



中认信通

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: ARTIKA FOR LIVING INC.

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

FCC ID: 2AYFP-FM-ALC-XXX

Product Name: Alton Ceiling light

Model Number: FM-ALC-HD2WD, CLU04R-3325T-830/40/50,
FM-ALC-XXXXXX

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

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

Report Number: CR230102498-00A

Date Of Issue: 2023/2/28

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
Tel: +86-769-82016888

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.

This report cannot be reproduced except in full, without prior written approval of the Company.

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk “★”.

CONTENTS

TEST FACILITY	2
DECLARATIONS.....	2
DOCUMENT REVISION HISTORY	4
1. GENERAL INFORMATION.....	5
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	5
1.2 DESCRIPTION OF TEST CONFIGURATION	6
1.2.2 Support Equipment List and Details	6
1.2.3 Support Cable List and Details	6
1.2.4 Block Diagram of Test Setup.....	7
1.3 MEASUREMENT UNCERTAINTY	9
2. SUMMARY OF TEST RESULTS	10
3. REQUIREMENTS AND TEST PROCEDURES	11
3.1 AC LINE CONDUCTED EMISSIONS.....	11
3.1.1 EUT Setup.....	11
3.1.2 EMI Test Receiver Setup	11
3.1.3 Test Procedure	12
3.1.4 Corrected Amplitude & Margin Calculation.....	12
3.2 RADIATION SPURIOUS EMISSIONS	13
3.2.1 EUT Setup.....	13
3.2.2 EMI Test Receiver Setup	13
3.2.3 Test Procedure	13
3.2.4 Corrected Amplitude & Margin Calculation.....	14
4. TEST DATA AND RESULTS.....	15
4.1 AC LINE CONDUCTED EMISSIONS	15
4.2 RADIATION SPURIOUS EMISSIONS	20

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230102498-00A	Original Report	2023/2/28

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Alton Ceiling light
EUT Model:	FM-ALC-HD2WD
Multiple Models:	CLU04R-3325T-830/40/50, FM-ALC-XXXXXX
Highest Operation Frequency▲:	Below 108 MHz
Rated Input Voltage:	AC 120V
Serial Number:	1Z15-1
EUT Received Date:	2023/1/17
EUT Received Status:	Good
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:

Accessory Description	Manufacturer	Model	Parameters
/	/	/	/

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. The device support silicon controlled dimmer. According to KDB 640677 D01 RF LED Lighting v01, it is recommended to explore the specific light output settings that produce maximum emissions. Test Mode : M1: Lighting with dimmer; M2: Lighting without dimmer
Equipment Modifications:	No
EUT Exercise Software:	No

1.2.2 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
LUTRON	Dimmer	DVCL-153P	50015952

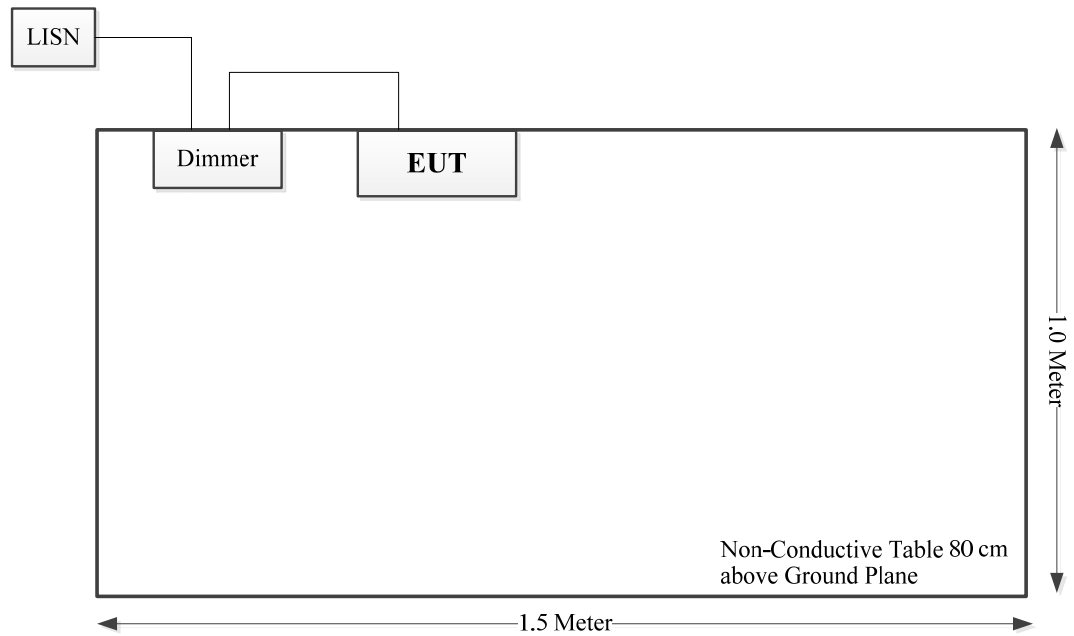
1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Power Cable	No	No	1.2	Dimmer	LISN
Power Cable	No	No	1.2	EUT	LISN
Power Cable	No	No	0.2	Dimmer	EUT

