

TEST REPORT

Reference No..... : WTX21X12135681E
FCC ID..... : 2AUHG-OUT-SWR
Applicant : ARTIKA FOR LIVING INC
Address : 1756, 50th Avenue Montréal (Lachine), Québec Canada H8T 2V5
Product Name : lamp
Test Model..... : OUT-SWR-MB
Standards..... : FCC PART15 SUBPART B
Date of Receipt sample : Dec. 10, 2021
Date of Test..... : Dec. 10, 2021 to Dec. 13, 2021
Date of Issue : Dec. 13, 2021
Test Result..... : Pass

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

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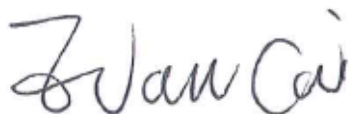
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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: ARTIKA FOR LIVING INC
 Address of applicant: 1756, 50th Avenue Montréal (Lachine), Québec Canada
 H8T 2V5

Manufacturer: Zhejiang Future Lighting Co., Ltd.
 Address of manufacturer: No.99, Jingfeng Road, Haining Warp Knitting Industrial
 Zone, Zhejiang

General Description of EUT	
Product Name:	lamp
Trade Name:	Artika
Model No.:	OUT-SWR-MB
Adding Model(s):	OUT-SWR-XXXXXX, "X" can be 0 to 9 and/or A to Z and /or Blank (commercial code)
<i>Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model OUT-SWR-MB, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	AC 120V 60Hz
Rated Current:	/
Rated Power:	/
Power Adapter Model:	/
Lowest Internal Frequency:	/
Highest Internal Frequency:	Below 108MHz
Classification of ITE:	Class B

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15 Subpart B:Unintentional Radiators.

ANSI C63.4-2014:American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List			
Test Mode	Description	Remark	Power Supply Mode
TM1	Working mode	/	AC120V60Hz

EUT Cable List and Details				
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite	With / Without Chip
/	/	/	/	/

Special Cable List and Details				
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite	With / Without Chip
/	/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz ± 3.74 dB
		0.15-30MHz ± 3.34 dB
Radiated Emissions	Radiated	30-200MHz ± 4.52 dB
		0.2-1GHz ± 5.56 dB
		1-6GHz ± 3.84 dB
		6-18GHz ± 3.92 dB

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2021-03-30	2022-03-29
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2021-04-12	2022-04-11
Amplifier	Agilent	8447F	3113A06717	2021-04-12	2022-04-11
Amplifier	C&D	PAP-1G18	2002	2021-04-12	2022-04-11
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2021-03-20	2023-03-19
Horn Antenna	ETS	3117	00086197	2021-03-19	2023-03-18
Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2023-03-19
EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2021-05-06	2022-05-05
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-04-09	2023-04-08
Amplifier	Agilent	8447D	2944A10179	2021-04-12	2022-04-11
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2021-04-15	2022-04-14

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission)*	Farad	EZ-EMC	RA-03A1

*Remark: indicates software version used in the compliance certification testing.

2. SUMMARY OF TEST RESULTS

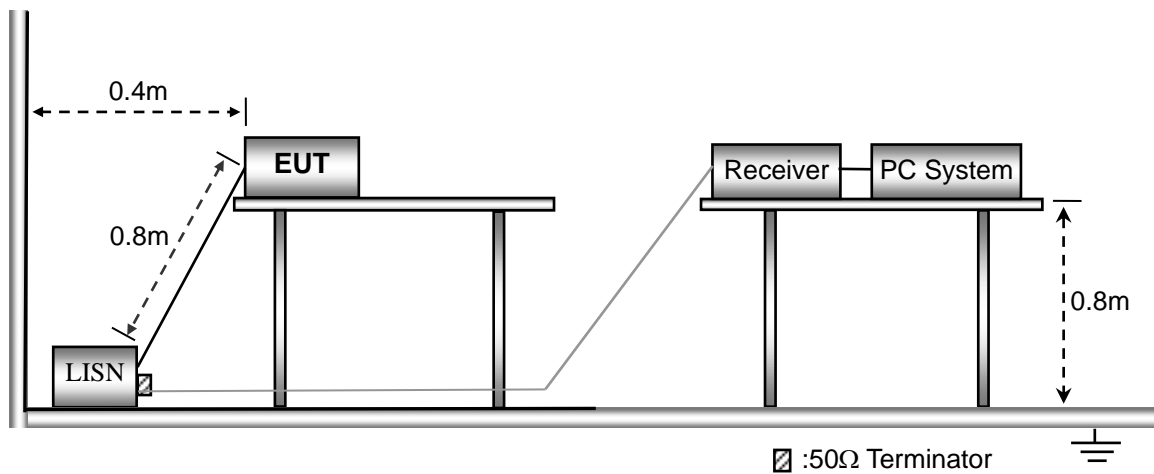
Description of Test	Result
§15.107(a) Conducted Emission	Compliant
§15.109(a) Radiated Emission	Compliant

