TEST REPORT

Reference No.	:	WTH22X10209727W001
FCC ID	:	2AOAF-661
Applicant	:	Tylt ,INC
Address	:	685 Cochran St. Suite 200 Simi Valley CA93065 United States
Manufacturer	:	Dongguan HANK Electronics.,LTD
Address	:	118 Shaxin Road,Tangxia Towm,Dongguan City,Guangdong Province,China
Factory	:	Dongguan HANK Electronics.,LTD
Address	:	118 Shaxin Road,Tangxia Towm,Dongguan City,Guangdong Province,China
Product Name	:	Three-In-One Wireless Charger
Model No.	:	QITRIOMSW-T
Standards	:	FCC Part 18
Date of Receipt sample	:	2022-06-17
Date of Test	:	2022-06-17 to 2022-06-24
Date of Issue	:	2022-11-01
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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Tested by:

Mike Shi

Approved by:

Silin Chen

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Report version

Version No.	Date of issue	Description
Rev.00	2022-06-24	Original report WTH22X06121985W001
Rev.01	2022-11-01	Refer the old report WTH22X06121985W001, updated the manufacturer, factory and address, but the circuit and the electronic construction do not change, declared by the manufacturer. so the test data from the original report.
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	Three-In-One Wireless Charger
Trade Name:	/
Model No.:	QITRIOMSW-T
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
Input:	DC9V2.22A/DC12V3A
Wireless output：	Output1: 5W,7.5W,15W Output2: 5W
Power adapter:	/

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	/	Output1: 5W + Output2: 5W output
TM2	Wireless Charging	/	Output1: 7.5W + Output2: 5W output
TM3	Wireless Charging	/	Output1: 15W+ Output2: 5W output

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	/	PN453C	/
Wireless Charging Load	YBZ	YBZ wireless charging tester	/

Special Cable List and Details

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

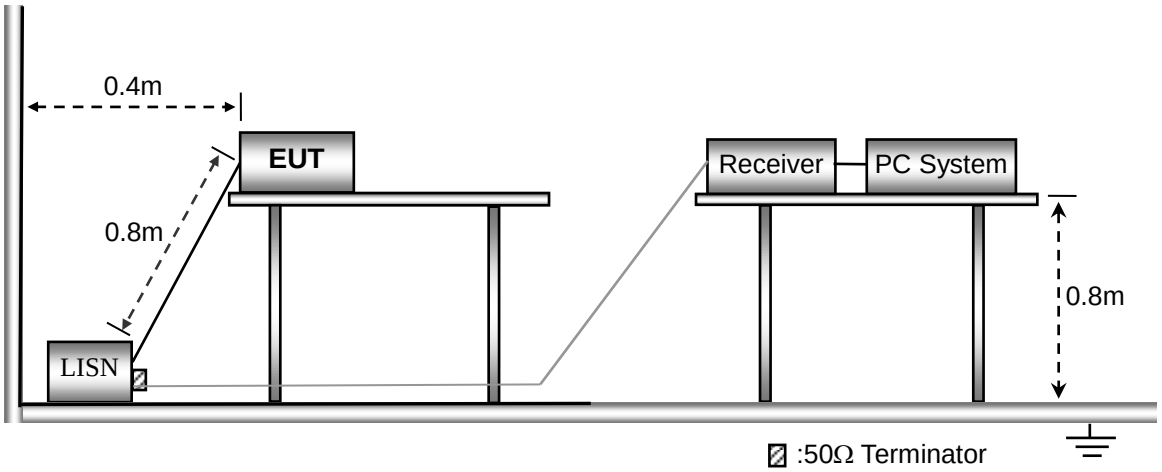
According to FCC 18.307(b), the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies shall not exceed the limits in the following tables:

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

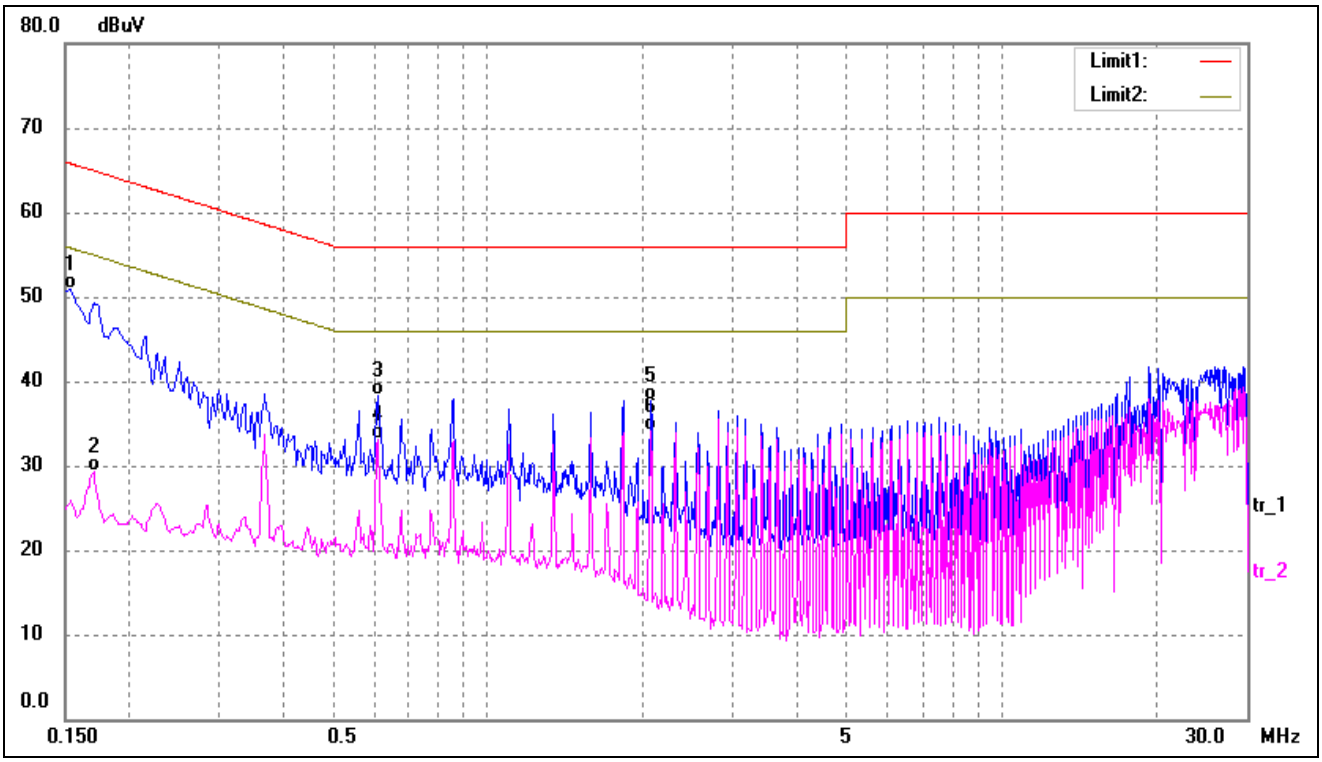
3.5 Test Receiver Setup

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

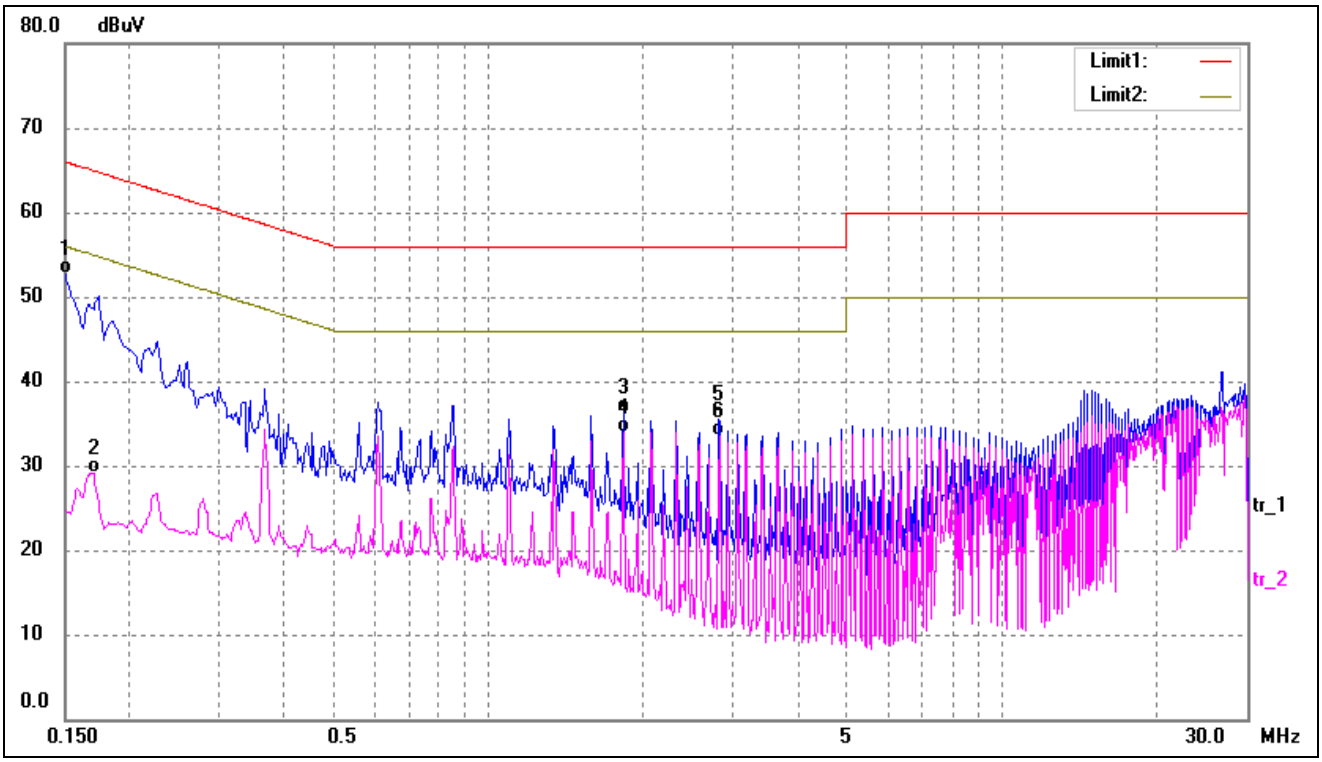
3.6 Summary of Test Results/Plots

Test mode:	TM1	Polarity:	Line



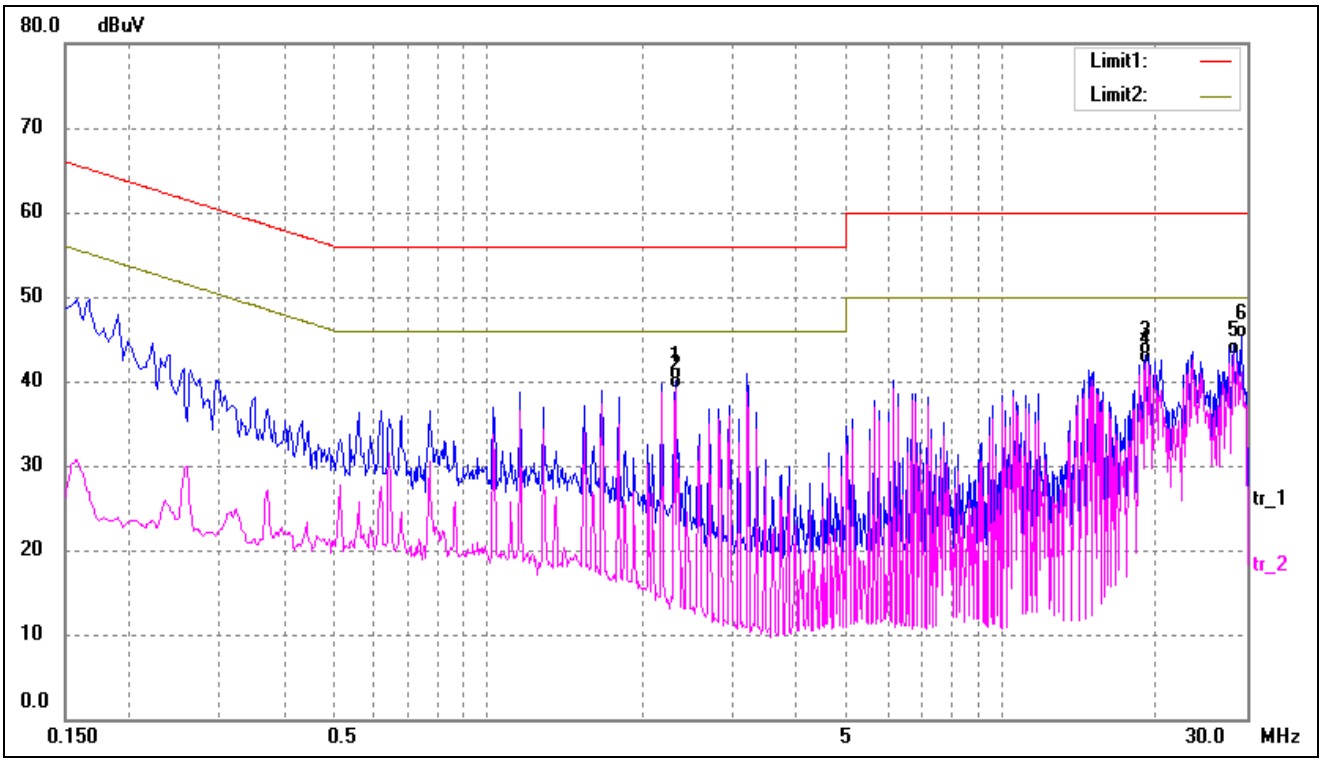
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1539	40.56	10.37	50.93	65.78	-14.85	QP
2	0.1700	18.98	10.37	29.35	54.96	-25.61	AVG
3	0.6100	28.05	10.33	38.38	56.00	-17.62	QP
4	0.6100	22.85	10.33	33.18	46.00	-12.82	AVG
5	2.0740	27.53	10.13	37.66	56.00	-18.34	QP
6*	2.0740	24.04	10.13	34.17	46.00	-11.83	AVG

Test mode:	TM1	Polarity:	Neutral



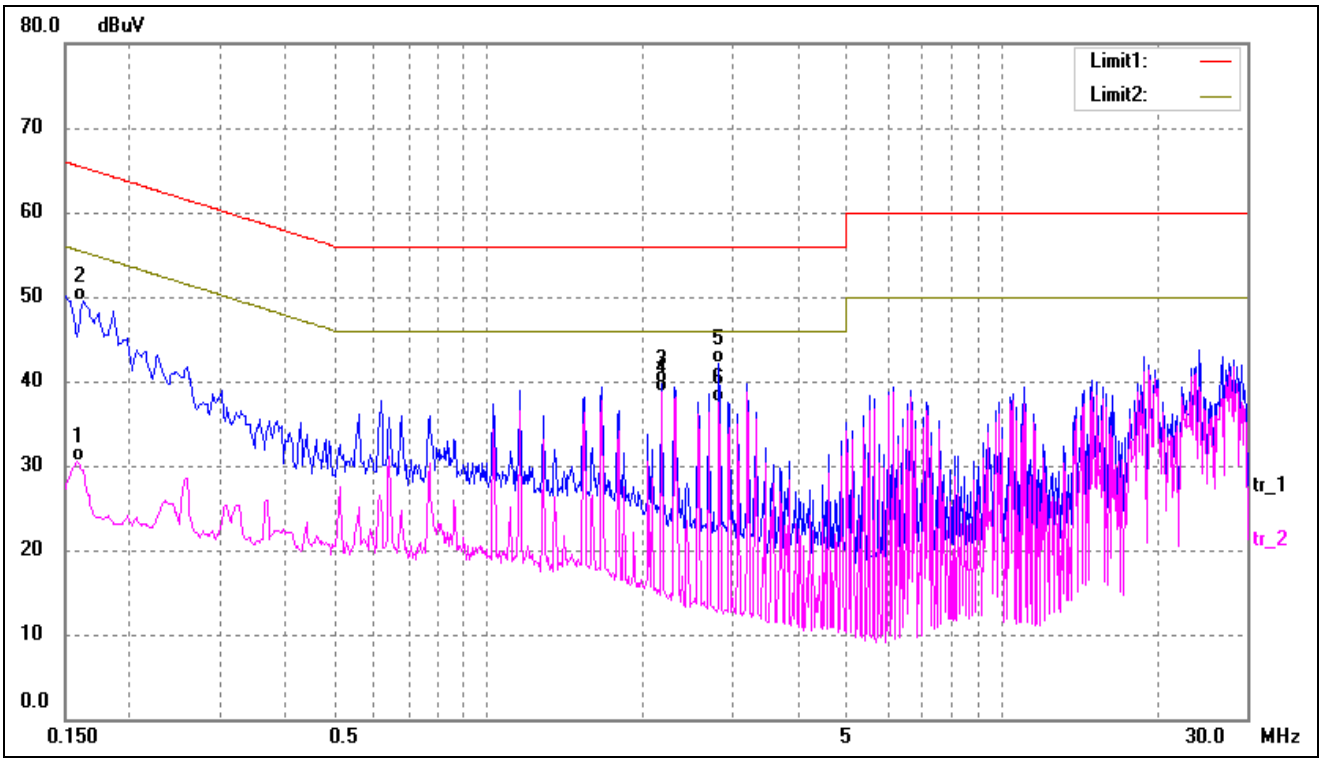
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1500	42.24	10.38	52.62	65.99	-13.37	QP
2	0.1700	18.82	10.37	29.19	54.96	-25.77	AVG
3	1.8300	26.11	10.20	36.31	56.00	-19.69	QP
4*	1.8300	23.80	10.20	34.00	46.00	-12.00	AVG
5	2.8220	25.43	10.09	35.52	56.00	-20.48	QP
6	2.8260	23.43	10.09	33.52	46.00	-12.48	AVG

