

FCC Part 15, Subpart B, Class B

ARTIKA FOR LIVING INC.

Ratio 4-Light Integrated LED

Test Model: VAN4RA

Additional Model No.: VAN4RA-XXXXXX

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

Prepared for	:	ARTIKA FOR LIVING INC.
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Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample	:	March 05, 2021
Number of tested samples	:	1
Sample number	:	210305053A
Serial number	:	Prototype
Date of Test	:	March 05, 2021 ~ March 18, 2021
Date of Report	:	March 18, 2021

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

Report Reference No. : LCS210305053AE

Date Of Issue : March 18, 2021

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 Lachine
Canada

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 : **Ratio 4-Light Integrated LED**

Test Model : VAN4RA

Trade Mark : Artika

Ratings : AC 120V, 50-60Hz,25W

Result : **Positive**

Compiled by:



Cherry Chen/ Administrators

Supervised by:



Jin Wang/ Technique principal

Approved by:



Gavin Liang/ Manager

FCC -- TEST REPORT

Test Report No. : **LCS210305053AE**March 18, 2021
Date of issue

Test Model : VAN4RA

EUT : Ratio 4-Light Integrated LED

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

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Manufacturer : Shanghai Chief Electrical Apparatus Co., Ltd.Address : NO.5942 Fu Yi Rd., Town Of Wai Gang, Jia Ding
District, Shanghai City, China

Telephone : /

Fax : /

Factory : Shanghai Chief Electrical Apparatus Co., Ltd.Address : NO.5942 Fu Yi Rd., Town Of Wai Gang, Jia Ding
District, Shanghai City, 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	March 18, 2021	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
***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 : Ratio 4-Light Integrated LED

Trade Mark : Artika

Test Model : VAN4RA

Additional Model : VAN4RA-XXXXXX
("XXXXXX" 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 : AC 120V, 50-60Hz, 25W

Highest internal frequency (Fx)	Highest measured frequency
$F_x \leq 108 \text{ MHz}$	1 GHz
$108 \text{ MHz} < F_x \leq 500 \text{ MHz}$	2 GHz
$500 \text{ MHz} < F_x \leq 1 \text{ GHz}$	5 GHz
$F_x > 1 \text{ GHz}$	5 \times F_x up to a maximum of 6 GHz

NOTE 1 For FM and TV broadcast receivers, F_x is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.

Where F_x is unknown, the radiated emission measurements shall be performed up to 6 GHz.

2.2. Support Equipment List

Name	Manufacturers	M/N	S/N
--	--	--	--

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.

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 (U _{lab})	Expanded Uncertainty (U _{cispr})
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 2.63 dB ± 2.35 dB	± 3.8 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

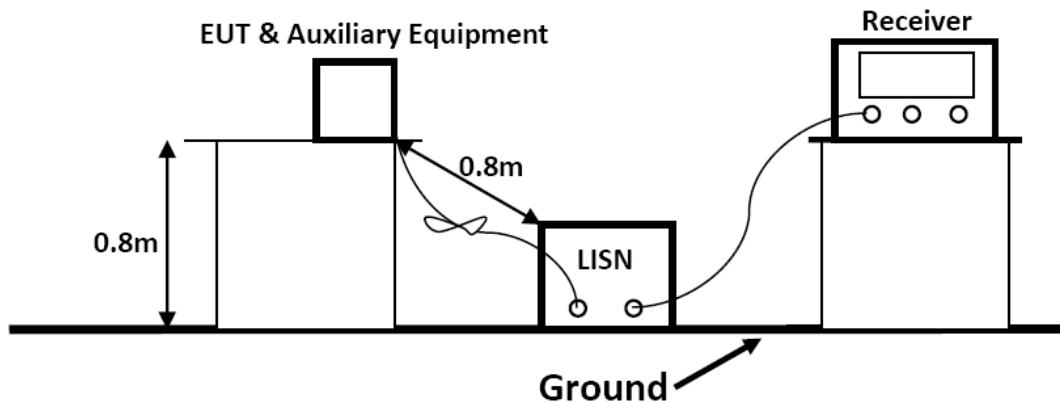
3.1. POWER LINE CONDUCTED EMISSION MEASUREMENT

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	SCHWARZBECK	NSLK8127	8127716	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.

