

TEST REPORT

Product Name : Anti-fog LED wall mirror luminaries
Model Number : WMIRH-SACH-2431-XXXXXX
FCC ID : 2AYFP-WMIRH-SACH

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

Prepared by : EMTEK (NINGBO) CO., LTD.
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Report Number : EN210414012W
Date(s) of Tests : April 14, 2021 to April 20, 2021
Date of issue : April 21, 2021

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TEST REPORT DESCRIPTION

Applicant : ARTIKA FOR LIVING INC
Manufacturer : NINGBO LGDD ELECTRICAL FITTINGS CO., LTD
Trade Mark :  
EUT : Anti-fog LED wall mirror luminaries
Model No. : WMIRH-SACH-2431-XXXXXX
Power Supply : AC 120V, 60Hz

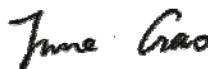
Measurement Procedure Used:

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

The device described above is tested by EMTEK (NINGBO) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (NINGBO) CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK (NINGBO) CO., LTD.

Date of Test : April 14, 2021 to April 20, 2021

Prepared by : 
June Gao/Engineer

Reviewer : 
Moses Yang/Supervisor

Approved & Authorized Signer : 
Tony Wei/Manager



Modified Information

Version	Report No.	Revision date	Summary
Ver.1.0	EN210414012W	/	Original Report



1. SUMMARY OF TEST RESULTS

EMISSION		
Description of Test Item	Standard & Limits	Results
Conducted Emission at Mains Terminals	FCC CFR Title 47, Part 15, Subpart B, Class B ANSI C63.4-2014	Pass
Radiated Emission	FCC CFR Title 47, Part 15, Subpart B, Class B ANSI C63.4-2014	Pass
Note: N/A is an abbreviation for Not Applicable.		



2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : Anti-fog LED wall mirror luminaries

Model Number : WMIRH-SACH-2431-XXXXXX
(Note:"XXXXXX" can be A to Z and/or 0 to 9 and/or Blank , represent a commercial code. We prepared model WMIRH-SACH-2431-C for EMC test.)

Test Voltage : AC 120V/60Hz

Highest Frequency : Below 108 MHz

Sample Number : 1#

Applicant : ARTIKA FOR LIVING INC

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

Manufacturer : NINGBO LGDD ELECTRICAL FITTINGS CO., LTD

Address : No.188 Changxing Road, Jiangbei District, Ningbo, China 315033

Date of Received : April 14, 2021

Date of Test : April 14, 2021 to April 19, 2021

2.2. Input / Output Ports

Port #	Name	Type*	Cable Max. >3m	Cable Shielded	Comments
1	Enclosure	N/E	--	--	None
2	AC mains	AC	No	Unshielded	None

* Note: Use abbreviations:

AC= AC Power Port

DC= DC Power Port

N/E= Non-Electrical

I/O= Signal Input or Output Port (Not Involved in Process Control)

TP= Telecommunication Ports

2.3. Independent Operation Modes

A. ON

2.4. Test Manner

Test Items	Test Voltage	Operation Modes	Worst case
Conducted Emission at Mains Terminals	AC 120V/60Hz	Mode A	Mode A
Radiated Emission	AC 120V/60Hz	Mode A	Mode A

2.5. Description of Test Facility

Site Description

EMC Lab. : **Accredited by A2LA**
The certificate is valid until May 31, 2023
The Certificate Number is 4321.03.

Name of Firm : EMTEK (NINGBO) CO., LTD.
Site Location : 1F Building 4, 1177#, Lingyun Road, Ningbo National Hi-Tech Zone, Ningbo, Zhejiang, China.

