TEST REPORT

Reference No.	:	WTX22X05105451W001
FCC ID	:	A4X-WPC20-2TCNA
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	:	Magsafe Wireless Charger
Model No.	:	WPC20-2TCNA
Standards	:	FCC Part 18
Date of Receipt sample	:	2022-05-26
Date of Test	:	2022-05-26 to 2022-06-25
Date of Issue	:	2022-06-25
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:

Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,
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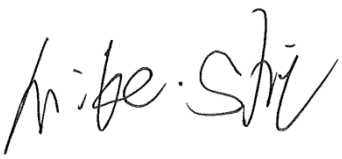
Tel.: +86-755-33663308 Fax.: +86-755-33663309 Email: sem@waltek.com.cn

Tested by:



Mike Shi

Approved by:

Silin Chen

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Report version

Version No.	Date of issue	Description
Rev.00	2022-06-25	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Factory1#:	SuiChuan CE LINK LIMITED
Address of factory	SuiChuan county industrial park east zone, Ji'an city Jiangxi province, China.
Factory2#:	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:	Magsafe Wireless Charger
Trade Name:	CE-LINK
Model No.:	WPC20-2TCNA
Adding Model(s):	/
Note: The test data is gathered from a production sample, provided by the manufacturer.	

Technical Characteristics of EUT	
Frequency Range:	110~205KHz
Modulation Type:	ASK
Antenna Type:	Coil Antenna
Antenna Gain:	0dBi
Rated Voltage:	Input: DC5V/9V
Rated Current:	Input: 3A
Wireless output Rated Power:	Output1: 5W Output2: 5W/7.5W/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 maintain ed 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; Output1 5W + Output2 5W
TM2	Wireless Charging	/	Connect to the Adapter, AC120V/60Hz for adapter; Output1 5W + Output2 7.5W
TM3	Wireless Charging	/	Connect to the Adapter, AC120V/60Hz for adapter; Output1 5W + Output2 15W

EUT Cable List and Details

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

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
AC Adapter	/	MDY-13-ET	/
Wireless Charging Load	YBZ	YBZ wireless charging tester	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
DC Cable	1.0	Shielded	Without Ferrite

1.6 Measurement Uncertainty

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

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2022-03-22	2023-03-21
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2022-03-22	2023-03-21
Amplifier	Agilent	8447F	3113A06717	2022-01-07	2023-01-06
Amplifier	C&D	PAP-1G18	2002	2022-03-22	2023-03-21
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
Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2021-04-09	2023-04-08
Amplifier	Agilent	8447D	2944A10179	2022-03-22	2023-03-21
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2022-03-25	2023-03-24

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

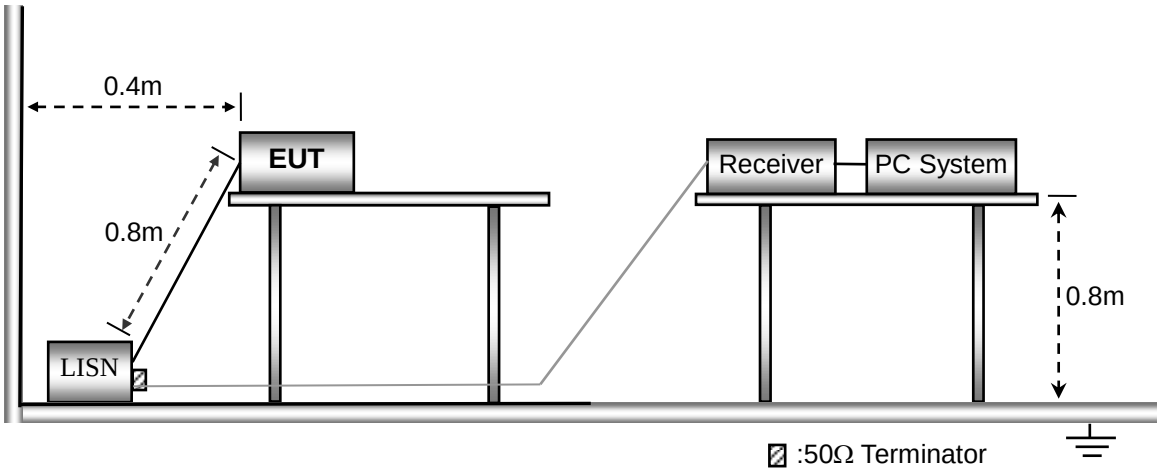
According to FCC 18.307(b), the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies shall not exceed the limits in the following tables:

Frequency (MHz)	Conducted limit (dBμV)	
	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:	23.5° C
Relative Humidity:	54%
ATM Pressure:	1016 mbar