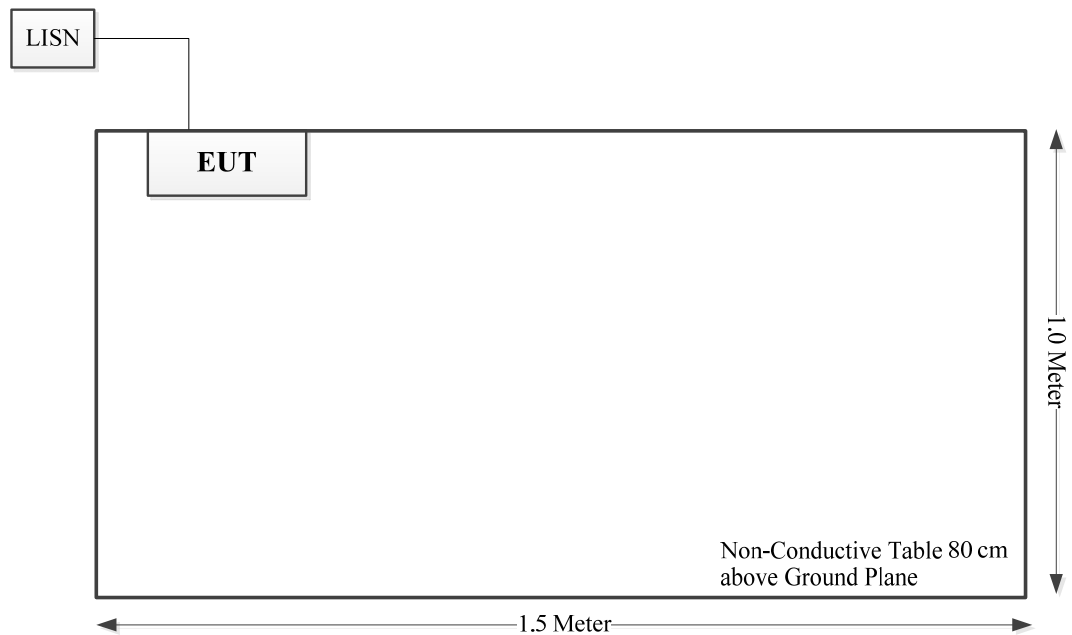
1.2.4 Block Diagram of Test Setup

Conducted emissions:

M1:

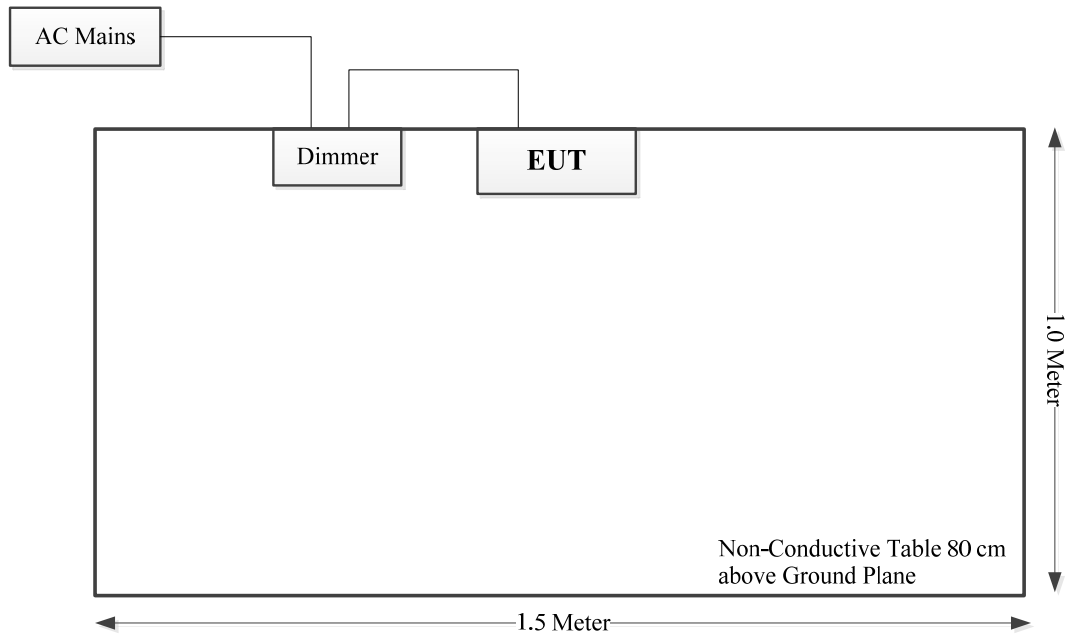


M2:

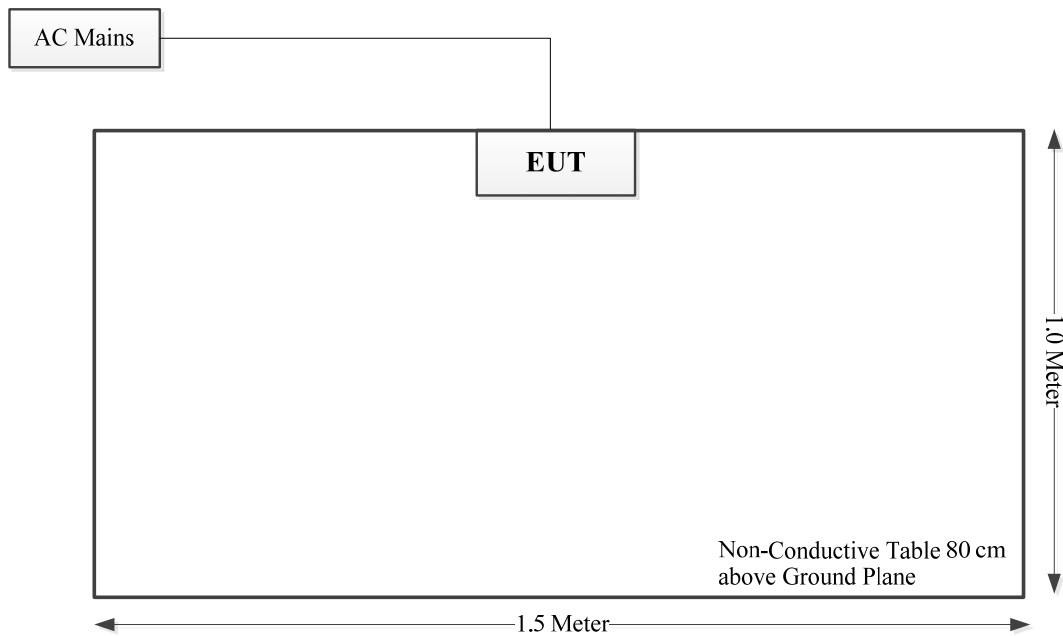


Radiated emissions:

M1:



M2:



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)

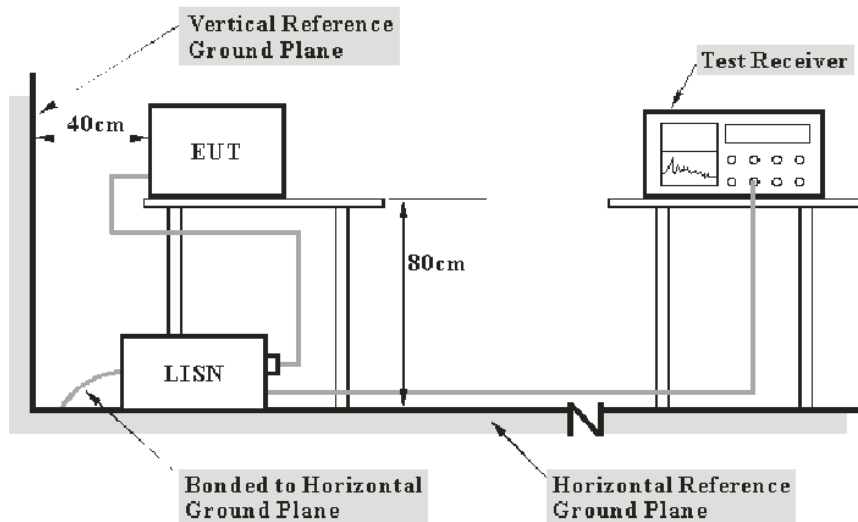
2. SUMMARY OF TEST RESULTS

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 EUT was 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

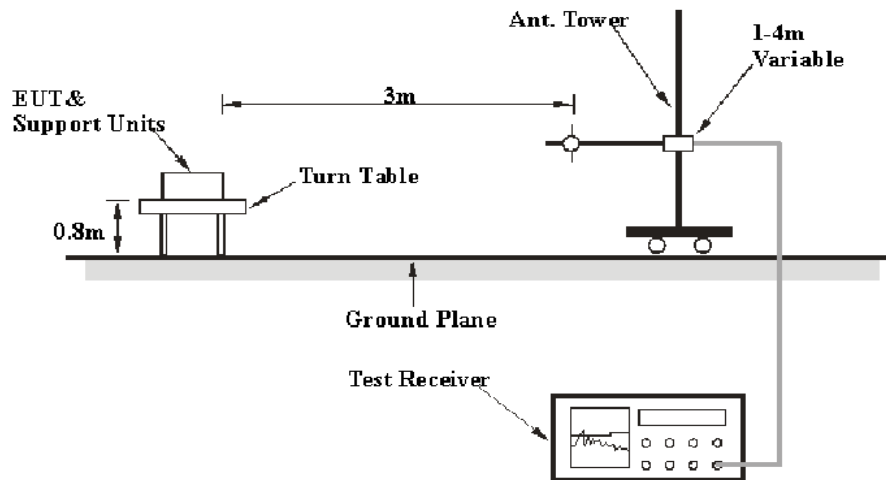
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

