

TEST REPORT

Reference No..... : WTX23X07151561W001
FCC ID : A4X-SWLCHG310BK
Applicant : CE LINK LIMITED
Address..... : 22 Dongkang Road, Dalingshan Town, Dongguan City, Guangdong
Province, China.
Manufacturer : DONGGUAN CE LINK LIMITED
Address..... : 22 Dongkang Road, Dalingshan Town, Dongguan City, Guangdong
Province, China.
Product Name : Sprout Magnetic Wireless Car Charger 15W
Model No..... : SWLCHG310BK
Standards : FCC Part 18
Date of Receipt sample : 2023-07-11
Date of Test..... : 2023-07-11 to 2023-07-20
Date of Issue : 2023-07-20
Test Report Form No. : WTX_Part 18W
Test Result..... : **Pass**

Remarks:

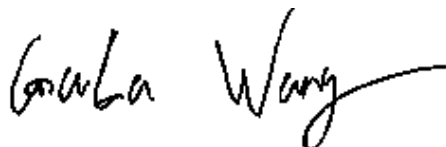
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:

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Tested by:



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Approved by:



Silin Chen

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Report version

Version No.	Date of issue	Description
Rev.00	2023-07-20	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Factory 1#: SuiChuan CE LINK LIMITED
 Address of factory: SuiChuan county industrial park east zone, Ji'an city,
 Jiangxi province, China.

Factory 2#: CE LINK VIET NAM COMPANY LIMITED
 Address of factory: Lot CNSG04&CNSG06 Van Trung Industrial Zone, Viet
 Yen district, Bac Giang Province, Vietnam

General Description of EUT	
Product Name:	Sprout Magnetic Wireless Car Charger 15W
Trade Name:	Sprout
Model No.:	SWLCHG310BK
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Frequency Range:	110-205kHz
Modulation Type:	ASK
Antenna Type:	Coil Antenna
Rated Voltage:	Input: DC5V/9V/12V
Rated Current:	Input:3A/2A/1.67A
Rate Power:	Output:5W/7.5W/10W/15W

1.2 Test Standards

The tests were performed according to following standards:

FCC Part 18 Subpart C: Industrial, Scientific, and medical medical equipment.

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 and FCC MP-5:1986, 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

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

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C. (518101)

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 level. 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	Wireless Charging	Connect to the Adapter;	AC120V 60Hz for adapter, Wireless Charging (MAX OUTPUT)

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Type-C Cable	1.5	Shielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Adapter	/	CCCJGCC	CCSUP-AS2111

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

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	2023-02-25	2024-02-24
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2023-02-25	2024-02-24
Amplifier	HP	8447F	2805A0347 5	2023-02-25	2024-02-24
Amplifier	C&D	PAP-1G18	14918	2023-02-25	2024-02-24
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2023-03-20	2026-03-19
Horn Antenna	ETS	3117	00086197	2021-03-19	2024-03-18
Loop Antenna	Schwarz beck	FMZB 1516	9773	2021-03-20	2024-03-19
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2023-03-22	2024-03-21
Amplifier	Agilent	8447D	2944A1017 9	2023-02-25	2024-02-24
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2023-02-25	2024-02-24

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

FCC RULES	DESCRIPTION OF TEST	RESULT
§18.307 (b)	Conducted Emission	Compliant
§18.305 (b)	Radiated Emission	Compliant

3. Conducted Emissions

3.1 Standard Applicable

According to FCC 18.307(b), the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies shall not exceed the limits in the following tables:

