

TEST REPORT

Reference No..... : WTX24X05109429W001
FCC ID..... : A4X-SQ2WLCH610BK
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..... : QI2 WIRELESS CAR CHARGER
Model No..... : SQ2WLCH610BK
Standards..... : FCC Part 18
Date of Receipt sample..... : 2024-05-13
Date of Test..... : 2024-05-13 to 2024-05-20
Date of Issue..... : 2024-05-20
Test Report Form No..... : WTX_Part 18W
Test Result..... : **Pass**

Remarks:

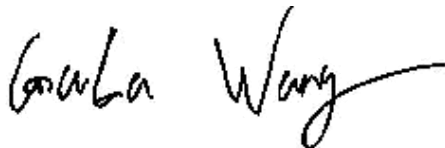
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

Prepared By:

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Tested by:



Gala Wang

Approved by:



Jason Su

TABLE OF CONTENTS

1. GENERAL INFORMATION 4

 1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) 4

 1.2 TEST STANDARDS 5

 1.3 TEST METHODOLOGY 5

 1.4 TEST FACILITY 5

 1.5 EUT SETUP AND OPERATION MODE 6

 1.6 MEASUREMENT UNCERTAINTY 7

 1.7 TEST EQUIPMENT LIST AND DETAILS 8

2. SUMMARY OF TEST RESULTS 9

3. CONDUCTED EMISSIONS 10

 3.1 STANDARD APPLICABLE 10

 3.2 TEST PROCEDURE 10

 3.3 BASIC TEST SETUP BLOCK DIAGRAM 10

 3.4 ENVIRONMENTAL CONDITIONS 10

 3.5 TEST RECEIVER SETUP 11

 3.6 SUMMARY OF TEST RESULTS/PLOTS 11

4. RADIATED EMISSIONS 16

 4.1 TEST PROCEDURE 16

 4.2 TEST RECEIVER SETUP 17

 4.3 CORRECTED AMPLITUDE & MARGIN CALCULATION 17

 4.4 ENVIRONMENTAL CONDITIONS 18

 4.5 SUMMARY OF TEST RESULTS/PLOTS 18

APPENDIX PHOTOGRAPHS 24

Report version

Version No.	Date of issue	Description
Rev.00	2024-05-20	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:	QI2 WIRELESS CAR CHARGER
Trade Name:	Sprout
Model No.:	SQ2WLCH610BK
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@5W 128/360kHz@15W
Modulation Type:	ASK
Antenna Type:	Coil Antenna
Rated Voltage:	Input: DC5V/9V
Rated Current:	Input: 3A/2.22A
Rated Power:	Output: 5W/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	Input:DC5V 3A; Wireless charging: output 5W
TM2	Wireless Charging	Connect to the Adapter	Input:DC9V 2.22A; Wireless charging: output 15W

EUT Cable List and Details

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

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Adapter	Iotie	CHCRIO160	/
iPhone	Apple Inc	A3104	/

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	2024-02-24	2025-02-23
EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2024-02-24	2025-02-23
Amplifier	HP	8447F	2805A0347 5	2024-02-24	2025-02-23
Amplifier	C&D	PAP-1G18	2002	2024-02-27	2025-02-26
Trilog Broadband Antenna	Schwarz beck	VULB9163	9163-333	2024-02-24	2025-02-23
Horn Antenna	ETS	3117	00086197	2024-02-26	2025-02-25
Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2025-02-25
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
Amplifier	Agilent	8447D	2944A1045 7	2024-02-24	2025-02-23
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2024-02-24	2025-02-23

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission Room 1#)*	Farad	EZ-EMC	RA-03A1
EMI Test Software (Conducted Emission Room 2#)*	SKET	EMC-I	V2.0

*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:

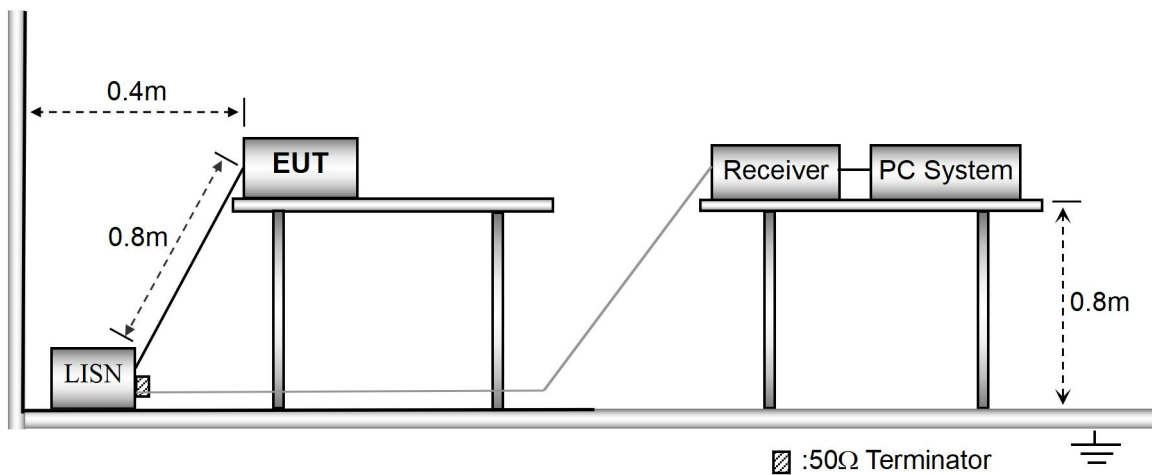
Frequency (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

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:	25° C
Relative Humidity:	45%
ATM Pressure:	1016 mbar

