



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-ATR

Model Name FM-ATR-BL,CLU03-5329R-827~50,FM-ATR-SL,FM-ATR-XXXXXX

Product Name: LED ceiling light

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: CR22050009-00

Date Of Issue: 2022-05-24

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.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Trade Name:	Artika, TWINSEL, SHUANGYU, RISEN, SYL
Factory 1:	Zhejiang Twinsel Electronic Technology Co., Ltd. Tashan Industry Zone, Meilin Street, Ninghai County, Ningbo City, 315609, Zhejiang, P.R. China
Factory 2:	Zhejiang Shuangyu Electronic Technology Co., Ltd. Tashan Industry Zone, Meilin Street, Ninghai County, Ningbo City, 315609, Zhejiang, P.R. China
Factory 3:	Zhejiang Twinsel Electronic Technology Co.,Ltd. No.5 Xiayang Road, Taoyuan Street, Ninghai County, Ningbo City, Zhejiang, P.R.China
Factory 4:	TWINSEL (VIETNAM) TECHNOLOGY COMPANY LIMITED Lot CN07, Cam Khe Industrial Park, Cam Khe Town, Cam Khe District, Phu Tho Province, Vietnam
EUT Name:	LED ceiling light
EUT Model:	FM-ATR-BL
Multiple Models:	CLU03-5329R-827~50, FM-ATR-SL, FM-ATR-XXXXXX
Highest Operation Frequency:	Below 108 MHz
Rated Input Voltage:	AC 120V
Serial Number:	CR22050009-RF-S1
EUT Received Date:	2022.5.7
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. The EUT model has two configurations that Type-1 is single ring and Type-2 is double ring. Please refer to external photos for more detail. Type-1 was performed.	

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. M1: Lighting(20% brightness) M2: Lighting(50% brightness) M3: Lighting(100% brightness)
Equipment Modifications:	No
EUT Exercise Software:	No

1.2.2 Support Equipment List and Details

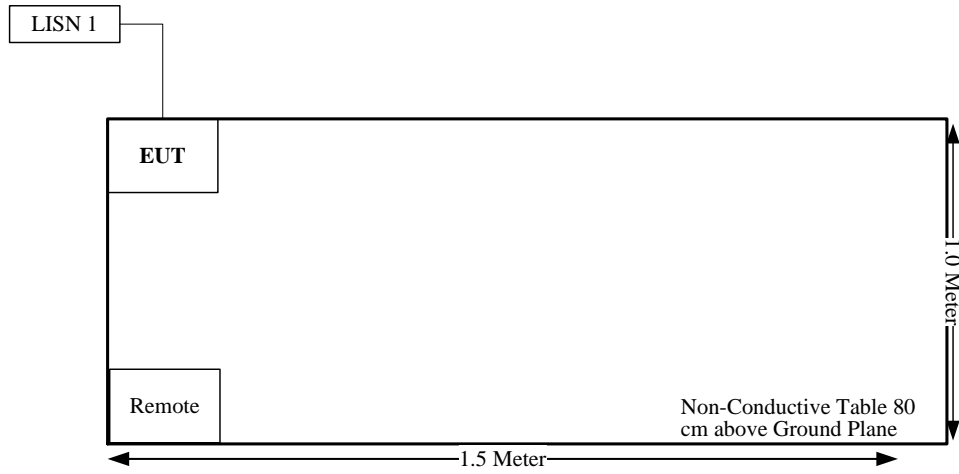
Manufacturer	Description	Model	Serial Number
/	/	/	/

1.2.3 Support Cable List and Details

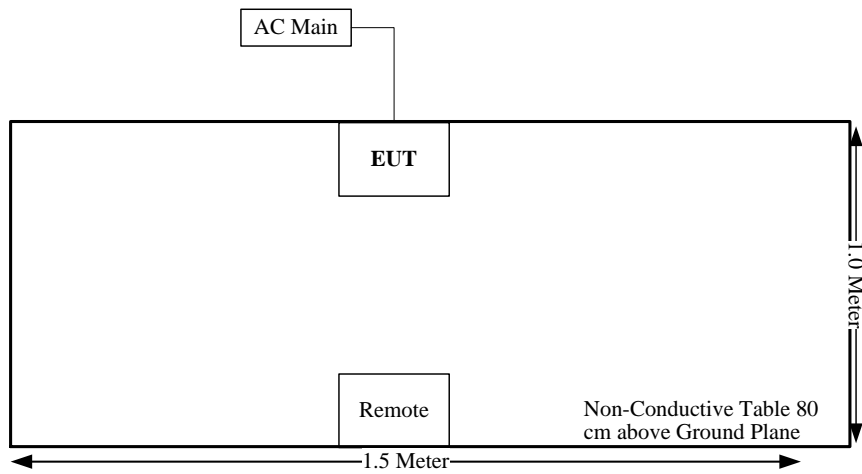
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Power	No	No	1.5	EUT	LISN

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)

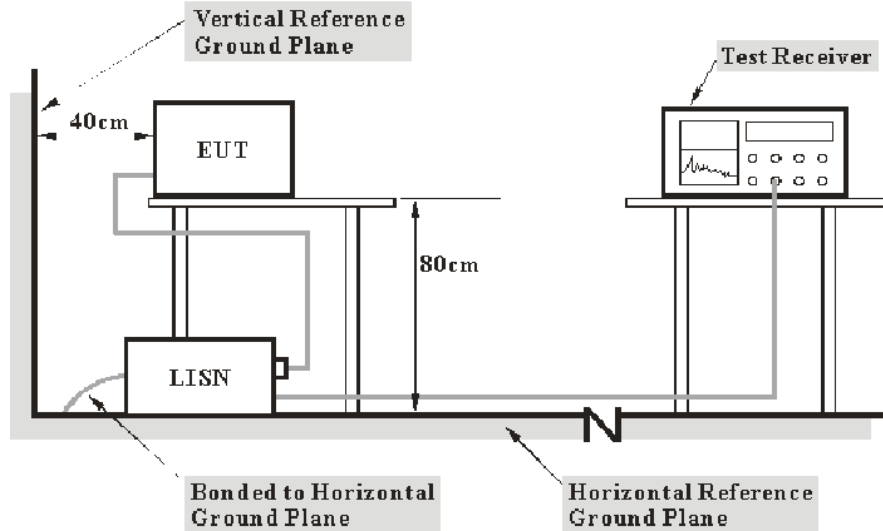
2. SUMMARY OF TEST RESULTS

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 or 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