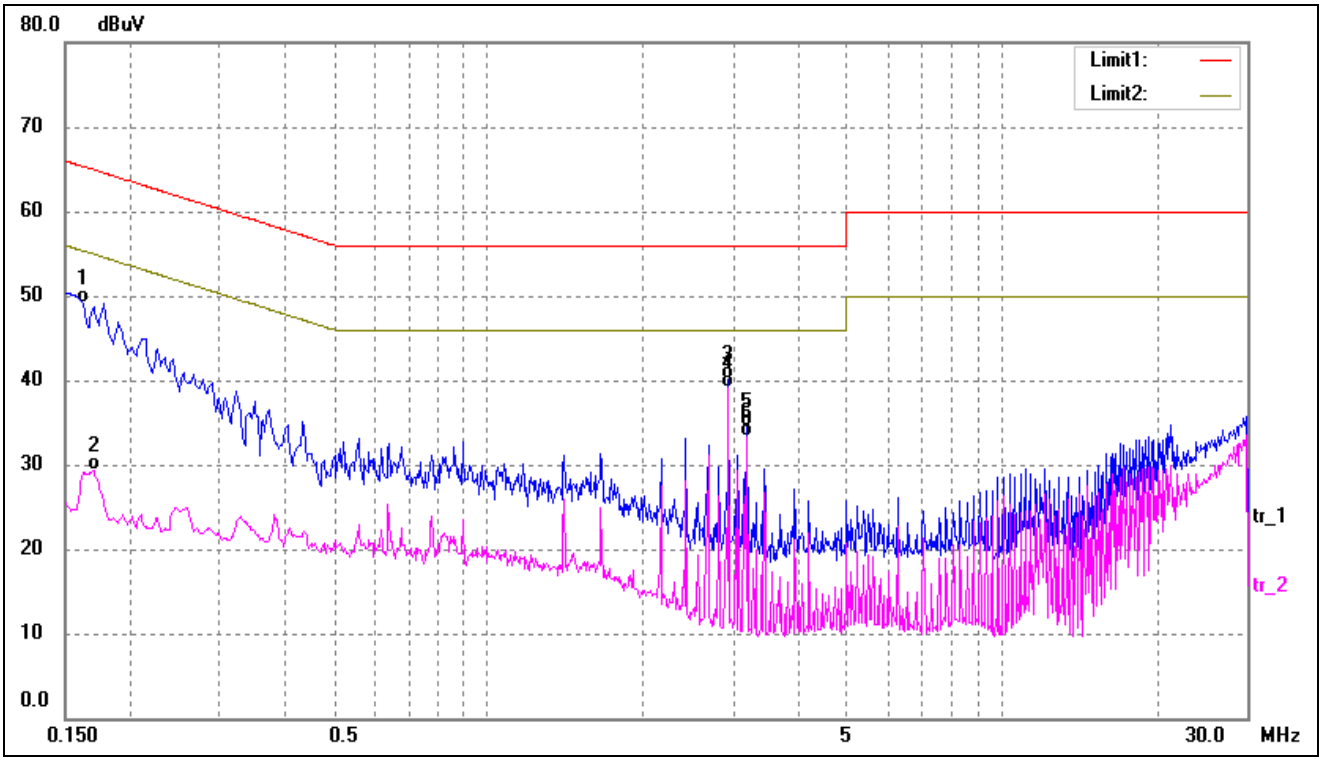
3.5 Test Receiver Setup

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

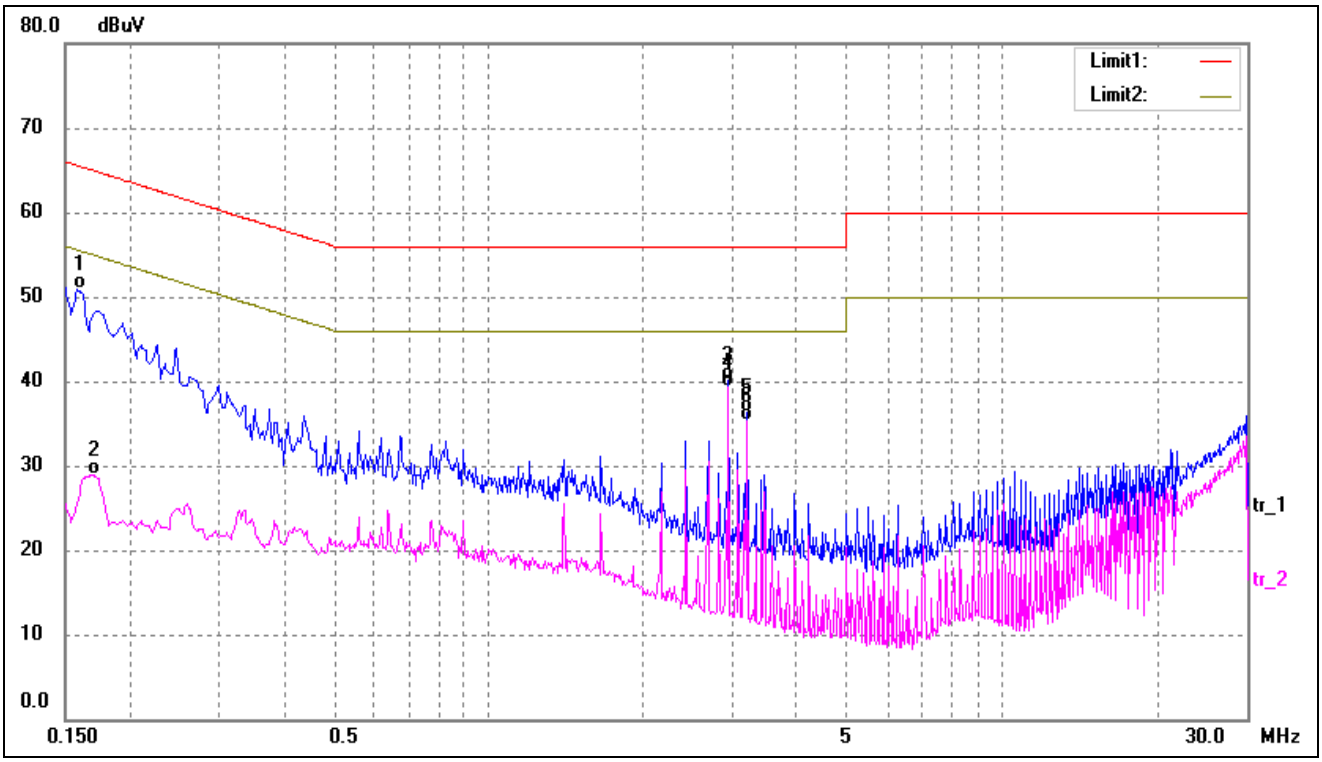
3.6 Summary of Test Results/Plots

Test mode:	TM1	Polarity:	Line



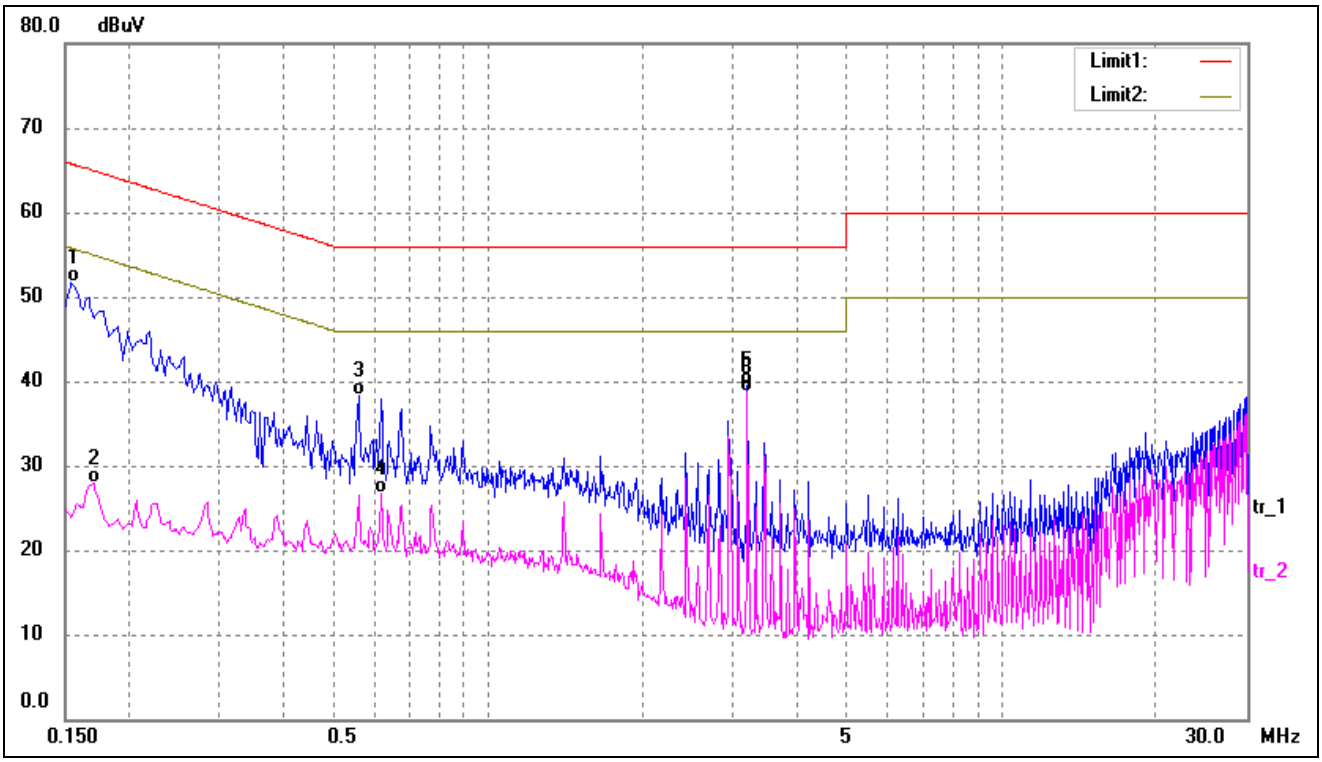
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1620	38.79	10.37	49.16	65.36	-16.20	QP
2	0.1700	18.99	10.37	29.36	54.96	-25.60	AVG
3	2.9380	30.02	10.09	40.11	56.00	-15.89	QP
4*	2.9380	29.09	10.09	39.18	46.00	-6.82	AVG
5	3.1940	24.43	10.08	34.51	56.00	-21.49	QP
6	3.1940	23.30	10.08	33.38	46.00	-12.62	AVG

Test mode:	TM1	Polarity:	Neutral



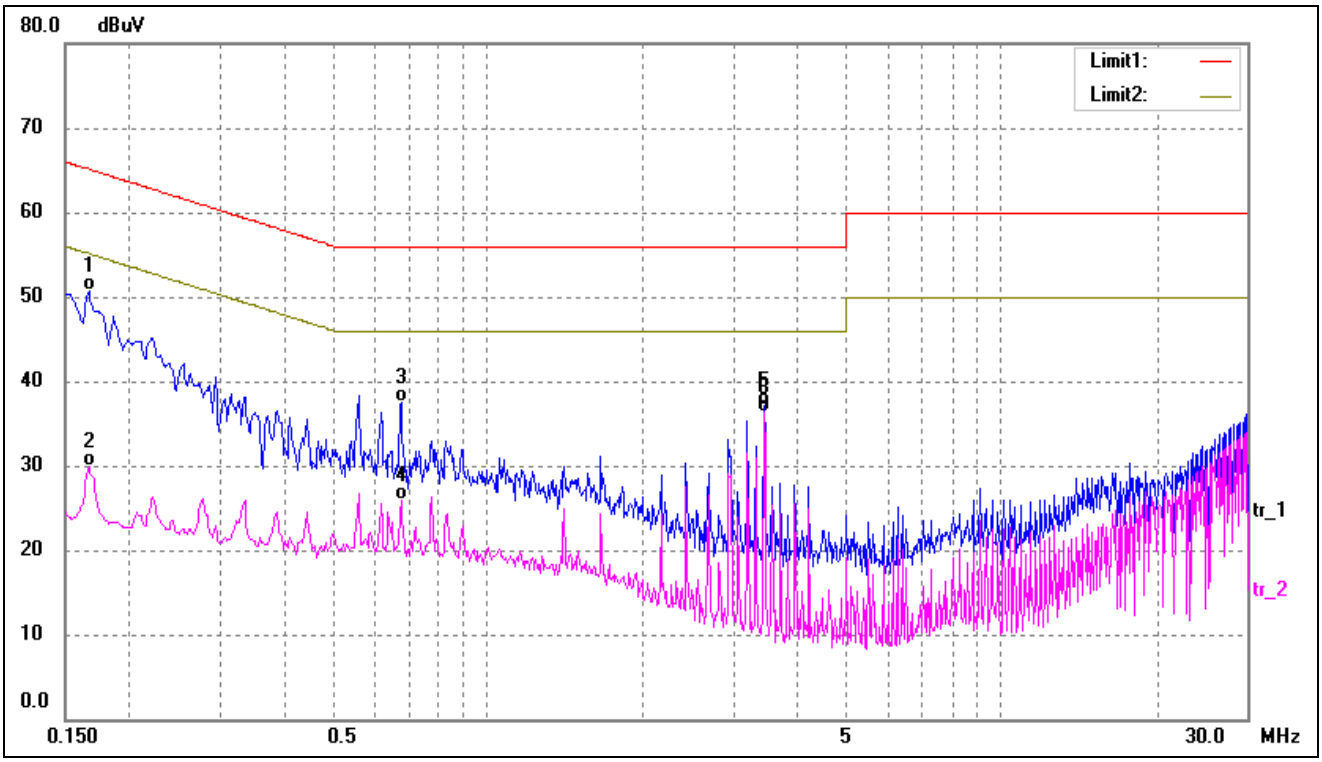
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1580	40.46	10.37	50.83	65.56	-14.73	QP
2	0.1700	18.58	10.37	28.95	54.96	-26.01	AVG
3	2.9380	30.06	10.09	40.15	56.00	-15.85	QP
4*	2.9380	29.12	10.09	39.21	46.00	-6.79	AVG
5	3.1940	26.23	10.08	36.31	56.00	-19.69	QP
6	3.1940	25.16	10.08	35.24	46.00	-10.76	AVG

