



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: ARTIKA FOR LIVING INC

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

FCC ID: 2AUHG-FM-HOC

Product Name: LED ceiling light

Model Number FM-HOC-C,CLU03R-3324T-830/40/50,CLU04R-3324T-830/40/50,CLU05R-3324T-830/40/50,FM-HOC-XXXXXX

Standard(s): 47 CFR Part 15 Subpart B
ANSI C63.4-2014

The above equipment has been tested and found compliance with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: CR22060016-00

Date Of Issue: 2022-06-28

Reviewed By: Sun Zhong *Sun Zhong*

Title: Manager

Test Laboratory: China Certification ICT Co., Ltd (Dongguan)

No. 113, Pingkang Road, Dalang Town, Dongguan,

Guangdong, China

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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Trade Name:	Artika,TWINSEL,SHUANGYU,RISEN,SYL
EUT Name:	LED ceiling light
EUT Model:	FM-HOC-C
Multiple Model:	CLU03R-3324T-830/40/50,CLU04R-3324T-830/40/50,CLU05R-3324T-830/40/50,FM-HOC-XXXXXX
Highest Operation Frequency:	Below 108MHz
Rated Input Voltage:	AC 120V
Serial Number:	CR22060016-RF-S1
EUT Received Date:	2022.6.15
EUT Received Status:	GOOD
Factory1:	Zhejiang Twinsel Electronic Technology Co., Ltd. Tashan Industry Zone, Meilin Street, Ninghai County, Ningbo City, 315609, Zhejiang, P.R. China
Factory2:	Zhejiang Shuangyu Electronic Technology Co., Ltd. Tashan Industry Zone, Meilin Street, Ninghai County, Ningbo City, 315609, Zhejiang, P.R. China
Factory3:	Zhejiang Twinsel Electronic Technology Co.,Ltd. No.5 Xiayang Road, Taoyuan Street, Ninghai County, Ningbo City, Zhejiang, P.R.China
Factory4:	TWINSEL (VIETNAM) TECHNOLOGY COMPANY LIMITED Lot CN07, Cam Khe Industrial Park, Cam Khe Town, Cam Khe District, Phu Tho Province, Vietnam
Note: The Multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

Accessory Information:

No.

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition:

EUT Operation Mode:	The system was configured for testing in Typical Use Mode, which was provided by the manufacturer. Test Mode: Lighting
Equipment Modifications:	No
EUT Exercise Software:	No

1.2.2 Support Equipment List and Details

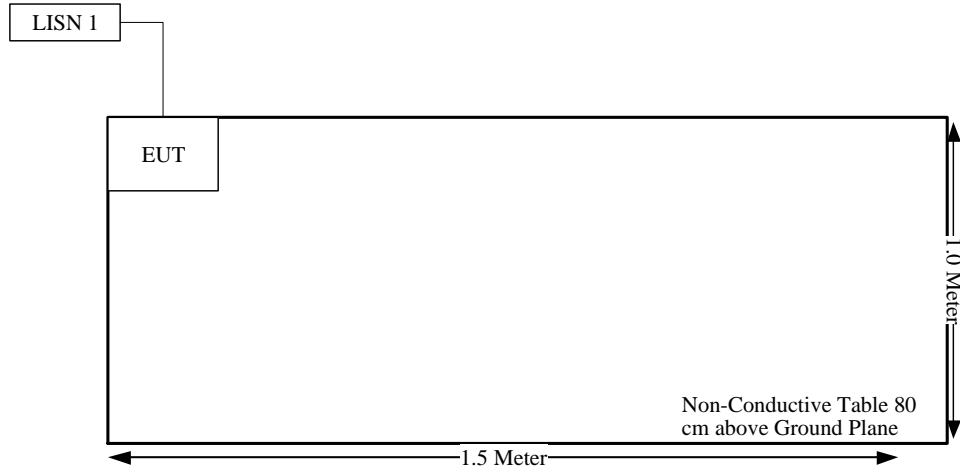
Manufacturer	Description	Model	Serial Number
/	/	/	/