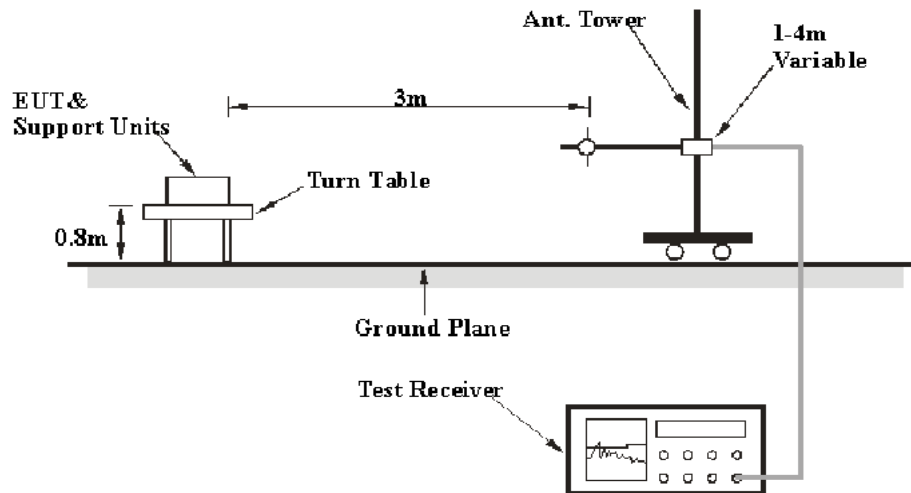
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

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 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:	CR22050009-RF-S1	Test Date:	2022-05-20
Test Site:	CE	Test Mode:	M1: Lighting(20% brightness) M2: Lighting(50% brightness) M3: Lighting(100% brightness)
Tester:	Nick Tang	Test Result:	Pass

Environmental Conditions:

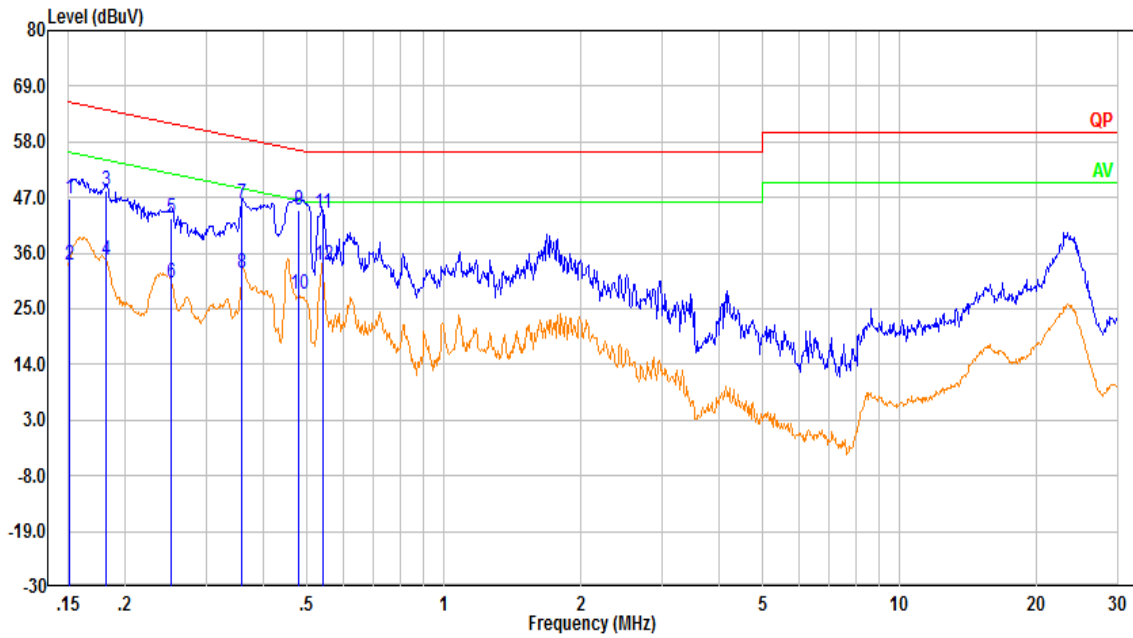
Temperature: (°C)	28.6	Relative Humidity: (%)	67	ATM Pressure: (kPa)	100.5
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Test Equipment List and Details:

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

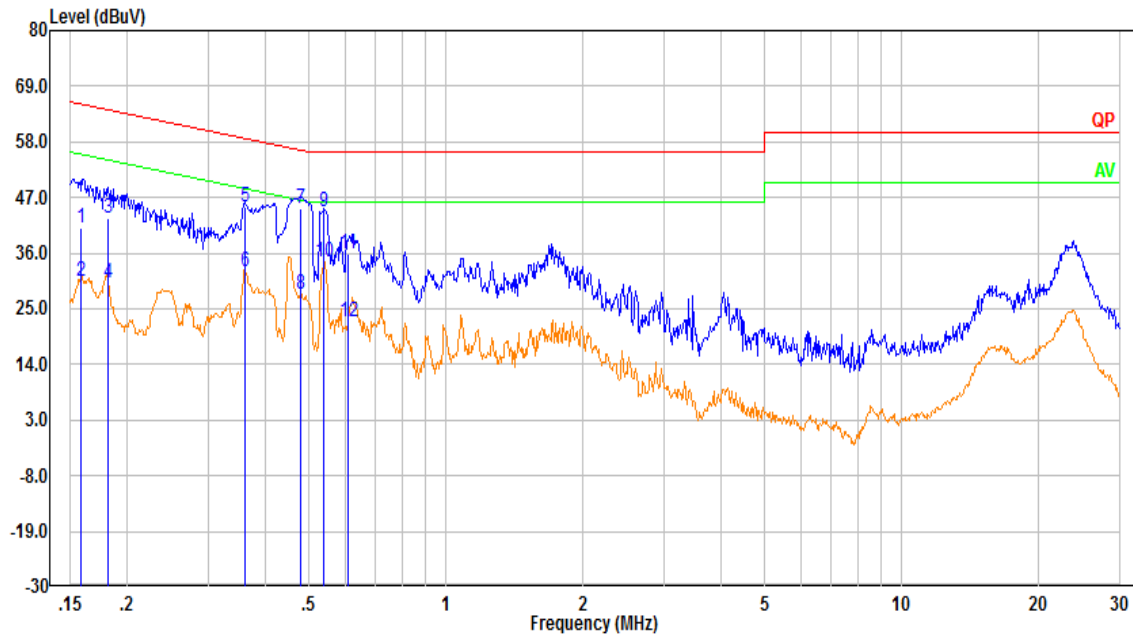
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

