

FCC Part 15, Subpart B, Class B

ARTIKA FOR LIVING INC.

Luminaire

Test Model: VAN3-FC

Additional Model No.: VAN3-FC-XXXXXX

("X" can be A to Z and/or 0 to 9 and/or blank (commercial code))

Prepared for : ARTIKA FOR LIVING INC.
Address : 1756 50th avenue, Lachine, Qc, Canada H8T 2V5

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
Address : 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park
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Date of receipt of test sample : December 04, 2020
Number of tested samples : 2
Sample No. : 201123207A-1, 201123207A-2
Serial number : Prototype
Date of Test : December 04, 2020 ~ December 10, 2020
Date of Report : December 15, 2020



**FCC Part 15, Subpart B, Class B
FCC 47 CFR Part 15 Subpart B, Class B, ANSI C63.4 -2014**

Report Reference No. : LCS201123207AE

Date Of Issue..... : December 15, 2020

Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.

Address..... : 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park
Yabianxueziwei, Shajing Street, Baoan District, Shenzhen,
518000, China

Testing Location/ Procedure.... : Full application of Harmonised standards
Partial application of Harmonised standards
Other standard testing method

Applicant's Name..... : ARTIKA FOR LIVING INC.

Address..... : 1756 50th avenue, Lachine, Qc, Canada H8T 2V5

Test Specification

Standard..... : FCC 47 CFR Part 15 Subpart B, Class B, ANSI C63.4
-2014

Test Report Form No..... : LCSEMC-1.0

TRF Originator..... : Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF..... : Dated 2011-03

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Test Item Description..... : Luminaire

Test Model : VAN3-FC

Trade Mark..... : Artika

Ratings..... : Input: AC 100-135V, 50-60Hz, 0.3A Max
Output: DC 25-47V, 350mA, 15W Max

Result : Positive

Compiled by:

Jayden Zhuo

Supervised by:

Jin Wang

Approved by:

Gavin Liang

Jayden Zhuo/ File administrators

Jin Wang/ Technique principal

Gavin Liang/ Manager

FCC -- TEST REPORT**Test Report No. : LCS201123207AE**December 15, 2020

Date of issue

Test Model : VAN3-FC

EUT..... : Luminaire

Applicant..... : ARTIKA FOR LIVING INC.

Address..... : 1756 50th avenue, Lachine, Qc, Canada H8T 2V5

Telephone..... : /

Fax..... : /

Manufacturer..... : RISING-SUN LIGHTING Co., LtdAddress..... : San Shi Liu Lang Industrial Area, Shilong Village Group,
Langxin Village, Danzao, Town, Nanhai District, Foshan
Guangdong 528216, China

Telephone..... : /

Fax..... : /

Factory..... : RISING-SUN LIGHTING Co., LtdAddress..... : San Shi Liu Lang Industrial Area, Shilong Village Group,
Langxin Village, Danzao, Town, Nanhai District, Foshan
Guangdong 528216, China

Telephone..... : /

Fax..... : /

Test Result according to the standards on page 6: **Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions	Revised By
000	December 15, 2020	Initial Issue	Gavin Liang

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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.

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	FCC 47 CFR Part 15 Subpart B, Class B, ANSI C63.4 -2014	Class B	PASS
Radiated disturbance	FCC 47 CFR Part 15 Subpart B, Class B, ANSI C63.4 -2014	Class B	PASS

N/A is an abbreviation for Not Applicable.

Test mode:

Mode	Lighting	Record
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***Note: All test modes were tested, but we only recorded the worst case in this report.

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	: Luminaire
Trade Mark	: Artika
Test Model	: VAN3-FC
Additional Model	: VAN3-FC-XXXXXX ("X" can be A to Z and/or 0 to 9 and/or blank (commercial code))
Model Declaration	: PCB board, structure and internal of these model(s) are the same, So no additional models were tested
Power Supply	: Input: AC 100-135V, 50-60Hz, 0.3A Max Output: DC 25-47V, 350mA, 15W Max

Highest internal frequency (Fx)	Highest measured frequency
Fx ≤ 108 MHz	1 GHz
108 MHz < Fx ≤ 500 MHz	2 GHz
500 MHz < Fx ≤ 1 GHz	5 GHz
Fx > 1 GHz	5 × Fx up to a maximum of 6 GHz

NOTE 1 For FM and TV broadcast receivers, Fx is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.
Where Fx is unknown, the radiated emission measurements shall be performed up to 6 GHz.