Test mode:	TM2	Polarity:	Line



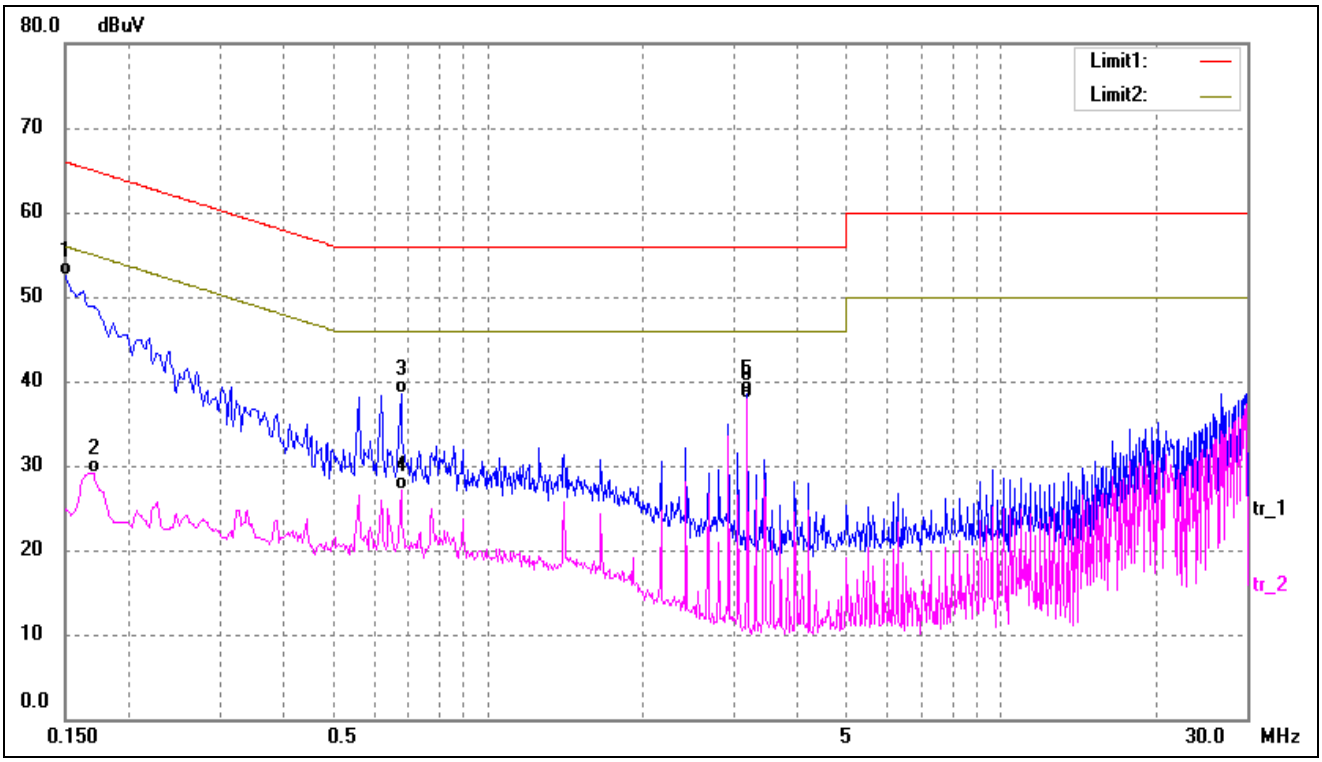
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1539	41.33	10.37	51.70	65.78	-14.08	QP
2	0.1700	17.52	10.37	27.89	54.96	-27.07	AVG
3	0.5580	28.03	10.29	38.32	56.00	-17.68	QP
4	0.6180	16.44	10.33	26.77	46.00	-19.23	AVG
5	3.1940	29.44	10.08	39.52	56.00	-16.48	QP
6*	3.1940	28.65	10.08	38.73	46.00	-7.27	AVG

Test mode:	TM2	Polarity:	Neutral



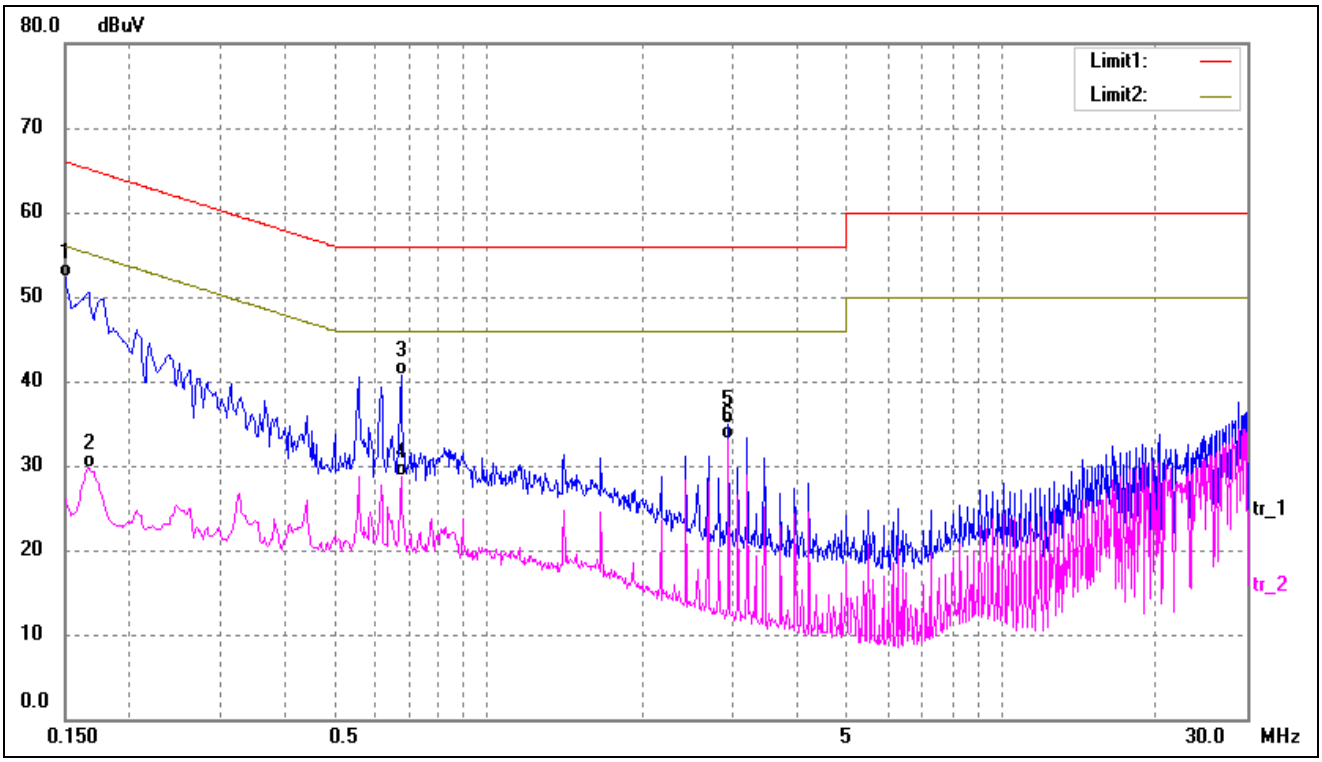
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1660	40.33	10.37	50.70	65.15	-14.45	QP
2	0.1660	19.47	10.37	29.84	55.15	-25.31	AVG
3	0.6780	27.15	10.37	37.52	56.00	-18.48	QP
4	0.6780	15.46	10.37	25.83	46.00	-20.17	AVG
5	3.4500	27.03	10.07	37.10	56.00	-18.90	QP
6*	3.4500	26.29	10.07	36.36	46.00	-9.64	AVG