M1:
Line:



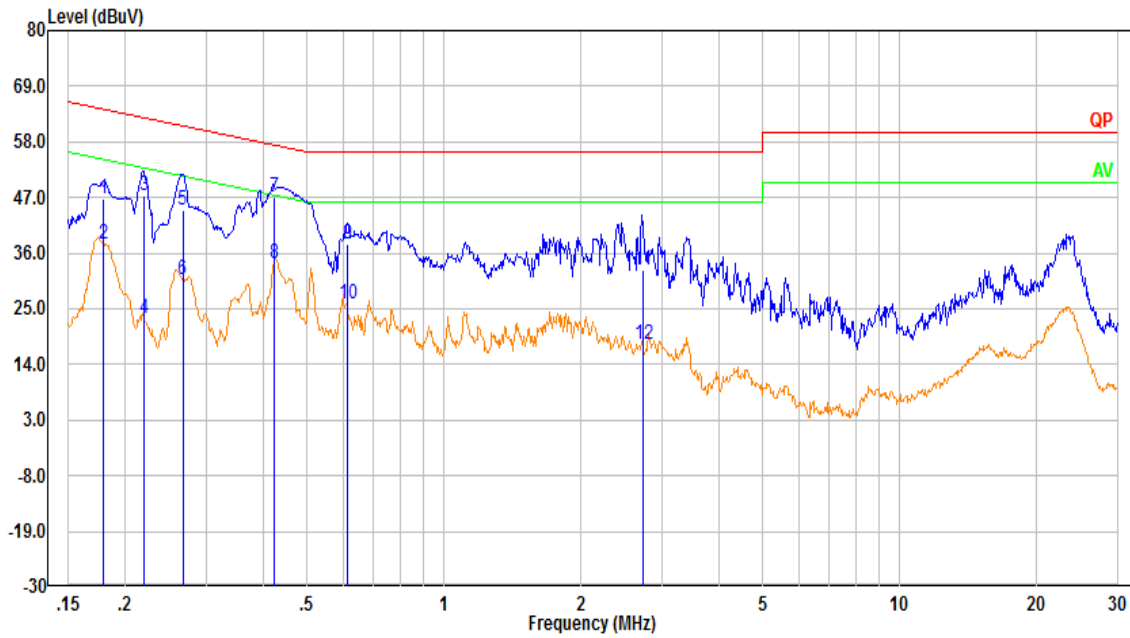
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.151	37.15	9.61	46.76	65.96	19.20	QP
2	0.151	23.95	9.61	33.56	55.96	22.40	Average
3	0.181	38.62	9.61	48.23	64.46	16.23	QP
4	0.181	25.11	9.61	34.72	54.46	19.74	Average
5	0.252	33.25	9.61	42.86	61.68	18.82	QP
6	0.252	20.36	9.61	29.97	51.68	21.71	Average
7	0.361	36.07	9.61	45.68	58.72	13.04	QP
8	0.361	22.57	9.61	32.18	48.72	16.54	Average
9	0.481	35.04	9.61	44.65	56.33	11.68	QP
10	0.481	18.41	9.61	28.02	46.33	18.31	Average
11	0.543	34.26	9.61	43.87	56.00	12.13	QP
12	0.543	23.98	9.61	33.59	46.00	12.41	Average

Neutral:



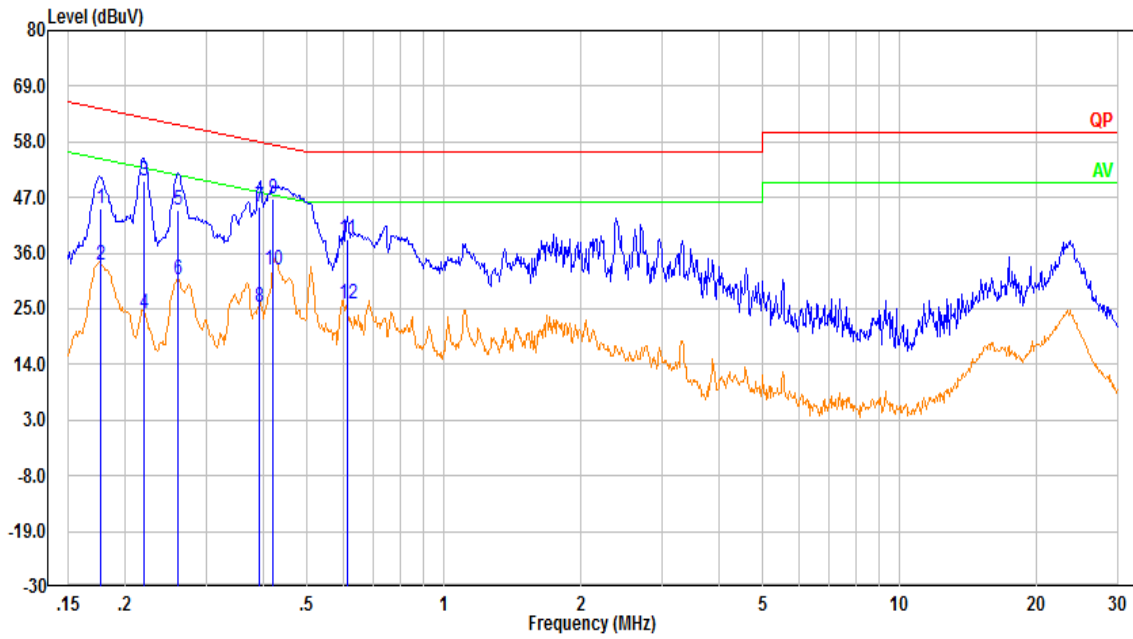
No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB)	Result (dB μ V)	Limit (dB μ V)	Margin (dB)	Detector
1	0.158	31.37	9.61	40.98	65.58	24.60	QP
2	0.158	20.81	9.61	30.42	55.58	25.16	Average
3	0.181	33.29	9.61	42.90	64.45	21.55	QP
4	0.181	20.36	9.61	29.97	54.45	24.48	Average
5	0.362	35.49	9.61	45.10	58.69	13.59	QP
6	0.362	22.85	9.61	32.46	48.69	16.23	Average
7	0.479	35.08	9.61	44.69	56.36	11.67	QP
8	0.479	18.27	9.61	27.88	46.36	18.48	Average
9	0.540	34.45	9.61	44.07	56.00	11.93	QP
10	0.540	24.77	9.61	34.38	46.00	11.62	Average
11	0.609	26.15	9.62	35.77	56.00	20.23	QP
12	0.609	12.82	9.62	22.44	46.00	23.56	Average