2.2. Support Equipment List

Name	Manufacturers	M/N	S/N
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2.3. Description of Test Facility

Site Description EMC Lab.	: NVLAP Accreditation Code is 600167-0. FCC Designation Number is CN5024. CAB identifier is CN0071. CNAS Registration Number is L4595.
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2.4. Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

2.5. Measurement Uncertainty

Test	Parameters	Expanded Uncertainty (Ulab)	Expanded Uncertainty (Ucispr)
Conducted Emission	Level accuracy (9kHz to 150kHz)	± 2.63 dB	± 3.8 dB
	(150kHz to 30MHz)	± 2.35 dB	± 3.4 dB
Radiated Emission	Level accuracy (30MHz to 1000MHz)	± 3.48 dB	± 5.3 dB
Radiated Emission	Level accuracy (above 1000MHz)	± 3.90 dB	± 5.2 dB

(1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

(2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

3. TEST RESULTS

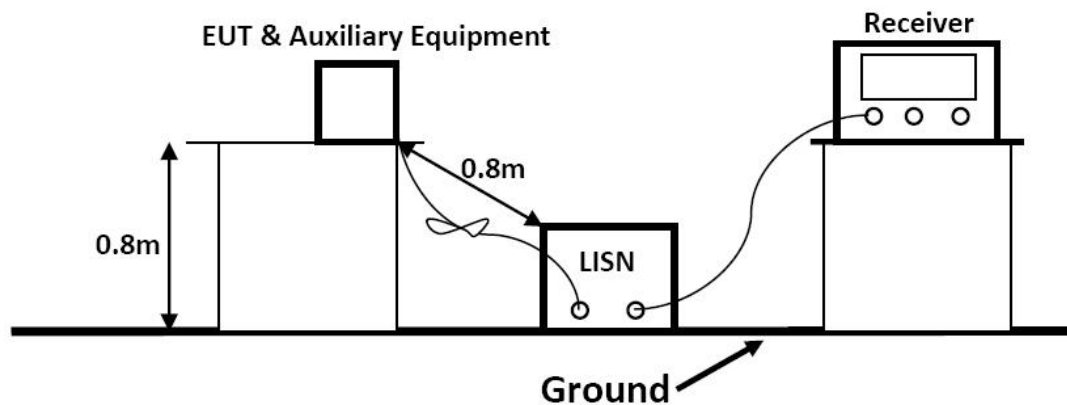
3.1. POWER LINE CONDUCTED EMISSION MEASUREMENT

3.1.1. Test Equipment

The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	EZ	EZ-EMC	/	N/A	N/A
2	EMI Test Receiver	R&S	ESPI	101840	2020-06-22	2021-06-21
3	Artificial Mains	R&S	ENV216	101288	2020-06-22	2021-06-21
4	10dB Attenuator	SCHWARZBECK	MTS-IMP-136	261115-001-0032	2020-06-22	2021-06-21
5	Impedance Stabilization Network	TESEQ	ISN T800	45130	2020-10-20	2021-10-19

3.1.2. Block Diagram of Test Setup



3.1.3. Test Standard

Power Line Conducted Emission Limits (Class B)

Frequency (MHz)			Limit (dB μ V)	
			Quasi-peak Level	Average Level
0.15	~	0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50	~	5.00	56.0	46.0
5.00	~	30.00	60.0	50.0

NOTE1-The lower limit shall apply at the transition frequencies.
NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

3.1.4. EUT Configuration on Test

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

3.1.5. Operating Condition of EUT

3.1.5.1. Setup the EUT as shown on Section 3.1.2

3.1.5.2. Turn on the power of all equipments.

3.1.5.3. Let the EUT work in measuring Lighting and measure it.

3.1.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC/ANSI C63.4-2014 on Conducted Emission Measurement.

The bandwidth of the test receiver is set at 9kHz.