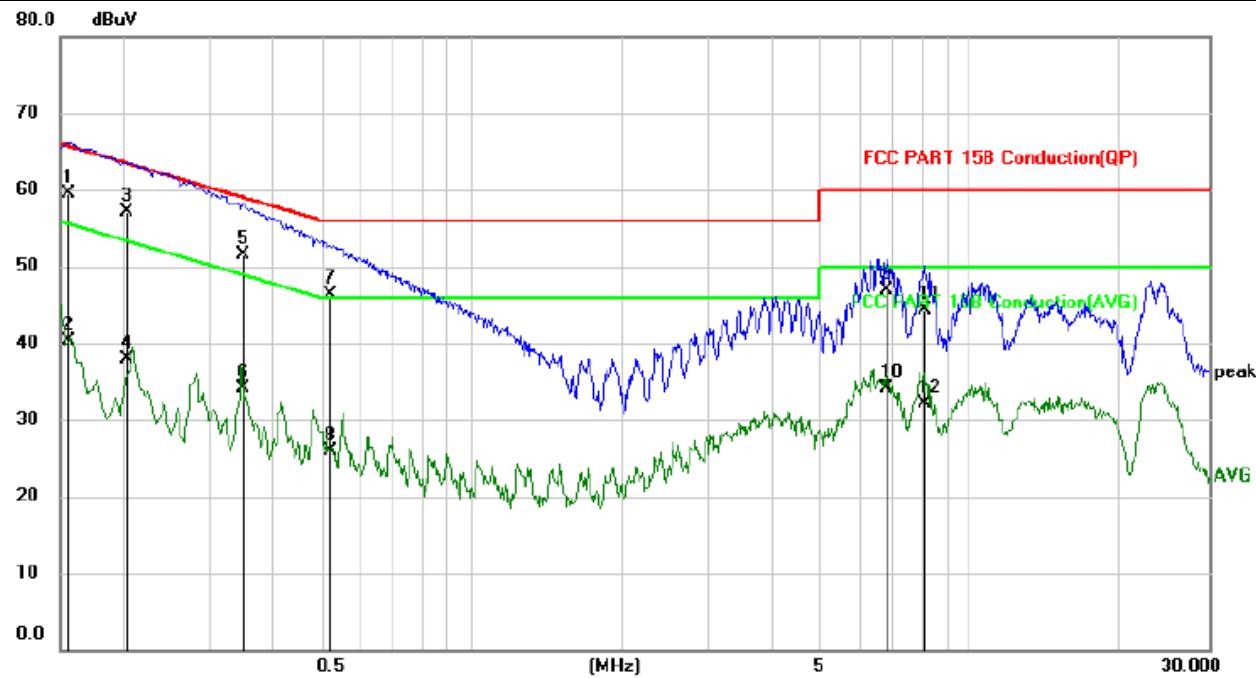
The frequency range from 150kHz to 30MHz is investigated

3.1.7. Test Results

PASS.