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:

Result = Reading + Factor

Factor = Antenna Factor + Cable Loss- 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:

Margin = Limit – Result

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	1Z15-1	Test Date:	2023/1/17~2023/2/27
Test Site:	CE	Test Mode:	M1, M2
Tester:	Bob Yang	Test Result:	Pass

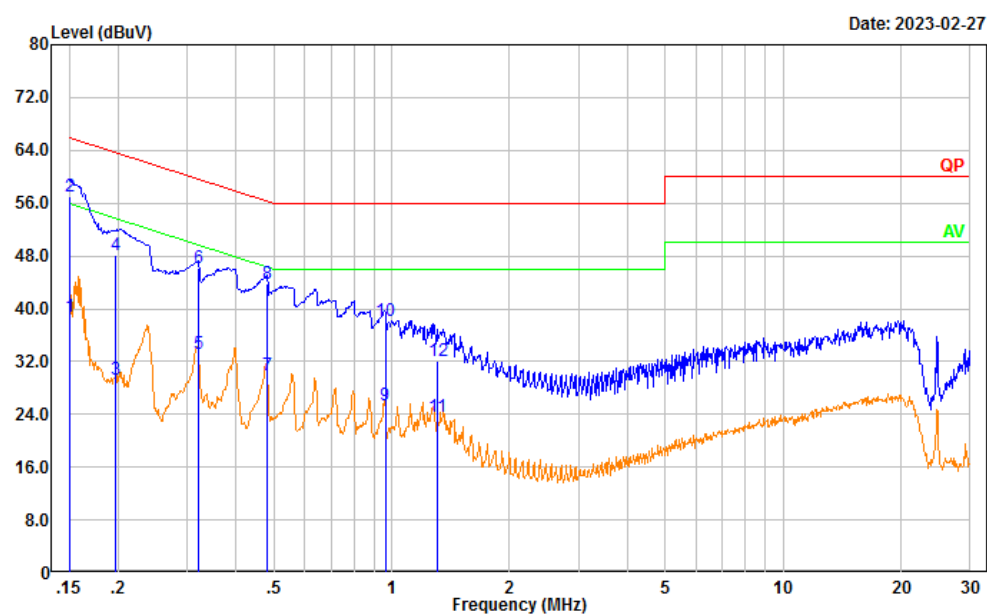
Environmental Conditions:

Temperature: (°C)	19.8~21.7	Relative Humidity: (%)	38~44	ATM Pressure: (kPa)	101.8~102.3
----------------------	-----------	------------------------------	-------	------------------------	-------------

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	2022/07/15	2023/07/14
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2022/08/07	2023/08/06
Audix	Test Software	E3	190306 (V9)	N/A	N/A

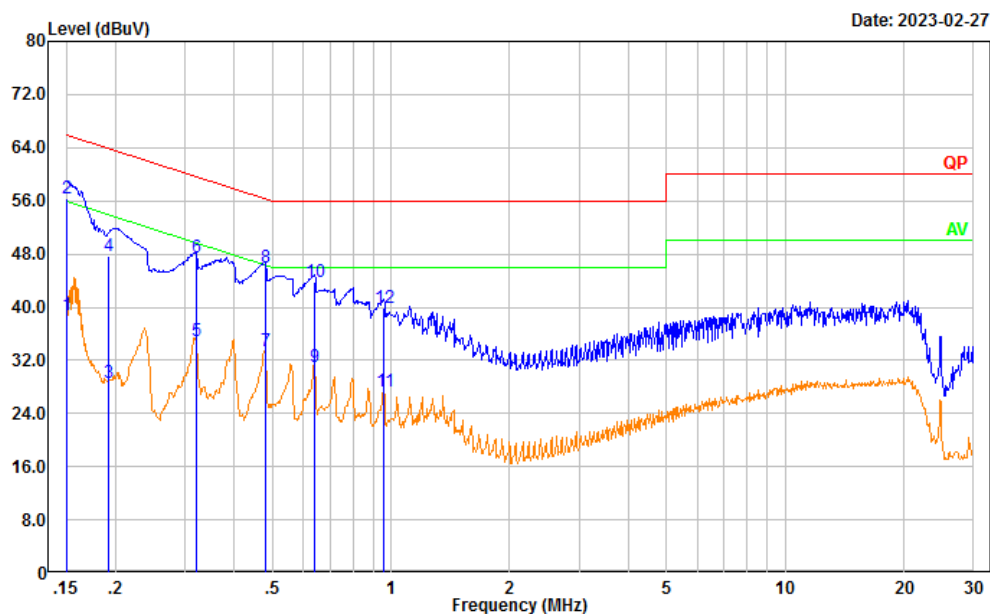
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