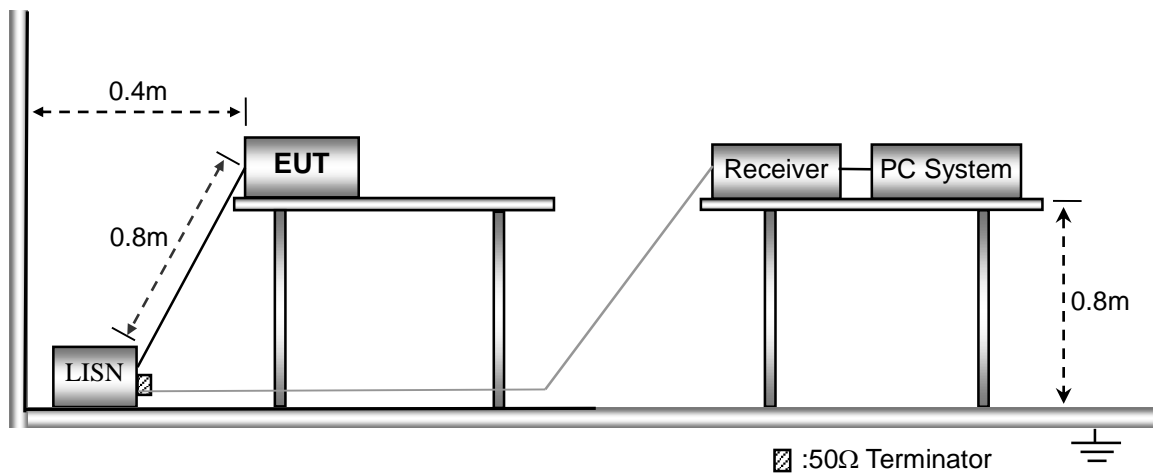
Frequency (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

3.2 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 18.307 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.