2.6. Test Software

Item Software
Conducted Emission : EZ-EMC (Ver. CON-03A1)
Radiated Emission : EZ-EMC (Ver. EMEC-3A1)

2.7. Description of Support Device

N/A

2.8. Measurement Uncertainty

Test Item Uncertainty
Conducted Emission Uncertainty : 2.08dB (9 k-150 kHz)
2.40dB (150 k-30 MHz)
Radiated Emission Uncertainty : 4.06 dB (Polarize: H) (30MHz-1000MHz)
(3m Chamber) 4.04 dB (Polarize: V) (30MHz-1000MHz)
4.82 dB (Polarize: H) (1~18GHz)
4.80 dB (Polarize: V) (1~18GHz)

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Power Line Conducted Emission Measurement

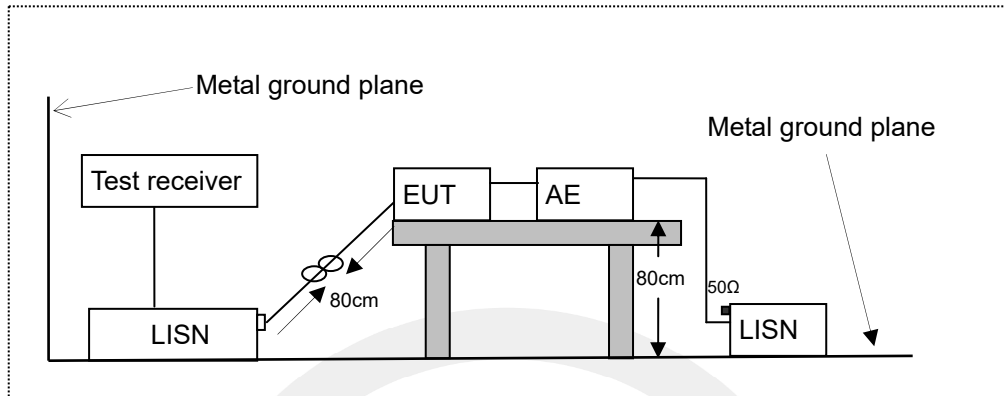
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☒	Test Receiver	Rohde & Schwarz	ESCI	101108	July 10, 2020	1 Year
☒	L.I.S.N	Rohde & Schwarz	ENV216	101193	July 10, 2020	1 Year
☒	L.I.S.N	Schwarzbeck	NSLK 8126	8126-462	July 10, 2020	1 Year
☒	Pulse Limiter	MTS-systemtechnik	IMP-136	2611115-001-0033	July 10, 2020	1 Year
☒	RF Switching unit	Compliance Direction Systems Inc.	RSU-M2	38400	July 10, 2020	1 Year

3.2. For Radiated Emission Measurement

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☒	Spectrum Analyzer	Rohde & Schwarz	ESCI	101107	July 10, 2020	1 Year
☒	EMI Test Receiver	Rohde & Schwarz	ESCI	101107	July 10, 2020	1 Year
☒	Pre-Amplifier	CD	PAP-0203	22015	July 10, 2020	1 Year
☒	Bilog Antenna	Schwarzbeck	VULB9163	9163-467	July 12, 2020	2 Year
☒	Cable	HUBER + SUHNER	CBL3-NN-0.5M	101216-2140500-2	July 10, 2020	1 Year
☒	Cable	HUBER + SUHNER	CBL3-NN-3.0M	101216-2143000-2	July 10, 2020	1 Year
☒	Cable	HUBER + SUHNER	CBL3-NN-9.0M	101216-2149000	July 10, 2020	1 Year
☐	Spectrum Analyzer	Agilent	E4407B	MY45107013	Oct 10, 2020	1 Year
☐	Pre-Amplifier	Connphy Microwave Inc.	GLN-1G40G-4165-K	0319104	Nov 29, 2020	1 Year
☐	Horn Antenna	Schwarzbeck	BBHA 9120	9120D-707	April 28, 2019	2 Year
☐	Cable	SMAMSMAM	A50-0.5M	N/A	Nov 29, 2020	1 Year
☐	Cable	SMAMSMAM	A50-3M	N/A	Nov 29, 2020	1 Year
☐	Cable	SMAMSMAM	A50-6M	N/A	Nov 29, 2020	1 Year

4. POWER LINE CONDUCTED EMISSION MEASUREMENT

4.1. Block Diagram of Test Setup



LISN: Line Impedance Stabilization Network
AE: Associated equipment
EUT: Equipment under test

4.2. Conducted Limit

FCC CFR Title 47, Part 15, Subpart B, Class B

Frequency (MHz)	Limit (dBμV)	
	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.