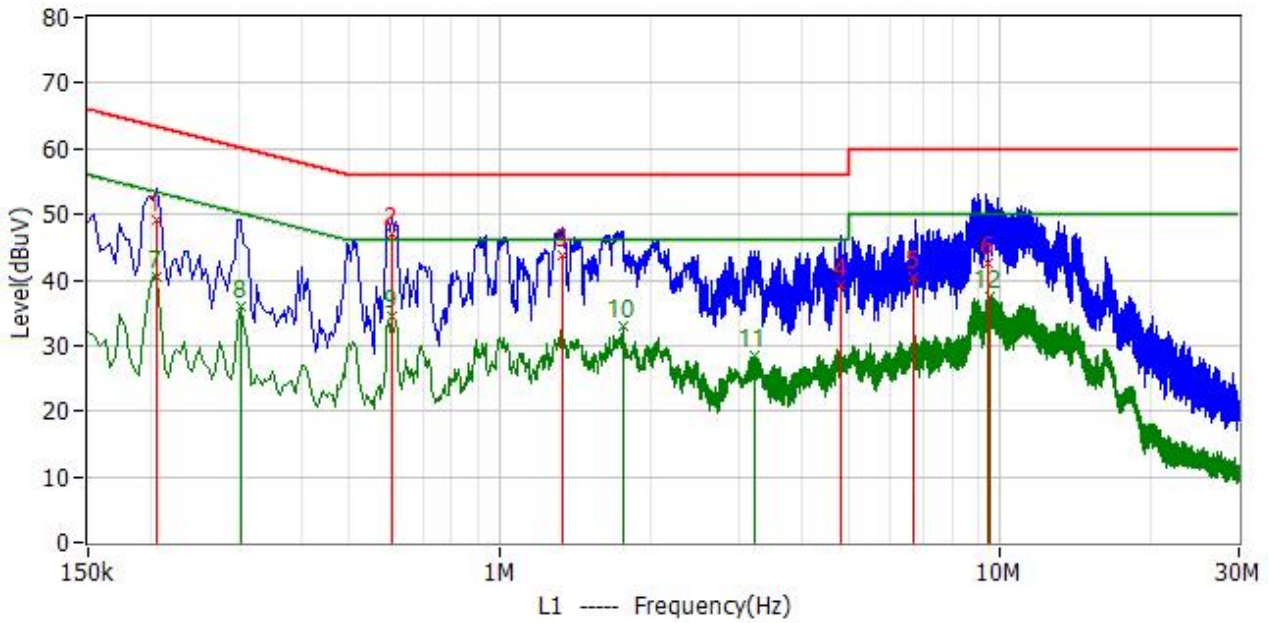
3.5 Test Receiver Setup

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

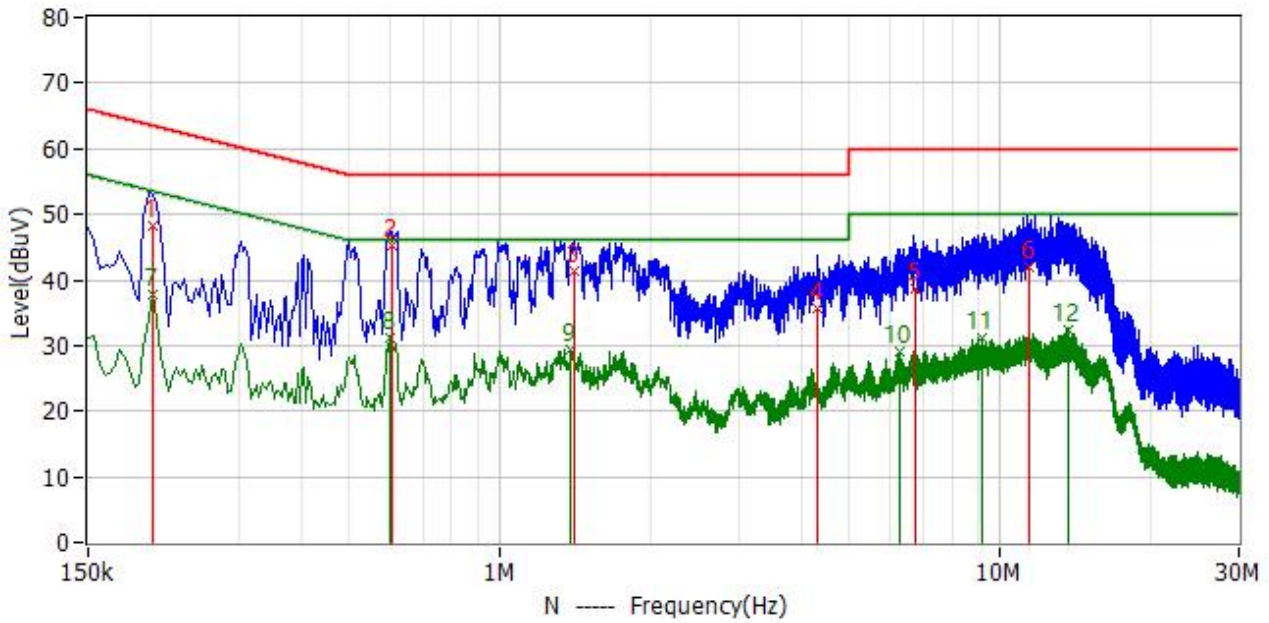
3.6 Summary of Test Results/Plots

Test mode:	TM1	Polarity:	Line
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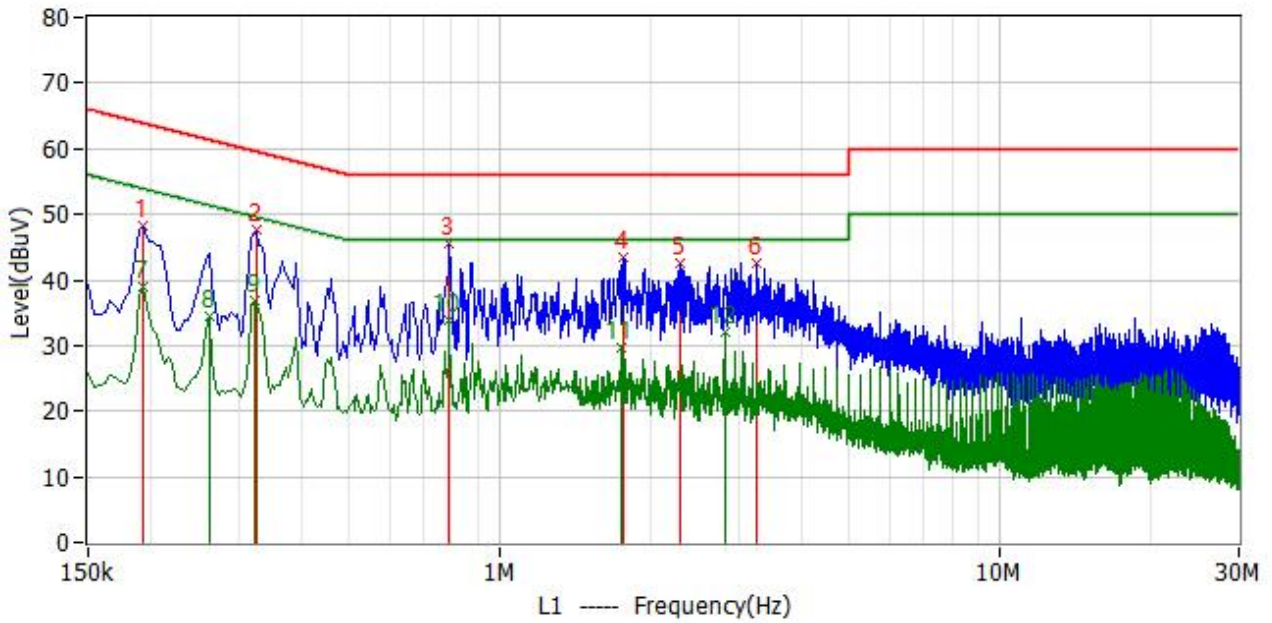
No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Delta dB	Detector
1	206.000kHz	39.5	9.7	49.2	63.4	-14.1	QP
2	606.000kHz	37.2	9.7	46.9	56.0	-9.1	QP
3	1.334MHz	33.8	9.8	43.6	56.0	-12.4	QP
4	4.786MHz	29.4	9.9	39.3	56.0	-16.7	QP
5	6.730MHz	30.7	9.7	40.4	60.0	-19.6	QP
6	9.434MHz	32.6	9.8	42.4	60.0	-17.6	QP
7*	206.000kHz	30.8	9.7	40.5	53.4	-12.9	AV
8*	302.000kHz	25.9	10.1	36.0	50.2	-14.1	AV
9*	606.000kHz	24.9	9.7	34.6	46.0	-11.4	AV
10*	1.762MHz	23.1	9.8	32.9	46.0	-13.1	AV