1.2.3 Support Cable List and Details

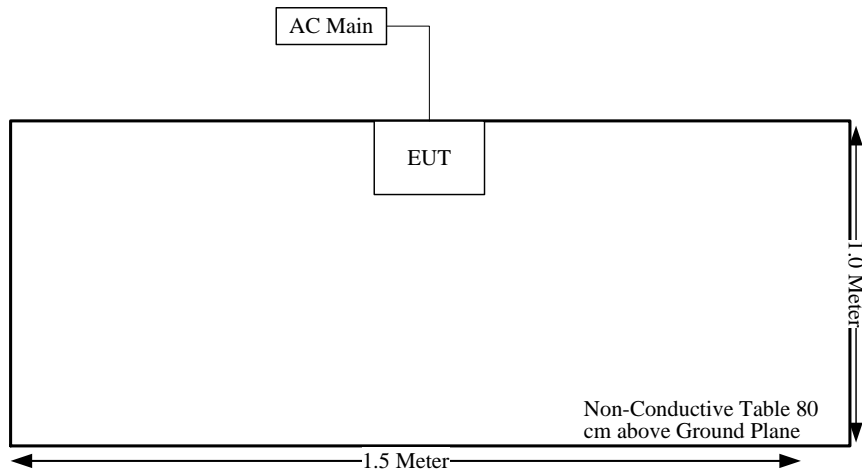
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Power Cable	No	No	1.3	EUT	LISN

1.2.4 Block Diagram of Test Setup

Conducted emissions:



Radiated emissions:



1.3 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.15 dB, 200M~1GHz: 5.61 dB, 1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB, 18G~26.5G: 5.47 dB, 26.5G~40G: 5.63 dB
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)

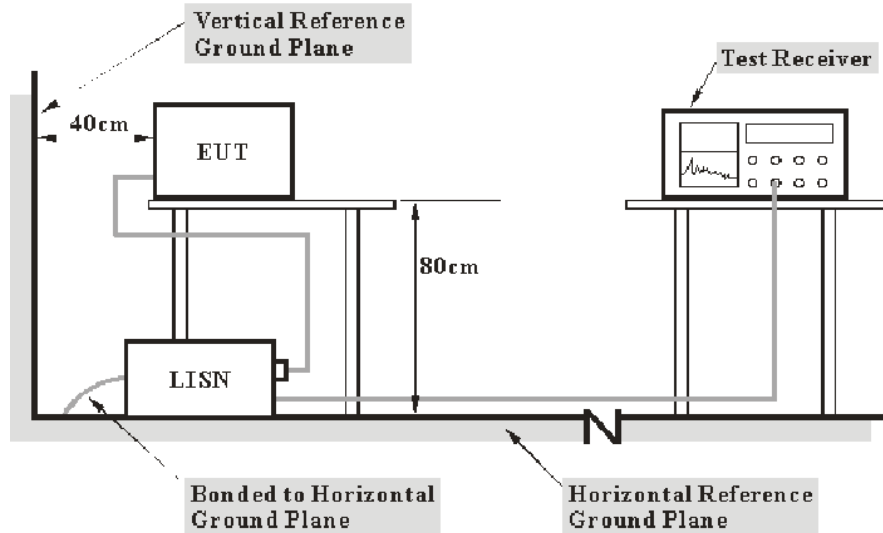
2. SUMMARY OF TEST RESULTS

Standard(s) Section	Description of Test	Result
§15.107	Conducted emissions	Compliant
§15.109	Radiated emissions	Compliant

3. REQUIREMENTS AND TEST PROCEDURES

3.1 AC Line Conducted Emissions

3.1.1 EUT Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15 B Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The adapter was or EUT connected to the main LISN with a 120 V/60 Hz AC power source.

3.1.2 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

3.1.3 Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT, the report shall list the six emissions with the smallest margin relative to the limit, unless the margin is greater than 20 dB.

All data was recorded in the Quasi-peak and average detection mode.

The report shall list the six emissions with the smallest margin relative to the limit, unless the margin is greater than 20 dB.