Test mode:	TM3	Polarity:	Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1500	42.17	10.38	52.55	65.99	-13.44	QP
2	0.1700	18.81	10.37	29.18	54.96	-25.78	AVG
3	0.6780	28.07	10.37	38.44	56.00	-17.56	QP
4	0.6780	16.65	10.37	27.02	46.00	-18.98	AVG
5	3.1940	28.50	10.08	38.58	56.00	-17.42	QP
6*	3.1940	27.91	10.08	37.99	46.00	-8.01	AVG

Test mode:	TM3	Polarity:	Neutral



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1500	41.83	10.38	52.21	65.99	-13.78	QP
2	0.1660	19.29	10.37	29.66	55.15	-25.49	AVG
3	0.6780	30.26	10.37	40.63	56.00	-15.37	QP
4	0.6780	18.26	10.37	28.63	46.00	-17.37	AVG
5	2.9380	24.75	10.09	34.84	56.00	-21.16	QP
6*	2.9380	23.00	10.09	33.09	46.00	-12.91	AVG

4. Radiated Emissions

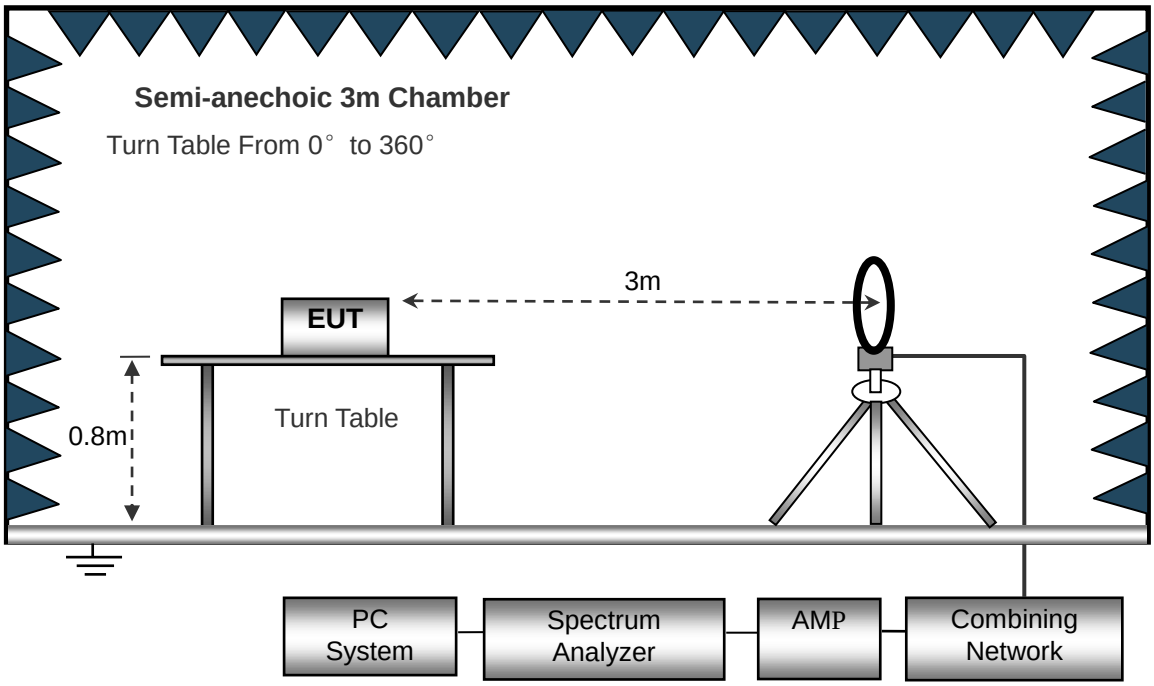
4.1 Test Procedure

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.

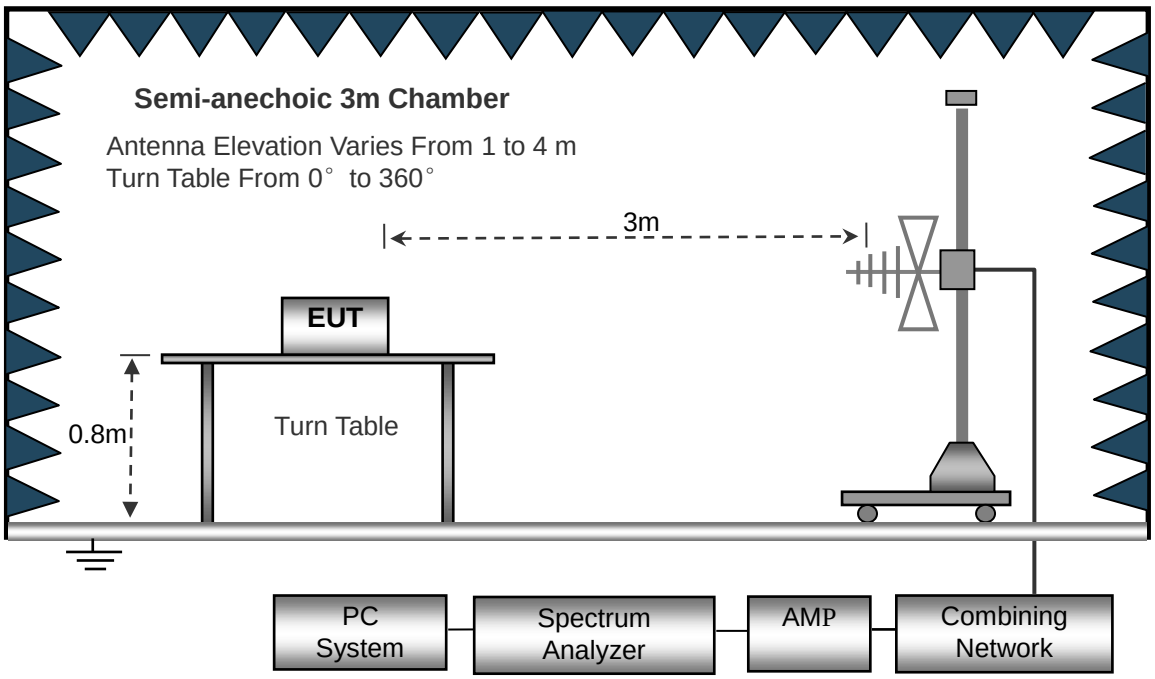
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

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	Frequency :30MHz-1GHz
RBW=10KHz,	RBW=120KHz,
VBW =30KHz	VBW=300KHz
Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold
Detector function = peak	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:

Corr. Ampl. = Indicated Reading – Corr. Factor

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit for Any non-ISM frequency device. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 18.305 Limit