11*	3.214MHz	18.6	9.9	28.5	46.0	-17.5	AV
12*	9.546MHz	27.8	9.8	37.6	50.0	-12.4	AV

Test mode:	TM1	Polarity:	Neutral
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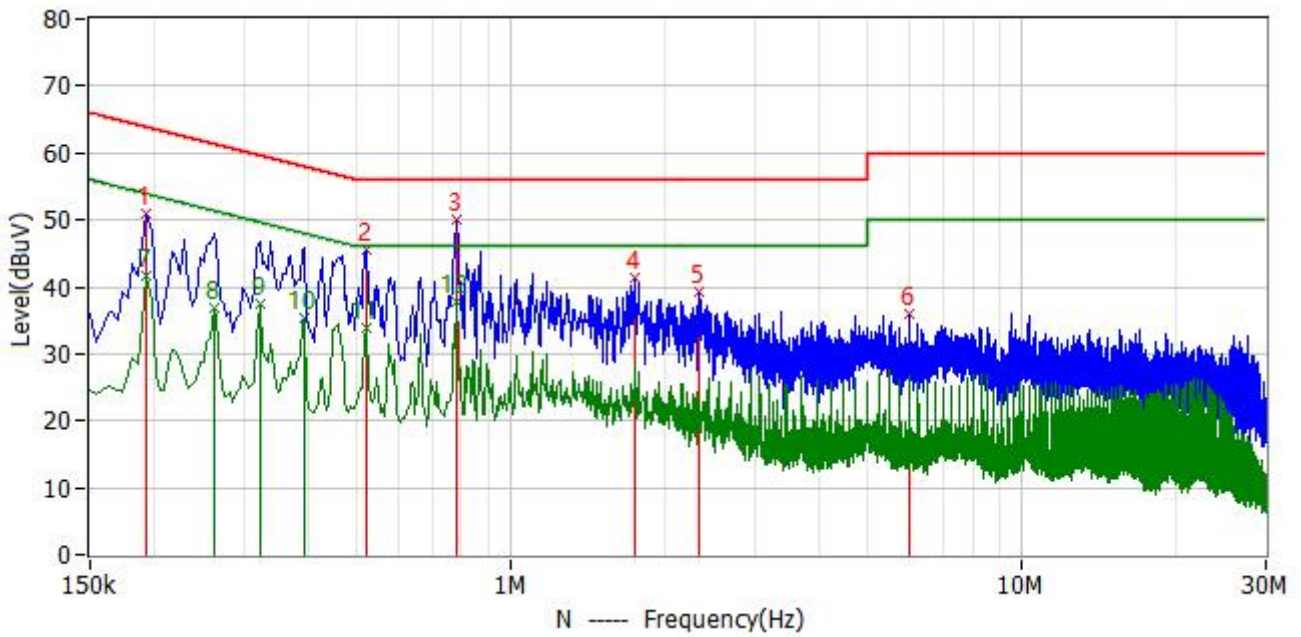
No.	Frequency	Reading dBuV	Factor dB	Level dBuV	Limit dBuV	Delta dB	Detector
1	202.000kHz	38.6	9.7	48.3	63.5	-15.3	QP
2	606.000kHz	35.4	9.7	45.1	56.0	-10.9	QP
3	1.410MHz	31.7	9.7	41.4	56.0	-14.6	QP
4	4.298MHz	25.9	9.8	35.7	56.0	-20.3	QP
5	6.738MHz	29.0	9.8	38.8	60.0	-21.2	QP
6	11.378MHz	32.0	9.8	41.8	60.0	-18.2	QP
7*	202.000kHz	28.2	9.7	37.9	53.5	-15.6	AV
8*	602.000kHz	21.6	9.7	31.3	46.0	-14.7	AV
9*	1.386MHz	19.8	9.7	29.5	46.0	-16.5	AV
10*	6.298MHz	19.2	9.8	29.0	50.0	-21.0	AV
11*	9.194MHz	21.3	9.9	31.2	50.0	-18.8	AV
12*	13.650MHz	22.7	9.8	32.5	50.0	-17.5	AV