3.1.4 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = attenuation caused by cable loss + voltage division factor of AMN

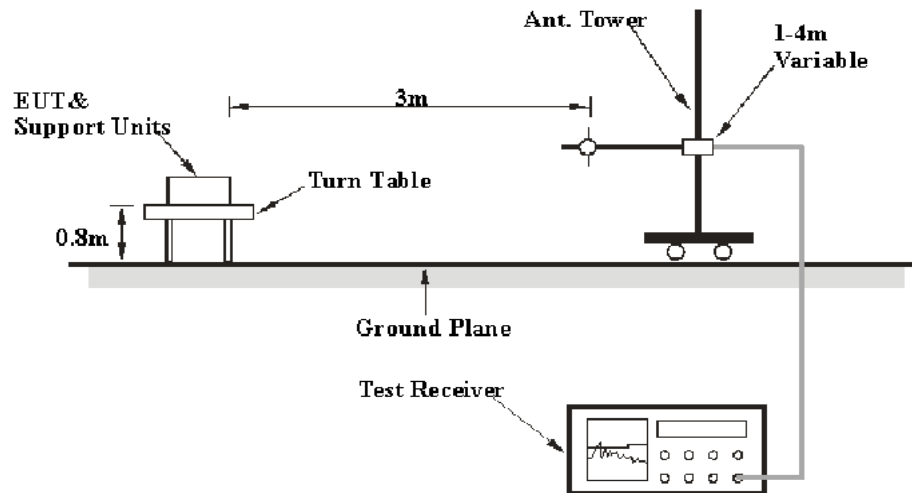
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

3.2 Radiation Spurious Emissions

3.2.1 EUT Setup

Below 1GHz:



The radiated emission were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was with the FCC Part 15 B Class B limits.

3.2.2 EMI Test Receiver Setup

The system was investigated from 30 MHz to 1 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP

If the maximized peak measured value complies with under the limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

3.2.3 Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz.

All emissions under the average limit and under the noise floor have not recorded in the report.

3.2.4 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$\text{Result} = \text{Reading} + \text{Factor}$$

$$\text{Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Result}$$

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	CR22060016-RF-S1	Test Date:	2022-06-16
Test Site:	CE	Test Mode:	Lighting
Tester:	Vic Du	Test Result:	Pass

Environmental Conditions:

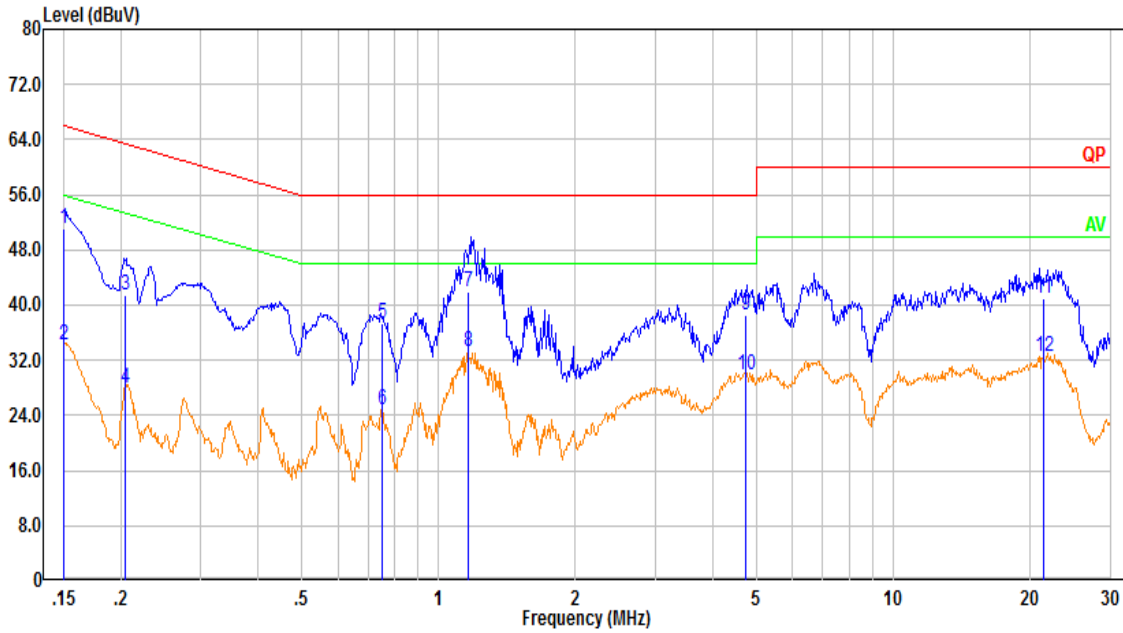
Temperature: (°C)	27.1	Relative Humidity: (%)	68	ATM Pressure: (kPa)	100.3
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2022-04-01	2023-03-31
R&S	EMI Test Receiver	ESR3	102726	2021-07-22	2022-07-21
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2021-08-08	2022-08-07
Audix	Test Software	E3	190306 (V9)	N/A	N/A