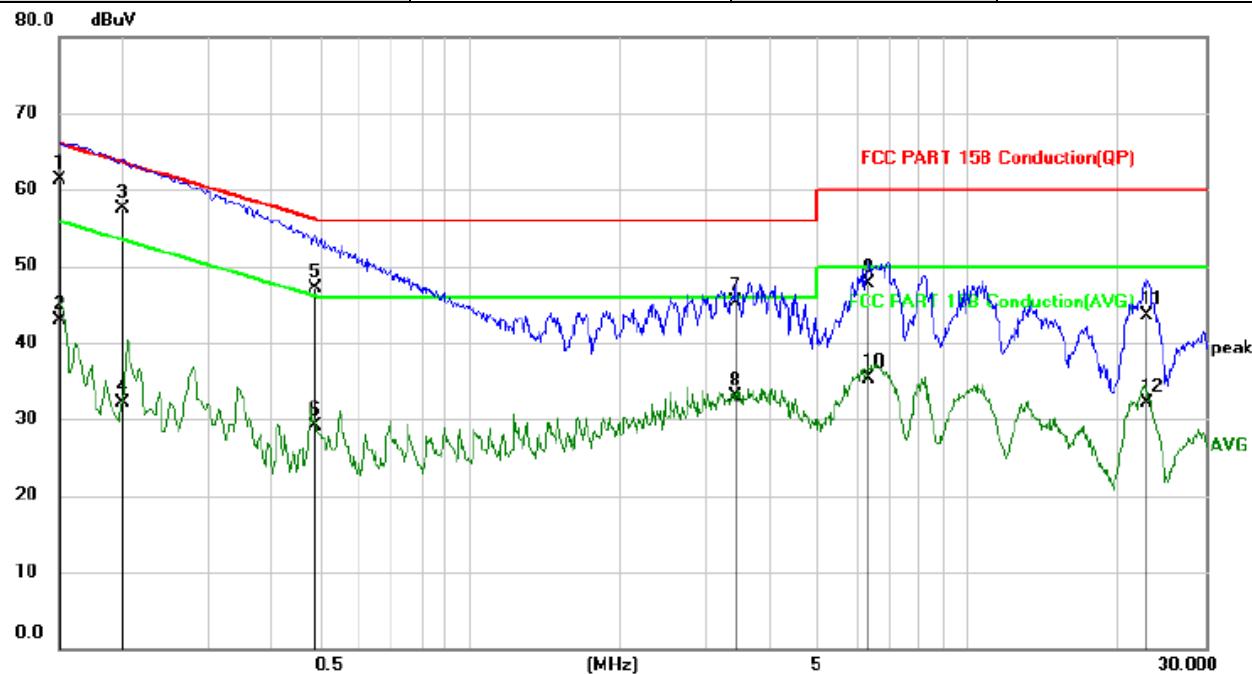
The test result please refer to the next page.

Test Model	VAN4RA	Test Mode	Lighting
Environmental Conditions	23.9°C, 53% RH	Test Engineer	Jay Li
Pol	Line	Test Voltage	AC 120V/60Hz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dB	Over Detector	Comment
1	*	0.1551	49.36	10.24	59.60	65.72	-6.12	QP
2		0.1551	30.15	10.24	40.39	55.72	-15.33	AVG
3		0.2057	46.93	10.22	57.15	63.38	-6.23	QP
4		0.2057	27.68	10.22	37.90	53.38	-15.48	AVG
5		0.3494	41.27	10.20	51.47	58.98	-7.51	QP
6		0.3494	23.99	10.20	34.19	48.98	-14.79	AVG
7		0.5190	36.15	10.20	46.35	56.00	-9.65	QP
8		0.5190	15.68	10.20	25.88	46.00	-20.12	AVG
9		6.8202	36.80	10.20	47.00	60.00	-13.00	QP
10		6.8202	23.83	10.20	34.03	50.00	-15.97	AVG
11		8.1268	34.09	10.20	44.29	60.00	-15.71	QP
12		8.1268	22.00	10.20	32.20	50.00	-17.80	AVG

Test Model	VAN4RA	Test Mode	Lighting
Environmental Conditions	23.9°C, 53% RH	Test Engineer	Jay Li
Pol	Neutral	Test Voltage	AC 120V/60Hz



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
		MHz	dBuV	dB	dBuV	dBuV	dB		
1	*	0.1500	51.16	10.24	61.40	66.00	-4.60	QP	
2		0.1500	32.76	10.24	43.00	56.00	-13.00	AVG	
3		0.2002	47.19	10.22	57.41	63.60	-6.19	QP	
4		0.2002	21.89	10.22	32.11	53.60	-21.49	AVG	
5		0.4891	36.99	10.20	47.19	56.18	-8.99	QP	
6		0.4891	18.87	10.20	29.07	46.18	-17.11	AVG	
7		3.4255	35.01	10.20	45.21	56.00	-10.79	QP	
8		3.4255	22.74	10.20	32.94	46.00	-13.06	AVG	
9		6.3007	37.42	10.20	47.62	60.00	-12.38	QP	
10		6.3007	25.02	10.20	35.22	50.00	-14.78	AVG	
11		22.8085	33.31	10.20	43.51	60.00	-16.49	QP	
12		22.8085	21.91	10.20	32.11	50.00	-17.89	AVG	