Test mode:	TM2	Polarity:	Line
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No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector
1*	194.000kHz	63.9	48.2	-15.6	38.5	9.7	QP
2*	326.000kHz	59.6	47.5	-12.1	37.4	10.1	QP
3*	790.000kHz	56.0	45.6	-10.4	35.8	9.8	QP
4*	1.766MHz	56.0	43.3	-12.7	33.5	9.8	QP
5*	2.282MHz	56.0	42.6	-13.4	32.7	9.9	QP
6*	3.258MHz	56.0	42.6	-13.4	32.7	9.9	QP
7*	194.000kHz	53.9	39.0	-14.9	29.3	9.7	AV
8*	262.000kHz	51.4	34.4	-16.9	24.5	9.9	AV
9*	322.000kHz	49.7	36.8	-12.9	26.7	10.1	AV
10*	790.000kHz	46.0	33.9	-12.1	24.1	9.8	AV
11*	1.746MHz	46.0	29.8	-16.2	20.0	9.8	AV
12*	2.814MHz	46.0	32.0	-14.0	22.1	9.9	AV

Test mode:	TM2	Polarity:	Neutral
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No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector
1*	194.000kHz	63.9	50.8	-13.0	41.1	9.7	QP
2*	522.000kHz	56.0	45.6	-10.4	36.0	9.6	QP
3*	782.000kHz	56.0	50.0	-6.0	40.3	9.7	QP
4*	1.750MHz	56.0	41.2	-14.8	31.5	9.7	QP
5*	2.342MHz	56.0	39.3	-16.7	29.6	9.7	QP
6*	6.010MHz	60.0	35.9	-24.1	26.1	9.8	QP
7*	194.000kHz	53.9	41.7	-12.2	32.0	9.7	AV
8*	262.000kHz	51.4	37.0	-14.4	27.1	9.9	AV
9*	322.000kHz	49.7	37.4	-12.3	27.4	10.0	AV
10*	394.000kHz	48.0	35.4	-12.6	25.5	9.9	AV
11*	522.000kHz	46.0	33.9	-12.1	24.3	9.6	AV
12*	782.000kHz	46.0	37.7	-8.3	28.0	9.7	AV

