
4.7 Test Results	11
5 MEASUREMENT UNCERTAINTY LIST	13
6 PHOTOGRAPHS	1
6.1 Conducted Emission Test.....	1
6.2 Radiated Emission Test	2

APPENDIX (Photos of EUT)

TEST REPORT

Applicant : Artika for Living Inc.
 Manufacturer : Hengdian Group Tospo Lighting Co., Ltd.
 EUT Description : LED Panel
 (A) Model No. : 15FLPR-SP3-XXX#YY
 (B) Power Supply : AC 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B
 AND ANSI C63.4-2014*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B (Class B) limits both radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT, which was tested in 3m anechoic chamber is in technically compliance with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

Date of Test : 2021.01.28 Date of Report : 2021.02.02

Producer : Alan He
 ALAN HE / Assistant

Review : Wency Yang
 WENCY YANG / Deputy Manager

AUDIX[®] For and on behalf of
 Audix Technology (Shanghai) Co., Ltd.

Signatory : Byron Kwo
 Authorized Signature(s) BYRON KWO/Assistant General Manager

Name of the Responsible Party : _____

Signature : _____

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Test Item	Referred Rules/Standard	Limit	Results
EMISSION			
Powerline Conducted Emission	47 CFR FCC Part 15 Subpart B AND ANSI C63.4-2014	15.107(a) Class B	Pass
			Margin 27.99dB at 0.552MHz
Radiated Emission (30-1000MHz)	47 CFR FCC Part 15 Subpart B AND ANSI C63.4-2014	15.109(a) Class B	Pass
			Margin 16.88dB at 31.51MHz (Vertical, 1.90m/80°)
Radiated Emission (Above 1GHz)	47 CFR FCC Part 15 Subpart B AND ANSI C63.4-2014	15.109(a) Class B	N/A

2 GENERAL INFORMATION

2.1 Description of Device (EUT)

Description : LED Panel

Type of EUT : Production Pre-product Pro-type

Model Number : 15FLPR-SP3-XXX#YY

Note : The model number is 15FLPR-SP3-XXX#YY,
"XXX" in the model name is 3 letters, A to Z and 0 to 9, to
represent the customer
"#" is A to Z and 0 to 9, represent the destination country
"YY" is A to Z and 0 to 9, represent the product color.

Test Model : 15FLPR-SP3-WH

Date of receipt : 2021.01.15

Applicant : Artika for Living Inc.
1756, 50th Avenue Montreal (Lachine), Quebec Canada
H8T 2V5

Manufacturer : Hengdian Group Tospo Lighting Co., Ltd.
Hengdian Electronics Industrial Zone, Dongyang Zhejiang
P.R China.

Factory : Same as manufacturer.

2.2 Description of Test Facility

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Test Facilities : No. 3 3m Chamber
No. 1 Shielded Room

NVLAP Lab Code : 200371-0

FCC Designation Number : CN5027

Test Firm Registration Number : 954668

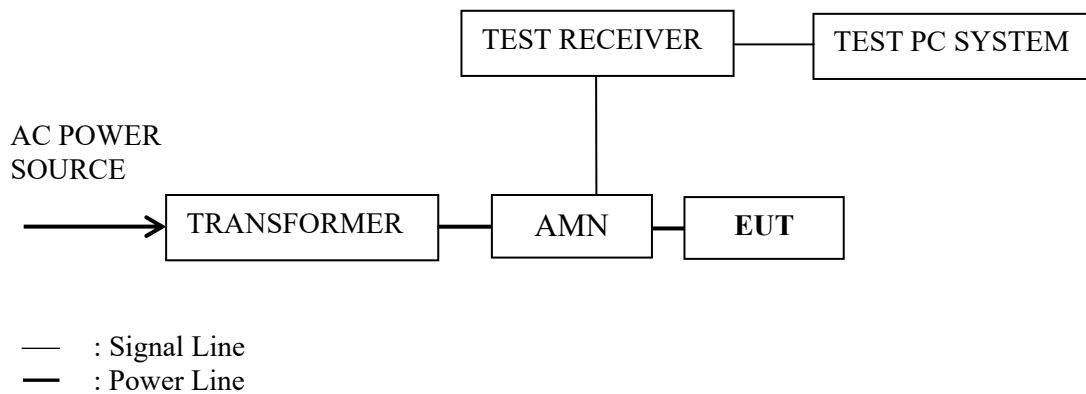
3 CONDUCTED EMISSION TEST

3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESCI	100841	2020.02.12	1 Year
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	2021.01.06	1 Year
3.	50 Ω Coaxial Switch	Anritsu	MP59B	6200655085	2020.03.08	1 Year
4.	Coaxial Cable	Audix	CE Cable	CE-SH1-001	2020.03.08	1 Year
5.	Software	Audix	e3	6.2009-1-15	--	--

3.2 Block Diagram of Test Setup



3.3 Conducted Emission Limits [FCC Part 15 Subpart B 15.107(a)]

Frequency Range (MHz)	Limits dB(μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE 1 – The lower limit shall apply at the transition frequencies.
 NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz

3.4 Test Configuration

The EUT (listed in Sec.2.1) was installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

- 3.5.1 Setup the EUT as shown in Sec.3.2.
- 3.5.2 Turn on the power of the EUT and then test.