M2:
Line:



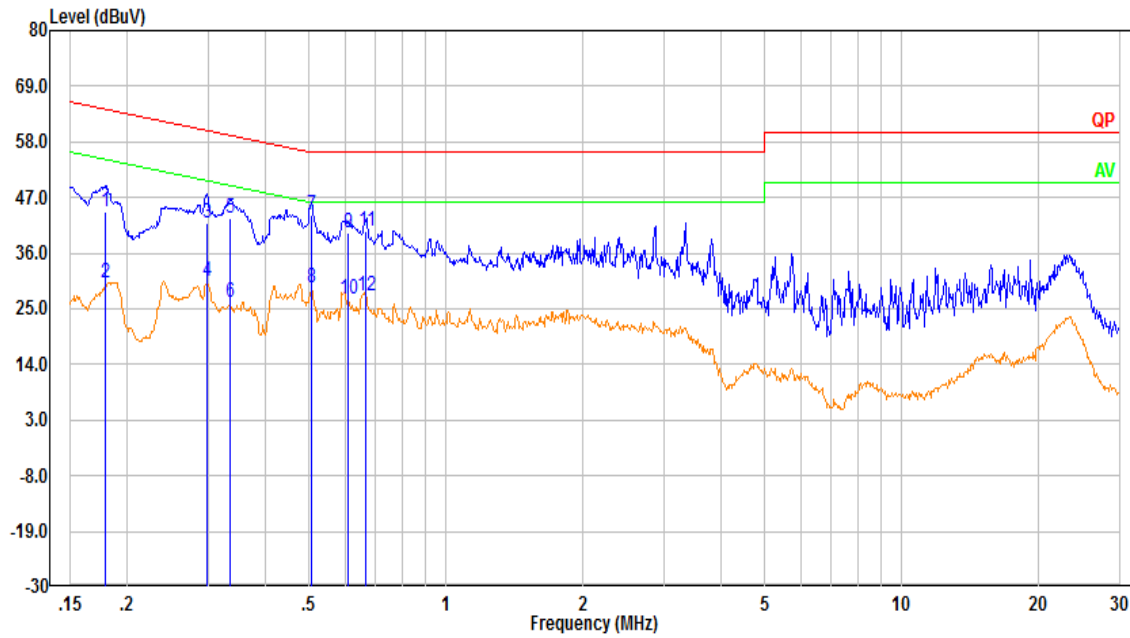
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.179	37.23	9.61	46.84	64.52	17.68	QP
2	0.179	28.21	9.61	37.82	54.52	16.70	Average
3	0.219	37.73	9.61	47.34	62.85	15.51	QP
4	0.219	13.33	9.61	22.94	52.85	29.91	Average
5	0.267	35.03	9.61	44.64	61.22	16.58	QP
6	0.267	21.13	9.61	30.74	51.22	20.48	Average
7	0.423	37.39	9.61	47.00	57.40	10.40	QP
8	0.423	24.20	9.61	33.81	47.40	13.59	Average
9	0.613	28.25	9.62	37.87	56.00	18.13	QP
10	0.613	16.37	9.62	25.99	46.00	20.01	Average
11	2.729	22.91	9.64	32.55	56.00	23.45	QP
12	2.729	8.47	9.64	18.12	46.00	27.88	Average

Neutral:



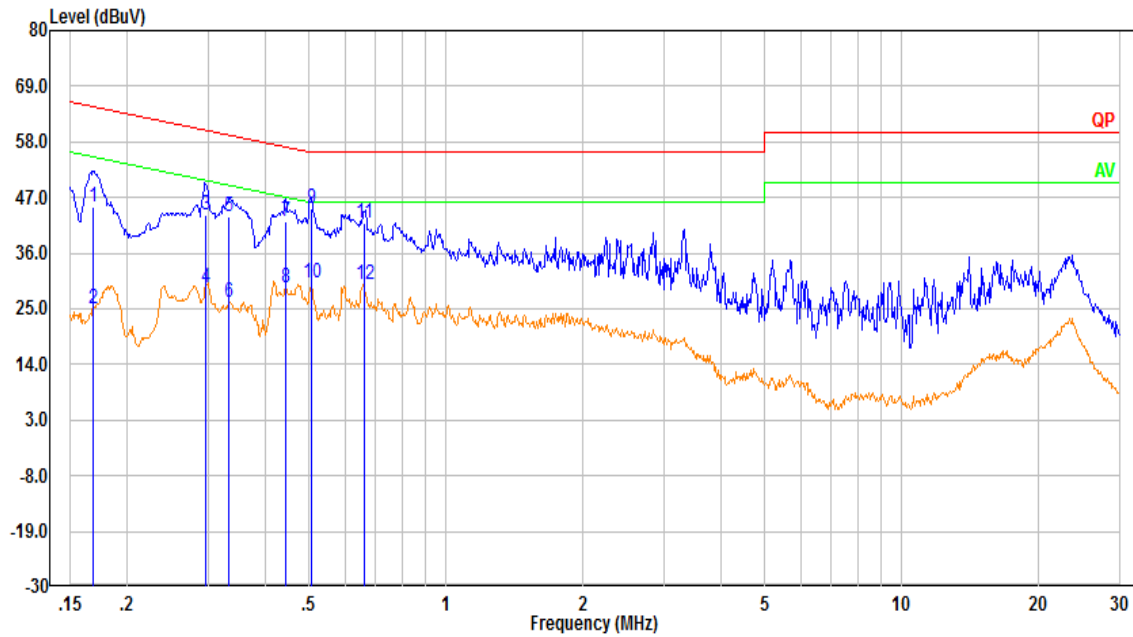
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.176	35.24	9.61	44.85	64.66	19.81	QP
2	0.176	24.16	9.61	33.77	54.66	20.89	Average
3	0.219	40.57	9.61	50.18	62.84	12.66	QP
4	0.219	14.31	9.61	23.92	52.84	28.92	Average
5	0.261	34.94	9.61	44.55	61.41	16.86	QP
6	0.261	21.30	9.61	30.91	51.41	20.50	Average
7	0.393	35.50	9.61	45.11	58.00	12.89	QP
8	0.393	15.86	9.61	25.47	48.00	22.53	Average
9	0.421	37.21	9.61	46.82	57.44	10.62	QP
10	0.421	23.05	9.61	32.66	47.44	14.78	Average
11	0.613	29.27	9.62	38.89	56.00	17.11	QP
12	0.613	16.41	9.62	26.03	46.00	19.97	Average