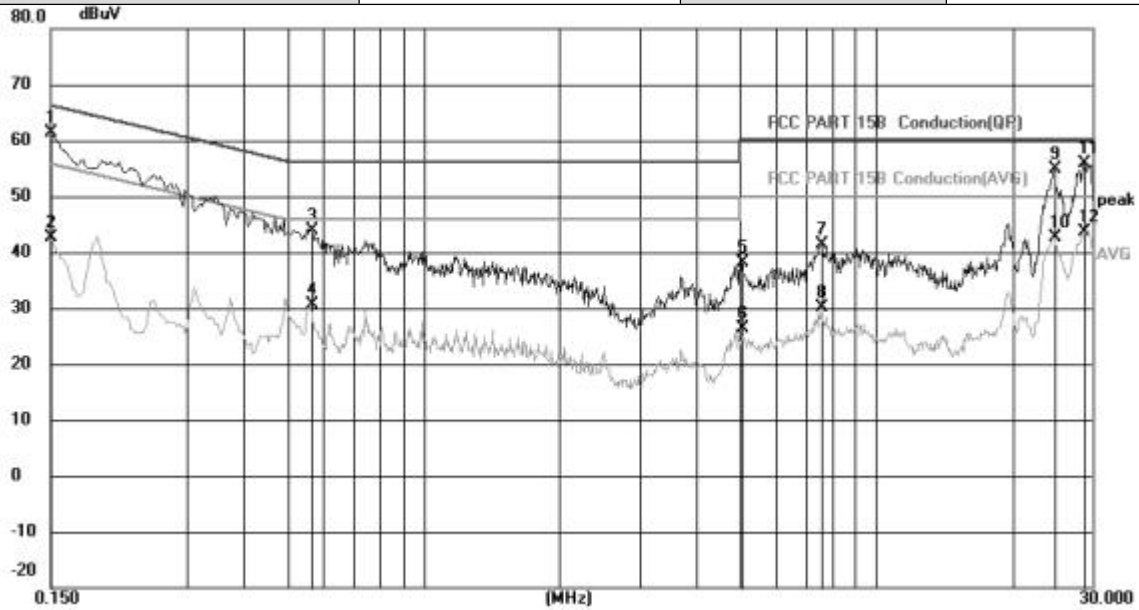
The frequency range from 150kHz to 30MHz is investigated

3.1.7. Test Results

PASS.

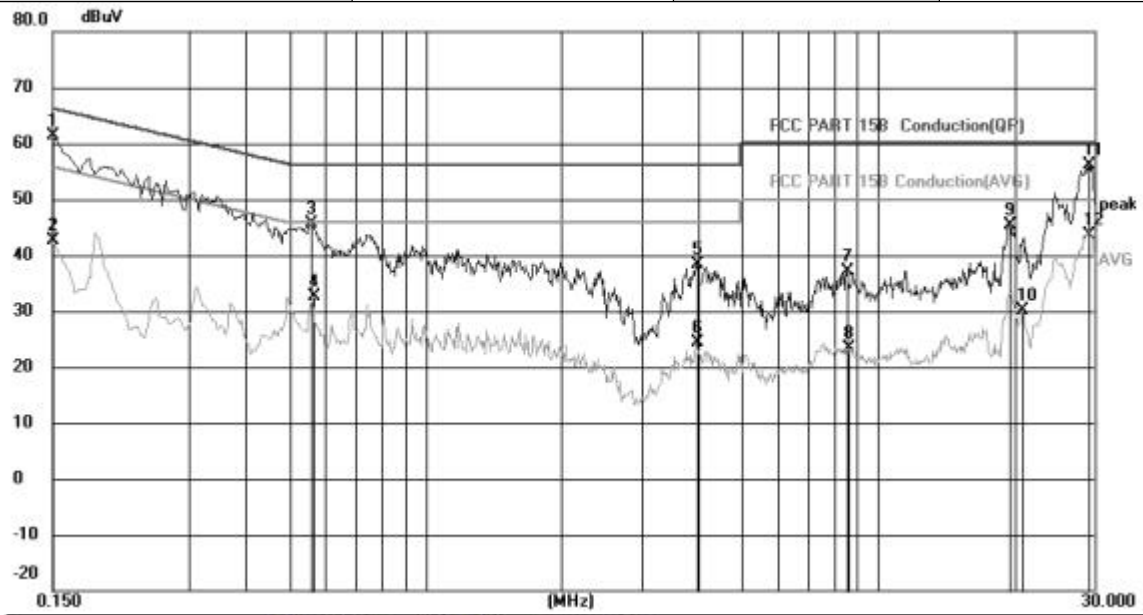
The test result please refer to the next page.