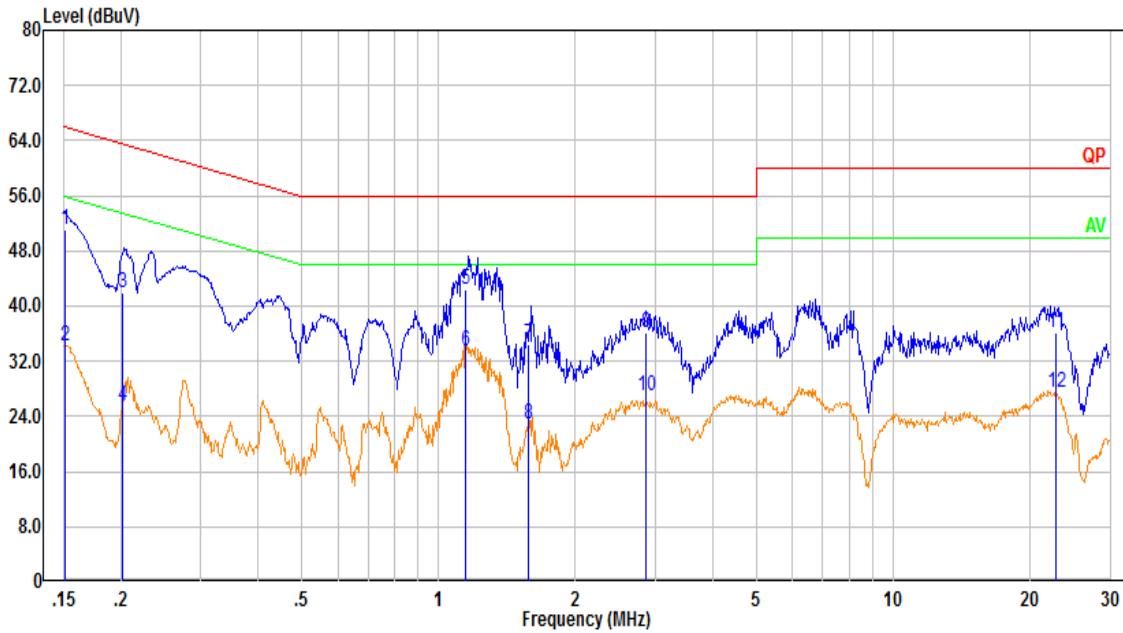
** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Line:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.150	41.52	9.61	51.13	66.00	14.87	QP
2	0.150	24.50	9.61	34.11	56.00	21.89	Average
3	0.204	31.95	9.61	41.56	63.43	21.87	QP
4	0.204	18.30	9.61	27.91	53.43	25.52	Average
5	0.749	27.68	9.62	37.30	56.00	18.70	QP
6	0.749	15.20	9.62	24.82	46.00	21.18	Average
7	1.165	32.33	9.62	41.95	56.00	14.05	QP
8	1.165	23.53	9.62	33.15	46.00	12.85	Average
9	4.726	28.95	9.66	38.61	56.00	17.39	QP
10	4.726	20.26	9.66	29.92	46.00	16.08	Average
11	21.412	31.22	9.80	41.03	60.00	18.97	QP
12	21.412	22.67	9.80	32.47	50.00	17.53	Average