3. Conducted Emissions

3.1 Test Procedure

Test is conducting under the description of ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.2 Basic Test Setup Block Diagram



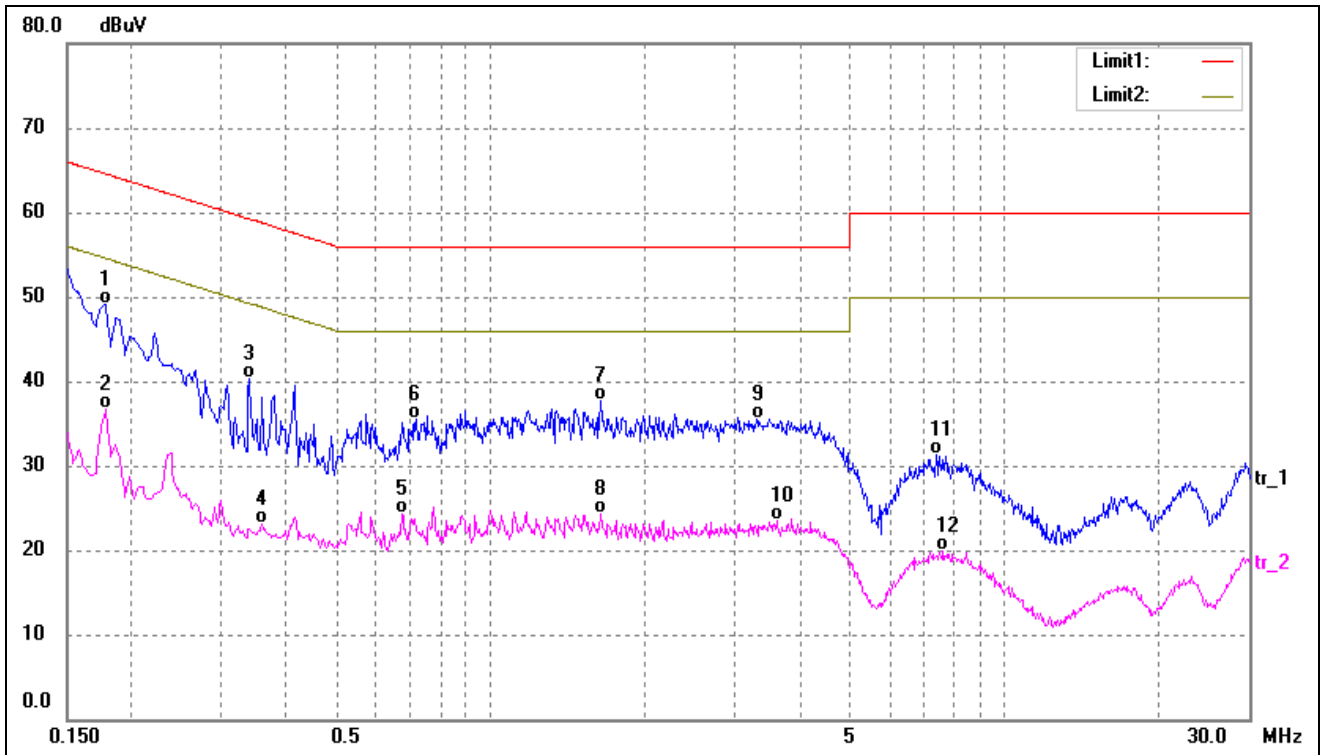
3.3 Environmental Conditions

Temperature:	23.5 °C
Relative Humidity:	51 %
ATM Pressure:	1014 mbar

3.4 Summary of Test Results

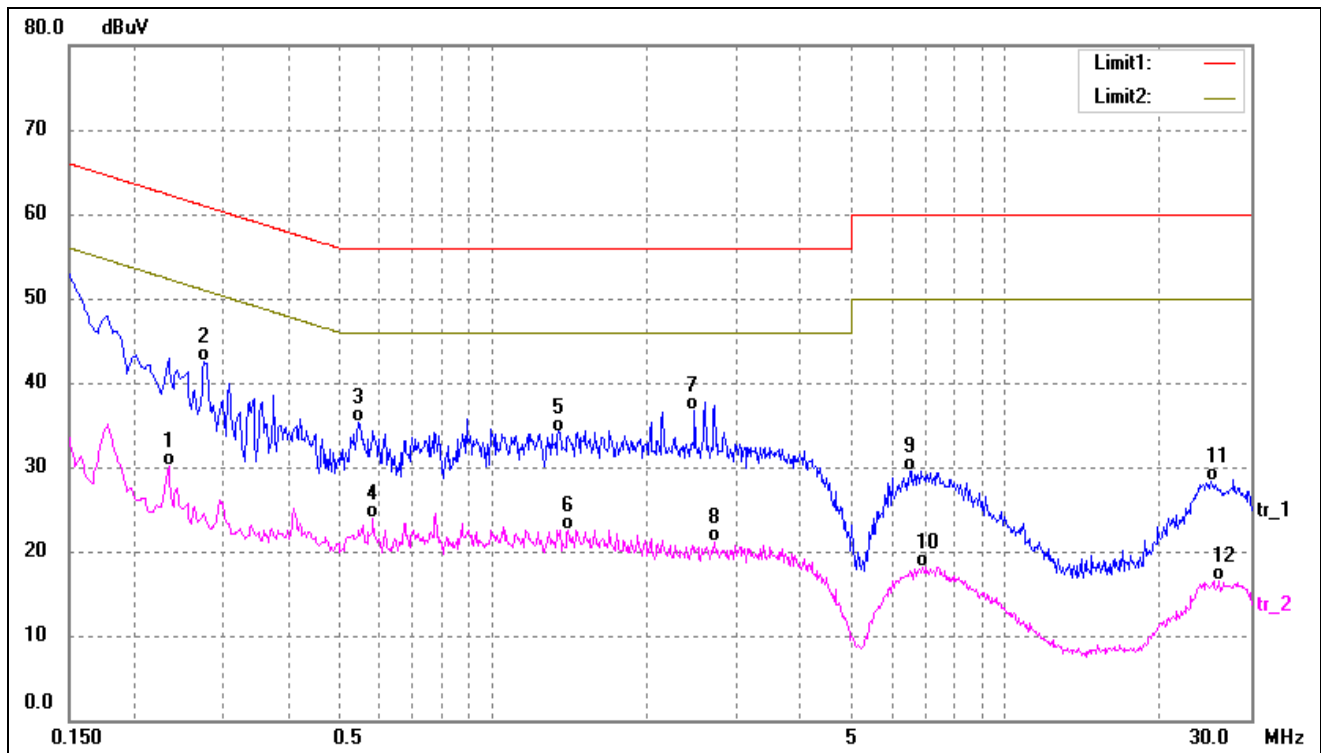
Please find the results below:

Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1780	38.76	10.37	49.13	64.57	-15.44	QP
2	0.1780	26.25	10.37	36.62	54.57	-17.95	AVG
3	0.3379	29.91	10.32	40.23	59.25	-19.02	QP
4	0.3580	12.80	10.31	23.11	48.77	-25.66	AVG
5	0.6740	13.96	10.36	24.32	46.00	-21.68	AVG
6	0.7180	25.17	10.39	35.56	56.00	-20.44	QP
7	1.6420	27.52	10.28	37.80	56.00	-18.20	QP
8	1.6420	14.04	10.28	24.32	46.00	-21.68	AVG
9	3.2980	25.48	10.07	35.55	56.00	-20.45	QP
10	3.6220	13.42	10.06	23.48	46.00	-22.52	AVG
11	7.3780	21.33	9.94	31.27	60.00	-28.73	QP
12	7.6140	9.89	9.93	19.82	50.00	-30.18	AVG

Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2340	19.82	10.36	30.18	52.31	-22.13	AVG
2*	0.2740	32.23	10.35	42.58	61.00	-18.42	QP
3	0.5460	24.98	10.29	35.27	56.00	-20.73	QP
4	0.5860	13.60	10.31	23.91	46.00	-22.09	AVG
5	1.3460	23.79	10.41	34.20	56.00	-21.80	QP
6	1.4060	12.15	10.39	22.54	46.00	-23.46	AVG
7	2.4860	26.51	10.11	36.62	56.00	-19.38	QP
8	2.7100	10.98	10.10	21.08	46.00	-24.92	AVG
9	6.5220	19.56	9.96	29.52	60.00	-30.48	QP
10	6.8780	8.19	9.95	18.14	50.00	-31.86	AVG
11	25.1500	18.01	10.21	28.22	60.00	-31.78	QP
12	26.0500	6.37	10.22	16.59	50.00	-33.41	AVG

4. RADIATED EMISSION

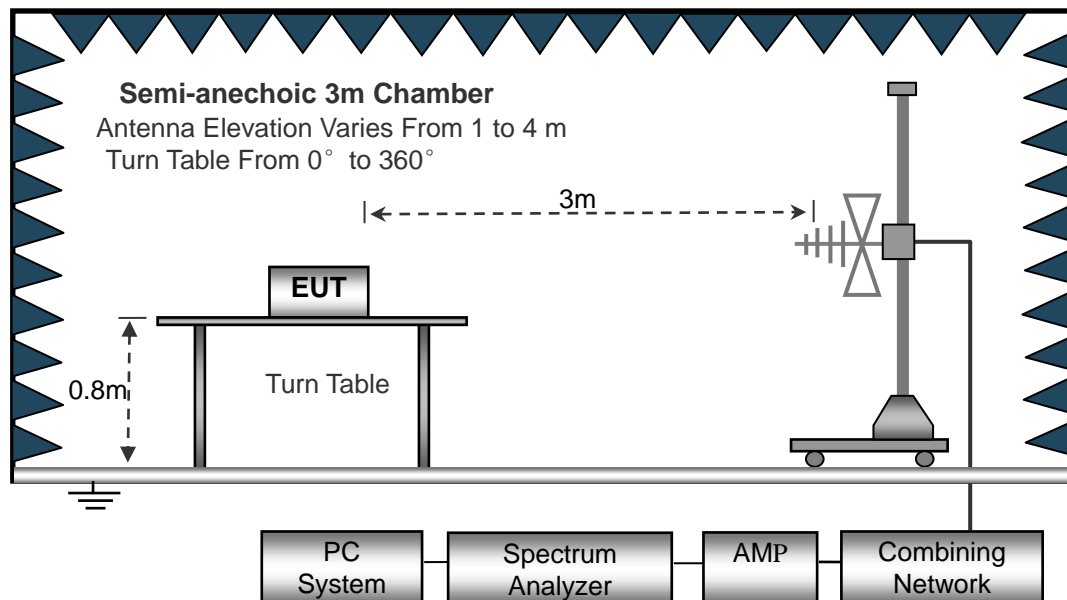
4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

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

The spacing between the peripherals was 10 cm.