M1:**Minimum light output configuration was the worst:**Port: Line
Note:

No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.150	29.29	9.61	38.90	55.98	17.08	Average
2	0.150	47.34	9.61	56.95	65.98	9.03	QP
3	0.196	19.66	9.61	29.27	53.76	24.49	Average
4	0.196	38.55	9.61	48.16	63.76	15.60	QP
5	0.321	23.51	9.61	33.12	49.68	16.56	Average
6	0.321	36.57	9.61	46.18	59.68	13.50	QP
7	0.482	20.33	9.61	29.94	46.31	16.37	Average
8	0.482	34.10	9.61	43.71	56.31	12.60	QP
9	0.962	15.71	9.62	25.33	46.00	20.67	Average
10	0.962	28.44	9.62	38.06	56.00	17.94	QP
11	1.308	13.99	9.62	23.61	46.00	22.39	Average
12	1.308	22.56	9.62	32.18	56.00	23.82	QP

Port: neutral

Note:

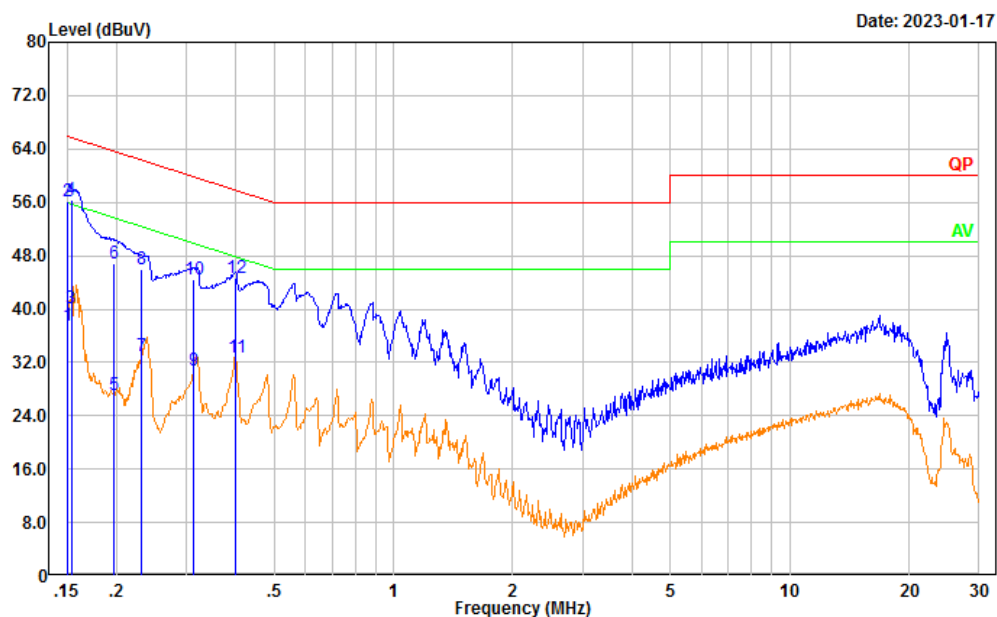


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.150	29.12	9.61	38.73	56.00	17.27	Average
2	0.150	46.87	9.61	56.48	66.00	9.52	QP
3	0.192	19.11	9.61	28.72	53.97	25.25	Average
4	0.192	37.98	9.61	47.59	63.97	16.38	QP
5	0.320	25.40	9.61	35.01	49.71	14.70	Average
6	0.320	37.95	9.61	47.56	59.71	12.15	QP
7	0.479	23.83	9.61	33.44	46.36	12.92	Average
8	0.479	36.25	9.61	45.86	56.36	10.50	QP
9	0.640	21.44	9.62	31.06	46.00	14.94	Average
10	0.640	34.27	9.62	43.89	56.00	12.11	QP
11	0.961	17.79	9.62	27.41	46.00	18.59	Average
12	0.961	30.27	9.62	39.89	56.00	16.11	QP

M2:

Port: Line

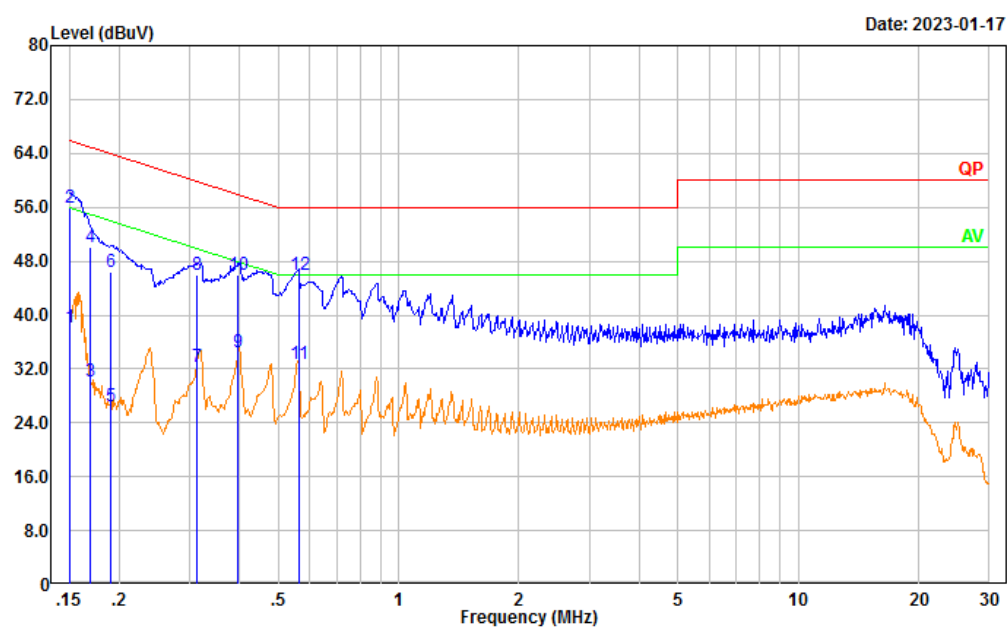
Note:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.150	27.85	9.61	37.46	56.00	18.54	Average
2	0.150	46.53	9.61	56.14	66.00	9.86	QP
3	0.154	30.60	9.61	40.21	55.80	15.59	Average
4	0.154	46.77	9.61	56.38	65.80	9.42	QP
5	0.198	17.56	9.61	27.17	53.71	26.54	Average
6	0.198	37.18	9.61	46.79	63.71	16.92	QP
7	0.232	23.36	9.61	32.97	52.39	19.42	Average
8	0.232	36.41	9.61	46.02	62.39	16.37	QP
9	0.312	21.08	9.61	30.69	49.90	19.21	Average
10	0.312	34.80	9.61	44.41	59.90	15.49	QP
11	0.401	23.15	9.61	32.76	47.84	15.08	Average
12	0.401	34.95	9.61	44.56	57.84	13.28	QP

Port: neutral

Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
<hr/>							
1	0.151	28.49	9.61	38.10	55.95	17.85	Average
2	0.151	46.22	9.61	55.83	65.95	10.12	QP
3	0.170	20.50	9.61	30.11	54.97	24.86	Average
4	0.170	40.54	9.61	50.15	64.97	14.82	QP
5	0.191	16.87	9.61	26.48	53.98	27.50	Average
6	0.191	36.84	9.61	46.45	63.98	17.53	QP
7	0.313	22.67	9.61	32.28	49.90	17.62	Average
8	0.313	36.33	9.61	45.94	59.90	13.96	QP
9	0.397	24.94	9.61	34.55	47.92	13.37	Average
10	0.397	36.44	9.61	46.05	57.92	11.87	QP
11	0.562	23.04	9.62	32.66	46.00	13.34	Average
12	0.562	36.25	9.62	45.87	56.00	10.13	QP

4.2 Radiation Spurious Emissions

Serial Number:	1Z15-1	Test Date:	2023/01/27~2023/2/27
Test Site:	966-2	Test Mode:	M1, M2
Tester:	Carl Xue	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	22.2~23.3	Relative Humidity: (%)	39~45	ATM Pressure: (kPa)	101.8~102.3
----------------------	-----------	------------------------------	-------	------------------------	-------------