3.3 Basic Test Setup Block Diagram



3.4 Environmental Conditions

Temperature:	26° C
Relative Humidity:	60%
ATM Pressure:	1016 mbar

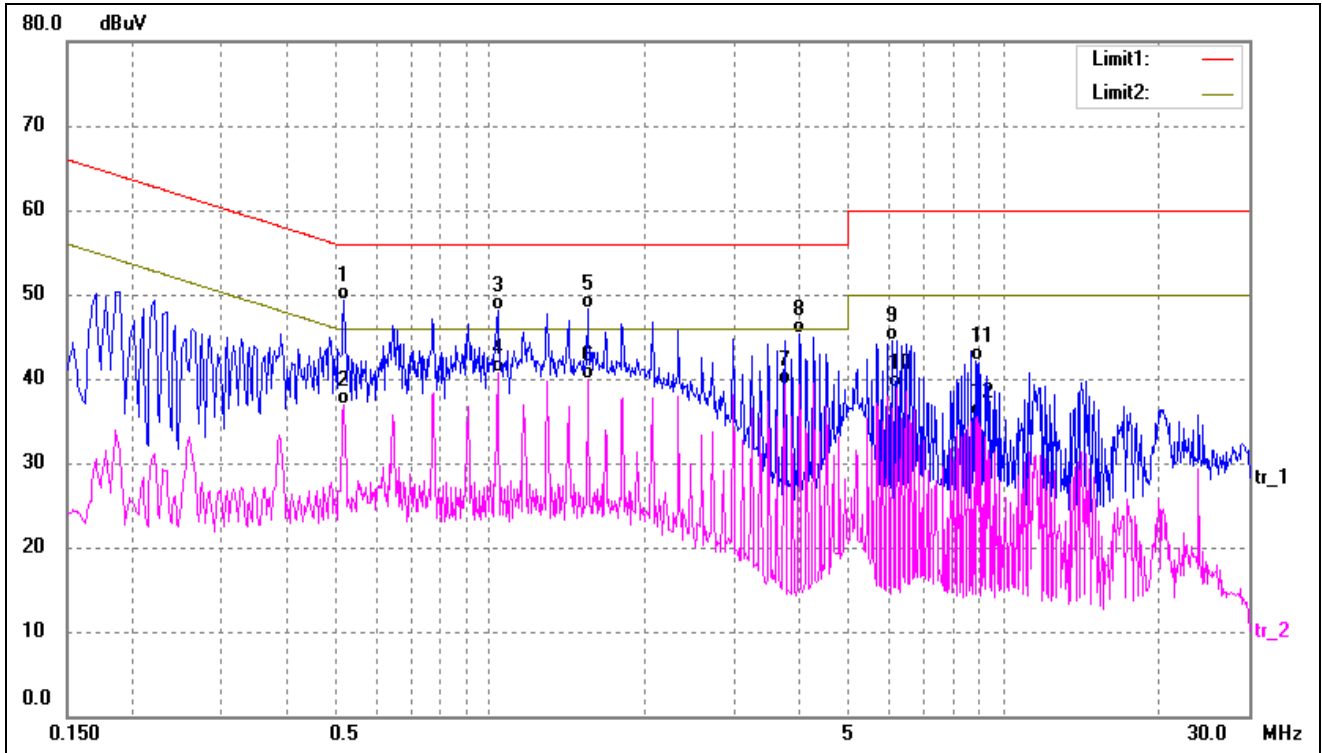
3.5 Test Receiver Setup

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

Start Frequency	150 kHz
Stop Frequency.....	30 MHz
Sweep Speed.....	Auto
IF Bandwidth	10 kHz
Quasi-Peak Adapter Bandwidth.....	9 kHz
Quasi-Peak Adapter Mode.....	Normal