Test Model	VAN3-FC	Test Mode	Lighting
Environmental Conditions	22.7°C, 53.7% RH	Test Engineer	Kay Hu
Pol	Line	Test Voltage	AC 120V/60Hz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1500	42.23	19.14	61.37	66.00	-4.63	QP	
2		0.1500	23.51	19.14	42.65	56.00	-13.35	AVG	
3		0.5641	24.46	19.31	43.77	56.00	-12.23	QP	
4		0.5641	11.30	19.31	30.61	46.00	-15.39	AVG	
5		5.0505	18.69	19.49	38.18	60.00	-21.82	QP	
6		5.0505	6.89	19.49	26.38	50.00	-23.62	AVG	
7		7.5795	21.84	19.61	41.45	60.00	-18.55	QP	
8		7.5795	10.57	19.61	30.18	50.00	-19.82	AVG	
9		24.6750	34.76	20.24	55.00	60.00	-5.00	QP	
10		24.6750	22.50	20.24	42.74	50.00	-7.26	AVG	
11	*	28.8420	35.71	20.13	55.84	60.00	-4.16	QP	
12		28.8420	23.47	20.13	43.60	50.00	-6.40	AVG	

Test Model	VAN3-FC	Test Mode	Lighting
Environmental Conditions	22.7°C, 53.7% RH	Test Engineer	Kay Hu
Pol	Neutral	Test Voltage	AC 120V/60Hz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1500	42.23	19.14	61.37	66.00	-4.63	QP	
2		0.1500	23.49	19.14	42.63	56.00	-13.37	AVG	
3		0.5595	26.38	19.31	45.69	56.00	-10.31	QP	
4		0.5641	13.22	19.31	32.53	46.00	-13.47	AVG	
5		3.9840	18.94	19.46	38.40	56.00	-17.60	QP	
6		3.9840	5.01	19.46	24.47	46.00	-21.53	AVG	
7		8.5290	17.46	19.64	37.10	60.00	-22.90	QP	
8		8.5875	3.64	19.64	23.28	50.00	-26.72	AVG	
9		19.5090	25.32	20.07	45.39	60.00	-14.61	QP	
10		20.8095	10.13	20.06	30.19	50.00	-19.81	AVG	
11	*	29.1840	35.97	20.14	56.11	60.00	-3.89	QP	
12		29.1840	23.39	20.14	43.53	50.00	-6.47	AVG	

Note: Pre-Scan all mode, Thus record worse case mode result in this report.