Test mode:	TM2	Polarity:	Line



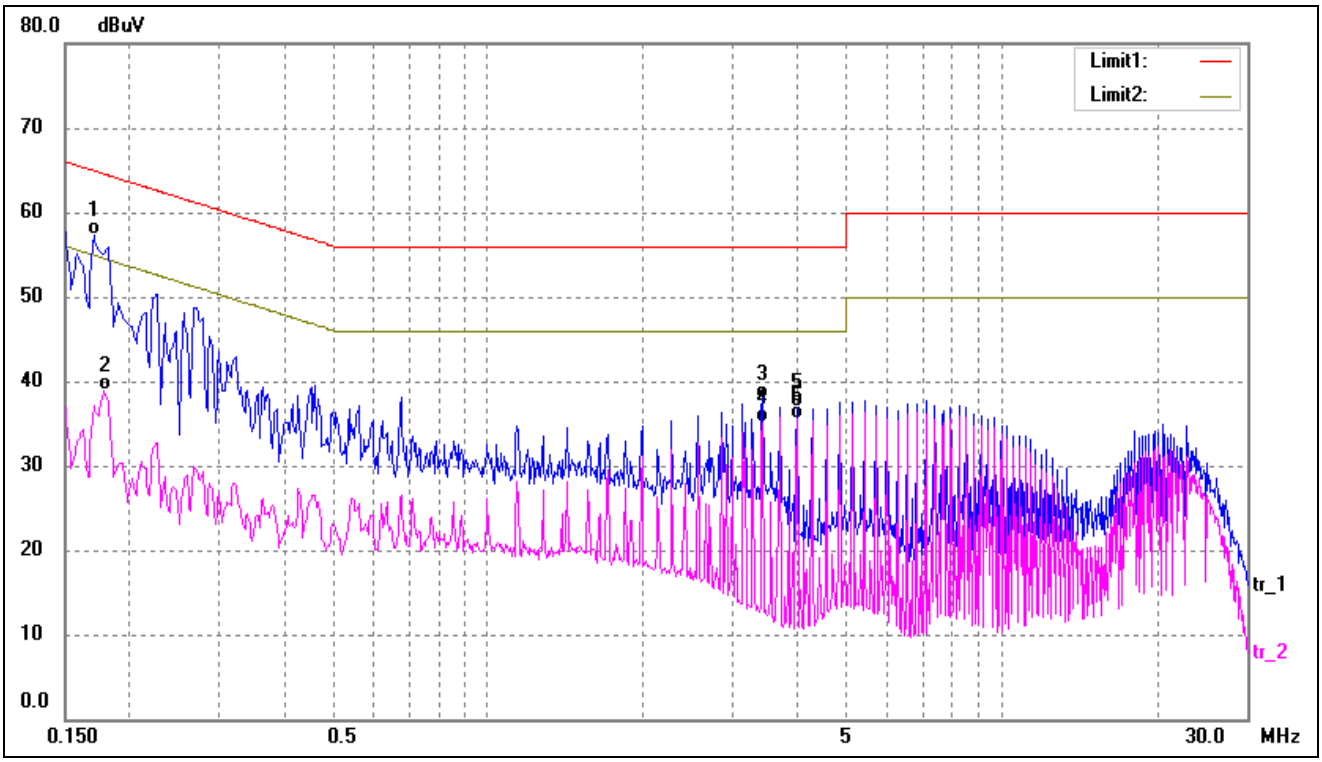
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	2.3100	29.92	10.12	40.04	56.00	-15.96	QP
2	2.3100	28.94	10.12	39.06	46.00	-6.94	AVG
3	19.1140	32.79	10.23	43.02	60.00	-16.98	QP
4	19.1140	31.80	10.23	42.03	50.00	-7.97	AVG
5*	28.2220	32.97	10.22	43.19	50.00	-6.81	AVG
6	29.2500	34.97	10.23	45.20	60.00	-14.80	QP

Test mode:	TM2	Polarity:	Neutral



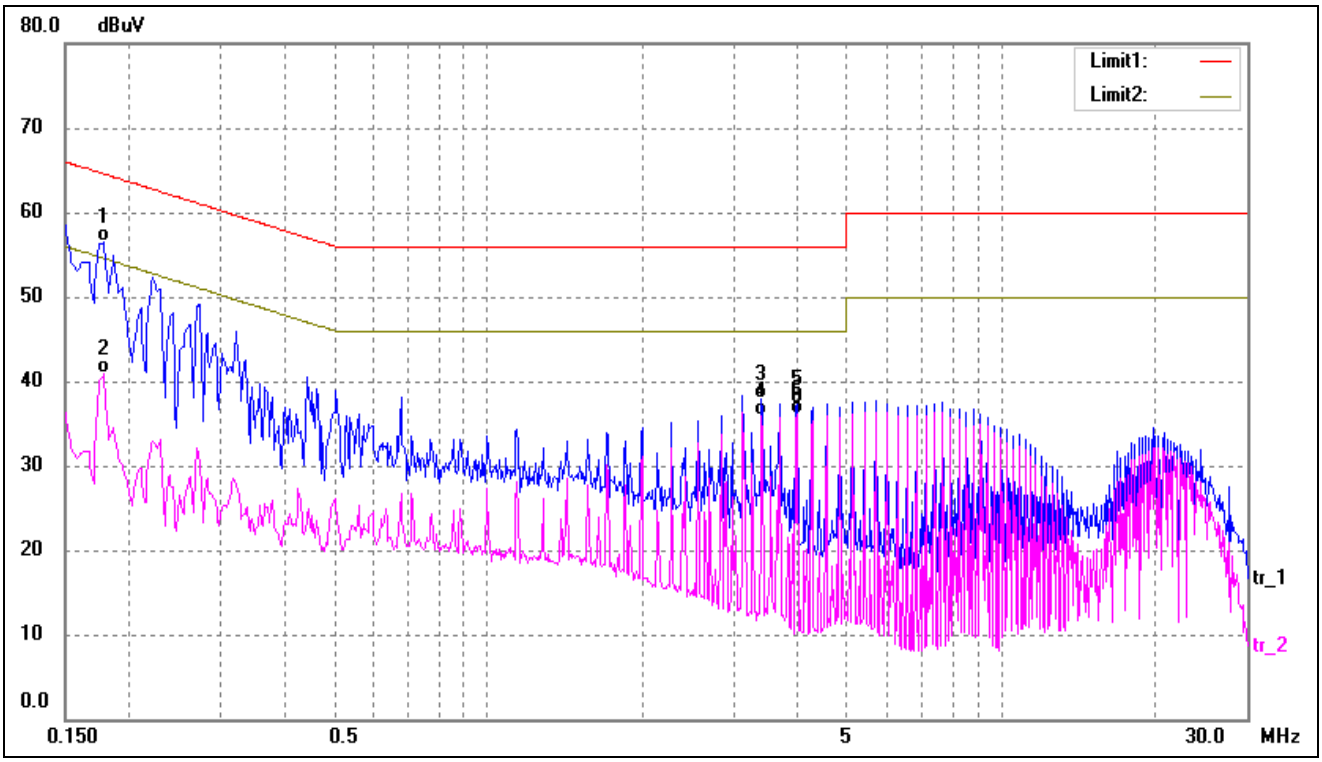
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1580	20.21	10.37	30.58	55.56	-24.98	AVG
2	0.1620	39.13	10.37	49.50	65.36	-15.86	QP
3	2.1779	29.50	10.12	39.62	56.00	-16.38	QP
4*	2.1779	28.58	10.12	38.70	46.00	-7.30	AVG
5	2.8220	32.08	10.09	42.17	56.00	-13.83	QP
6	2.8220	27.48	10.09	37.57	46.00	-8.43	AVG