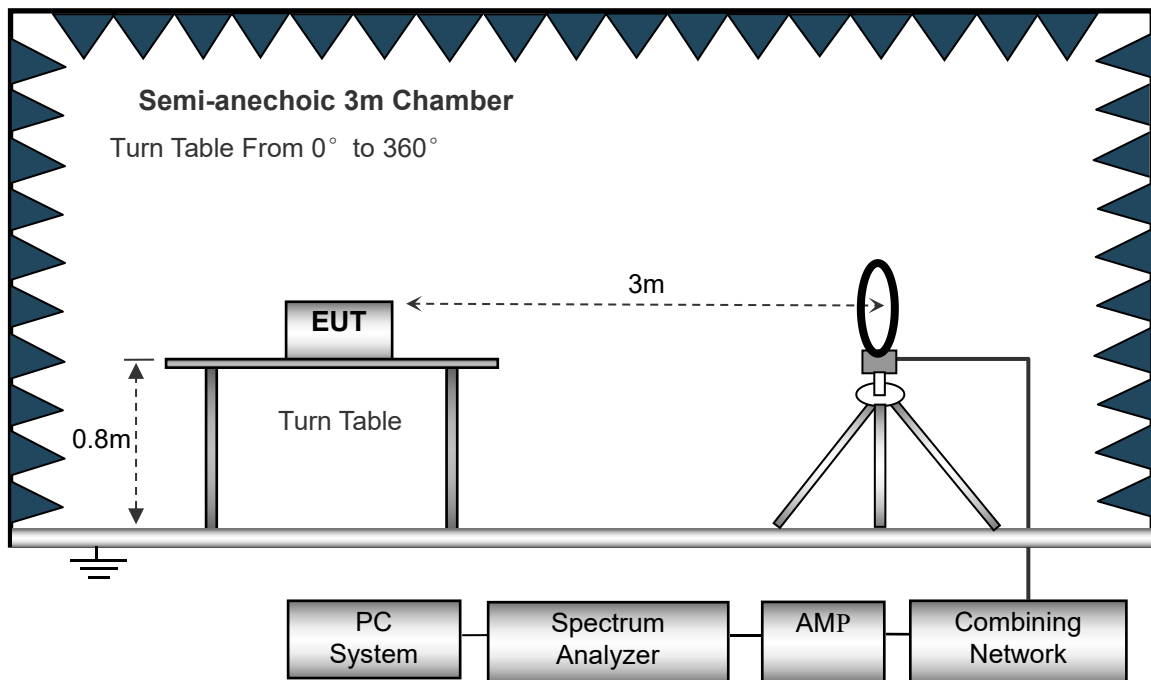
4. Radiated Emissions

4.1 Test Procedure

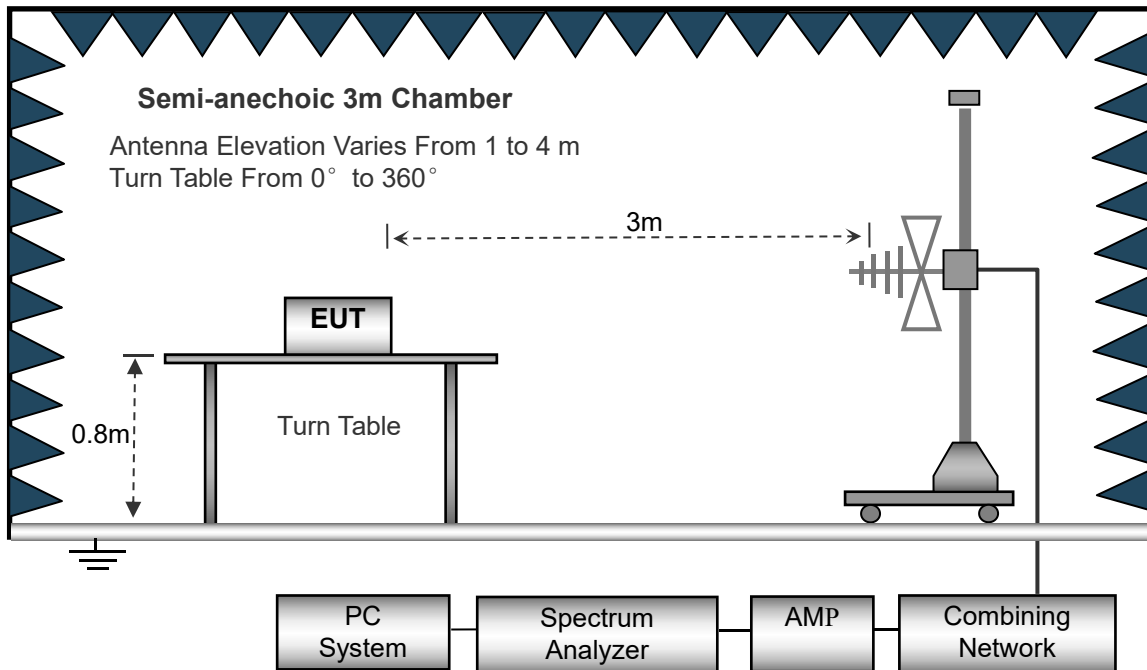
The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 18.305 Limit.

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:

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

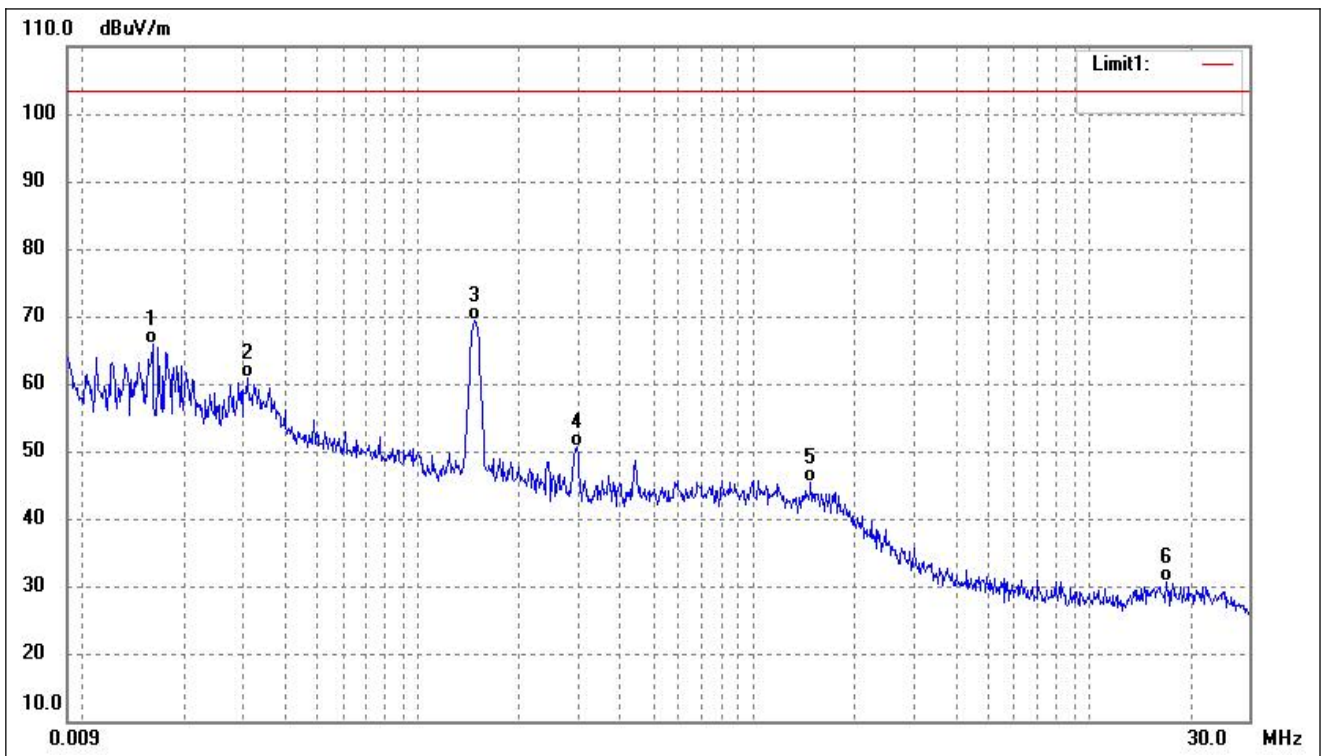
4.4 Environmental Conditions

Temperature:	22.5 °C
Relative Humidity:	54 %
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