3.6 Test Procedures

The EUT was placed upon a non-metallic table, which is 0.8 m above the horizontal conducting ground plane and 0.4 m from a vertical reference plane. The EUT was connected to the power mains through an Artificial Mains Network (AMN) to provide a 50 Ω coupling impedance for the measuring equipment. Both sides of AC line (Line & Neutral) were checked to find out the maximum conducted emission according to FCC Part 15 (CLASS B) regulations during conducted disturbance test.

The I.F. bandwidth of Test Receiver ESCI was set at 9 kHz.

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

The test mode (Lighting) was done on conducted disturbance test and all the test results are listed in Sec. 3.7.

3.7 Test Results

< PASS >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

NOTE 1 – Factor = Cable Loss + AMN Factor.

NOTE 2 – Emission Level = Meter Reading + Factor.

NOTE 3 – “QP” means “Quasi-Peak” values, “AV” means “Average” values.

EUT : LED Panel Temperature : 22°C

Model No. : 15FLPR-SP3-WH Humidity : 48%RH

Test Mode : Lighting Date of Test : 2021.01.28

Test Line	Frequency (MHz)	Meter Reading dB(μ V)	Factor (dB)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)	Remark	
Line	0.150	34.27	0.16	34.43	66.00	31.57	QP	
	0.303	24.81	0.24	25.05	60.15	35.10		
	0.567	27.63	0.29	27.92	56.00	28.08		
	0.720	27.72	0.27	27.99	56.00	28.01		
	2.736	23.50	0.32	23.82	56.00	32.18		
	29.061	11.67	0.39	12.06	60.00	47.94		
	Line	0.150	25.04	0.16	25.20	56.00	30.80	AV
		0.303	14.68	0.24	14.92	50.15	35.23	
		0.567	17.00	0.29	17.29	46.00	28.71	
		0.720	15.90	0.27	16.17	46.00	29.83	
		2.736	11.33	0.32	11.65	46.00	34.35	
		29.061	5.58	0.39	5.97	50.00	44.03	
Neutral	0.150	34.00	0.17	34.17	66.00	31.83	QP	
	0.310	24.37	0.26	24.63	59.97	35.34		
	0.552	27.70	0.31	28.01	56.00	27.99		
	0.720	27.32	0.28	27.60	56.00	28.40		
	2.736	24.48	0.34	24.82	56.00	31.18		
	29.061	14.24	0.50	14.74	60.00	45.26		
	Neutral	0.150	24.91	0.17	25.08	56.00	30.92	AV
		0.310	14.22	0.26	14.48	49.97	35.49	
		0.552	16.90	0.31	17.21	46.00	28.79	
		0.720	15.45	0.28	15.73	46.00	30.27	
		2.736	12.25	0.34	12.59	46.00	33.41	
		29.061	8.34	0.50	8.84	50.00	41.16	