Test mode:	TM3	Polarity:	Line



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1*	0.1700	46.92	10.37	57.29	64.96	-7.67	QP
2	0.1779	28.57	10.37	38.94	54.58	-15.64	AVG
3	3.4180	27.93	10.07	38.00	56.00	-18.00	QP
4	3.4180	25.09	10.07	35.16	46.00	-10.84	AVG
5	3.9860	26.85	10.04	36.89	56.00	-19.11	QP
6	3.9860	25.53	10.04	35.57	46.00	-10.43	AVG

Test mode:	TM3	Polarity:	Neutral



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1*	0.1779	46.04	10.37	56.41	64.58	-8.17	QP
2	0.1779	30.45	10.37	40.82	54.58	-13.76	AVG
3	3.4140	27.91	10.07	37.98	56.00	-18.02	QP
4	3.4140	25.79	10.07	35.86	46.00	-10.14	AVG
5	3.9860	27.34	10.04	37.38	56.00	-18.62	QP
6	3.9860	26.02	10.04	36.06	46.00	-9.94	AVG

4. Radiated Emissions

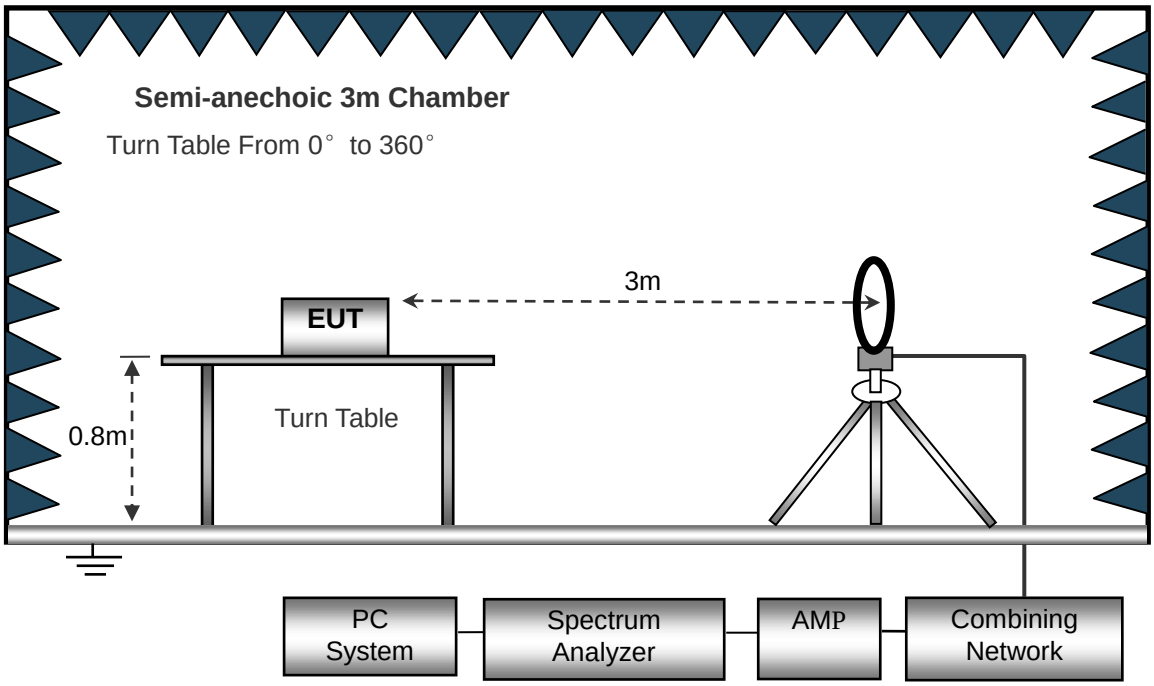
4.1 Test Procedure

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.

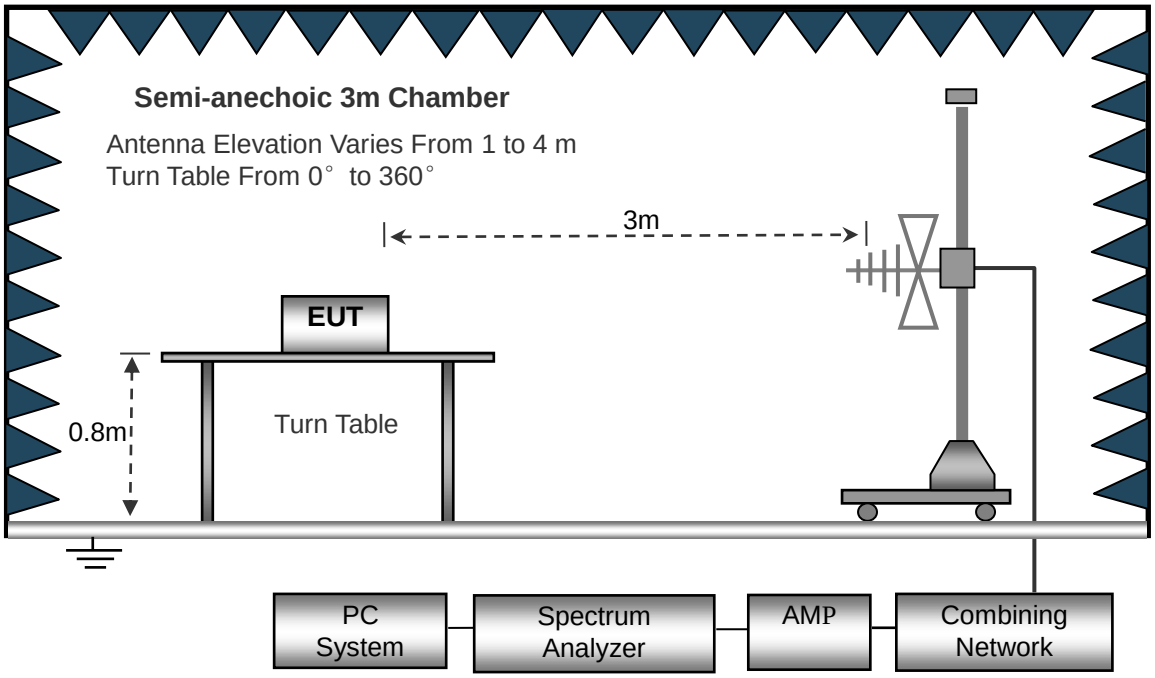
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