M3:
Line:



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector
1	0.179	34.45	9.61	44.06	64.53	20.47	QP
2	0.179	20.39	9.61	30.00	54.53	24.53	Average
3	0.299	32.47	9.61	42.08	60.28	18.20	QP
4	0.299	20.74	9.61	30.35	50.28	19.93	Average
5	0.335	33.17	9.61	42.78	59.32	16.54	QP
6	0.335	16.60	9.61	26.21	49.32	23.11	Average
7	0.505	34.03	9.61	43.64	56.00	12.36	QP
8	0.505	19.53	9.61	29.14	46.00	16.86	Average
9	0.610	30.41	9.62	40.03	56.00	15.97	QP
10	0.610	17.39	9.62	27.01	46.00	18.99	Average
11	0.667	30.82	9.62	40.44	56.00	15.56	QP
12	0.667	18.03	9.62	27.65	46.00	18.35	Average

Neutral:



No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB)	Result (dB μ V)	Limit (dB μ V)	Margin (dB)	Detector
1	0.168	35.60	9.61	45.21	65.07	19.86	QP
2	0.168	15.43	9.61	25.04	55.07	30.03	Average
3	0.296	33.81	9.61	43.42	60.35	16.93	QP
4	0.296	19.64	9.61	29.25	50.35	21.10	Average
5	0.335	33.53	9.61	43.14	59.34	16.20	QP
6	0.335	16.81	9.61	26.42	49.34	22.92	Average
7	0.443	32.77	9.61	42.38	57.00	14.62	QP
8	0.443	19.50	9.61	29.11	47.00	17.89	Average
9	0.506	35.19	9.61	44.80	56.00	11.20	QP
10	0.506	20.45	9.61	30.06	46.00	15.94	Average
11	0.662	32.40	9.62	42.02	56.00	13.98	QP
12	0.662	20.15	9.62	29.77	46.00	16.23	Average

4.2 Radiation Spurious Emissions

Serial Number:	CR22050009-RF-S1	Test Date:	2022-05-20
Test Site:	966-2	Test Mode:	M1: Lighting(20% brightness) M2: Lighting(50% brightness) M3: Lighting(100% brightness)
Tester:	Gary Ling	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.6	Relative Humidity: (%)	64	ATM Pressure: (kPa)	100.5
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Test Equipment List and Details:

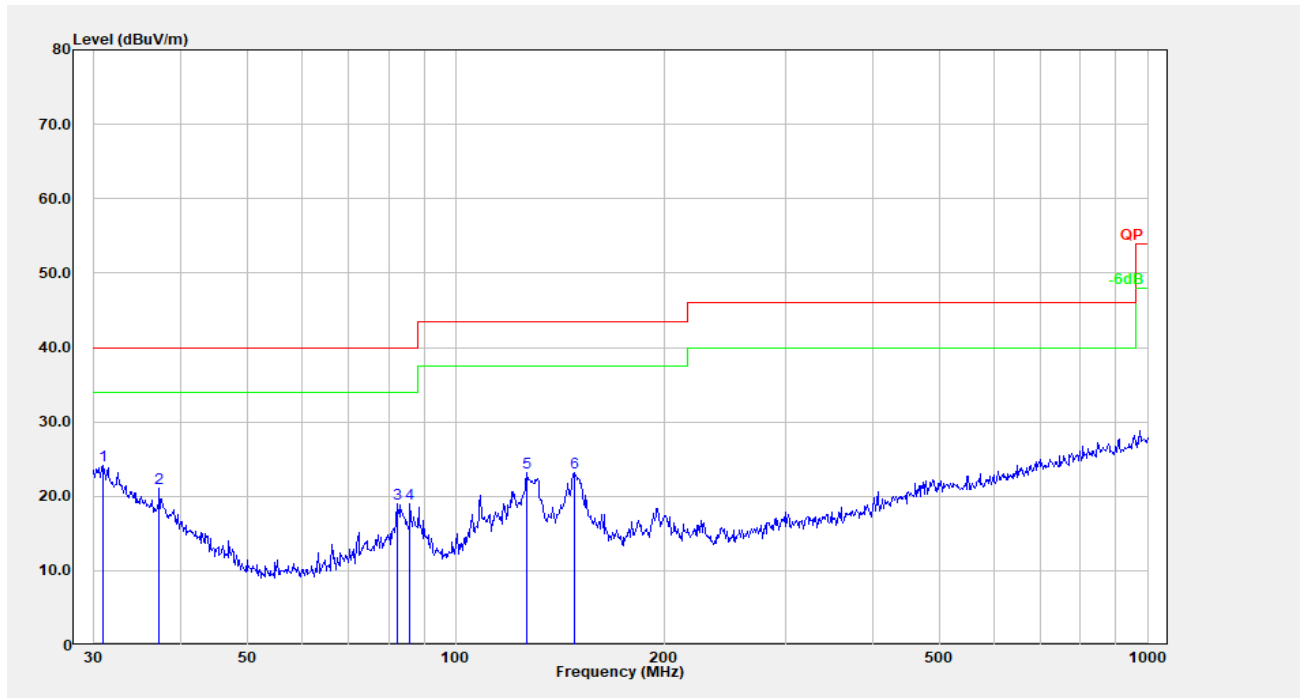
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020-10-19	2023-10-18
R&S	EMI Test Receiver	ESR3	102724	2021-07-22	2022-07-21
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2021-07-18	2022-07-17
TIMES MICROWAVE	Coaxial 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

* 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).