4.3. Test Procedure

The EUT was placed on a desk 0.8 m height from the metal ground plane and 0.4 m from the conducting wall of the shielding room and it was kept at least 0.8 m from any other grounded conducting surface. The size of the table will nominally be 1.5 m x1.0 m.

The rear of the arrangement shall be flush with the back of the supporting tabletop unless that would not be possible or typical of normal use.

All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units.

Connect EUT to the power mains through a line impedance stabilization network (LISN). Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

All the support units are connecting to the other LISN.

The LISN provides 50 ohm coupling impedance for the measuring instrument.

Both sides of AC line were checked for maximum conducted interference.

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

Set the test-receiver system to quasi peak detect function and average detect function, and to measure the conducted emissions values.

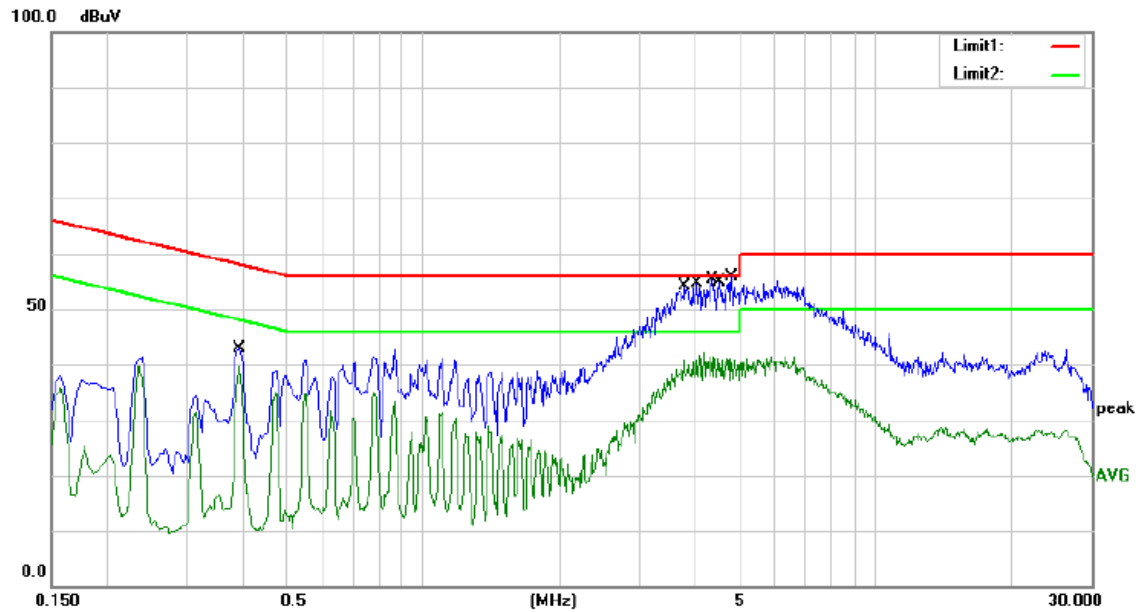
Test results were obtained from the following equation:
Measurement (dBμV) = Correct Factor (dB) + Reading (dBμV)
Over (dB) = Measurement (dBμV) - Limit (dBμV)

4.4. Measuring Results

Pass.