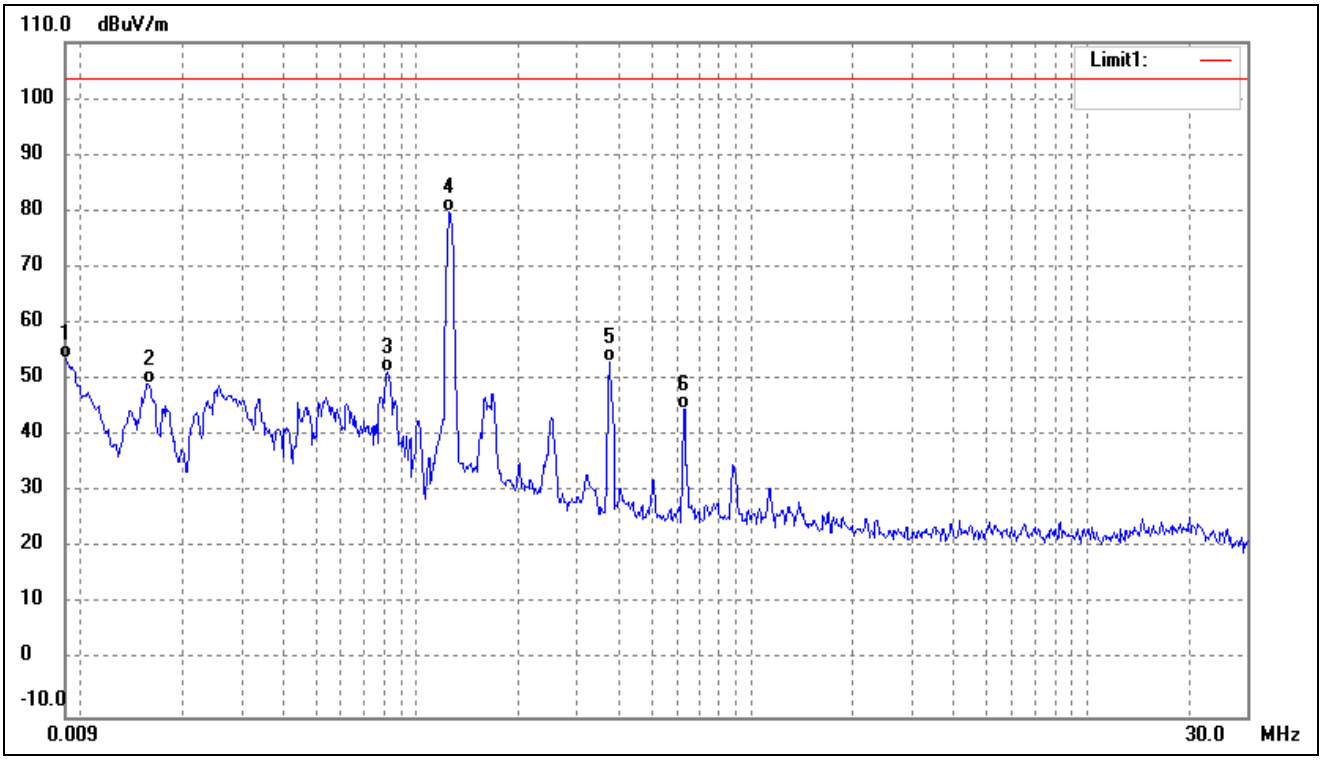
4.4 Environmental Conditions

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

4.5 Summary of Test Results/Plots

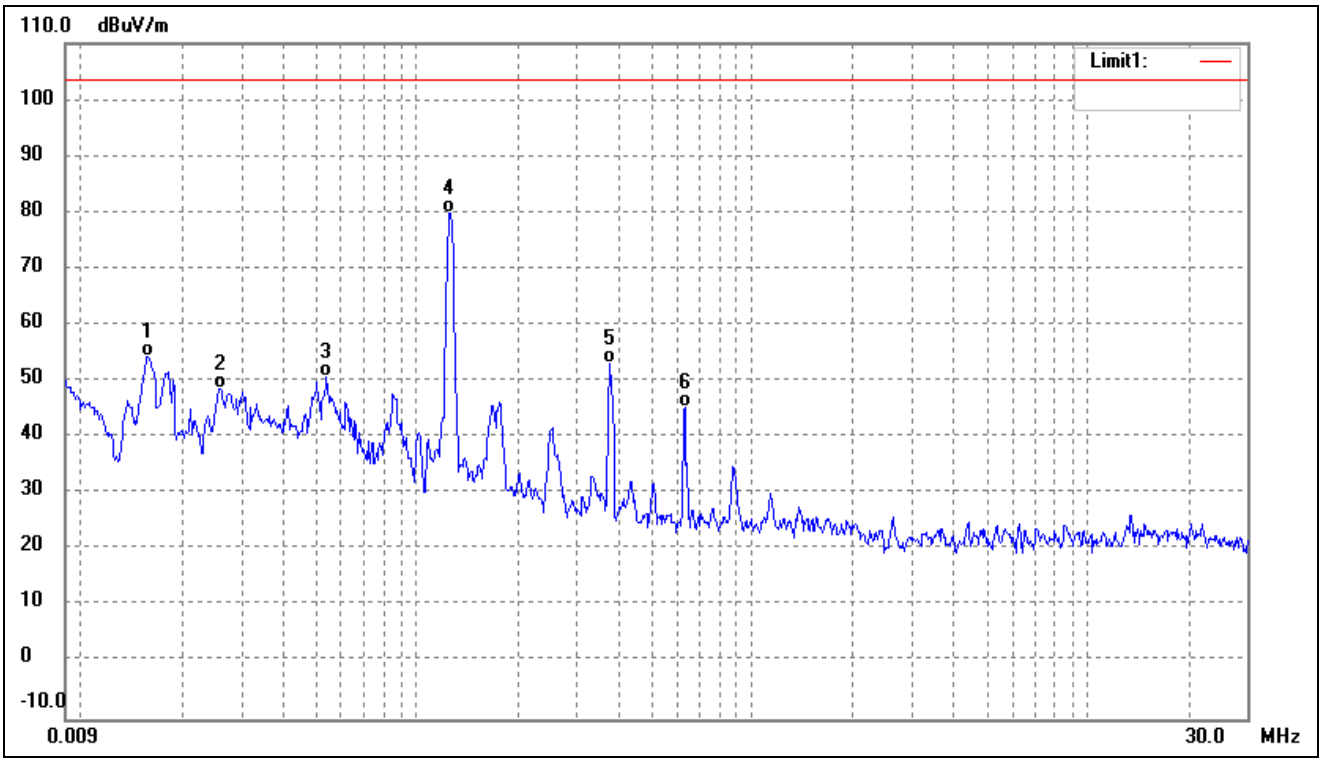
Plot of Radiated Emissions Test Data (Below 30MHz)

Test mode:	TM1	Polarity:	Vertical



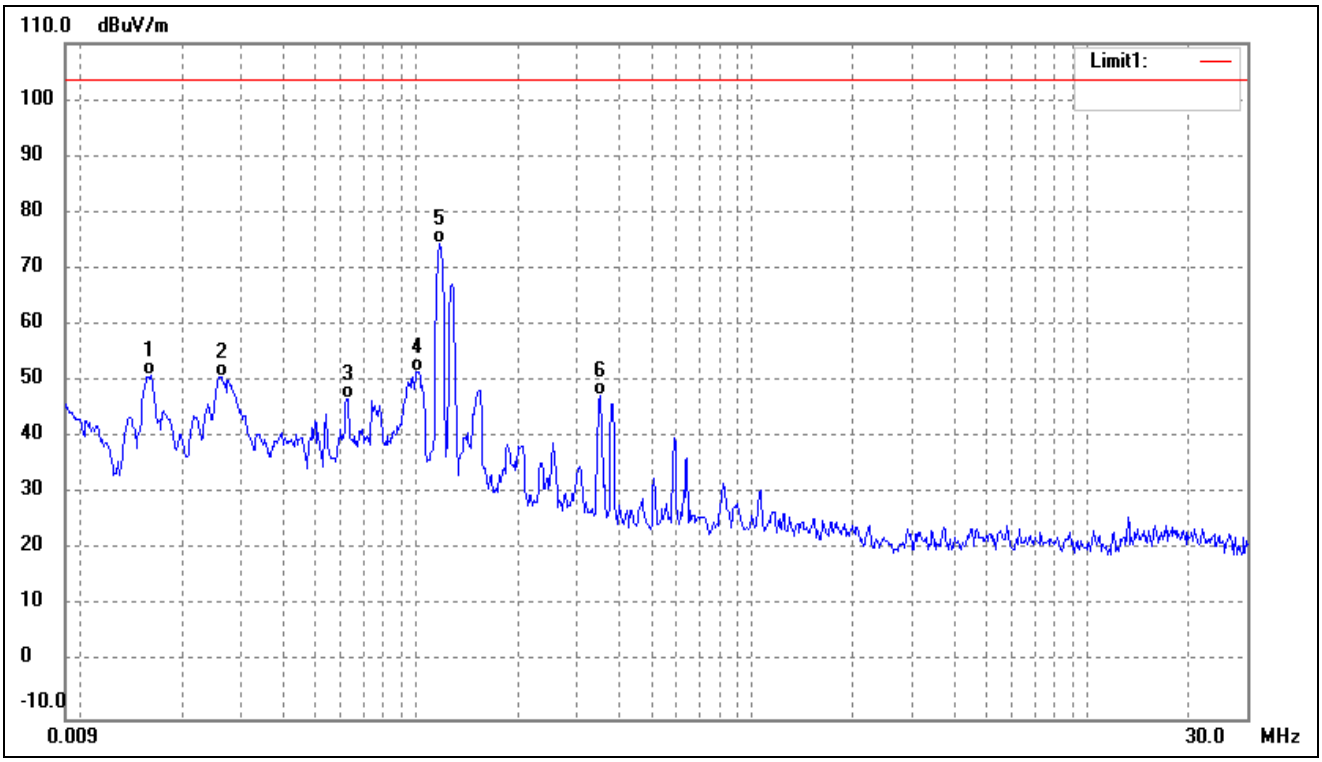
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	0.0088	58.77	-4.90	53.87	103.50	-49.63	-	-	QP
2	0.0158	54.70	-5.58	49.12	103.50	-54.38	-	-	QP
3	0.0824	56.12	-4.69	51.43	103.50	-52.07	-	-	QP
4	0.1257	84.40	-4.45	79.95	103.50	-23.55	-	-	QP
5	0.3756	57.83	-4.73	53.10	103.50	-50.40	-	-	QP
6	0.6262	48.70	-3.81	44.89	103.50	-58.61	-	-	QP