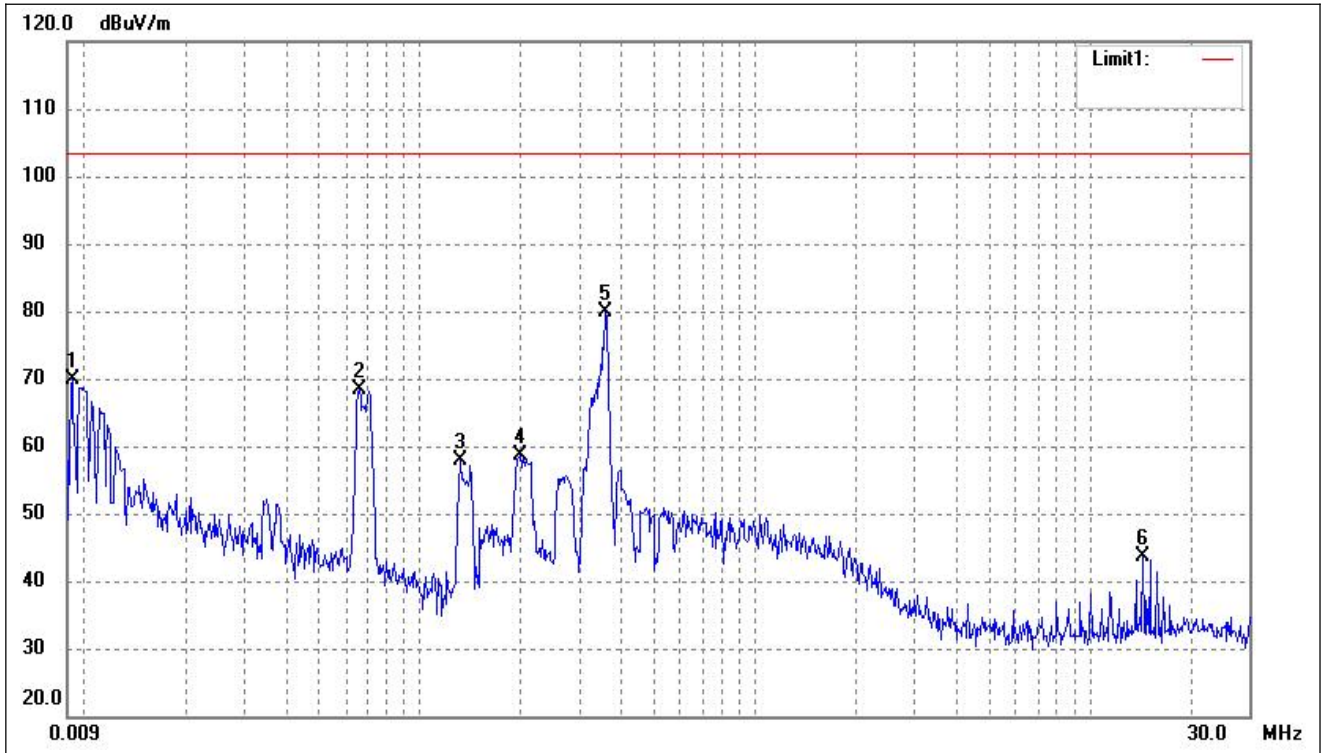
Plot of Radiated Emissions Test Data (Below 30MHz)

Test mode:	TM1	Polarity:	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	0.0160	72.80	-7.02	65.78	103.50	-37.72	-	-	peak
2	0.0309	67.33	-6.46	60.87	103.50	-42.63	-	-	peak
3	0.1477	75.72	-6.34	69.38	103.50	-34.12	-	-	peak
4	0.2968	58.52	-7.82	50.70	103.50	-52.80	-	-	peak
5	1.4796	51.50	-6.12	45.38	103.50	-58.12	-	-	peak

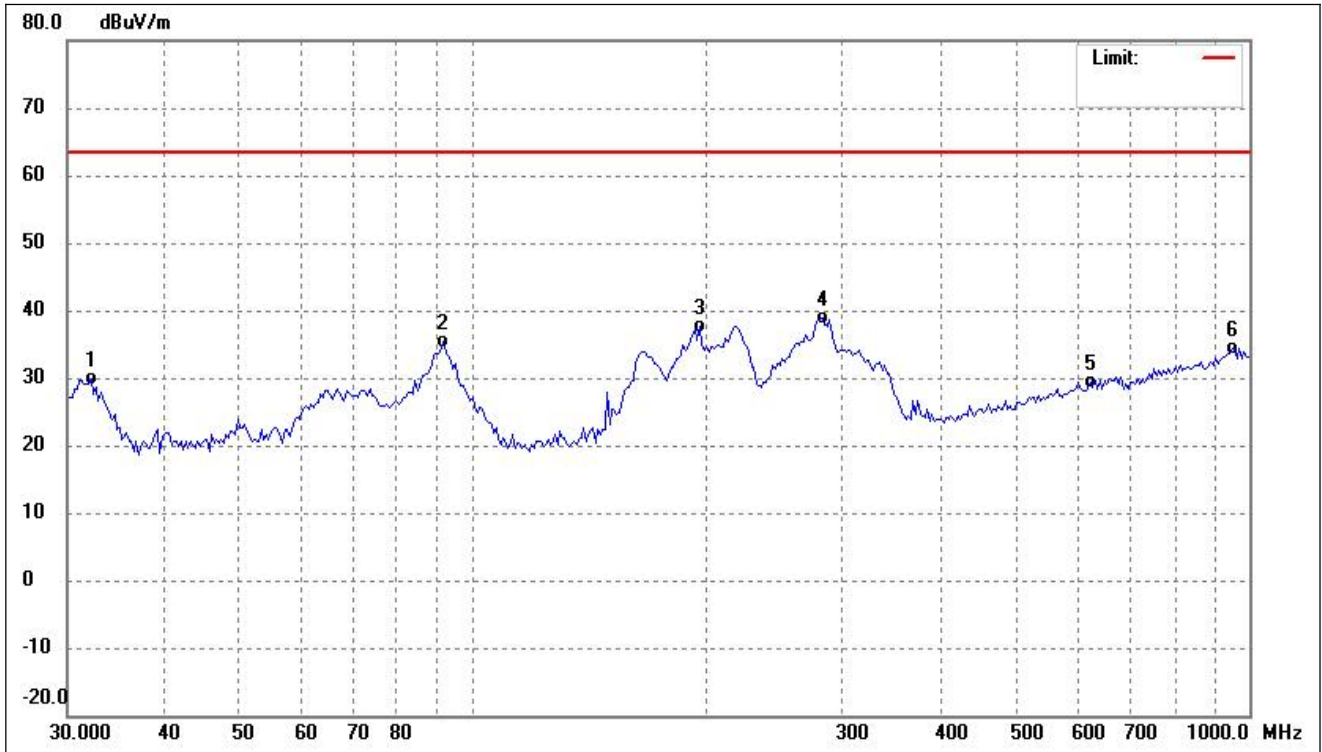
Test mode:	TM2	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	0.0093	76.41	-6.55	69.86	103.50	-33.64	-	-	peak
2	0.0660	74.58	-6.08	68.50	103.50	-35.00	-	-	peak
3	0.1314	64.40	-6.44	57.96	103.50	-45.54	-	-	peak
4	0.1986	65.50	-6.98	58.52	103.50	-44.98	-	-	peak
5	0.3577	87.52	-7.75	79.77	103.50	-23.73	-	-	peak
6	14.4404	48.48	-4.81	43.67	103.50	-59.83	-	-	peak