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

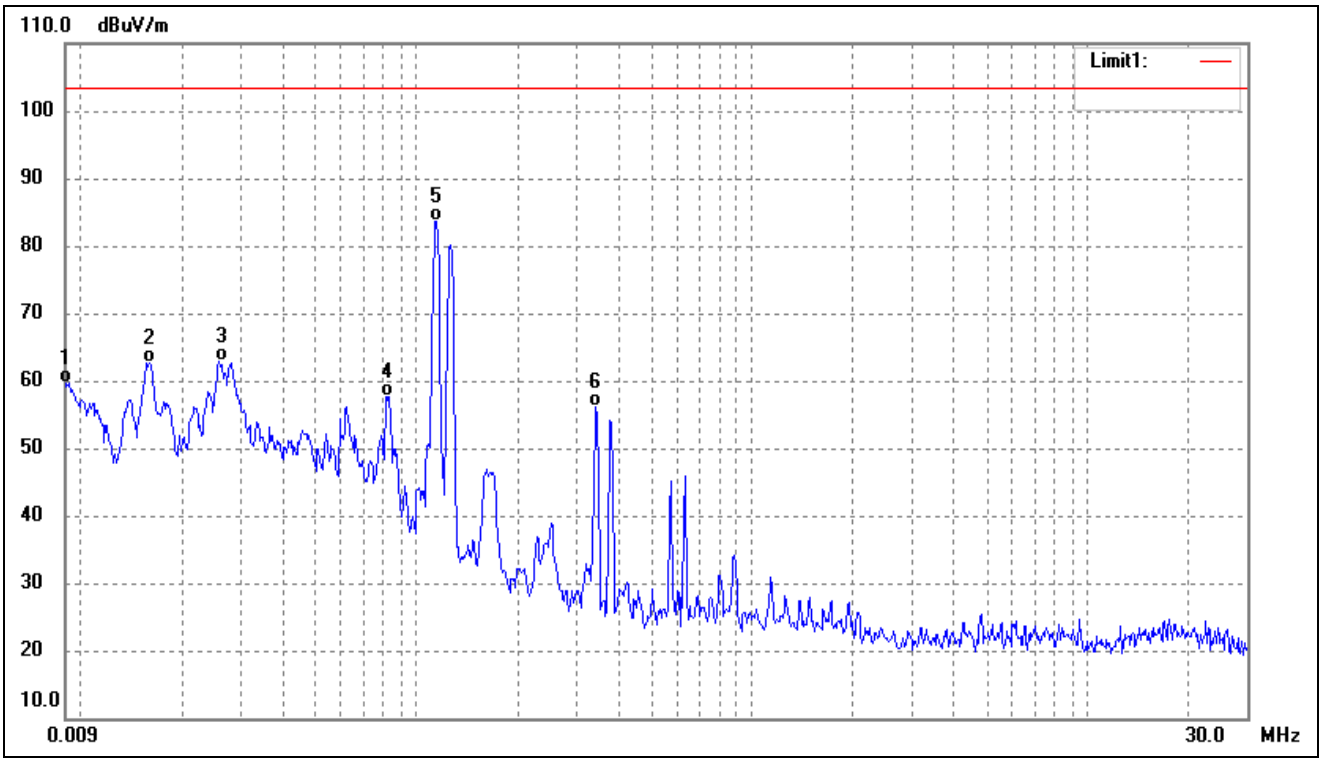
4.4 Environmental Conditions

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

4.5 Summary of Test Results/Plots

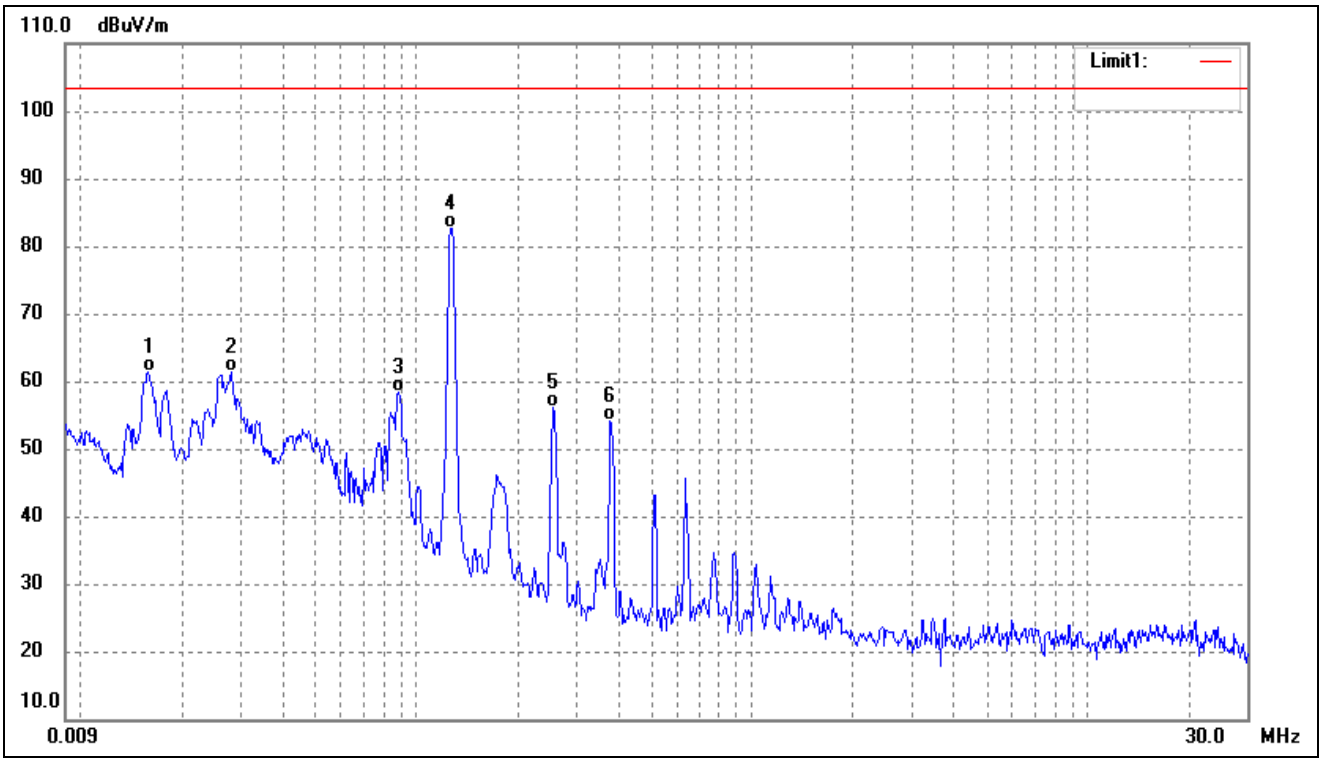
Plot of Radiated Emissions Test Data (Below 30MHz)

Test mode:	TM1	Polarity:	Vertical



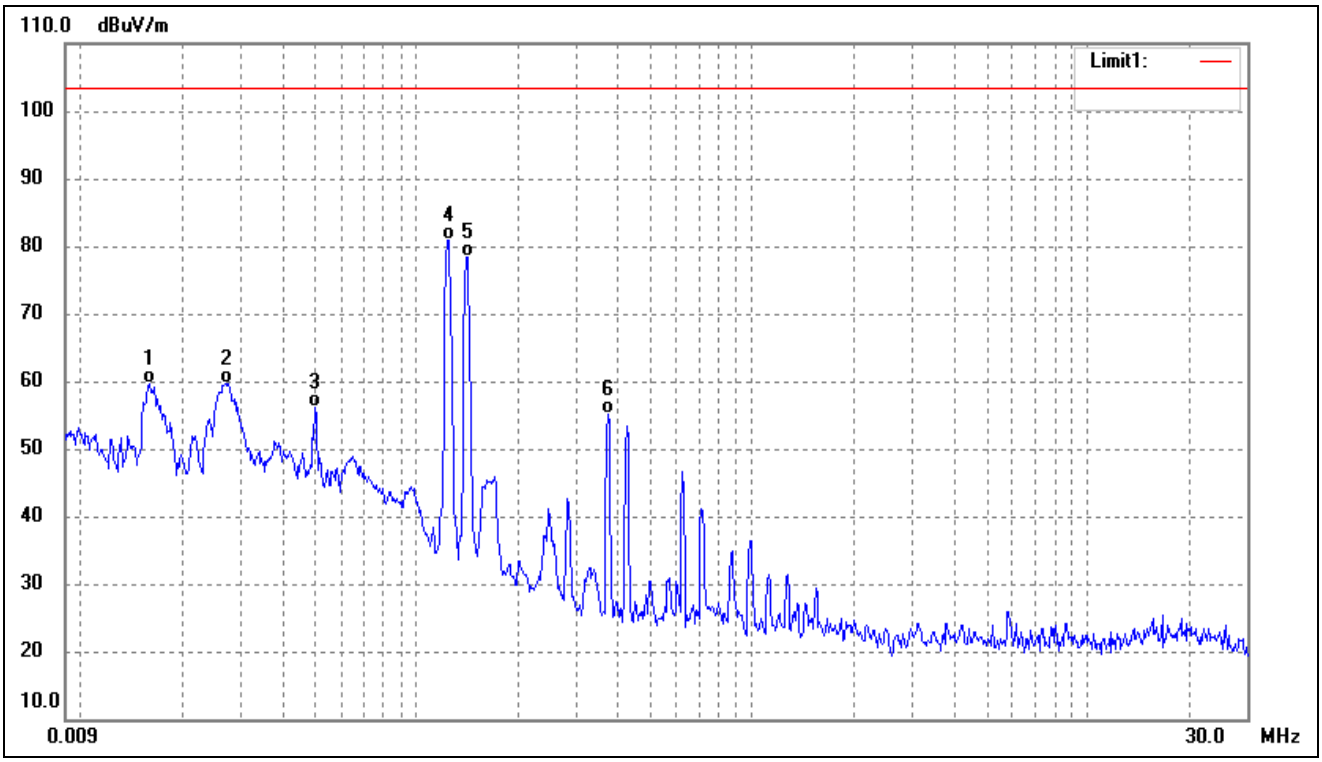
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	0.0090	64.69	-4.96	59.73	103.50	-43.77	-	-	QP
2	0.0158	68.21	-5.58	62.63	103.50	-40.87	-	-	QP
3	0.0258	68.13	-5.24	62.89	103.50	-40.61	-	-	QP
4	0.0817	62.34	-4.69	57.65	103.50	-45.85	-	-	QP
5	0.1149	88.26	-4.56	83.70	103.50	-19.80	-	-	QP
6	0.3436	60.97	-4.81	56.16	103.50	-47.34	-	-	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	66.91	-5.58	61.33	103.50	-42.17	-	-	QP
2	0.0280	66.40	-5.11	61.29	103.50	-42.21	-	-	QP
3	0.0887	63.06	-4.71	58.35	103.50	-45.15	-	-	QP
4	0.1267	87.01	-4.43	82.58	103.50	-20.92	-	-	QP
5	0.2565	61.22	-4.98	56.24	103.50	-47.26	-	-	QP
6	0.3785	58.92	-4.73	54.19	103.50	-49.31	-	-	QP