Test mode:	TM2	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	0.0159	59.93	-5.58	54.35	103.50	-49.15	-	-	QP
2	0.0260	53.93	-5.23	48.70	103.50	-54.80	-	-	QP
3	0.0541	54.66	-3.96	50.70	103.50	-52.80	-	-	QP
4	0.1257	84.43	-4.45	79.98	103.50	-23.52	-	-	QP
5	0.3787	57.99	-4.73	53.26	103.50	-50.24	-	-	QP
6	0.6313	49.12	-3.79	45.33	103.50	-58.17	-	-	QP

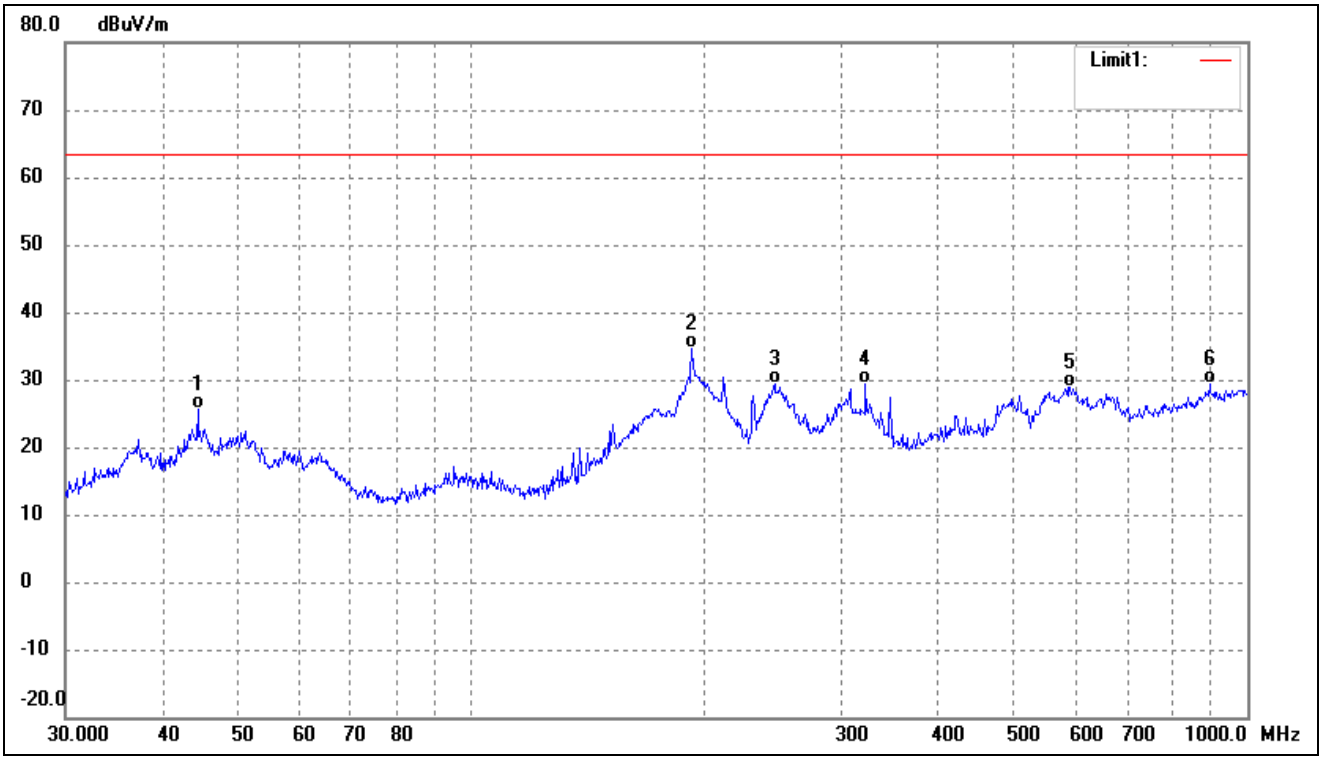
Test mode:	TM3	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	0.0161	56.50	-5.58	50.92	103.50	-52.58	-	-	QP
2	0.0263	56.01	-5.21	50.80	103.50	-52.70	-	-	QP
3	0.0625	51.16	-4.25	46.91	103.50	-56.59	-	-	QP
4	0.1008	56.41	-4.72	51.69	103.50	-51.81	-	-	QP
5	0.1178	78.92	-4.53	74.39	103.50	-29.11	-	-	QP
6	0.3520	52.12	-4.79	47.33	103.50	-56.17	-	-	QP

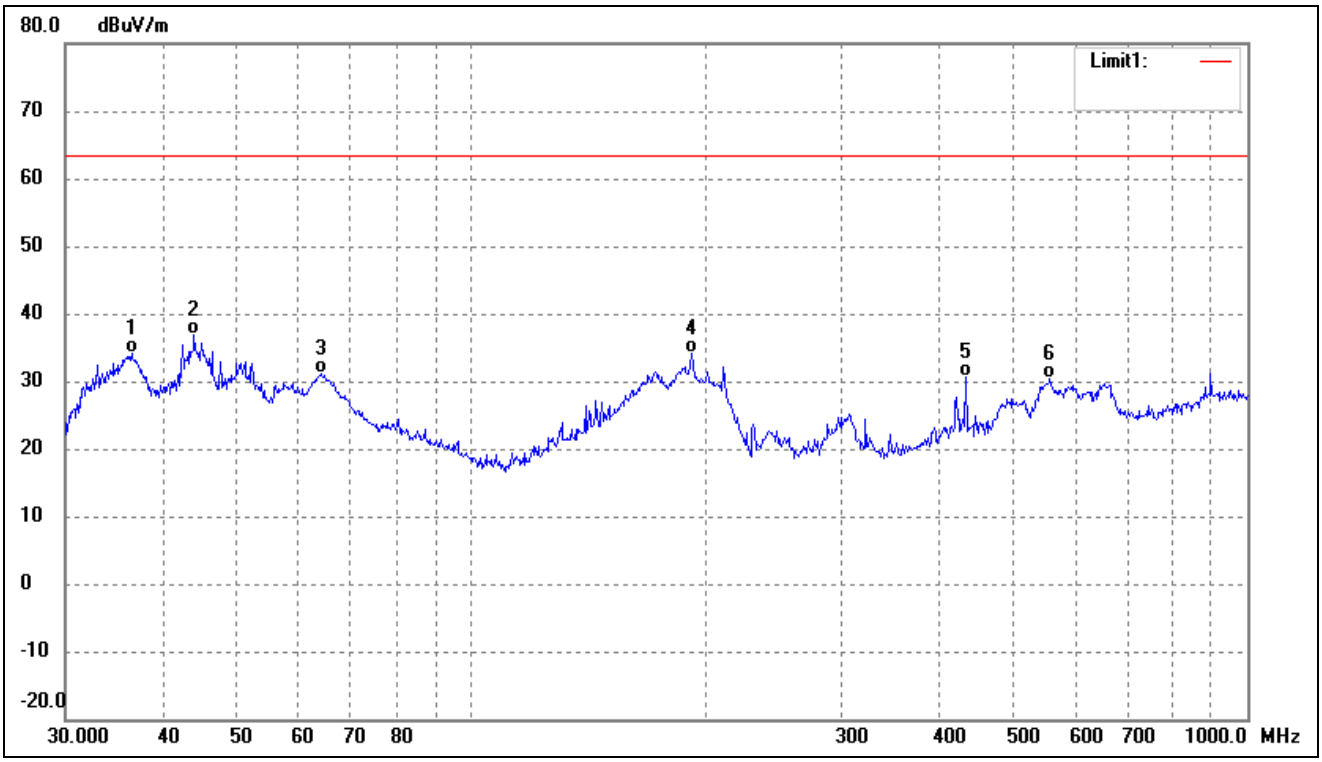
Plot of Radiated Emissions Test Data (Above 30MHz)