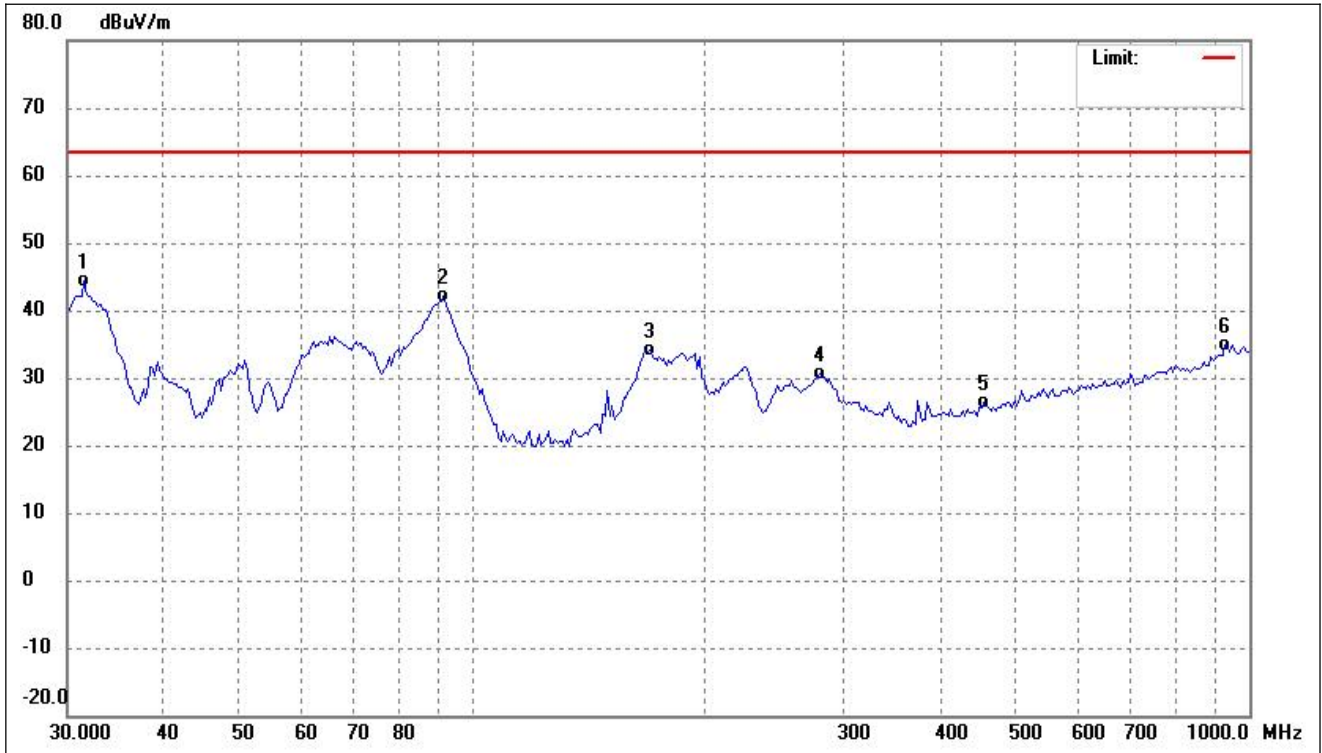
Plot of Radiated Emissions Test Data (Above 30MHz)

Test mode:	TM1	Polarity:	Horizontal
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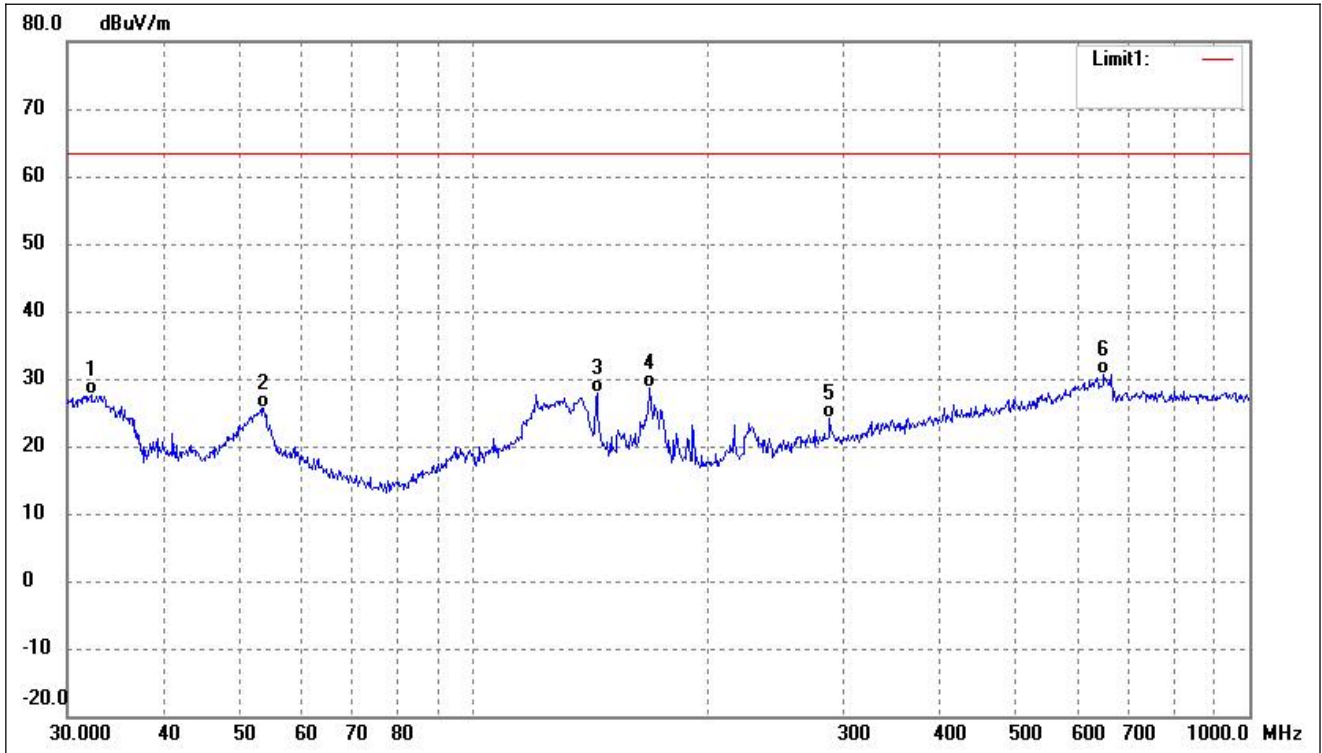
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.1840	39.80	-9.91	29.89	63.50	-33.61	-	-	QP
2	91.6995	48.34	-13.00	35.34	63.50	-28.16	-	-	QP
3	195.8701	49.45	-11.75	37.70	63.50	-25.80	-	-	QP
4	282.2702	47.84	-8.86	38.98	63.50	-24.52	-	-	QP
5	624.4897	30.79	-1.41	29.38	63.50	-34.12	-	-	QP
6	952.0001	32.13	2.25	34.38	63.50	-29.12	-	-	QP