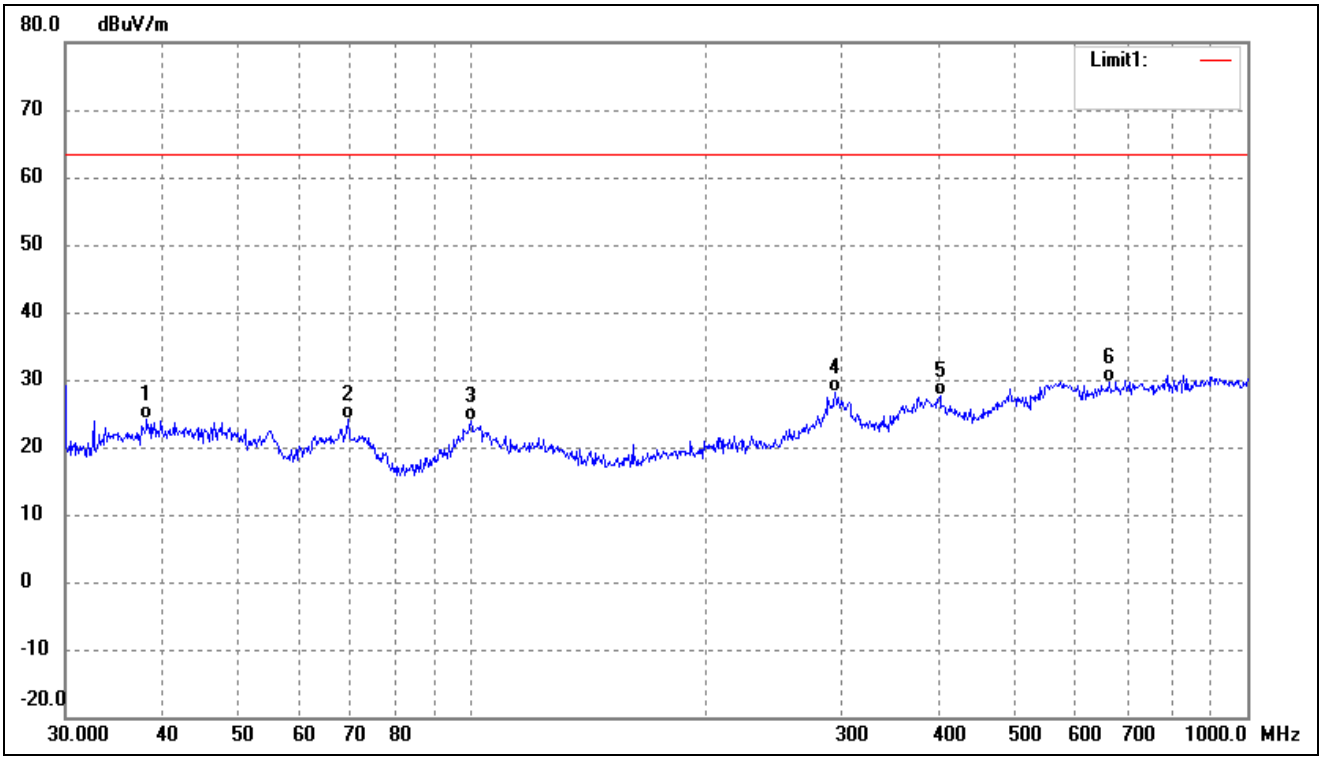
Test mode:	TM3	Polarity:	Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	0.0160	65.10	-5.58	59.52	103.50	-43.98	-	-	QP
2	0.0269	64.93	-5.18	59.75	103.50	-43.75	-	-	QP
3	0.0497	60.07	-3.85	56.22	103.50	-47.28	-	-	QP
4	0.1246	85.43	-4.46	80.97	103.50	-22.53	-	-	QP
5	0.1418	82.75	-4.27	78.48	103.50	-25.02	-	-	QP
6	0.3725	59.77	-4.74	55.03	103.50	-48.47	-	-	QP

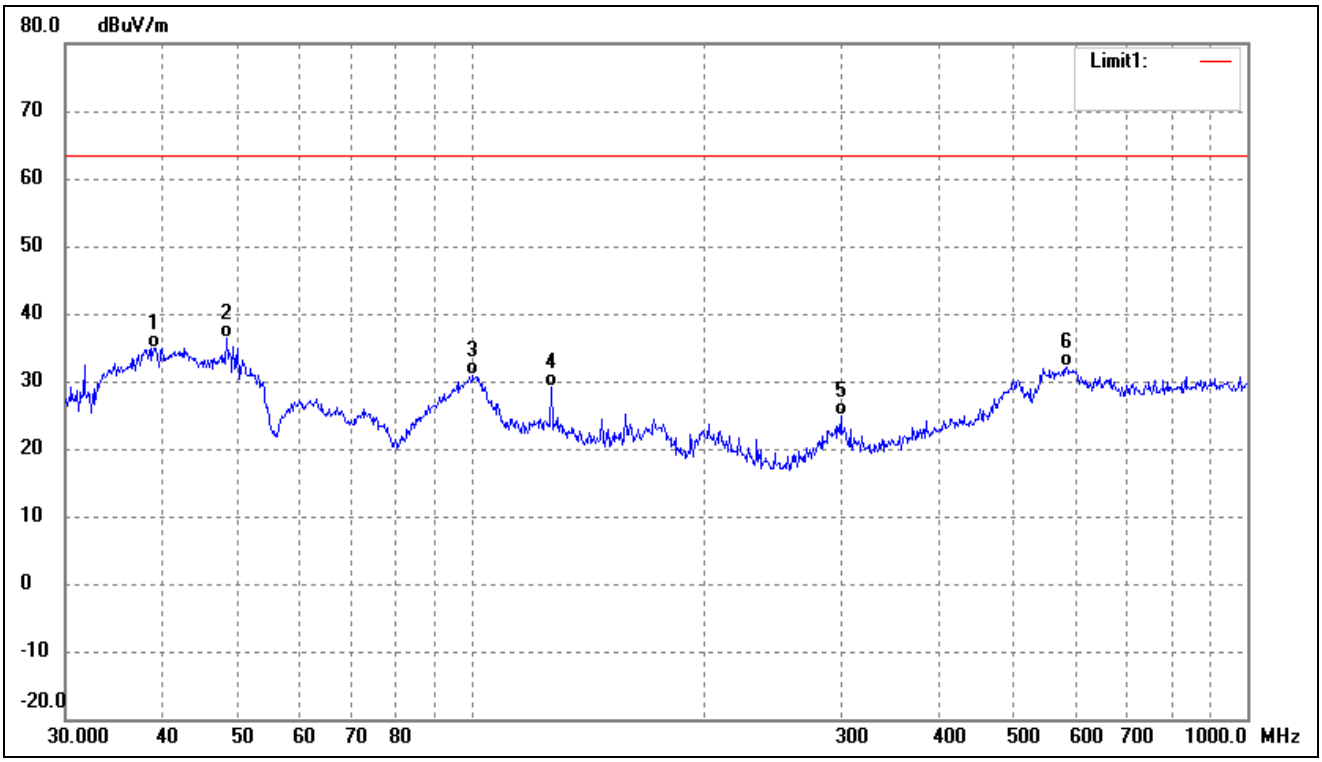
Plot of Radiated Emissions Test Data (Above 30MHz)