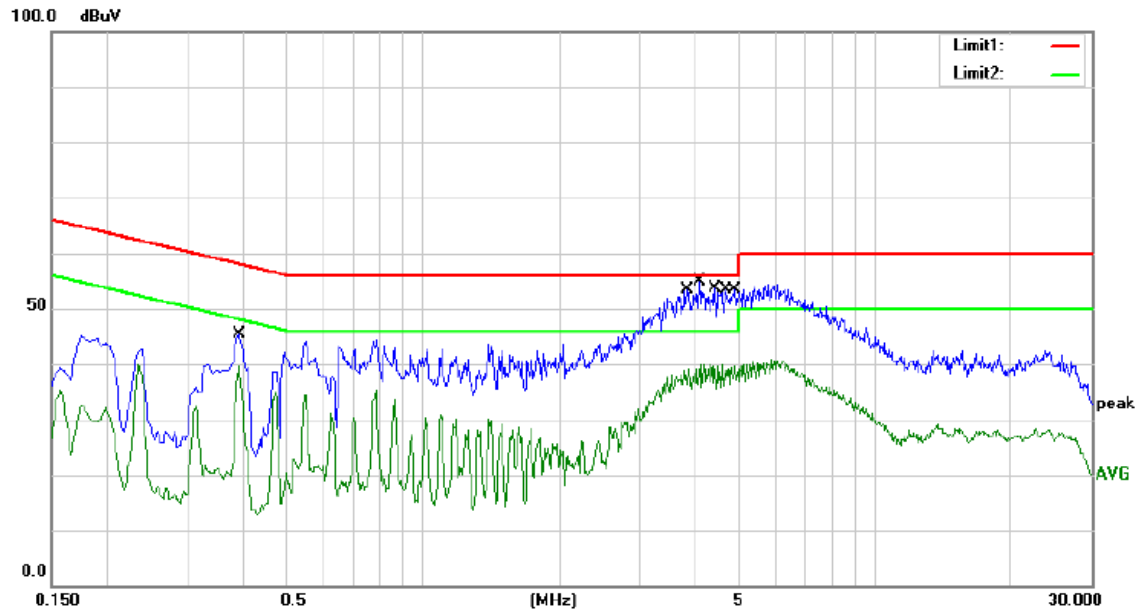
Please refer to following pages.





Site site #1 Phase: **L1** Temperature: 24
 Limit: (CE)FCC PART 15 class B_QP Power: AC 120V/60Hz Humidity: 50 %
 Mode: ON
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.3900	32.70	10.08	42.78	58.06	-15.28	QP	
2		0.3900	29.40	10.08	39.48	48.06	-8.58	AVG	
3		3.7820	37.70	10.25	47.95	56.00	-8.05	QP	
4		3.7820	28.70	10.25	38.95	46.00	-7.05	AVG	
5		4.0380	38.30	10.27	48.57	56.00	-7.43	QP	
6		4.0380	28.30	10.27	38.57	46.00	-7.43	AVG	
7		4.3380	36.60	10.30	46.90	56.00	-9.10	QP	
8		4.3380	29.00	10.30	39.30	46.00	-6.70	AVG	
9		4.5140	38.60	10.31	48.91	56.00	-7.09	QP	
10		4.5140	28.90	10.31	39.21	46.00	-6.79	AVG	
11		4.7980	38.00	10.33	48.33	56.00	-7.67	QP	
12	*	4.7980	29.90	10.33	40.23	46.00	-5.77	AVG	