1) 30MHz-1GHz:

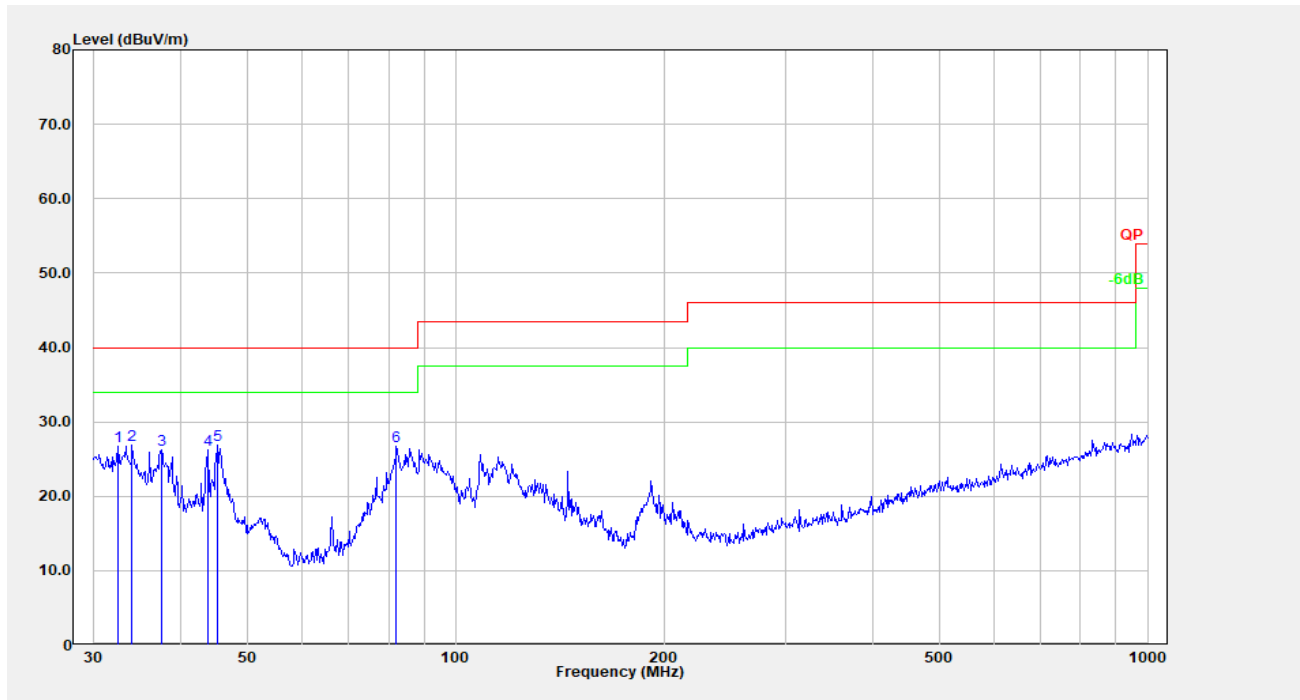
M1:

Horizontal:



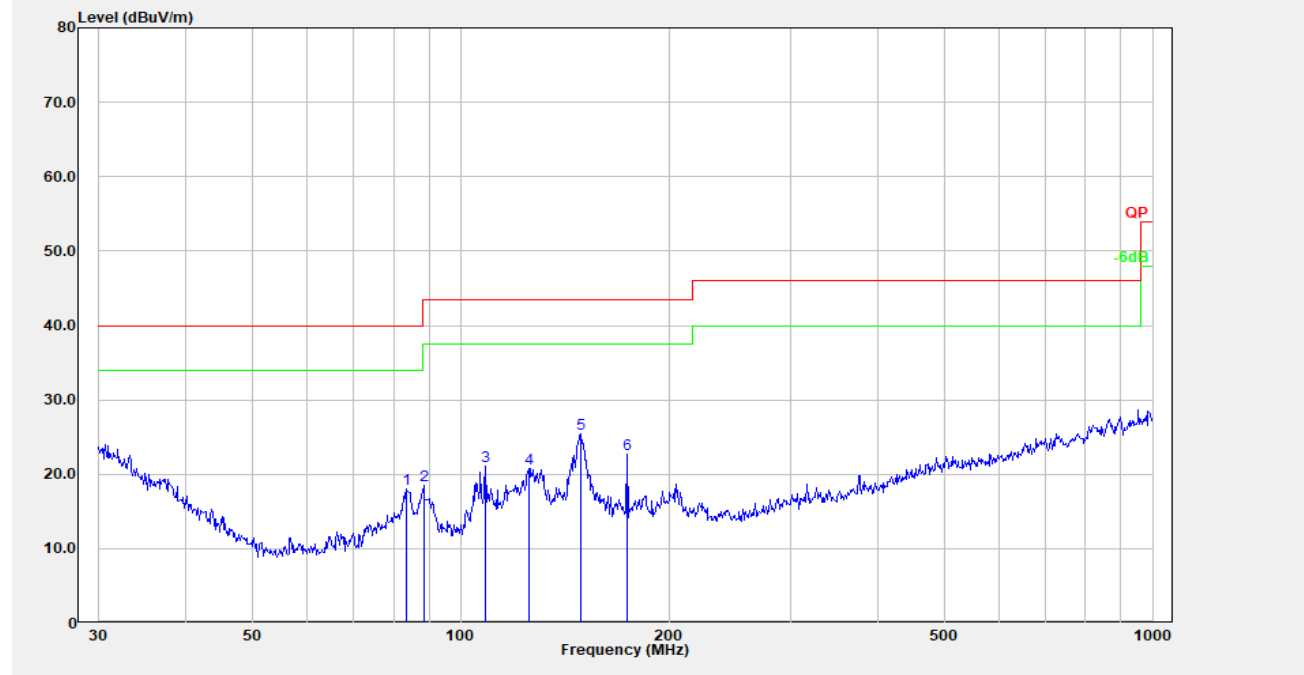
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	30.853	28.61	-4.45	24.16	40.00	15.84	Peak
2	37.285	30.48	-9.40	21.08	40.00	18.92	Peak
3	82.359	36.56	-17.57	18.99	40.00	21.01	Peak
4	85.898	36.46	-17.39	19.07	40.00	20.93	Peak
5	126.772	34.81	-11.60	23.21	43.50	20.29	Peak
6	148.441	35.39	-12.25	23.14	43.50	20.36	Peak

