

# TEST REPORT

Reference No..... : WTX20X07050504W-1  
FCC ID ..... : A4X-WPC10-2CCOA  
Applicant ..... : CE LINK LIMITED  
Address ..... : Building M,LiCheng Technology Industrial Zone,GongHe Village,Shajing  
Town,ShenZhen City,China  
Product Name ..... : Wireless Charge  
Test Model. .... : WPC10-2CCOA  
Standards ..... : FCC Part 18  
Date of Receipt sample .... : Jul.29, 2020  
Date of Test..... : Jul.29, 2020 to Aug.11, 2020  
Date of Issue ..... : Aug.11, 2020  
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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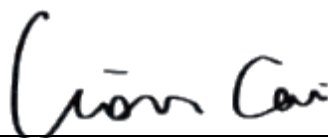
Tested by:

Reviewed By:

Approved & Authorized By:



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Lion Cai / RF Manager



Silin Chen / Manager

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**Report version**

Version No.	Date of issue	Description
Rev.00	Aug.11, 2020	Original
/	/	/

## 1. GENERAL INFORMATION

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### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: CE LINK LIMITED  
 Address of applicant: Building M,LiCheng Technology Industrial Zone,  
 GongHe Village,ShaJing Town,ShenZhen City,China

Manufacturer: CE LINK LIMITED  
 Address of manufacturer: Building M,LiCheng Technology Industrial Zone,  
 GongHe Village,ShaJing Town,ShenZhen City,China

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 VIETNAM LIMITED  
 Address of factory: Lo FJ-25, Song Khe-Noi Hoang Industrial Zone, Noi  
 Hoang Village, Yen Dung Town, Bac Giang  
 Province, Vietnam.

General Description of EUT	
Product Name:	Wireless Charge
Trade Name:	CE-LINK
Model No.:	WPC10-2CCOA
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:	112~205kHz
Antenna Type:	Coil Antenna
Rated Voltage/ Current Input:	5V/2A,9V/2A,12V/1.5A
Rated Voltage/ Current Output:	5V/1A, 9V/1.1A
Rated Power:	5W / 10W

## 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, 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	/	Input DC5V/2A; Output:DC5V/1A
TM2	Wireless Charging	/	Input DC9V/2A; Output:DC9V/1.1A
TM3	Wireless Charging	/	Input DC12V/1.5A; Output:DC9V/1.1A

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
Power Port Speed	ANKER	A2025	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB-C Cable	1.0	Unshielded	Without Ferrite

## 1.6 Measurement Uncertainty

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

### 1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2020-04-28	2021-04-27
Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2020-04-28	2021-04-27
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2020-04-28	2021-04-27
Amplifier	Agilent	8447F	3113A06717	2020-04-28	2021-04-27
Amplifier	C&D	PAP-1G18	2002	2020-04-28	2021-04-27
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2019-05-05	2021-05-04
Horn Antenna	ETS	3117	00086197	2019-05-05	2021-05-04
Loop Antenna	Schwarz beck	FMZB 1516	9773	2019-05-05	2021-05-04
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2020-04-28	2021-04-27
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2020-04-28	2021-04-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2020-04-28	2021-04-27

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

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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:

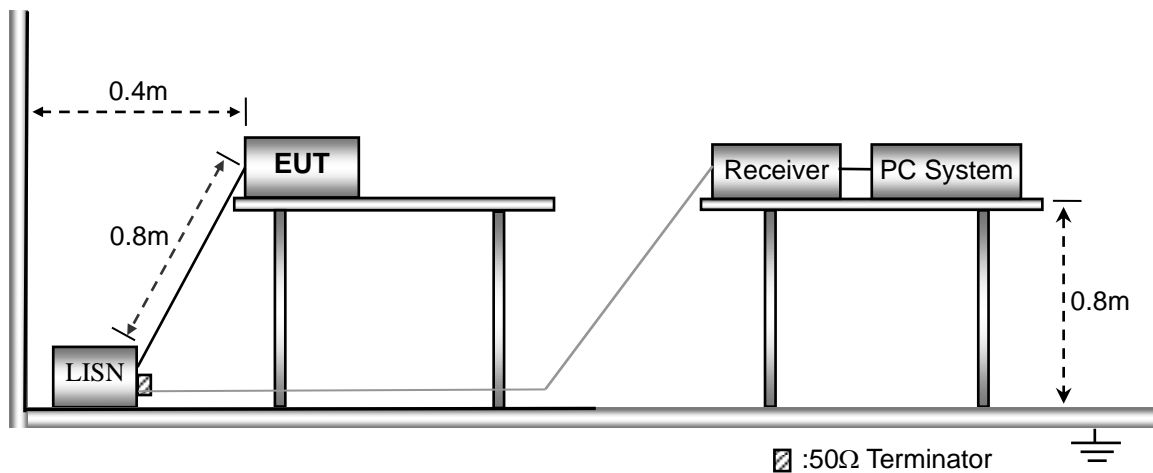
Frequency (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

#### 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

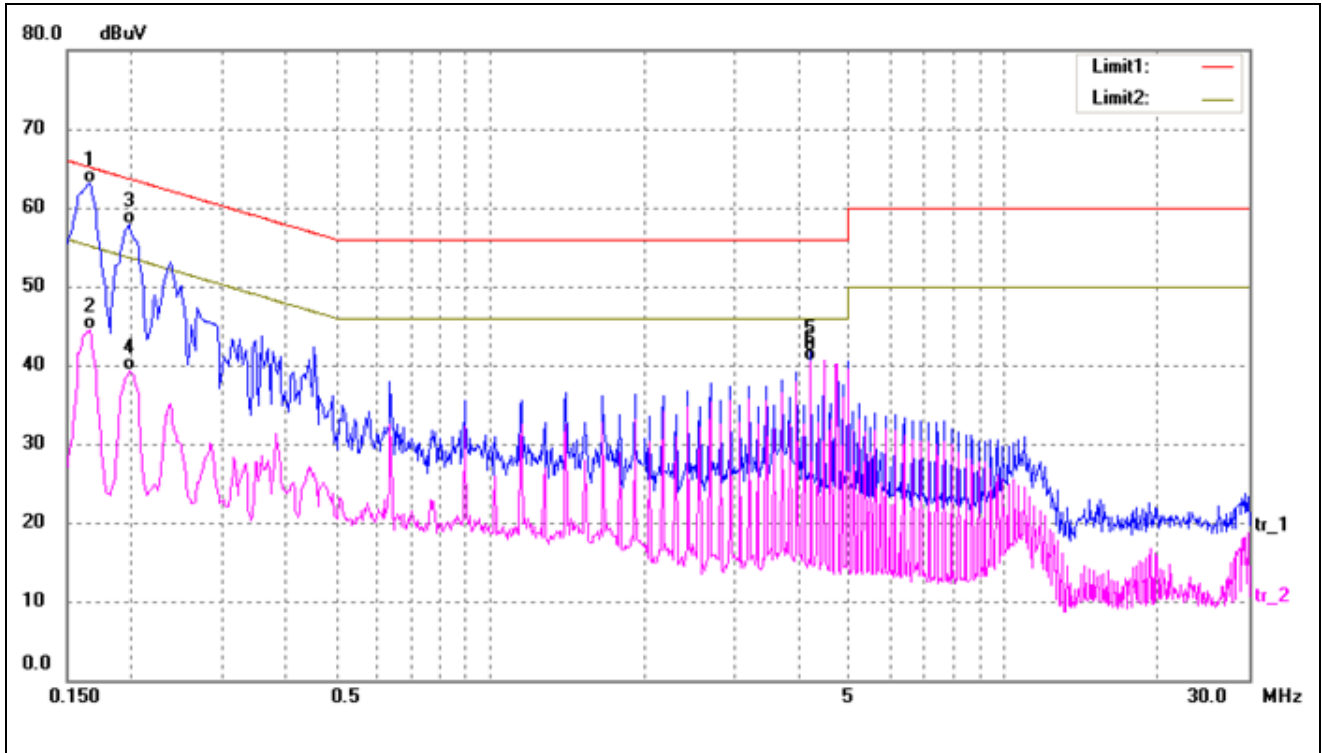
During the conducted emission test, the test receiver was set with the following configurations:

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

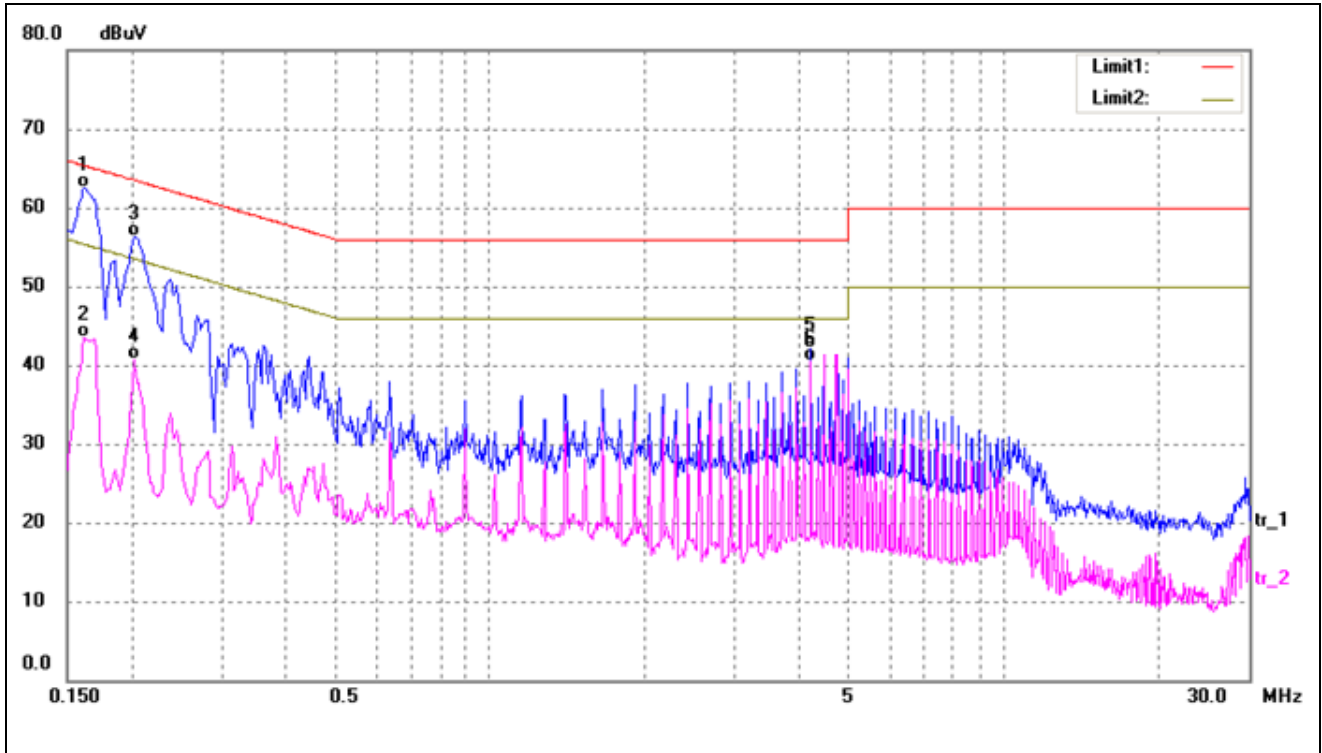
According to the data in this section, the EUT complied with the FCC Part 18C Conducted margin for Any non-ISM frequency device, with the *worst* margin reading of:

Test mode:	TM1	Polarity:	Line
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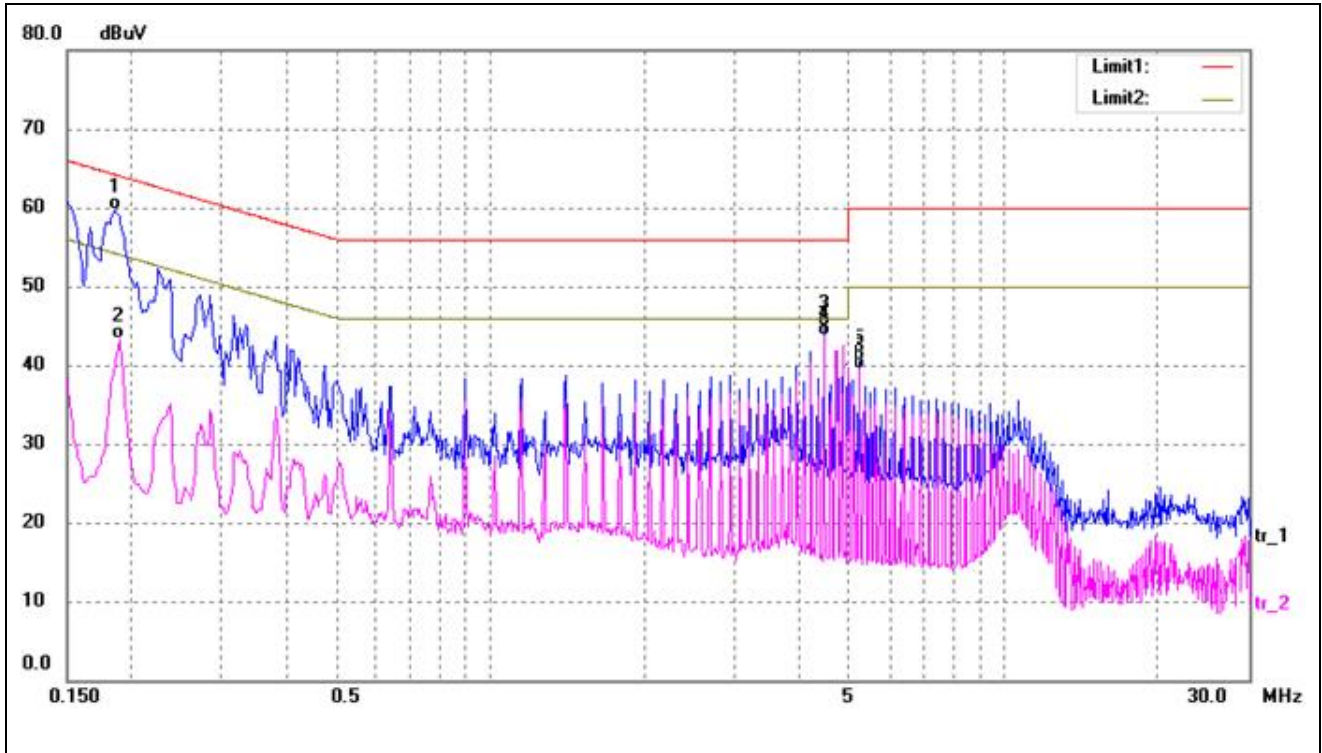
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1660	52.93	10.26	63.19	65.16	-1.97	QP
2	0.1660	34.23	10.26	44.49	55.16	-10.67	AVG
3	0.1980	47.60	10.27	57.87	63.69	-5.82	QP
4	0.1980	29.06	10.27	39.33	53.69	-14.36	AVG
5	4.2140	31.43	10.24	41.67	56.00	-14.33	QP
6	4.2140	30.17	10.24	40.41	46.00	-5.59	AVG