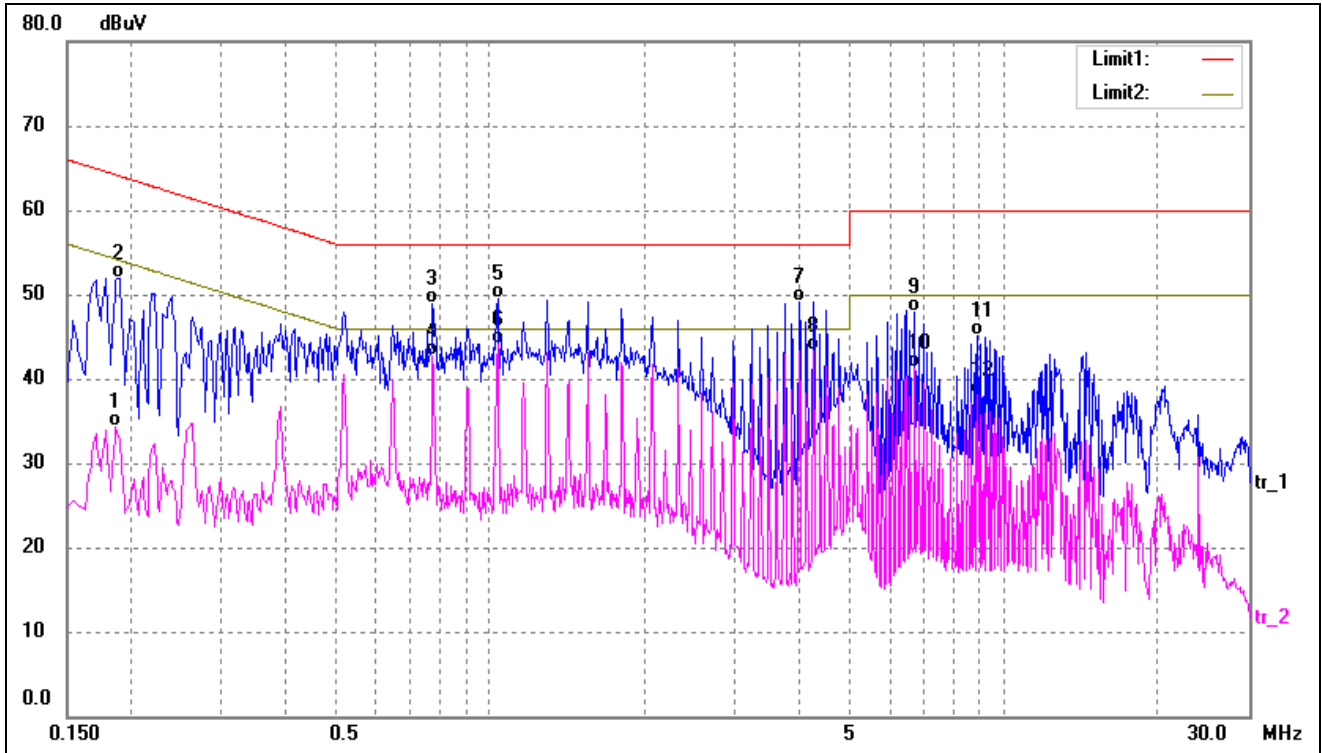
3.6 Summary of Test Results/Plots

Test mode:	TM1	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.5180	39.09	10.23	49.32	56.00	-6.68	QP
2	0.5180	26.62	10.23	36.85	46.00	-9.15	AVG
3	1.0340	37.95	10.14	48.09	56.00	-7.91	QP
4*	1.0340	30.57	10.14	40.71	46.00	-5.29	AVG
5	1.5500	37.99	10.25	48.24	56.00	-7.76	QP
6	1.5500	29.62	10.25	39.87	46.00	-6.13	AVG
7	3.7460	29.01	10.36	39.37	46.00	-6.63	AVG
8	4.0060	34.87	10.36	45.23	56.00	-10.77	QP
9	6.0700	34.20	10.38	44.58	60.00	-15.42	QP
10	6.1940	28.57	10.38	38.95	50.00	-11.05	AVG
11	8.7900	31.76	10.38	42.14	60.00	-17.86	QP
12	8.9140	25.03	10.38	35.41	50.00	-14.59	AVG

Test mode:	TM1	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1860	23.94	10.40	34.34	54.21	-19.87	AVG
2	0.1900	41.58	10.39	51.97	64.04	-12.07	QP
3	0.7740	38.79	10.18	48.97	56.00	-7.03	QP
4	0.7740	32.58	10.18	42.76	46.00	-3.24	AVG
5	1.0340	39.35	10.14	49.49	56.00	-6.51	QP
6*	1.0340	34.04	10.14	44.18	46.00	-1.82	AVG
7	4.0020	38.82	10.36	49.18	56.00	-6.82	QP
8	4.2620	33.00	10.37	43.37	46.00	-2.63	AVG
9	6.7100	37.43	10.38	47.81	60.00	-12.19	QP
10	6.7100	30.92	10.38	41.30	50.00	-8.70	AVG
11	8.9100	34.63	10.38	45.01	60.00	-14.99	QP
12	8.9100	27.71	10.38	38.09	50.00	-11.91	AVG