Vertical:

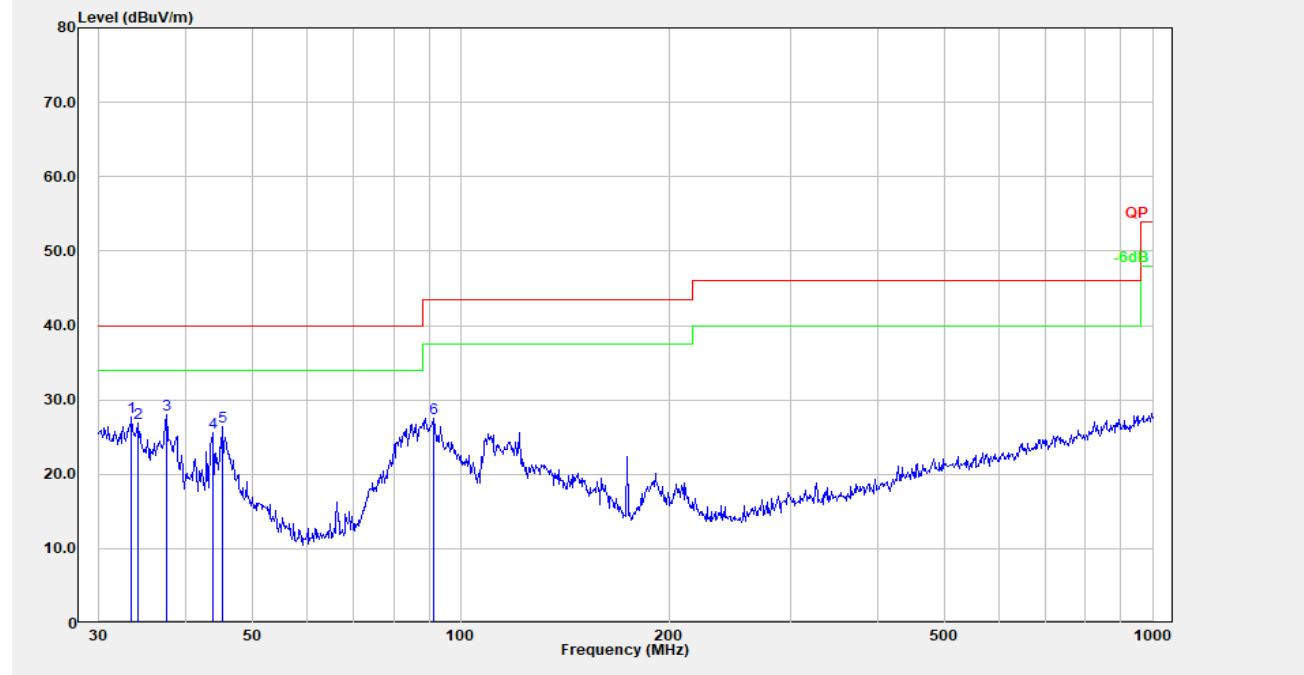


No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	32.520	32.52	-5.74	26.78	40.00	13.22	Peak
2	34.037	33.76	-6.89	26.87	40.00	13.13	Peak
3	37.548	35.77	-9.58	26.19	40.00	13.81	Peak
4	43.812	40.00	-13.80	26.20	40.00	13.80	Peak
5	45.217	41.44	-14.58	26.86	40.00	13.14	Peak
6	82.071	44.36	-17.60	26.76	40.00	13.24	Peak

M2:
Horizontal:

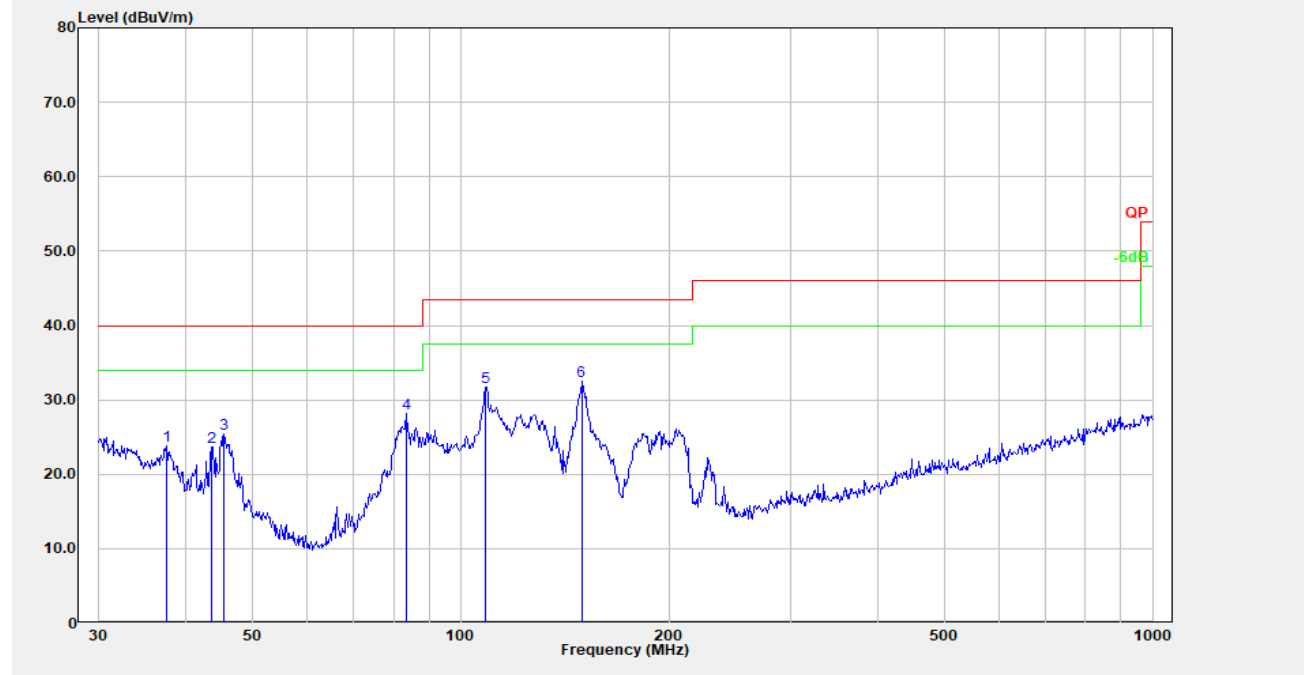


No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	83.522	35.58	-17.49	18.09	40.00	21.91	Peak
2	88.342	35.71	-17.27	18.44	43.50	25.06	Peak
3	108.647	33.98	-12.82	21.16	43.50	22.34	Peak
4	125.446	32.34	-11.54	20.80	43.50	22.70	Peak
5	148.963	37.74	-12.26	25.48	43.50	18.02	Peak
6	173.814	36.07	-13.45	22.63	43.50	20.87	Peak

Vertical:

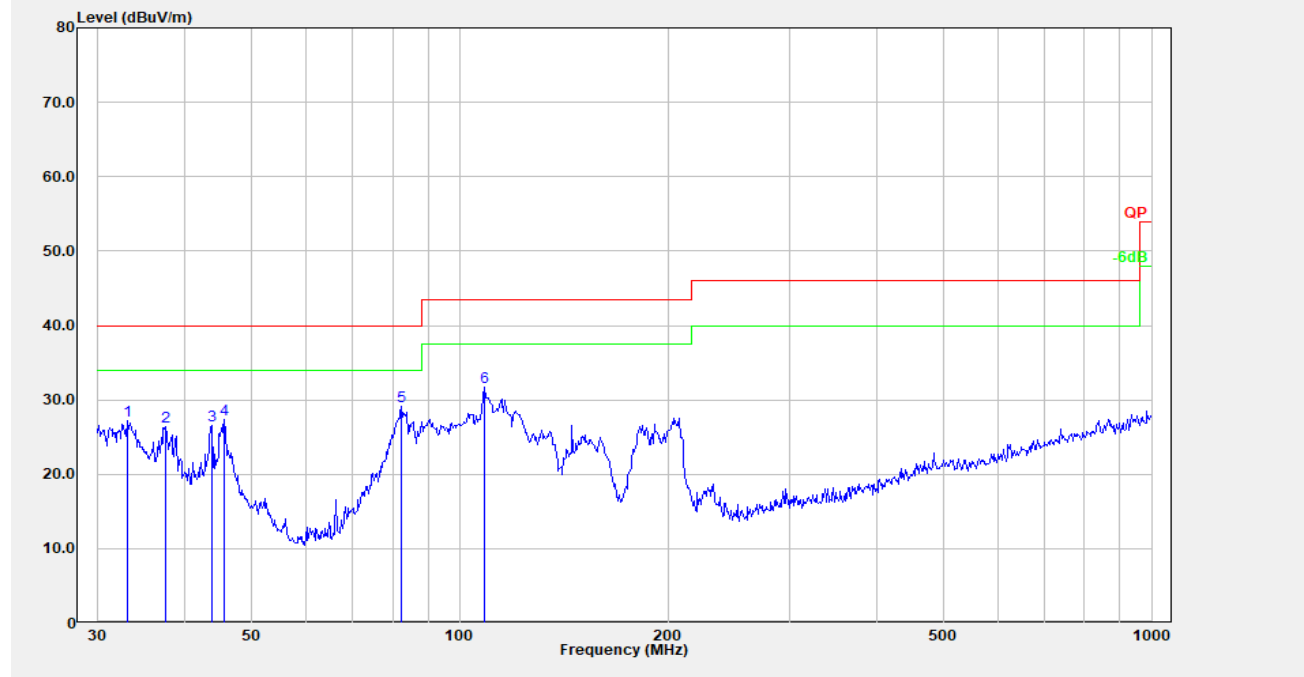
No.	Frequency (MHz)	Reading (dB μ V)	Factor (dB/m)	Result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	33.445	34.07	-6.45	27.62	40.00	12.38	Peak
2	34.156	33.92	-6.99	26.94	40.00	13.06	Peak
3	37.548	37.65	-9.58	28.07	40.00	11.93	Peak
4	43.812	39.45	-13.80	25.65	40.00	14.35	Peak
5	45.217	41.01	-14.58	26.44	40.00	13.56	Peak
6	91.495	44.42	-16.82	27.61	43.50	15.89	Peak

M3:
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	37.548	33.36	-9.58	23.78	40.00	16.22	Peak
2	43.659	37.34	-13.70	23.64	40.00	16.36	Peak
3	45.535	40.23	-14.78	25.45	40.00	14.55	Peak
4	83.522	45.72	-17.49	28.23	40.00	11.77	Peak
5	108.647	44.51	-12.82	31.69	43.50	11.81	Peak
6	149.486	44.70	-12.26	32.44	43.50	11.06	Peak

Vertical:



No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	33.095	33.33	-6.19	27.14	40.00	12.86	Peak
2	37.548	36.03	-9.58	26.45	40.00	13.55	Peak
3	43.812	40.41	-13.80	26.62	40.00	13.38	Peak
4	45.695	42.22	-14.88	27.34	40.00	12.66	Peak
5	82.359	46.70	-17.57	29.14	40.00	10.86	Peak
6	108.647	44.57	-12.82	31.75	43.50	11.75	Peak

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