Note: Pre-Scan all mode, Thus record worse case mode result in this report.
 Margin=Reading level + Correct - Limit

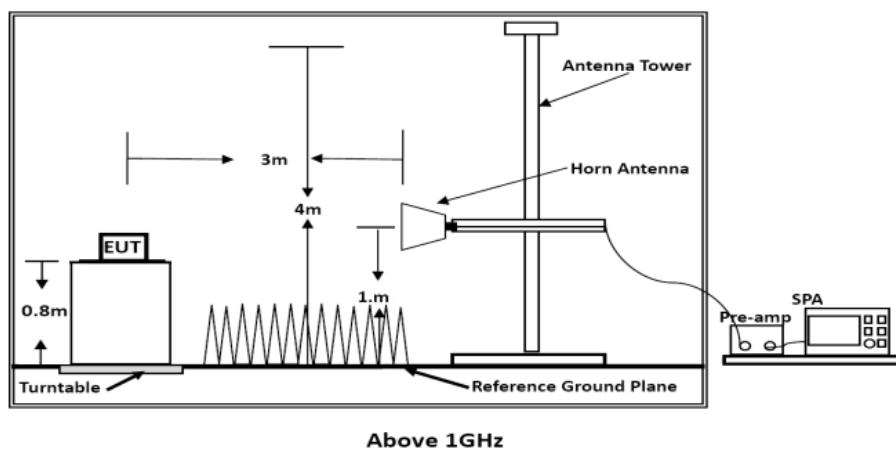
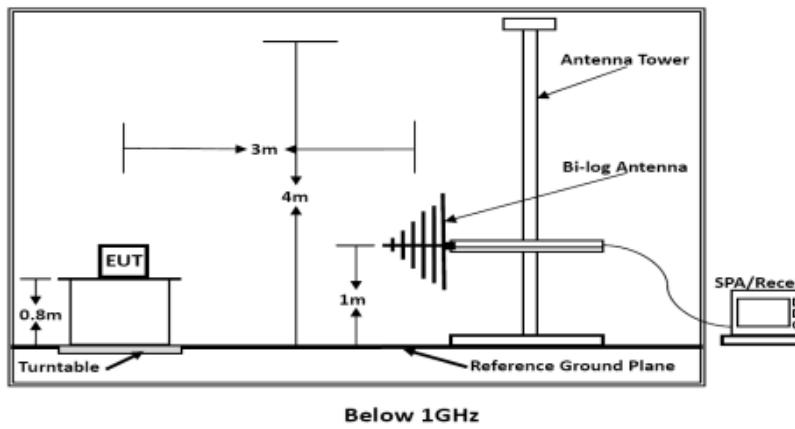
3.2. Radiated emission Measurement

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	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2019-08-05	2021-08-05
3	Positioning Controller	MF	MF7082	MF78020803	2020-06-22	2021-06-21
4	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2018-07-26	2021-07-25
5	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2018-07-02	2021-07-01
6	EMI Test Receiver	R&S	ESR 7	101181	2020-06-22	2021-06-21
7	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2020-11-22	2021-11-21
8	Broadband Preamplifier	/	BP-01M18G	P190501	2020-06-22	2021-06-21
9	RF Cable-R03m	Jye Bao	RG142	CB021	2020-06-22	2021-06-21
10	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2020-06-22	2021-06-21
11	EMI Test Software	AUDIX	E3	/	N/A	N/A

3.2.2. Block Diagram of Test Setup



3.2.3. Radiated Emission Limit (Class B)

Limits for Radiated Disturbance Below 1GHz

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/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 (dB) μ V = 20 log Emission level μ 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 (dB μ V/m)	Average Limit (dB μ 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.