***Note: 1). Pre-scan all modes and recorded the worst case results in this report

2). Margin=Reading level + Correct - Limit

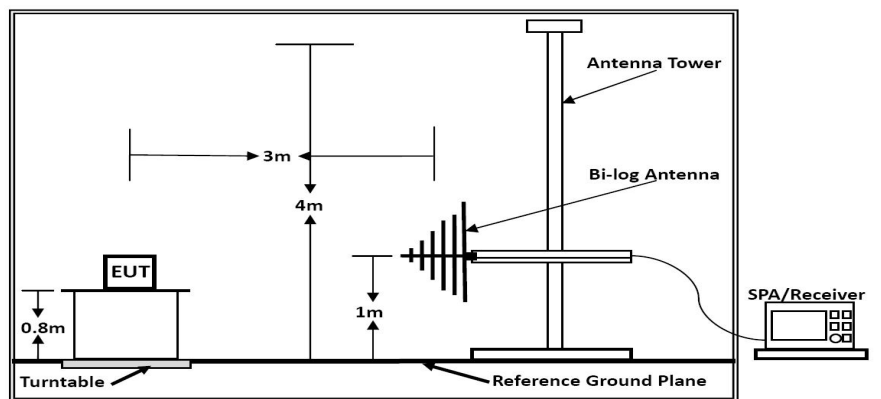
3.2. Radiated emission Measurement

3.2.1. Test Equipment

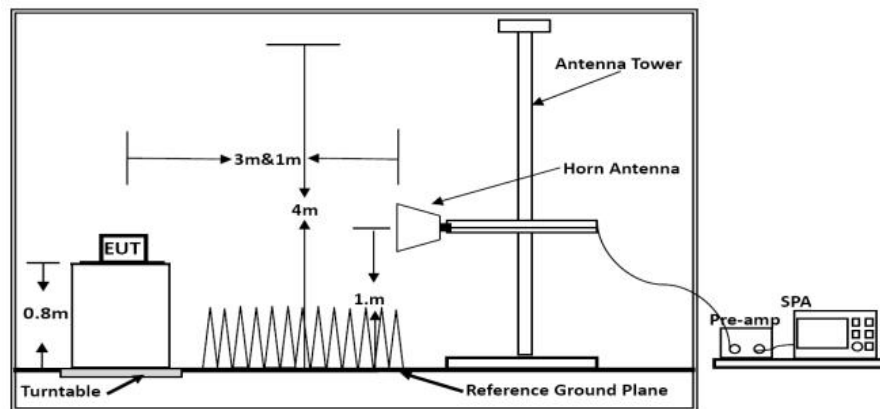
The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	EZ	EZ-EMC	/	N/A	N/A
2	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2018-07-26	2021-07-25
3	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-192 5	2018-07-02	2021-07-01
4	EMI Test Receiver	R&S	ESR 7	101181	2020-06-22	2021-06-21
5	Broadband Preamplifier	/	BP-01M18G	P190501	2020-06-22	2021-06-21

3.2.2. Block Diagram of Test Setup



Below 1GHz



Above 1GHz

3.2.3. Radiated Emission Limit (Class B)

Limits for Radiated Disturbance Below 1GHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V/m})$
30 ~ 88	3	100	40
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46
960 ~ 1000	3	500	54
Remark: (1) Emission level $(\text{dB})\mu\text{V} = 20 \log$ Emission level $\mu\text{V/m}$ (2) The smaller limit shall apply at the cross point between two frequency bands. (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.			
Limits for Radiated Emission Above 1GHz			
Frequency (MHz)	Distance (Meters)	Peak Limit ($\text{dB}\mu\text{V/m}$)	Average Limit ($\text{dB}\mu\text{V/m}$)
Above 1000	3	74	54
***Note: The lower limit applies at the transition frequency.			

3.2.4. EUT Configuration on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.2.5. Operating Condition of EUT

3.2.5.1. Setup the EUT as shown in Section 3.2.2.

3.2.5.2. Let the EUT work in test Lighting and measure it.

3.2.6. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated by-log antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2014 on radiated emission measurement.

The bandwidth of the EMI test receiver is set at 120kHz, 300kHz.

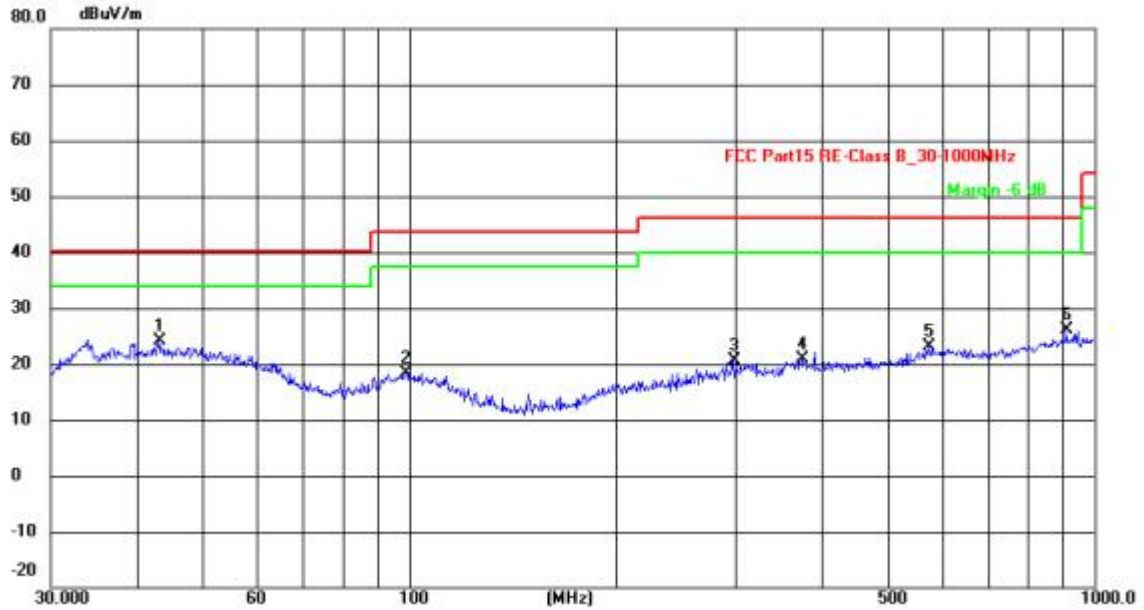
The frequency range from 30MHz to 1000MHz is checked.