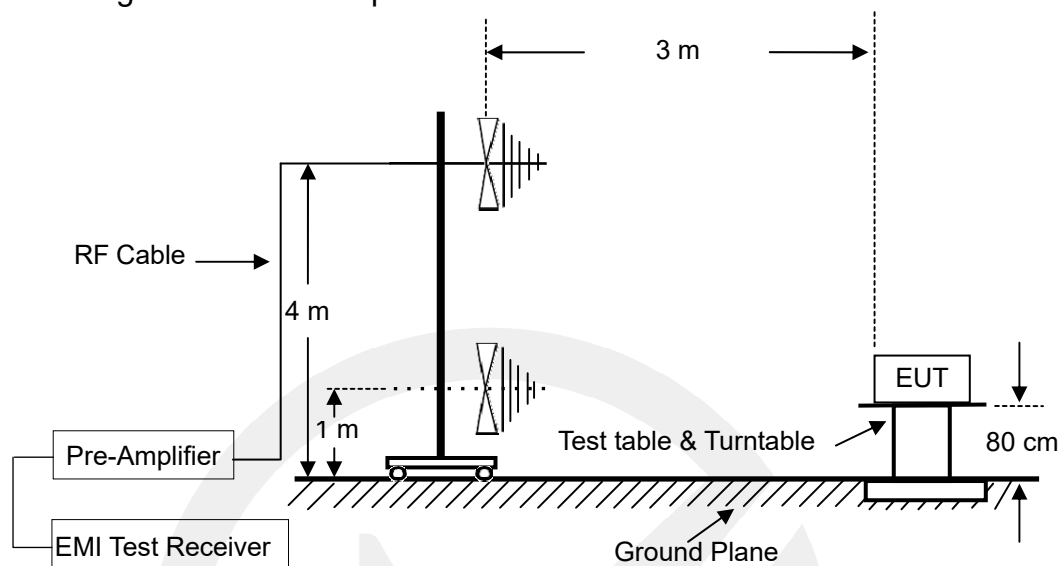


Site site #1 Phase: **N** Temperature: 24
 Limit: (CE)FCC PART 15 class B_QP Power: AC 120V/60Hz Humidity: 50 %
 Mode: ON
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.3900	30.20	10.10	40.30	58.06	-17.76	QP	
2		0.3900	29.60	10.10	39.70	48.06	-8.36	AVG	
3		3.8380	37.20	10.15	47.35	56.00	-8.65	QP	
4		3.8380	26.30	10.15	36.45	46.00	-9.55	AVG	
5		4.0860	38.70	10.18	48.88	56.00	-7.12	QP	
6	*	4.0860	29.60	10.18	39.78	46.00	-6.22	AVG	
7		4.4100	37.30	10.23	47.53	56.00	-8.47	QP	
8		4.4100	28.80	10.23	39.03	46.00	-6.97	AVG	
9		4.6500	37.00	10.26	47.26	56.00	-8.74	QP	
10		4.6500	28.60	10.26	38.86	46.00	-7.14	AVG	
11		4.8820	37.10	10.29	47.39	56.00	-8.61	QP	
12		4.8820	29.30	10.29	39.59	46.00	-6.41	AVG	

5. RADIATED EMISSION MEASUREMENT(UP TO 1GHz)

5.1. Block Diagram of Test Setup



5.2. Radiated Limit

FCC CFR Title 47, Part 15, Subpart B, Class B

Frequency MHz	Distance Meters	Field Strengths Limit	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

5.3. Test Procedure

The EUT was placed on a non-conductive table whose total height equaled 80cm. All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The EUT was set 3 meters away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The bandwidth of the Receiver is set at 120 kHz.

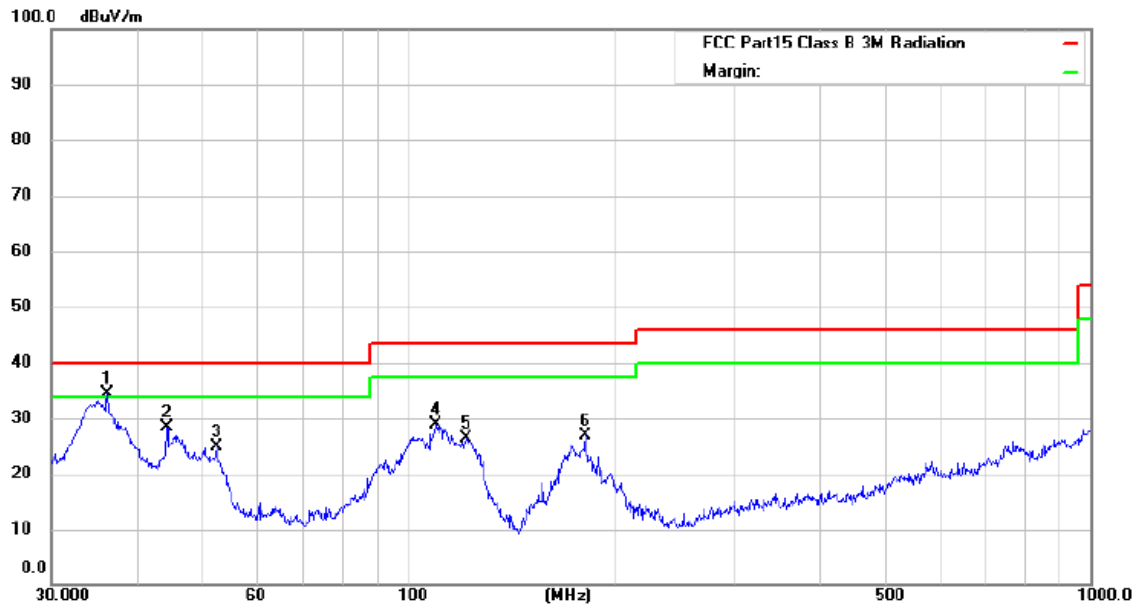
Test results were obtained from the following equation:
Measurement (dBμV) = Correct Factor (dB) + Reading (dBμV)
Over (dB) = Measurement (dBμV) - Limit (dBμV)