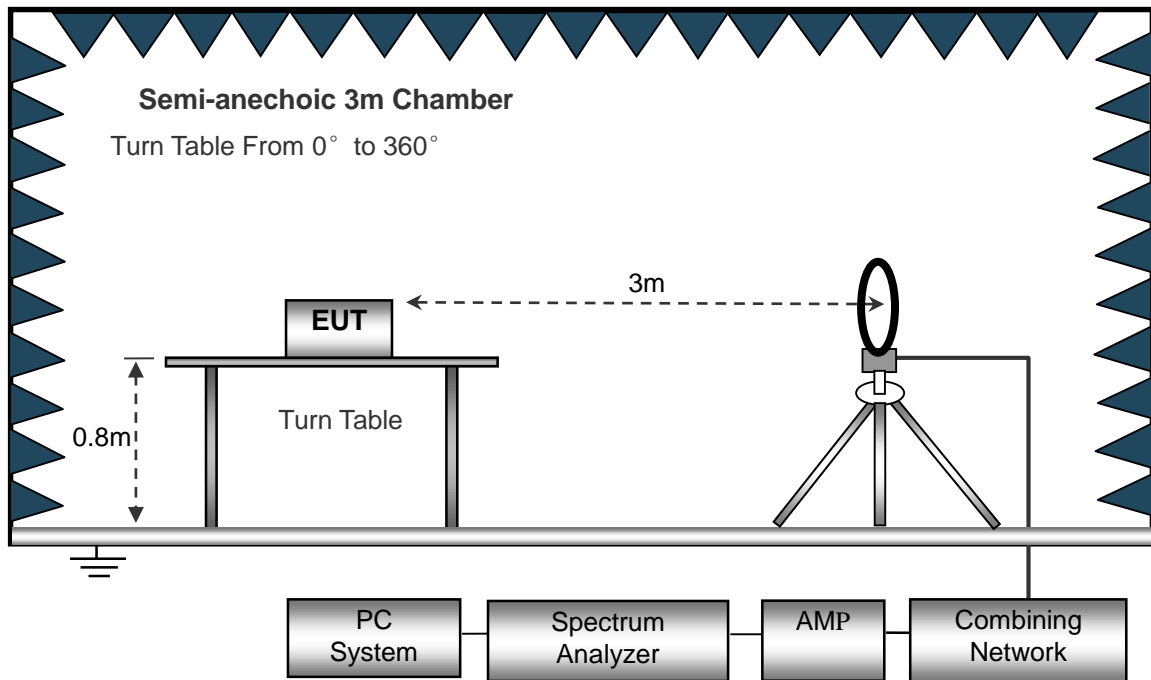
4. Radiated Emissions

4.1 Test Procedure

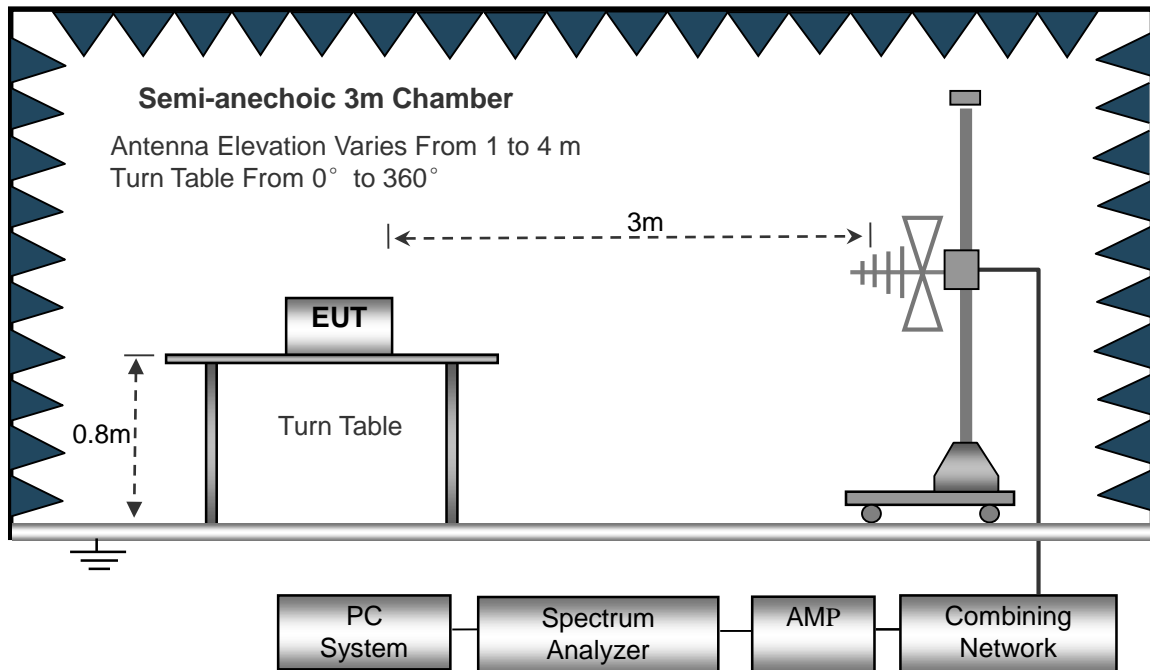
The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 18.305 Limit.

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.

The test setup for emission measurement below 30MHz..



The test setup for emission measurement from 30 MHz to 1 GHz..