Test mode:	TM1	Polarity:	Vertical
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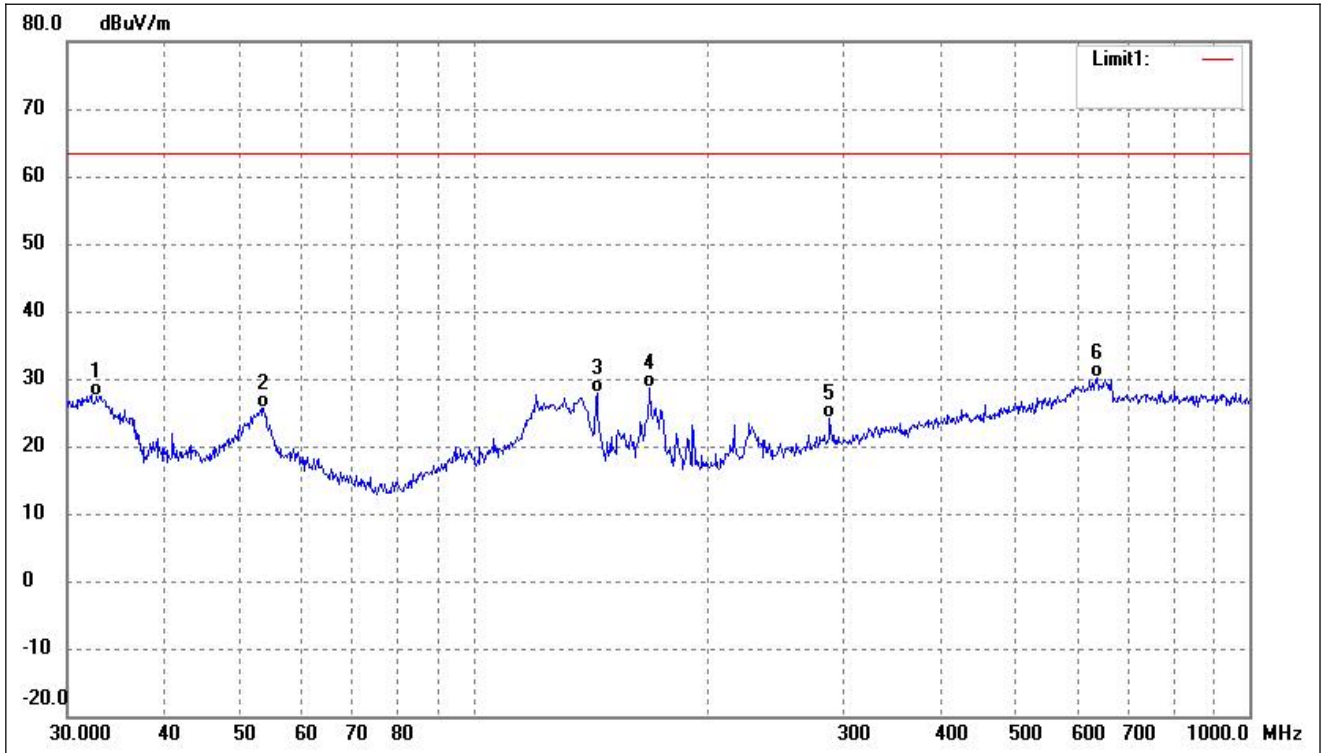
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	31.5126	54.33	-10.00	44.33	63.50	-19.17	-	-	QP
2	91.6995	55.09	-13.00	42.09	63.50	-21.41	-	-	QP
3	168.9970	43.05	-8.85	34.20	63.50	-29.30	-	-	QP
4	280.2936	39.48	-8.93	30.55	63.50	-32.95	-	-	QP
5	455.1888	30.91	-4.52	26.39	63.50	-37.11	-	-	QP
6	932.1405	33.11	1.87	34.98	63.50	-28.52	-	-	QP

Test mode:	TM2	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	32.1795	38.61	-11.09	27.52	63.50	-35.98	-	-	QP
2	53.6932	33.63	-8.07	25.56	63.50	-37.94	-	-	QP
3	144.3348	39.79	-11.94	27.85	63.50	-35.65	-	-	QP
4	169.0054	39.55	-10.83	28.72	63.50	-34.78	-	-	QP
5	287.9904	29.23	-5.20	24.03	63.50	-39.47	-	-	QP
6	649.6597	28.89	1.85	30.74	63.50	-32.76	-	-	QP

Test mode:	TM2	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	32.7486	38.41	-10.93	27.48	63.50	-36.02	-	-	QP
2	53.6932	33.63	-8.07	25.56	63.50	-37.94	-	-	QP
3	144.3348	39.79	-11.94	27.85	63.50	-35.65	-	-	QP
4	169.0054	39.55	-10.83	28.72	63.50	-34.78	-	-	QP
5	287.9904	29.23	-5.20	24.03	63.50	-39.47	-	-	QP
6	636.1340	28.73	1.51	30.24	63.50	-33.26	-	-	QP

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 ****