4.2 Block Diagram of Test Setup



4.3 Test Receiver Setup

Frequency :9kHz-30MHz
 RBW=10KHz,
 VBW =30KHz
 Sweep time= Auto
 Trace = max hold
 Detector function = peak

Frequency :30MHz-1GHz
 RBW=120KHz,
 VBW=300KHz
 Sweep time= Auto
 Trace = max hold
 Detector function = peak, QP

Frequency :Above 1GHz
 RBW=1MHz,
 VBW=3MHz(Peak), 10Hz(AV)
 Sweep time= Auto
 Trace = max hold
 Detector function = peak, AV

4.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\begin{aligned} \text{Corr. Ampl.} &= \text{Indicated Reading} + \text{Correct} \\ \text{Correct} &= \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain} \end{aligned}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit for a Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

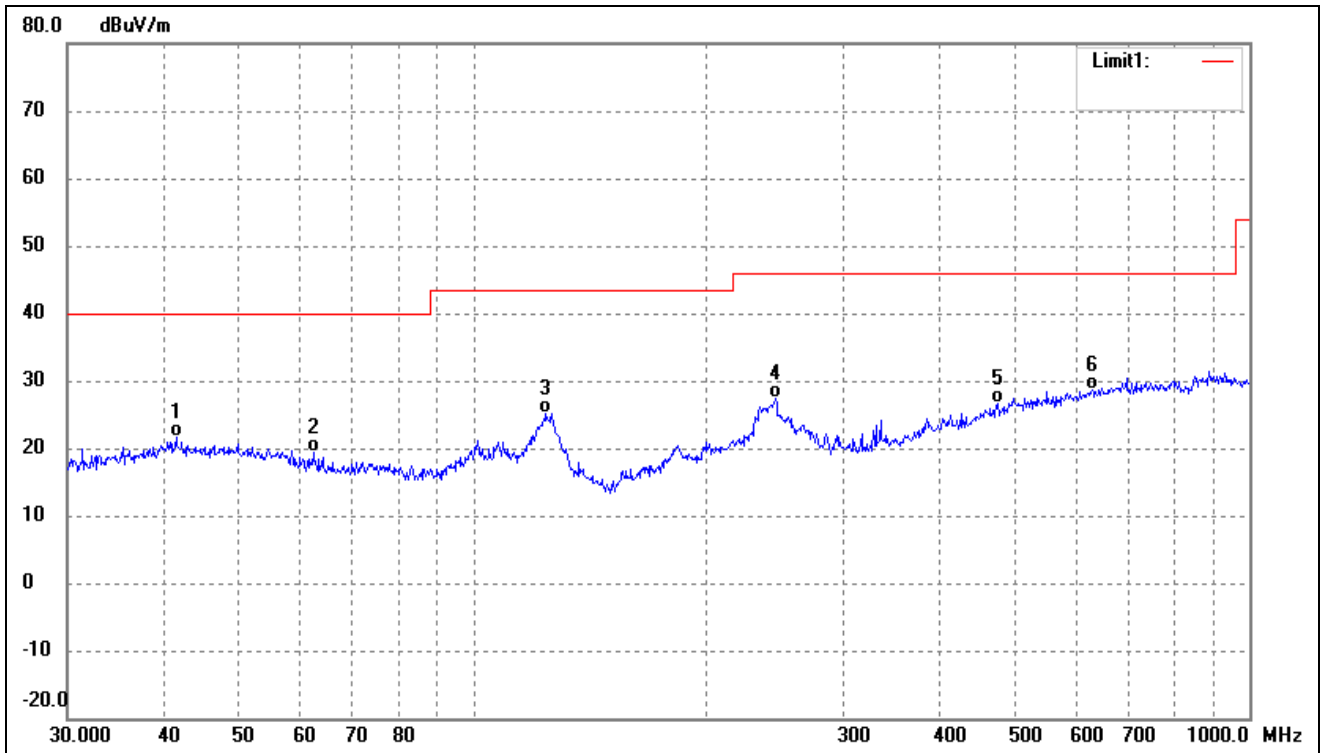
4.5 Environmental Conditions

Temperature:	22.5 °C
Relative Humidity:	52 %
ATM Pressure:	1011 mbar