4.2 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

4.3 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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

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 Any non-ISM frequency device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 18.305 Limit}$$

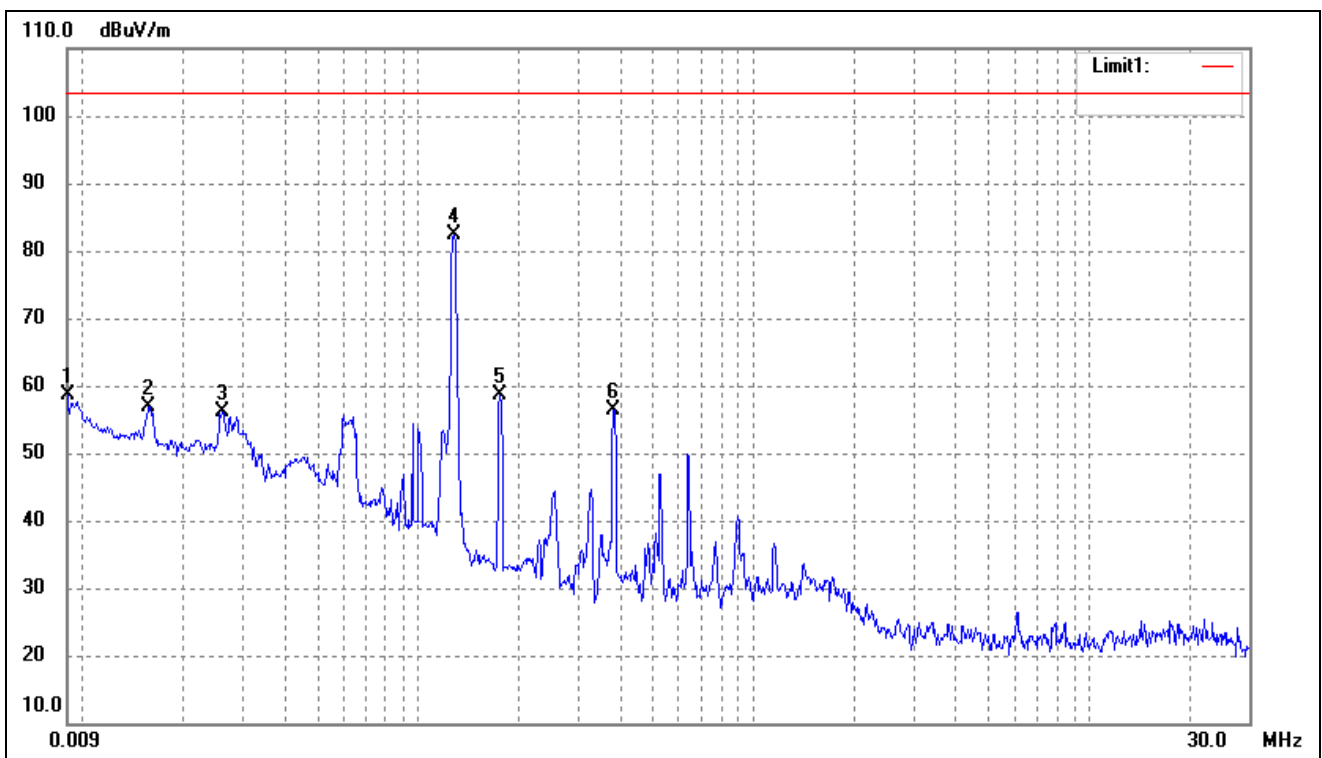
4.4 Environmental Conditions

Temperature:	22 °C
Relative Humidity:	54 %
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

Plot of Radiated Emissions Test Data (Below 30MHz)