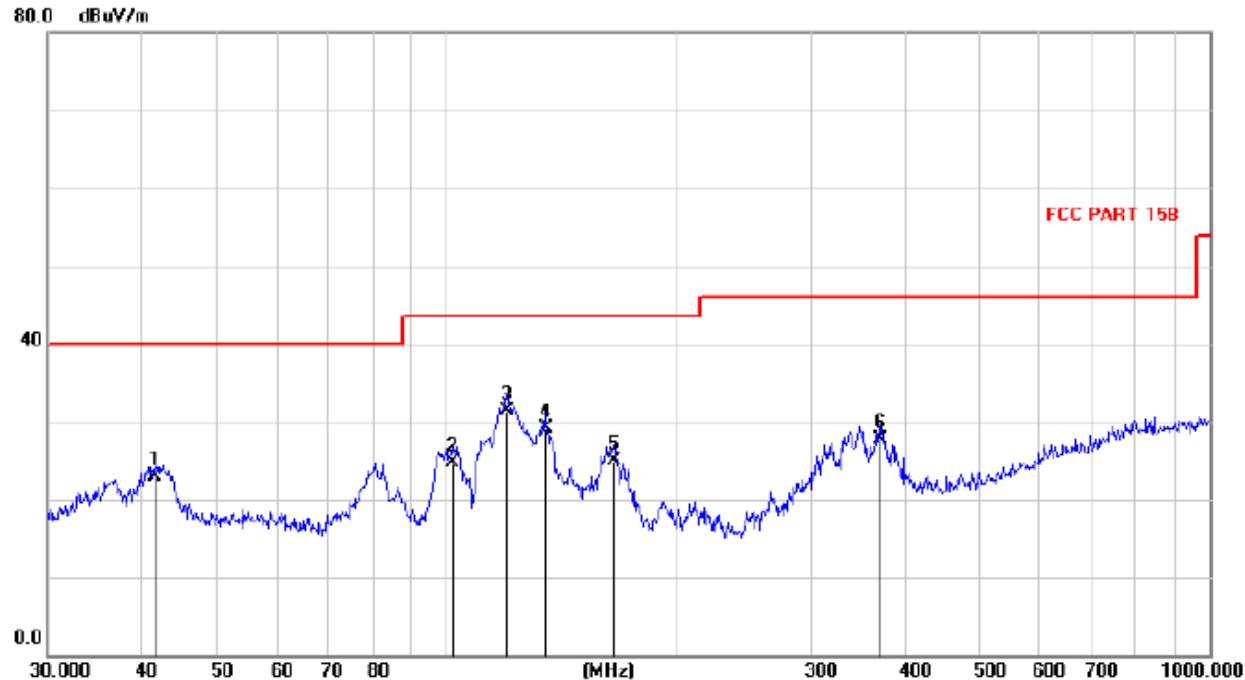
The scanning waveforms please refer to the next page.

Test Model	VAN4RA	Test Mode	Lighting
Environmental Conditions	23.6°C, 51% RH	Detector Function	Quasi-peak
Pol	Vertical	Distance	3m
Test Engineer	Jay Li	Test Voltage	AC 120V/60Hz



No.	Mk.	Freq. MHz	Reading	Correct	Measure-	Limit	Margin	Antenna	Table
			Level	Factor	ment				
1		36.1588	17.58	14.00	31.58	40.00	-8.42	QP	
2	*	41.6582	20.47	13.76	34.23	40.00	-5.77	QP	
3		118.3936	20.01	12.40	32.41	43.50	-11.09	QP	
4		166.1409	18.65	12.20	30.85	43.50	-12.65	QP	
5		381.9176	7.85	15.08	22.93	46.00	-23.07	QP	
6		490.9598	7.45	17.22	24.67	46.00	-21.33	QP	

Test Model	VAN4RA	Test Mode	Lighting
Environmental Conditions	23.6°C, 51% RH	Detector Function	Quasi-peak
Pol	Horizontal	Distance	3m
Test Engineer	Jay Li	Test Voltage	AC 120V/60Hz



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table			
			Level	Factor	ment					Height	Degree	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		41.6217	9.09	13.87	22.96	40.00	-17.04	QP				
2		101.8227	11.45	13.23	24.68	43.50	-18.82	QP				
3 *		120.1712	19.82	11.46	31.28	43.50	-12.22	QP				
4		134.8544	19.04	10.10	29.14	43.50	-14.36	QP				
5		165.7771	14.74	10.21	24.95	43.50	-18.55	QP				
6		369.5667	12.68	15.03	27.71	46.00	-18.29	QP				

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

Margin=Reading level + Factor - Limit

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-----