Test mode:	TM1	Polarity:	Horizontal



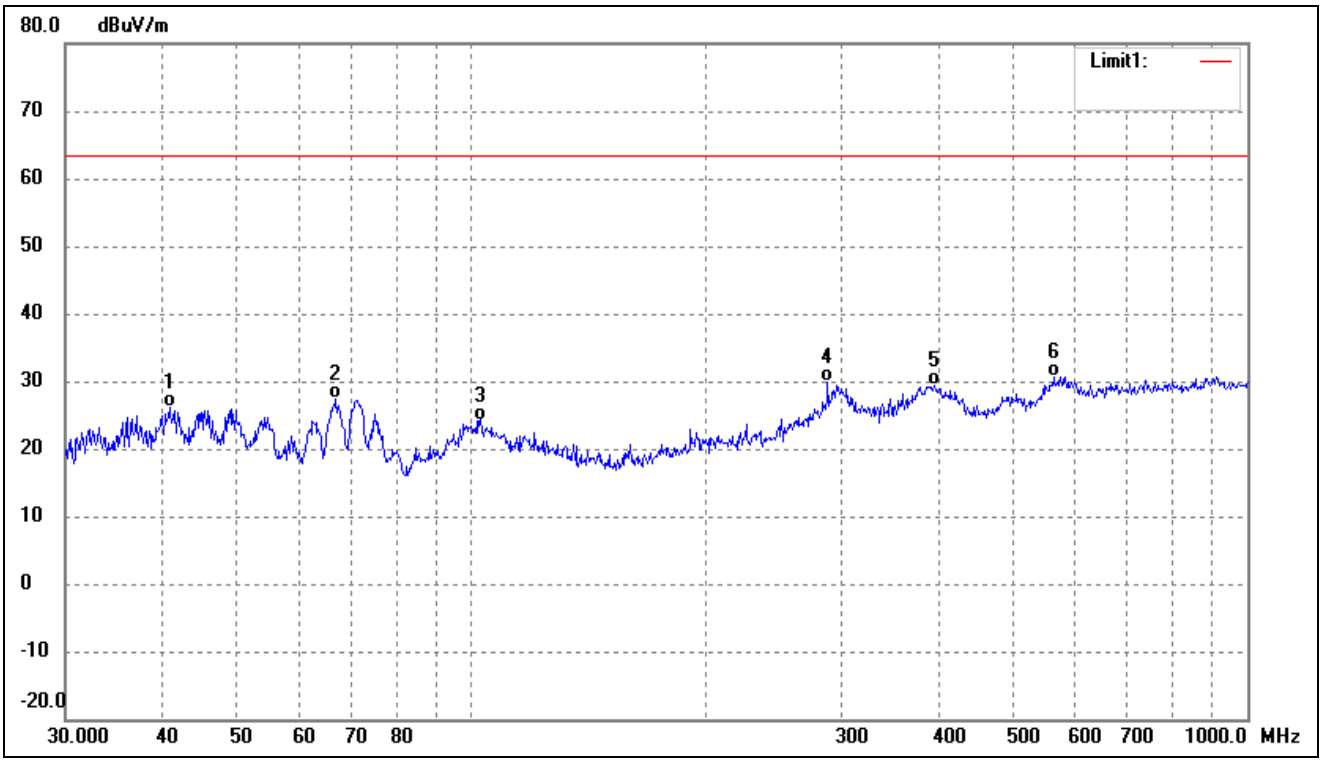
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	38.2120	31.49	-7.45	24.04	63.50	-39.46	-	-	QP
2	69.3568	34.30	-10.07	24.23	63.50	-39.27	-	-	QP
3	99.8777	32.64	-8.75	23.89	63.50	-39.61	-	-	QP
4	294.1137	35.18	-7.12	28.06	63.50	-35.44	-	-	QP
5	401.8385	31.40	-3.84	27.56	63.50	-35.94	-	-	QP
6	663.4729	28.57	1.06	29.63	63.50	-33.87	-	-	QP

Test mode:	TM1	Polarity:	Vertical



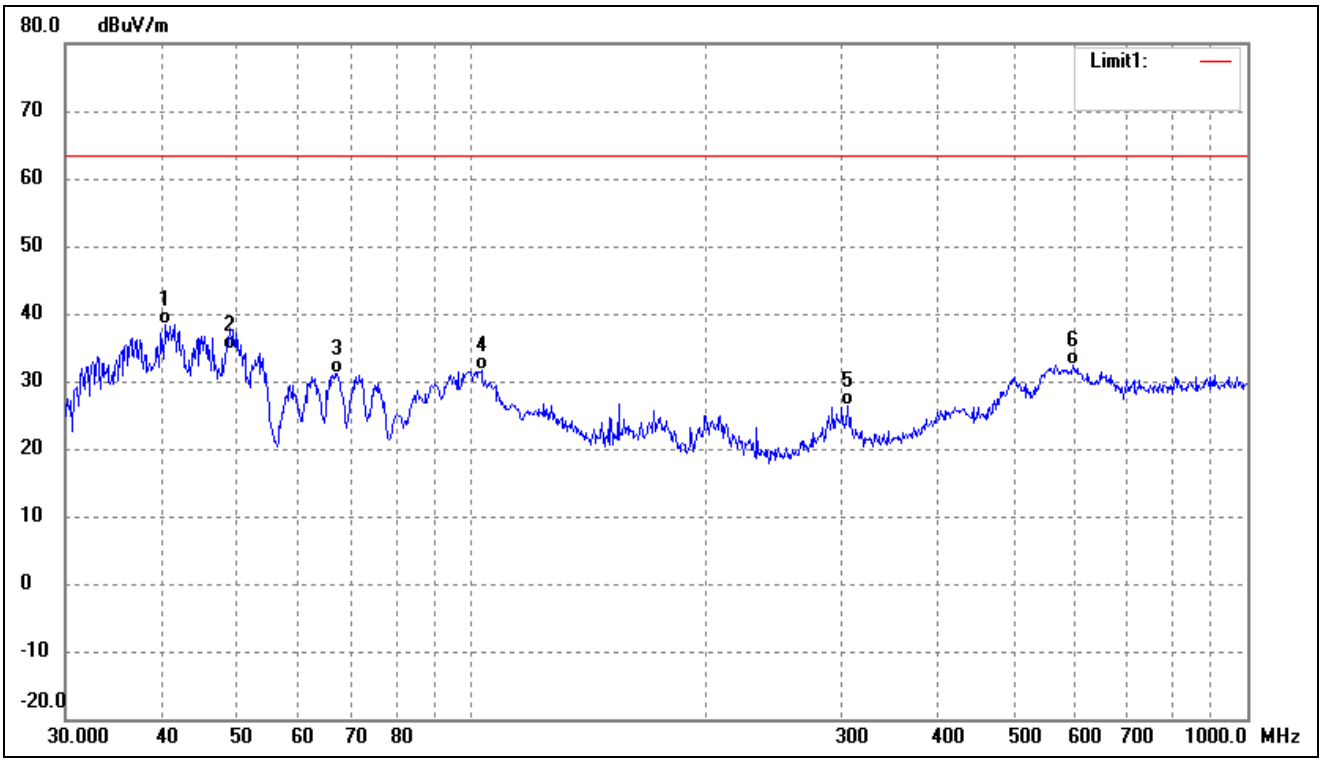
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	39.0245	42.22	-7.23	34.99	63.50	-28.51	-	-	QP
2	48.3318	43.38	-6.96	36.42	63.50	-27.08	-	-	QP
3	100.5806	39.49	-8.73	30.76	63.50	-32.74	-	-	QP
4	126.7723	39.87	-10.85	29.02	63.50	-34.48	-	-	QP
5	299.3158	31.84	-6.98	24.86	63.50	-38.64	-	-	QP
6	584.7895	31.91	0.11	32.02	63.50	-31.48	-	-	QP