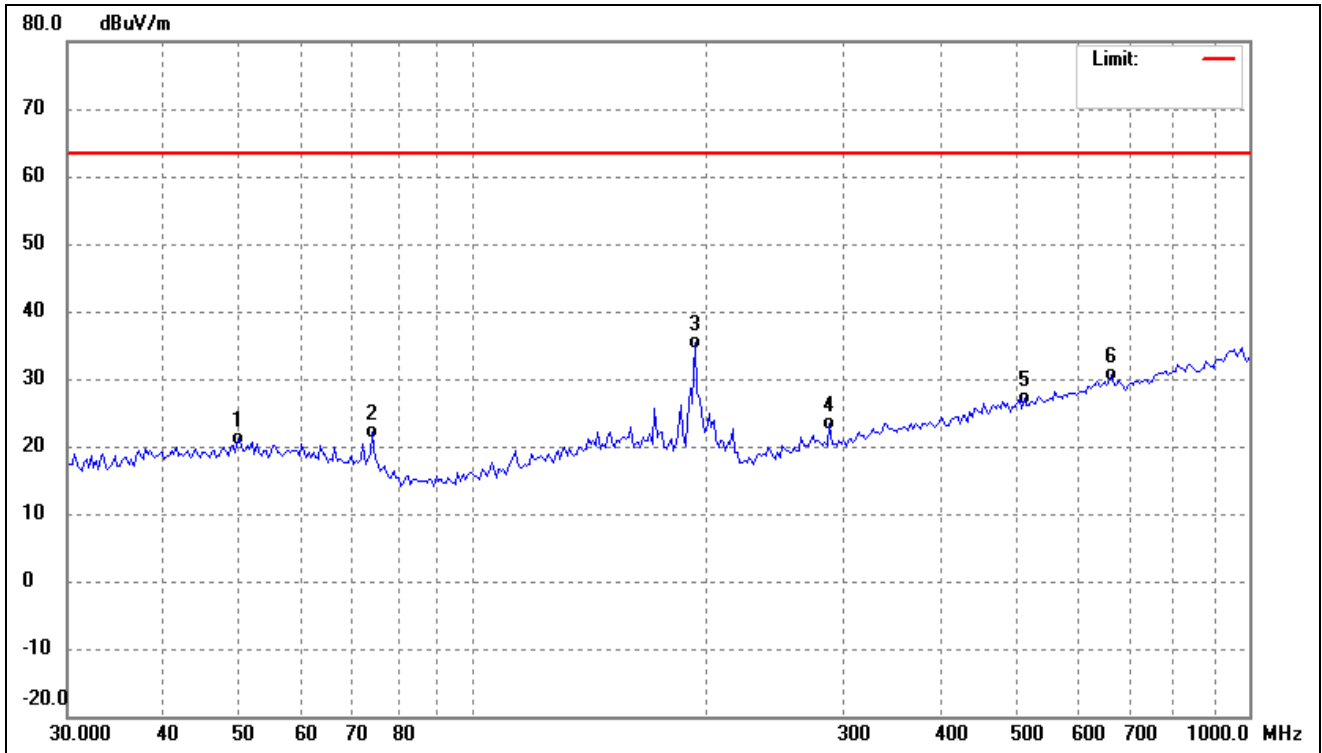
Test mode:	TM1	Polarity:	X
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	0.0090	63.57	-4.90	58.67	103.50	-44.83	-	-	peak
2	0.0158	62.39	-5.58	56.81	103.50	-46.69	-	-	peak
3	0.0260	61.32	-5.23	56.09	103.50	-47.41	-	-	peak
4	0.1277	86.75	-4.42	82.33	103.50	-21.17	-	-	peak
5	0.1752	63.02	-4.40	58.62	103.50	-44.88	-	-	peak
6	0.3818	61.16	-4.72	56.44	103.50	-47.06	-	-	peak