Test mode:	TM1	Polarity:	Horizontal



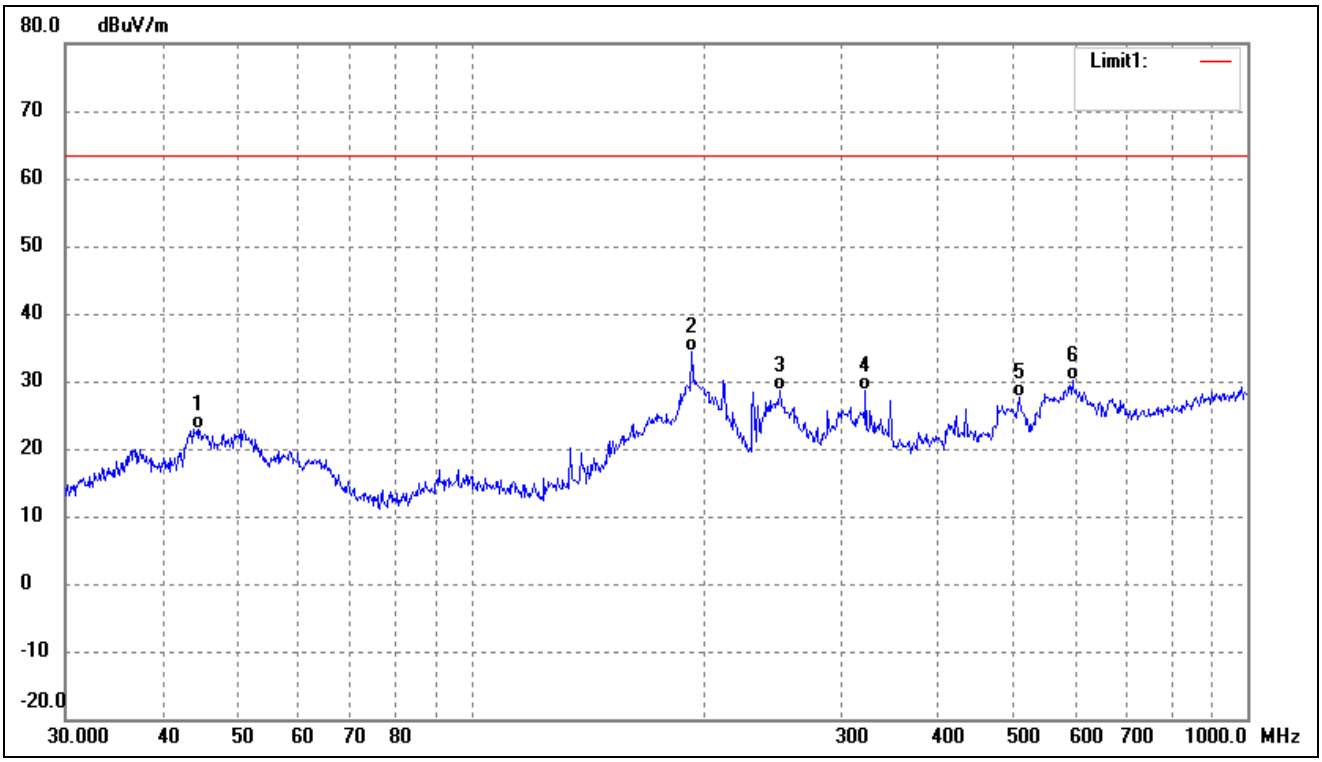
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	44.4308	36.43	-10.89	25.54	63.50	-37.96	-	-	QP
2	192.4186	47.31	-12.71	34.60	63.50	-28.90	-	-	QP
3	245.9509	40.31	-11.02	29.29	63.50	-34.21	-	-	QP
4	322.1886	38.10	-8.72	29.38	63.50	-34.12	-	-	QP
5	590.9737	32.84	-3.92	28.92	63.50	-34.58	-	-	QP
6	893.8567	29.07	0.37	29.44	63.50	-34.06	-	-	QP

Test mode:	TM1	Polarity:	Vertical



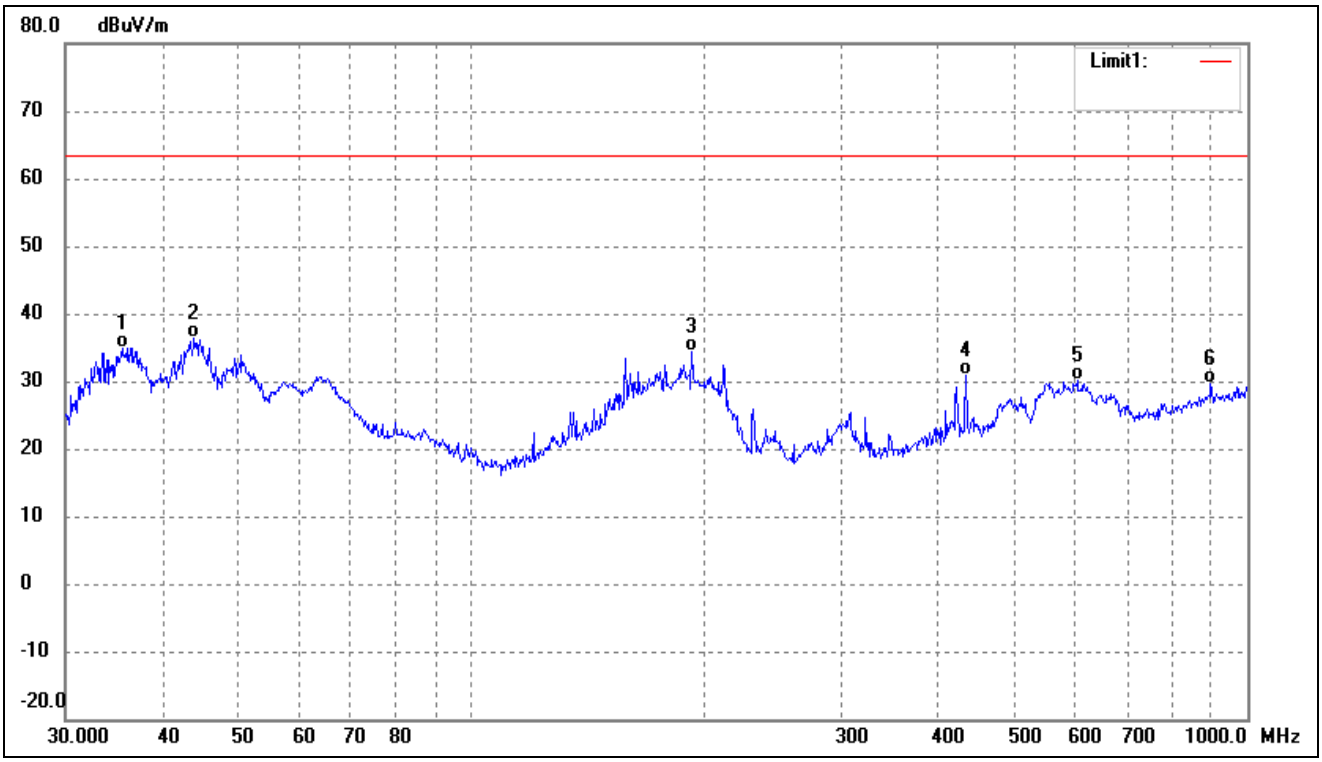
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	36.5092	45.75	-11.53	34.22	63.50	-29.28	-	-	QP
2	43.9658	47.83	-10.89	36.94	63.50	-26.56	-	-	QP
3	63.9828	44.83	-13.74	31.09	63.50	-32.41	-	-	QP
4	192.4186	46.96	-12.71	34.25	63.50	-29.25	-	-	QP
5	434.0651	36.13	-5.39	30.74	63.50	-32.76	-	-	QP
6	556.7744	35.00	-4.56	30.44	63.50	-33.06	-	-	QP