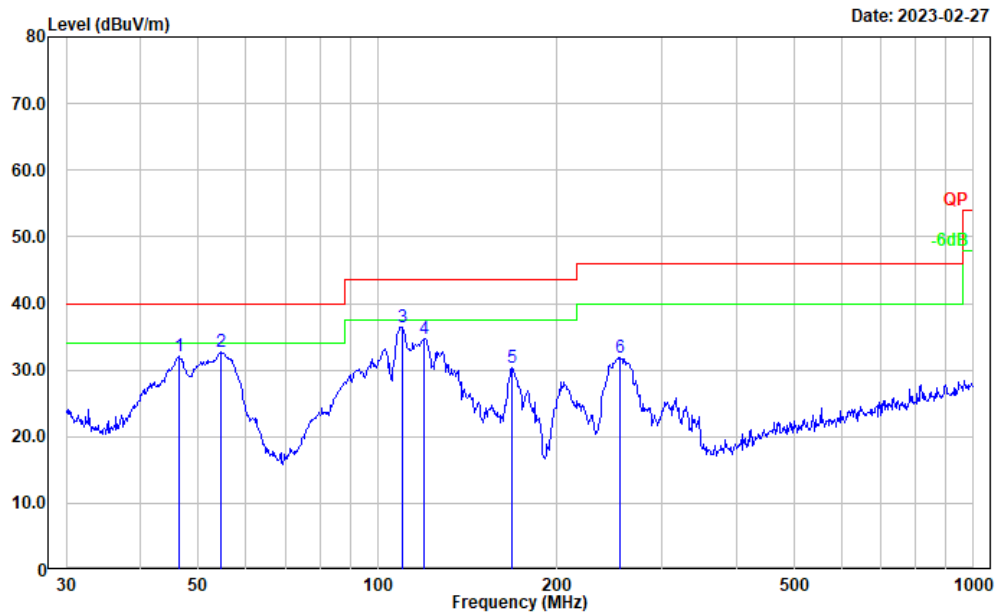
Test Equipment List and Details:

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	2022/07/15	2023/07/14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022/07/17	2023/07/16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022/07/17	2023/07/16
Sonoma	Amplifier	310N	186165	2022/07/17	2023/07/16
Audix	Test Software	E3	201021 (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).

M1:
Maximum light output configuration was the worst:

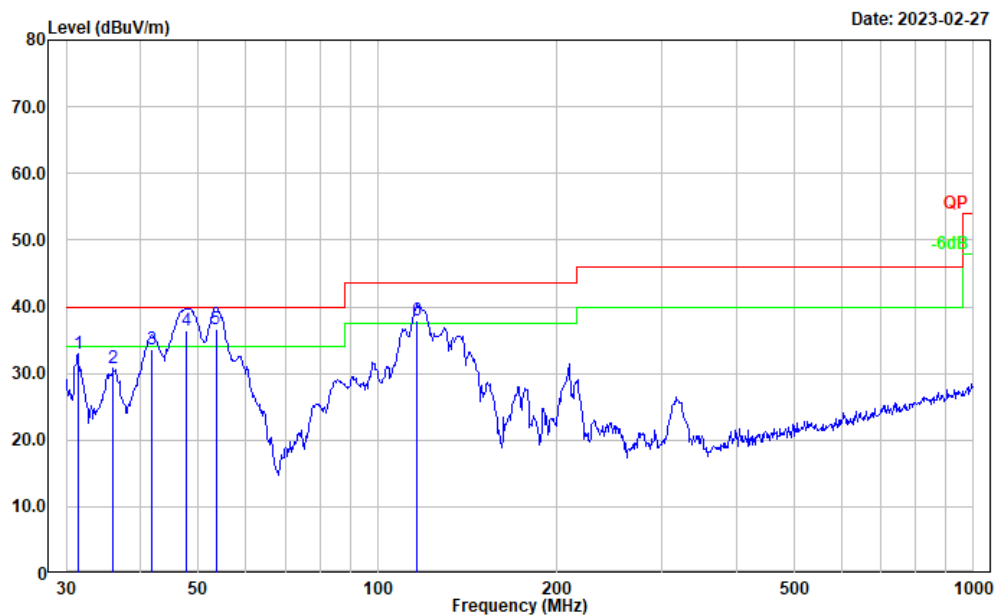
Polarization: horizontal
Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	46.340	47.15	-15.04	32.11	40.00	7.89	Peak
2	54.452	49.93	-17.27	32.66	40.00	7.34	Peak
3	109.796	48.87	-12.36	36.51	43.50	6.99	Peak
4	119.436	46.23	-11.49	34.74	43.50	8.76	Peak
5	167.824	43.11	-12.73	30.38	43.50	13.12	Peak
6	254.728	44.79	-12.83	31.96	46.00	14.04	Peak

Polarization: vertical

Note:

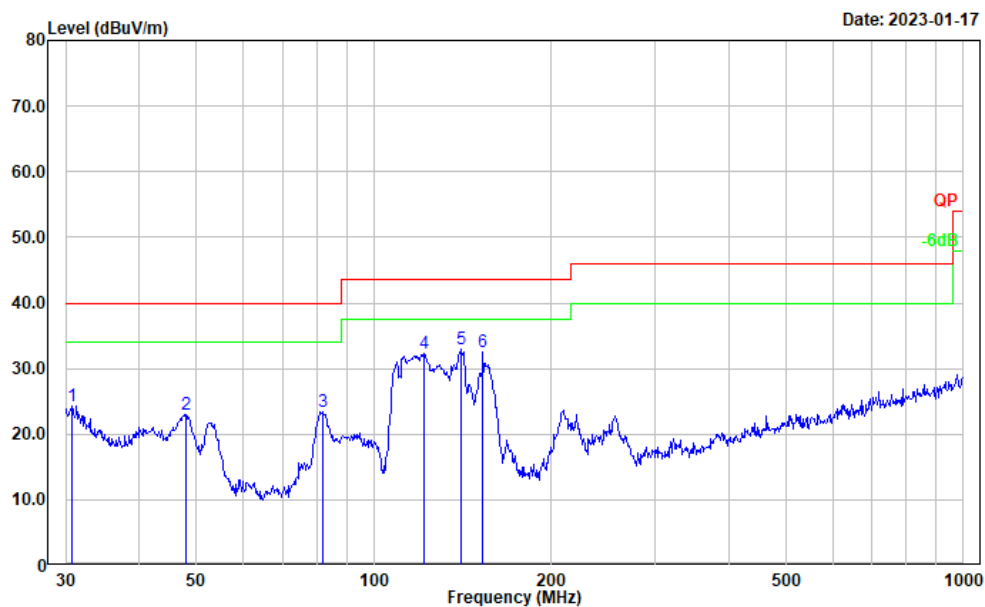


No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	31.399	37.66	-4.67	32.99	40.00	7.01	Peak
2	36.001	39.02	-8.24	30.78	40.00	9.22	Peak
3	41.713	45.89	-12.29	33.60	40.00	6.40	QP
4	47.826	52.25	-15.93	36.32	40.00	3.68	QP
5	53.505	53.97	-17.25	36.72	40.00	3.28	QP
6	116.540	49.75	-11.75	38.00	43.50	5.50	QP

M2:

Polarization: horizontal

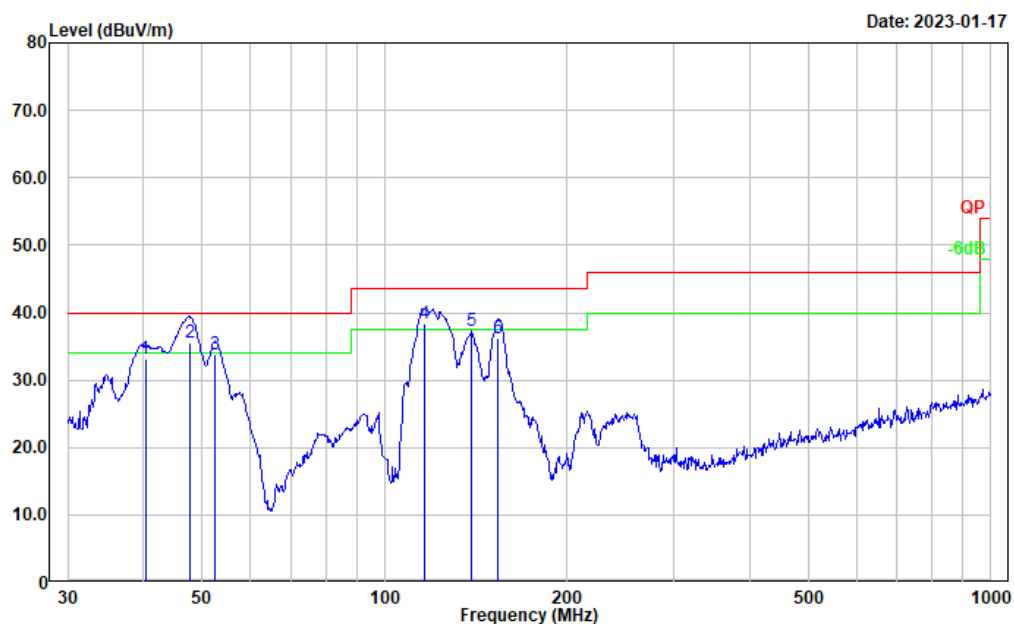
Note:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.745	28.53	-4.17	24.36	40.00	15.64	Peak
2	47.994	39.10	-16.03	23.07	40.00	16.93	Peak
3	81.783	40.86	-17.36	23.50	40.00	16.50	Peak
4	121.549	43.69	-11.43	32.26	43.50	11.24	Peak
5	140.835	44.87	-11.93	32.94	43.50	10.56	Peak
6	153.200	44.61	-12.03	32.58	43.50	10.92	Peak

Polarization: vertical

Note:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	40.276	44.71	-11.48	33.23	40.00	6.77	QP
2	47.659	51.28	-15.83	35.45	40.00	4.55	QP
3	52.391	51.12	-17.21	33.91	40.00	6.09	QP
4	116.132	50.19	-11.82	38.37	43.50	5.13	QP
5	139.361	49.03	-11.83	37.20	43.50	6.30	Peak
6	153.739	48.25	-12.01	36.24	43.50	7.26	QP

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