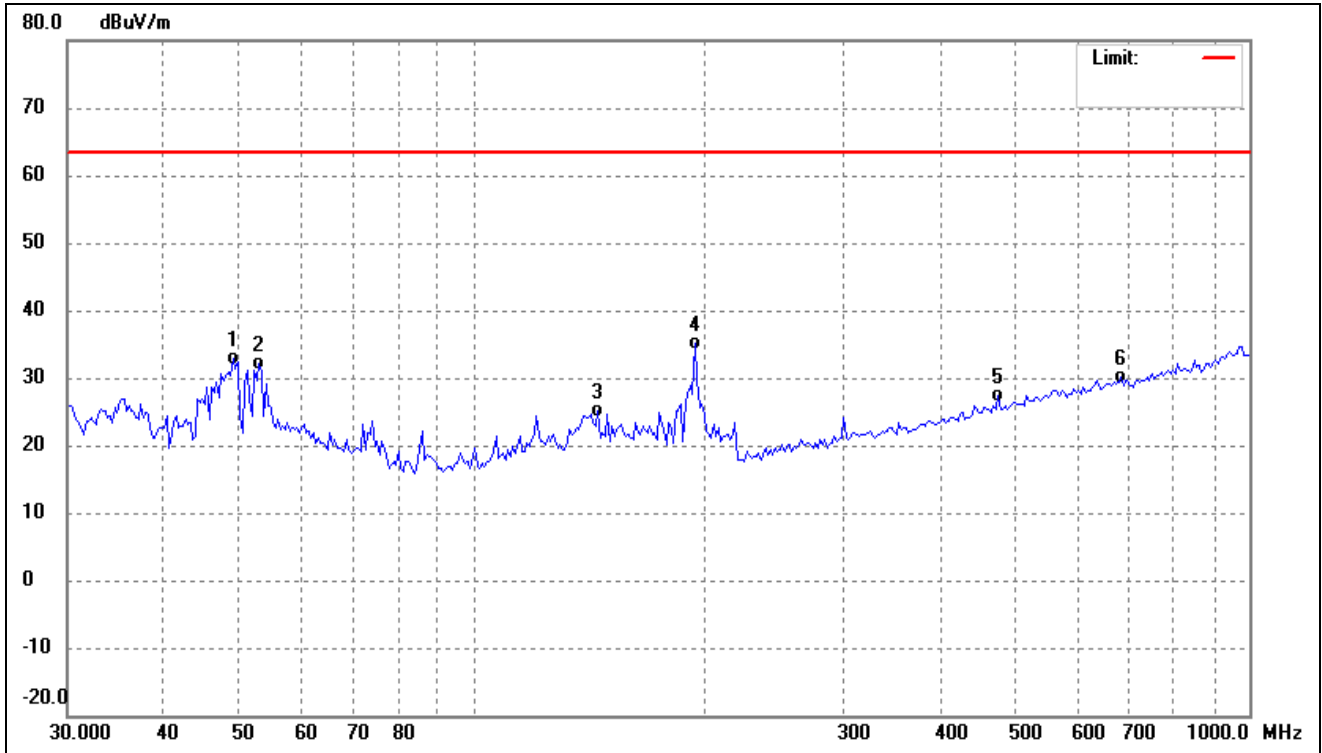
Plot of Radiated Emissions Test Data (Above 30MHz)

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	49.7571	29.15	-8.09	21.06	63.50	-42.44	-	-	peak
2	74.2696	33.87	-11.70	22.17	63.50	-41.33	-	-	peak
3	193.1366	47.01	-11.60	35.41	63.50	-28.09	-	-	peak
4	288.2840	31.99	-8.66	23.33	63.50	-40.17	-	-	peak
5	512.9478	30.91	-3.70	27.21	63.50	-36.29	-	-	peak
6	665.2610	31.82	-1.27	30.55	63.50	-32.95	-	-	peak

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	49.0627	41.09	-8.15	32.94	63.50	-30.56	-	-	peak
2	53.0056	40.50	-8.41	32.09	63.50	-31.41	-	-	peak
3	144.7899	34.09	-9.03	25.06	63.50	-38.44	-	-	peak
4	193.1366	46.80	-11.60	35.20	63.50	-28.30	-	-	peak
5	474.7913	31.54	-4.24	27.30	63.50	-36.20	-	-	peak
6	684.2259	31.34	-1.20	30.14	63.50	-33.36	-	-	peak

Remark: '-' Means' the test Degree and Height are not recorded by the test software and only show the worst case in the test report.

APPENDIX PHOTOGRAPHS

Please refer to "ANNEX"

**** END OF REPORT ****