Test mode:	TM2	Polarity:	Horizontal



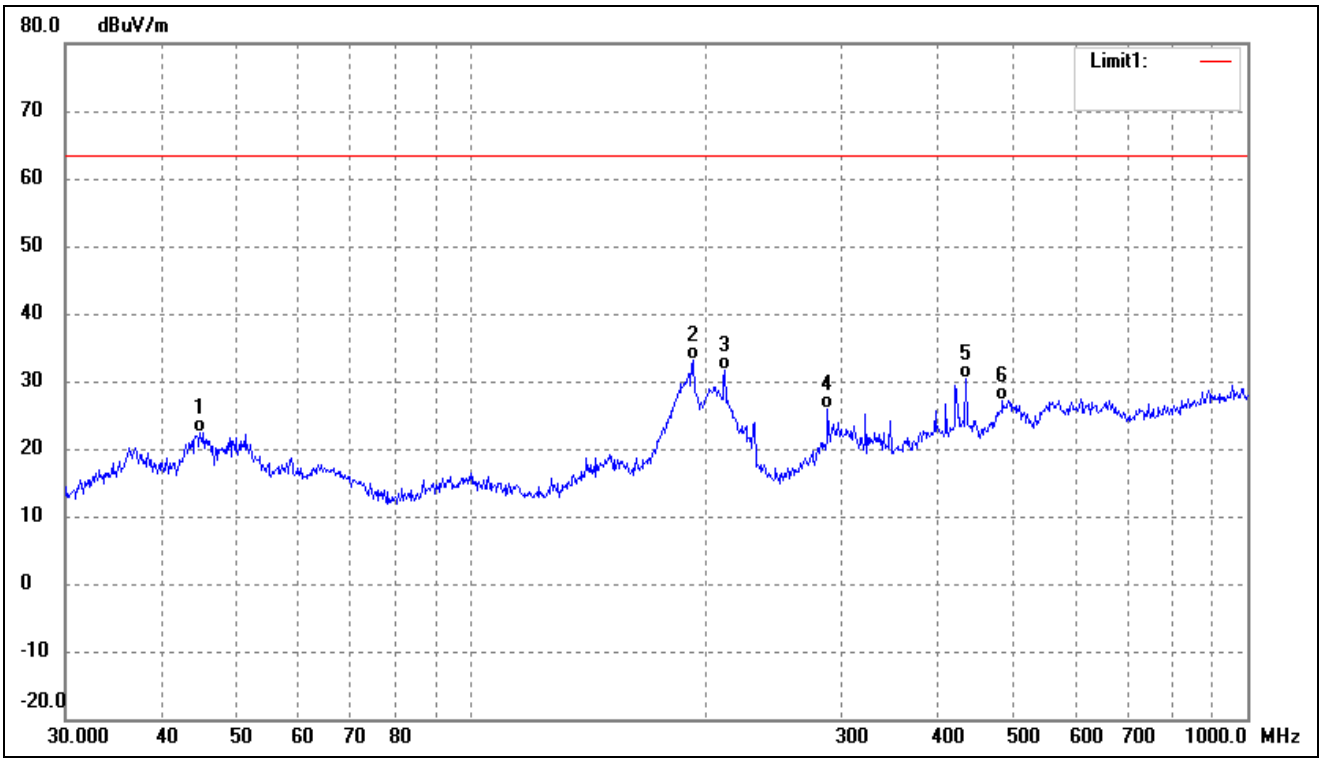
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	44.5868	33.78	-10.89	22.89	63.50	-40.61	-	-	QP
2	192.4186	47.08	-12.71	34.37	63.50	-29.13	-	-	QP
3	250.3012	39.61	-10.88	28.73	63.50	-34.77	-	-	QP
4	322.1886	37.45	-8.72	28.73	63.50	-34.77	-	-	QP
5	508.2582	32.61	-5.09	27.52	63.50	-35.98	-	-	QP
6	595.1329	33.98	-3.84	30.14	63.50	-33.36	-	-	QP

Test mode:	TM2	Polarity:	Vertical



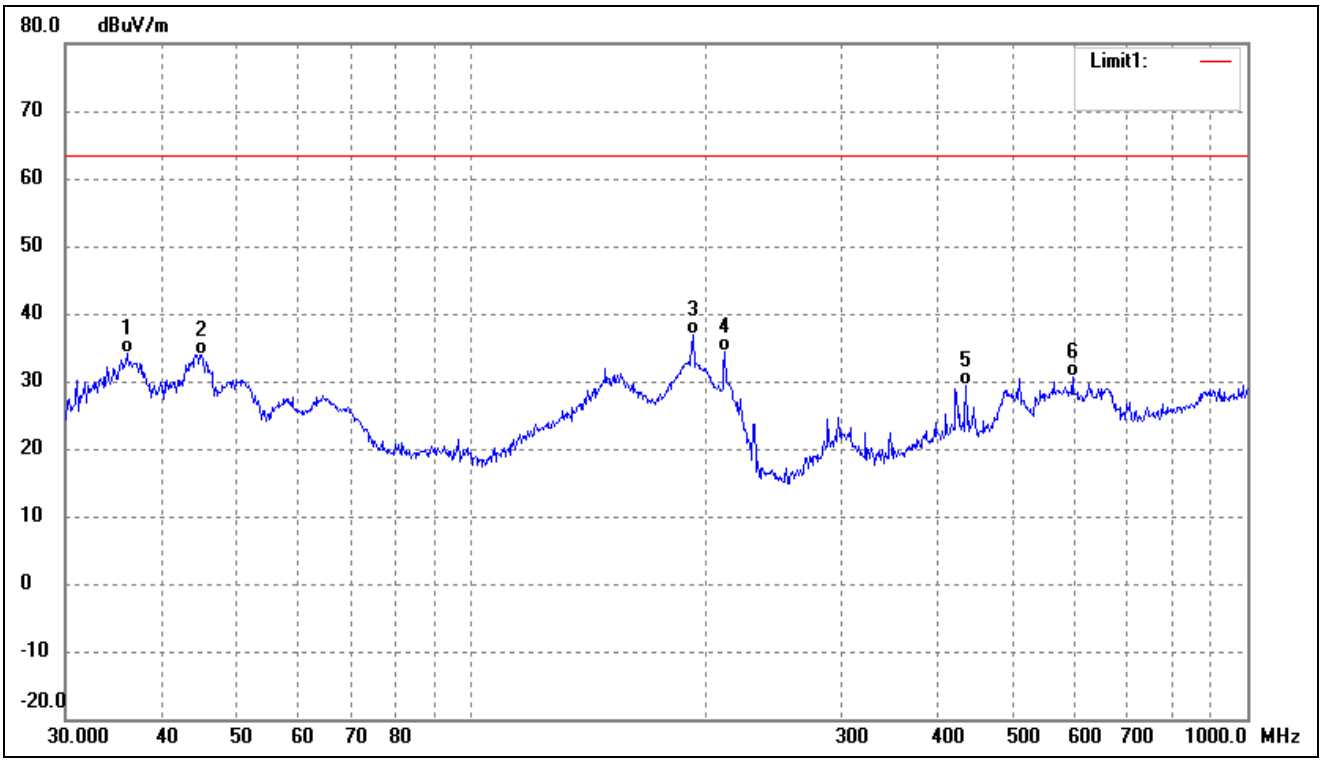
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	35.4992	46.66	-11.70	34.96	63.50	-28.54	-	-	QP
2	43.9658	47.21	-10.89	36.32	63.50	-27.18	-	-	QP
3	192.4185	47.15	-12.71	34.44	63.50	-29.06	-	-	QP
4	434.0650	36.36	-5.39	30.97	63.50	-32.53	-	-	QP
5	603.5392	33.77	-3.72	30.05	63.50	-33.45	-	-	QP
6	896.9964	29.10	0.42	29.52	63.50	-33.98	-	-	QP

Test mode:	TM3	Polarity:	Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	44.7433	33.35	-10.89	22.46	63.50	-41.04	-	-	QP
2	193.0945	45.92	-12.69	33.23	63.50	-30.27	-	-	QP
3	212.2695	43.54	-12.03	31.51	63.50	-31.99	-	-	QP
4	287.9904	35.49	-9.70	25.79	63.50	-37.71	-	-	QP
5	434.0651	35.86	-5.39	30.47	63.50	-33.03	-	-	QP
6	483.9094	32.30	-5.20	27.10	63.50	-36.40	-	-	QP

Test mode:	TM3	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	36.0007	45.76	-11.61	34.15	63.50	-29.35	-	-	QP
2	44.9004	44.87	-10.89	33.98	63.50	-29.52	-	-	QP
3	193.0945	49.68	-12.69	36.99	63.50	-26.51	-	-	QP
4	212.2694	46.32	-12.03	34.29	63.50	-29.21	-	-	QP
5	434.0650	34.83	-5.39	29.44	63.50	-34.06	-	-	QP
6	595.1327	34.48	-3.84	30.64	63.50	-32.86	-	-	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 *******