Neutral:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.151	41.53	9.61	51.14	65.95	14.81	QP
2	0.151	24.57	9.61	34.18	55.96	21.78	Average
3	0.202	32.30	9.61	41.91	63.54	21.63	QP
4	0.202	15.98	9.61	25.59	53.54	27.95	Average
5	1.145	32.78	9.62	42.41	56.00	13.59	QP
6	1.145	23.91	9.62	33.53	46.00	12.47	Average
7	1.577	24.94	9.63	34.56	56.00	21.44	QP
8	1.577	13.23	9.63	22.85	46.00	23.15	Average
9	2.863	26.50	9.65	36.14	56.00	19.86	QP
10	2.863	17.25	9.65	26.90	46.00	19.10	Average
11	22.732	26.40	9.74	36.14	60.00	23.86	QP
12	22.732	17.71	9.74	27.44	50.00	22.56	Average

4.2 Radiation Spurious Emissions

Serial Number:	CR22060016-RF-S1	Test Date:	2022-06-16
Test Site:	966-2	Test Mode:	Lighting
Tester:	Gary Ling	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.9	Relative Humidity: (%)	50	ATM Pressure: (kPa)	100.3
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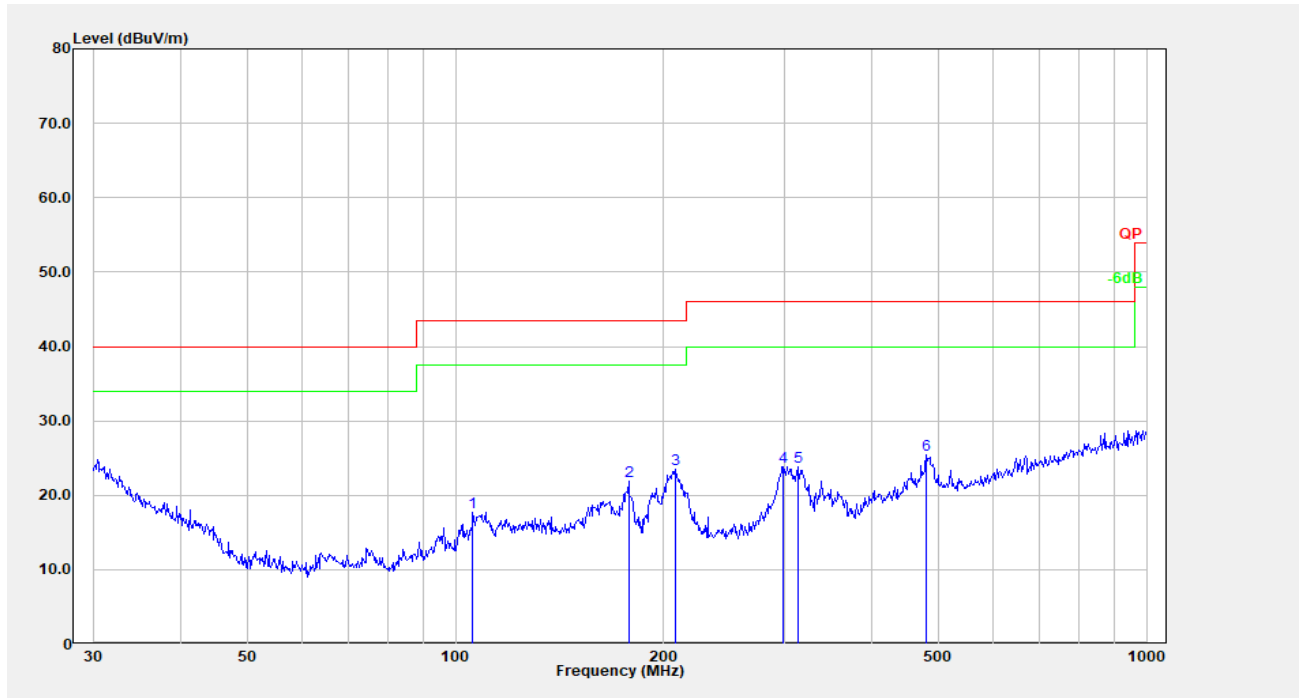
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020-10-19	2023-10-18
R&S	EMI Test Receiver	ESR3	102724	2021-07-22	2022-07-21
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2021-07-18	2022-07-17
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2021-07-18	2022-07-17
Sonoma	Amplifier	310N	186165	2021-07-18	2022-07-17
Audix	Test Software	E3	201021 (V9)	N/A	N/A