5.4. Measuring Results

Pass.

Please refer to following pages.





Site Radiated Emission 3m #1

Polarization: **Vertical**

Temperature: 24

Limit: FCC Part15 Class B 3M Radiation

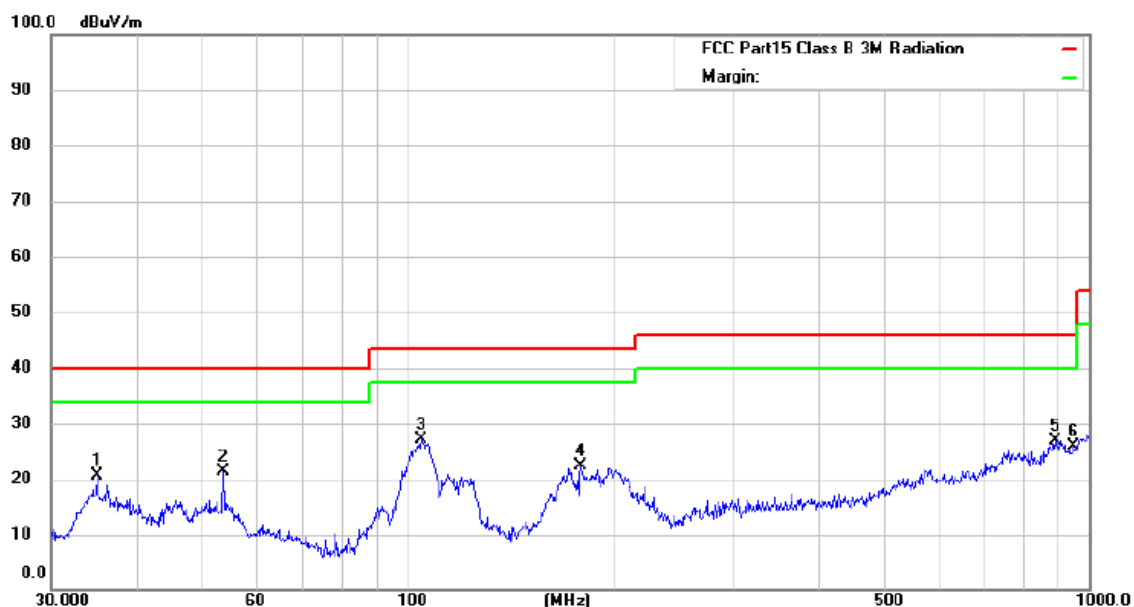
Power: AC 120V/60Hz

Humidity: 55 %

Mode: ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	36.2540	58.34	-23.84	34.50	40.00	-5.50	QP		
2		44.2752	49.87	-21.37	28.50	40.00	-11.50	QP		
3		52.3911	46.02	-21.02	25.00	40.00	-15.00	QP		
4		109.7959	52.22	-23.32	28.90	43.50	-14.60	QP		
5		121.5485	51.60	-25.20	26.40	43.50	-17.10	QP		
6		181.9202	52.56	-25.56	27.00	43.50	-16.50	QP		