3.2.7. Radiated Emission Noise Measurement Result

PASS.

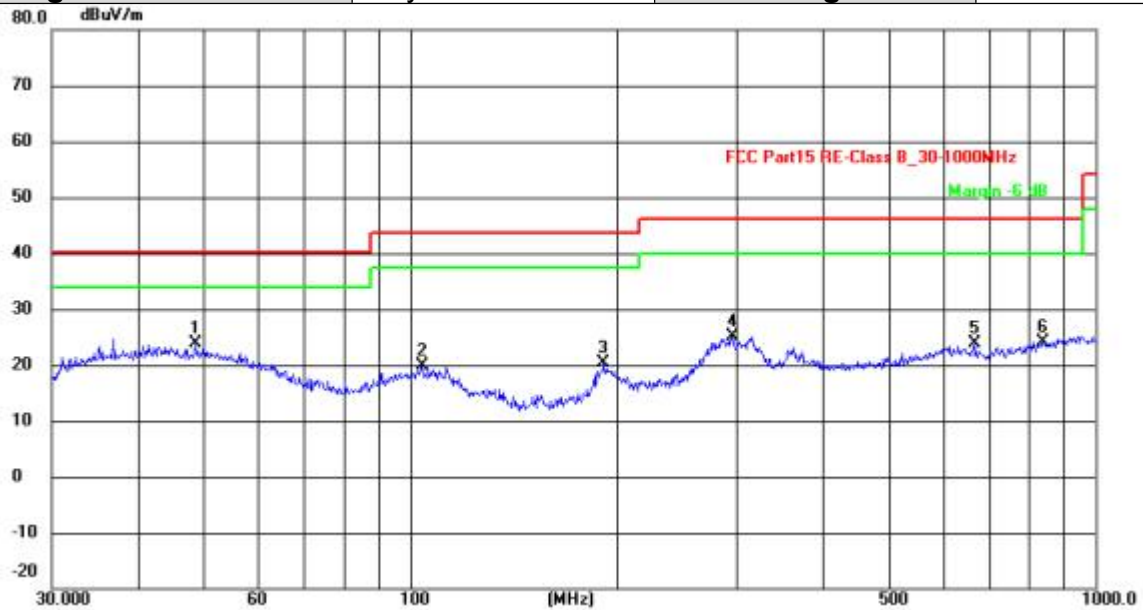
The scanning waveforms please refer to the next page.

Test Model	VAN3-FC	Test Mode	Lighting
Environmental Conditions	24.6°C, 54.1% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	Kay Hu	Test Voltage	AC 120V/60Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	43.0505	52.56	-28.49	24.07	40.00	-15.93	QP
2	99.1797	48.69	-30.25	18.44	43.50	-25.06	QP
3	297.2241	48.04	-27.41	20.63	46.00	-25.37	QP
4	374.6225	46.54	-25.54	21.00	46.00	-25.00	QP
5	574.6258	44.72	-21.68	23.04	46.00	-22.96	QP
6	909.6667	44.82	-18.73	26.09	46.00	-19.91	QP

Test Model	VAN3-FC	Test Mode	Lighting
Environmental Conditions	24.6°C, 54.1% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	Kay Hu	Test Voltage	AC 120V/60Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	48.6719	51.99	-28.20	23.79	40.00	-16.21	QP
2	104.1701	50.15	-30.30	19.85	43.50	-23.65	QP
3	191.7450	51.36	-30.98	20.38	43.50	-23.12	QP
4	296.1836	52.62	-27.43	25.19	46.00	-20.81	QP
5	665.8035	45.00	-21.21	23.79	46.00	-22.21	QP
6	839.1818	43.74	-19.61	24.13	46.00	-21.87	QP

Note: Pre-Scan all mode, Thus record worse case mode result in this report.

***Note:

- 1). Pre-scan all modes and recorded the worst case results in this report.
- 2). Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 3). Corrected Reading: Antenna Factor + Cable Loss + Read Level = Level.

4. TEST SETUP PHOTOGRAPHS OF EUT

Please refer to separated files for Test Setup Photos of the EUT.

5. EXTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

6. INTERIOR PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.

-----THE END OF TEST REPORT-----