4.6 Summary of Test Results

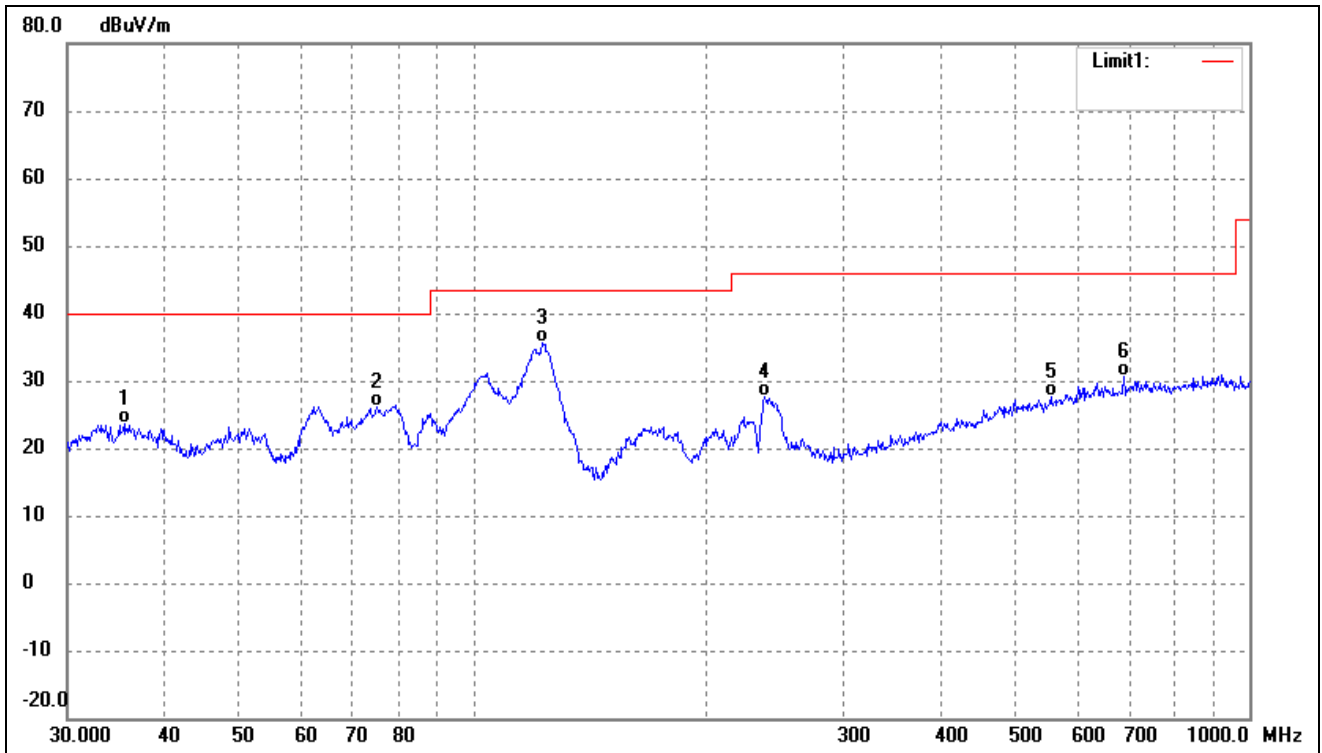
Please find the results below:

Test mode:	TM1	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	41.4215	28.57	-6.99	21.58	40.00	-18.42	357	100	QP
2	62.2128	28.25	-8.81	19.44	40.00	-20.56	97	100	QP
3	124.1330	35.49	-10.36	25.13	43.50	-18.37	214	100	QP
4	245.0900	35.90	-8.45	27.45	46.00	-18.55	101	100	QP
5	473.8347	28.56	-1.96	26.60	46.00	-19.40	184	100	QP
6	627.2738	27.88	0.67	28.55	46.00	-17.45	235	100	QP

Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	35.4993	31.69	-8.11	23.58	40.00	-16.42	231	100	QP
2	75.1822	36.56	-10.46	26.10	40.00	-13.90	90	100	QP
3	122.8340	45.63	-10.12	35.51	43.50	-7.99	85	100	QP
4	237.4760	36.31	-8.66	27.65	46.00	-18.35	97	100	QP
5	554.8254	27.90	-0.39	27.51	46.00	-18.49	203	100	QP
6	689.5644	29.20	1.33	30.53	46.00	-15.47	313	100	QP

***** END OF REPORT *****