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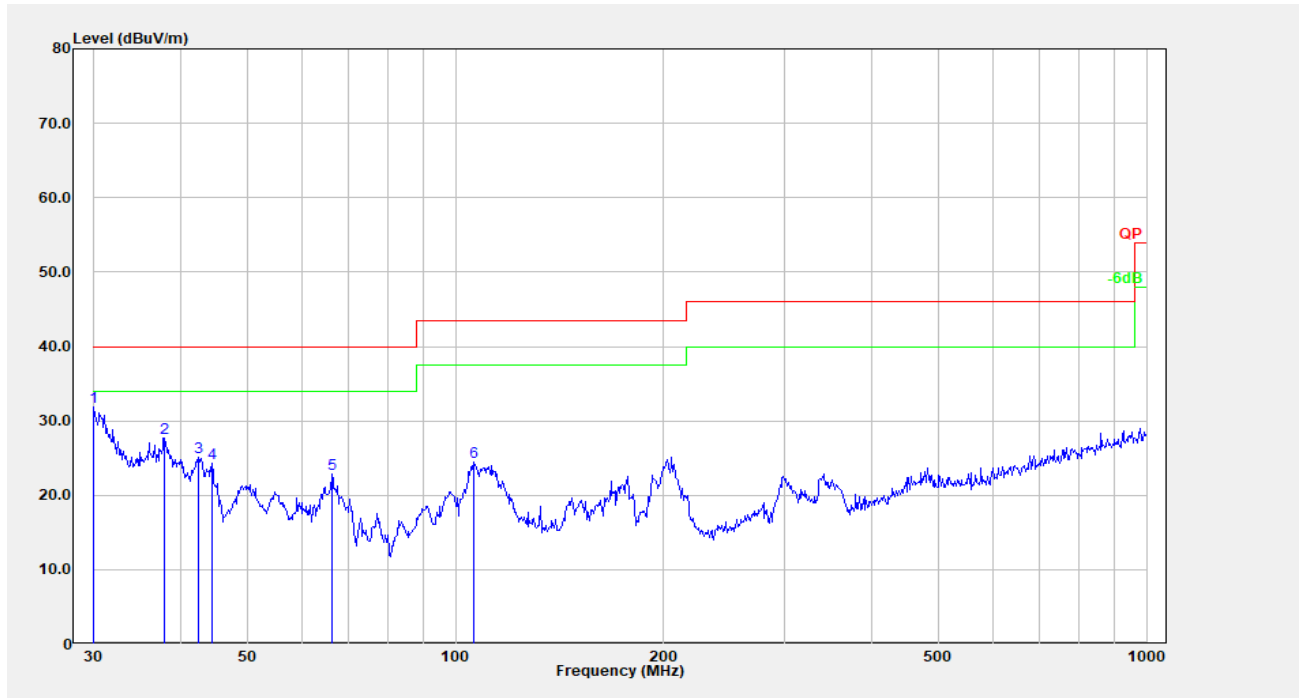
1) 30MHz-1GHz:

Horizontal:



No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	106.013	31.12	-13.42	17.70	43.50	25.80	Peak
2	178.133	35.53	-13.67	21.86	43.50	21.64	Peak
3	207.850	36.09	-12.57	23.52	43.50	19.98	Peak
4	298.268	34.68	-10.86	23.83	46.00	22.17	Peak
5	313.276	34.64	-10.82	23.82	46.00	22.18	Peak
6	480.528	31.93	-6.49	25.44	46.00	20.56	Peak

Vertical:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.000	35.74	-3.79	31.95	40.00	8.05	Peak
2	37.945	37.60	-9.87	27.73	40.00	12.27	Peak
3	42.451	38.03	-12.95	25.07	40.00	14.93	Peak
4	44.431	38.40	-14.14	24.26	40.00	15.74	Peak
5	66.266	40.00	-17.07	22.93	40.00	17.07	Peak
6	106.385	37.77	-13.32	24.45	43.50	19.05	Peak

===== END OF REPORT =====