TEST ENGINEER: WESKER

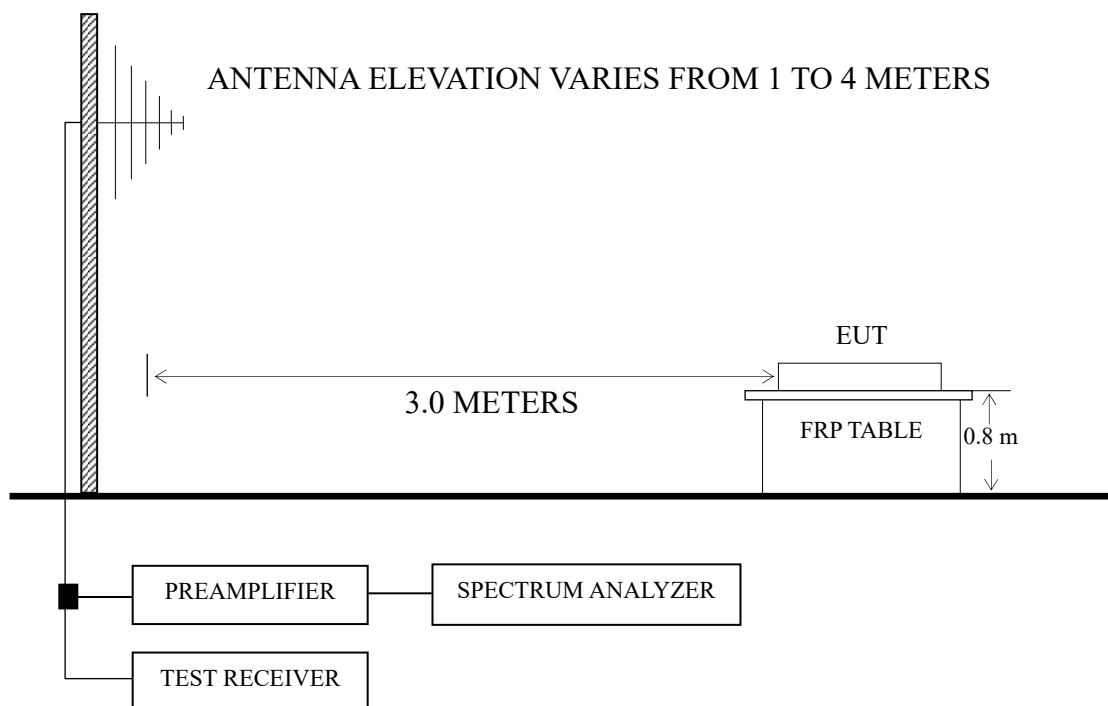
4 RADIATED EMISSION TEST

4.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESCI	101303	2020.04.26	1 Year
2.	Preamplifier	Agilent	8447D	2944A10548	2020.04.26	1 Year
3.	Bi-log Antenna	Schwarz beck	VULB 9168+EMCI- N-6-06	708+AT-N063 8	2020.07.06	1 Year
4.	Coaxial Cable	SCHAFFNE R	RG 212U-MIL C 17+N1K50- EW0630-N1 K50-15m-1	RE-10m-001/ RE-15m-002	2020.03.08	1 Year
5.	50Ω Coaxial Switch	ANRITSU	MP59B	6200655086	2020.03.08	1 Year
6.	Software	Audix	e3	6.2007-9-10	--	--

4.2 Block Diagram of Test Setup



■ : 50 ohm Coaxial Switch

4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a)]

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

NOTE 1 - Emission Level dB($\mu\text{V/m}$) = 20 lg Emission Level ($\mu\text{V/m}$)
 NOTE 2 - The tighter limit applies at the band edges.
 NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.4 Test Configuration

The EUT (listed in Sec.2.1) was installed as shown on Sec.4.2 meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

4.5 Operating Condition of EUT

- 4.5.1 Set up the EUT as shown in Sec.4.2.
- 4.5.2 Turn on the power of all equipments.
- 4.5.3 Operate the EUT on the test mode (Lighting) and then test.

4.6 Test Procedures

The EUT was placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4 requirements during radiated emission test.

The bandwidth of Test Receiver R&S ESCI was set at 120 kHz.

The frequency range from 30 MHz to 1000 MHz was checked.

The test mode (Lighting) was done on radiated disturbance test and all the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative to the limit is reported. All the emissions not reported below are too low against the FCC limit.

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading.
($< 1\text{GHz}$);

NOTE 2 – All readings are Quasi-Peak values below or equal to 1GHz.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

EUT : LED Panel Temperature : 22°C

Model No. : 15FLPR-SP3-WH Humidity : 60%RH

Test Mode : Lighting Date of Test : 2021.01.28

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	58.203	25.19	19.54	0.47	28.31	16.89	40.00	23.11	QP
	66.266	24.00	18.75	0.50	28.25	15.00	40.00	25.00	
	153.739	22.90	18.97	0.59	27.71	14.75	43.50	28.75	
	324.456	22.21	20.00	0.93	27.32	15.82	46.00	30.18	
	389.355	24.77	21.03	1.07	27.25	19.62	46.00	26.38	
	530.101	22.97	23.76	1.32	27.20	20.85	46.00	25.15	
Vertical	31.510	33.27	17.85	0.35	28.35	23.12	40.00	16.88	QP
	40.702	28.23	17.75	0.40	28.36	18.02	40.00	21.98	
	59.025	23.40	19.52	0.48	28.30	15.10	40.00	24.90	
	145.861	24.34	18.78	0.59	27.76	15.95	43.50	27.55	
	381.249	23.43	20.91	1.05	27.26	18.13	46.00	27.87	
	526.397	23.82	23.72	1.32	27.20	21.66	46.00	24.34	

TEST ENGINEER: AVALON

5 MEASUREMENT UNCERTAINTY LIST

The measurement uncertainty was estimated for test on the EUT according to CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage of K=2.

The uncertainties value is not used in determining the PASS/FAIL results.

Test Items/Facilities	Frequency/Equipment/Unit	Uncertainty
Conducted Emission No.1 Shielded Room	9kHz~150kHz	±3.2 dB
	150kHz~30MHz	±3.1 dB
Conducted Emission No.3 Shielded Room	150kHz~30MHz	±3.1 dB
Conducted Emissions at Wired network port	Category 3	±2.8 dB
	Category 5	±3.3 dB
	Category 6	±3.9 dB
Disturbance Power	300MHz~1000MHz	±3.7 dB
Radiated Emission	30MHz~200MHz, Horizontal	±3.4 dB
	30MHz~200MHz, Vertical	±4.0 dB
	200MHz~1000MHz, Horizontal	±3.7 dB
	200MHz~1000MHz, Vertical	±5.1 dB
	1GHz~6GHz	±5.7 dB
	6GHz~18GHz	±4.7 dB
Radiated Emission LLAS	9kHz~30MHz	±2.2 dB