Site Radiated Emission 3m #1

Polarization: **Horizontal**

Temperature: 24

Limit: FCC Part15 Class B 3M Radiation

Power: AC 120V/60Hz

Humidity: 55 %

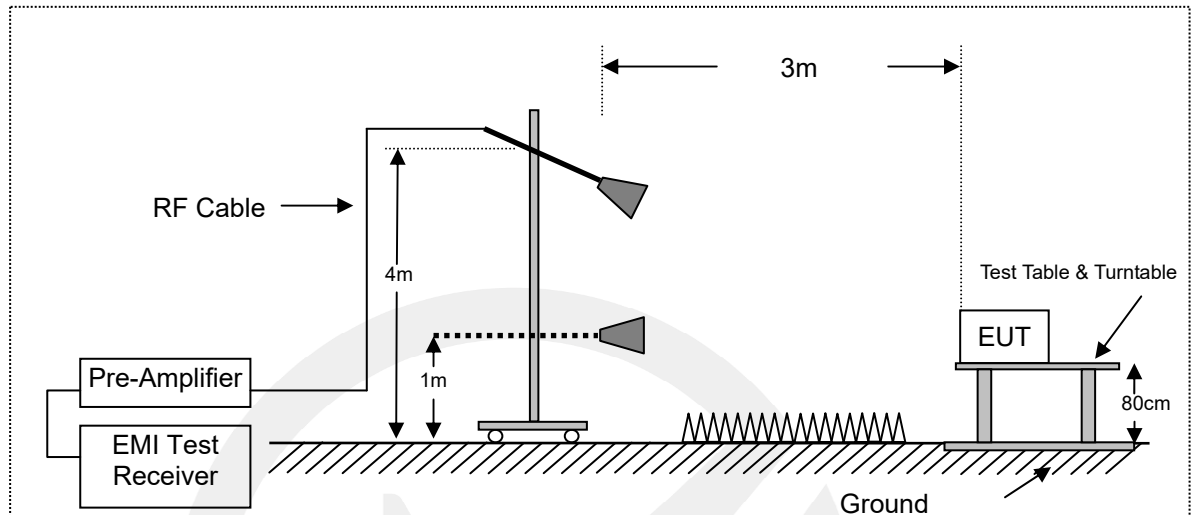
Mode: ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		35.0048	44.45	-23.85	20.60	40.00	-19.40	QP			
2		53.6931	42.31	-21.01	21.30	40.00	-18.70	QP			
3	*	104.5360	49.83	-22.73	27.10	43.50	-16.40	QP			
4		179.3863	48.16	-25.86	22.30	43.50	-21.20	QP			
5		890.7277	35.60	-8.60	27.00	46.00	-19.00	QP			
6		948.7609	34.11	-8.21	25.90	46.00	-20.10	QP			

6. RADIATED EMISSION MEASUREMENT (ABOVE 1GHz)

6.1. Block Diagram of Test Setup



6.2. Radiated Limit

FCC CFR Title 47, Part 15, Subpart B, Class B

Frequency range GHz	Average limit dB(μ V/m)	Peak limit dB(μ V/m)
Above 1000	54	74

Note: The highest internal source of an EUT is defined as the highest frequency generated or used in the device or on which the EUT operates or tunes. If the highest frequency of the internal sources of the EUT is less than 1.705 MHz, the measurement shall only be made up to 30 MHz. If the highest frequency of the internal sources of the EUT is between 1.705 MHz and 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz the measurement shall only be made up to 2 GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, whichever is less.

6.3. Test Procedure

The EUT was placed on a non-conductive table whose total height equaled 80cm. All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The EUT was set 3 meters away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with peak detector for peak values, and use RBW=1 MHz and VBW=10 Hz with peak detector for Average Values.

Test results were obtained from the following equation:
Measurement (dBμV) =Correct Factor (dB) + Reading (dBμV)
Over (dB) = Measurement (dBμV) - Limit (dBμV)

6.4. Measuring Results

N/A.

*** End of Report ***

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