Test mode:	TM2	Polarity:	Horizontal



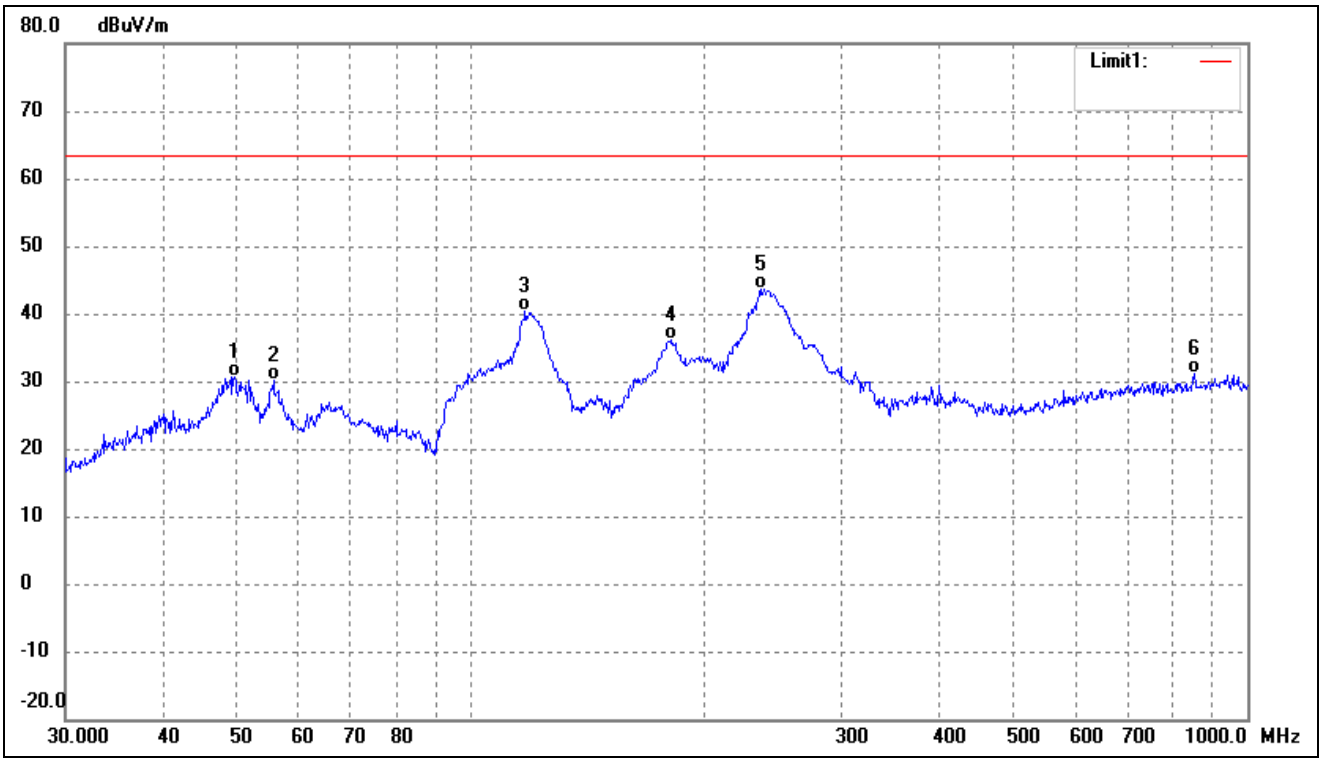
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	40.8446	33.17	-7.00	26.17	63.50	-37.33	-	-	QP
2	66.9669	37.12	-9.64	27.48	63.50	-36.02	-	-	QP
3	102.7192	33.02	-8.77	24.25	63.50	-39.25	-	-	QP
4	287.9904	37.05	-7.28	29.77	63.50	-33.73	-	-	QP
5	394.8545	33.48	-4.04	29.44	63.50	-34.06	-	-	QP
6	562.6624	30.89	-0.26	30.63	63.50	-32.87	-	-	QP

Test mode:	TM2	Polarity:	Vertical



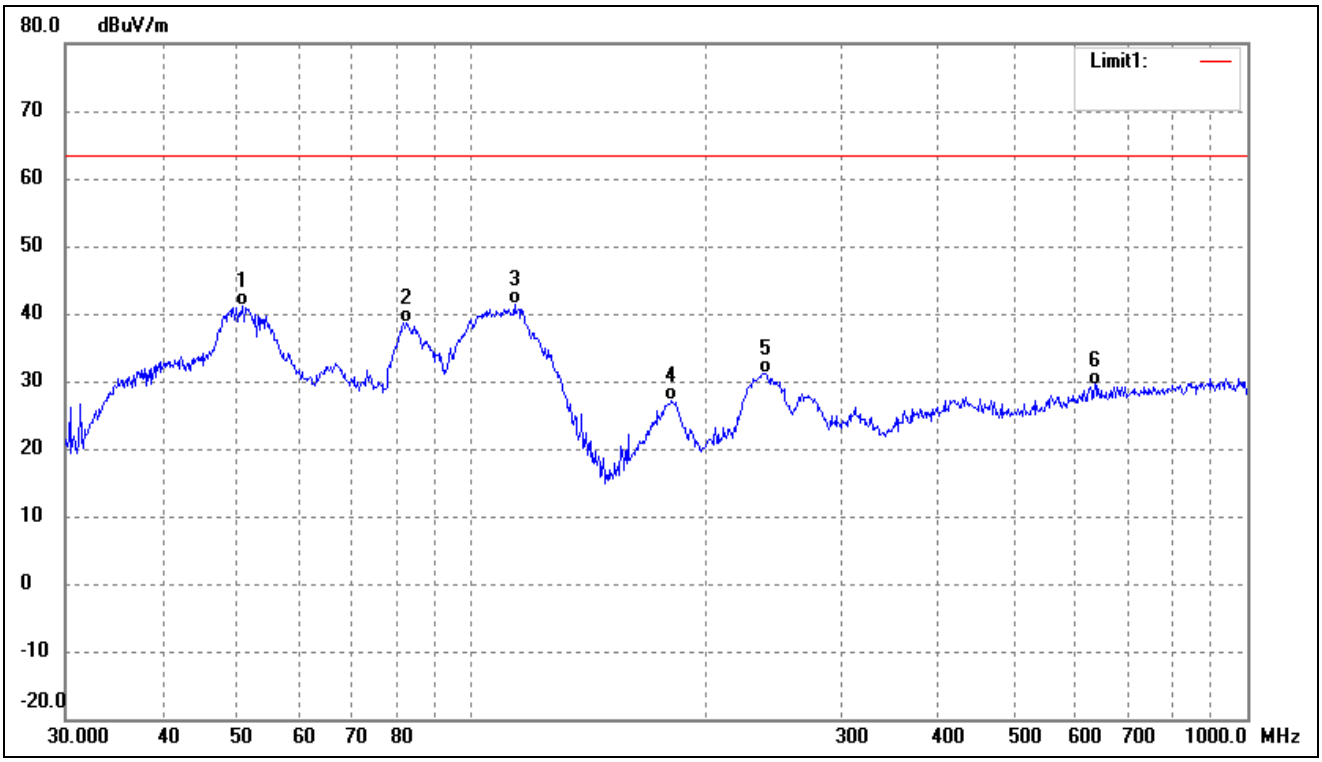
No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	40.4172	45.48	-6.99	38.49	63.50	-25.01	-	-	QP
2	48.8429	41.60	-6.97	34.63	63.50	-28.87	-	-	QP
3	67.2022	40.73	-9.68	31.05	63.50	-32.45	-	-	QP
4	103.0800	40.39	-8.77	31.62	63.50	-31.88	-	-	QP
5	305.6800	33.10	-6.79	26.31	63.50	-37.19	-	-	QP
6	595.1329	32.02	0.29	32.31	63.50	-31.19	-	-	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	49.5328	37.70	-6.97	30.73	63.50	-32.77	-	-	QP
2	55.6094	37.83	-7.78	30.05	63.50	-33.45	-	-	QP
3	117.3603	49.72	-9.40	40.32	63.50	-23.18	-	-	QP
4	181.2834	47.23	-11.12	36.11	63.50	-27.39	-	-	QP
5	235.8164	52.26	-8.71	43.55	63.50	-19.95	-	-	QP
6	854.0247	28.72	2.41	31.13	63.50	-32.37	-	-	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	50.7637	48.13	-7.07	41.06	63.50	-22.44	-	-	QP
2	82.6482	49.30	-10.69	38.61	63.50	-24.89	-	-	QP
3	113.7143	50.48	-9.14	41.34	63.50	-22.16	-	-	QP
4	181.2834	38.22	-11.12	27.10	63.50	-36.40	-	-	QP
5	239.1473	39.79	-8.62	31.17	63.50	-32.33	-	-	QP
6	636.1340	28.73	0.77	29.50	63.50	-34.00	-	-	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 *******