Test mode:	TM1	Polarity:	Neutral
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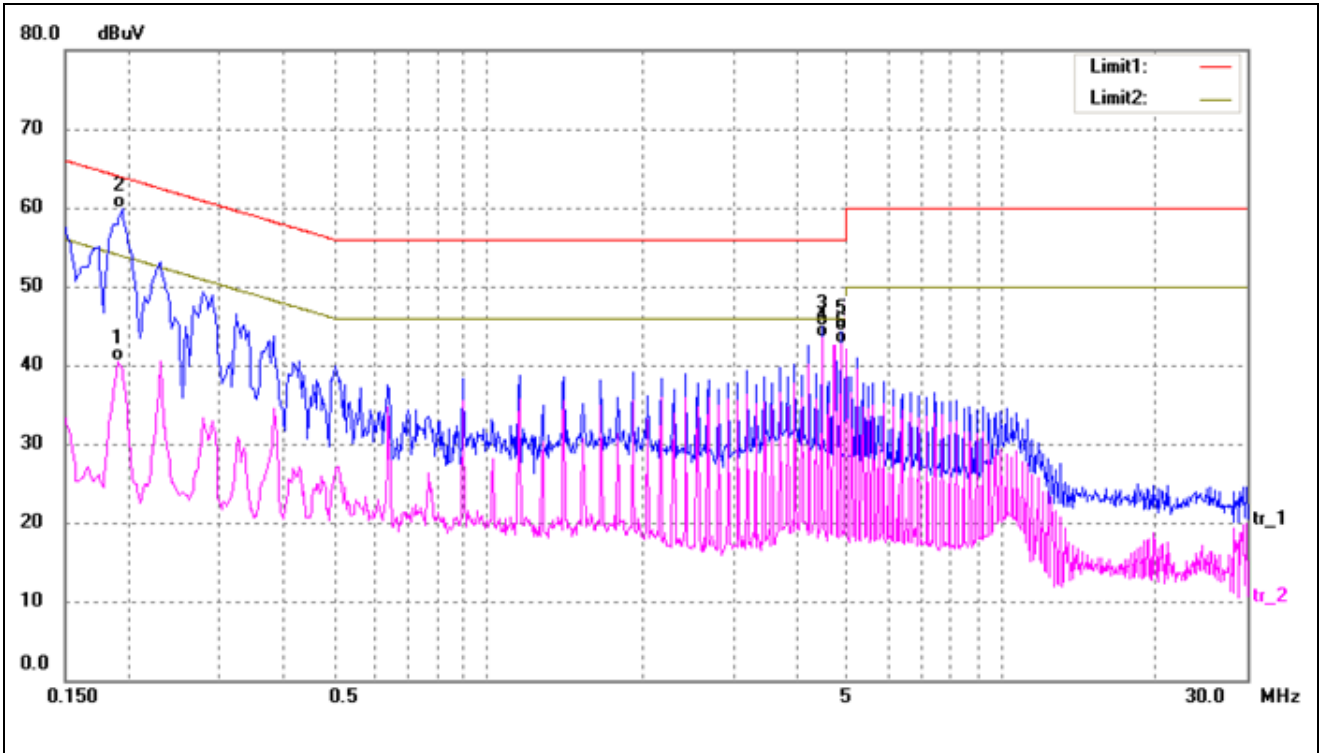
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1620	52.33	10.26	62.59	65.36	-2.77	QP
2	0.1620	33.17	10.26	43.43	55.36	-11.93	AVG
3	0.2020	46.01	10.27	56.28	63.52	-7.24	QP
4	0.2020	30.50	10.27	40.77	53.52	-12.75	AVG
5	4.2139	31.80	10.24	42.04	56.00	-13.96	QP
6	4.2139	30.20	10.24	40.44	46.00	-5.56	AVG

Test mode:	TM2	Polarity:	Line
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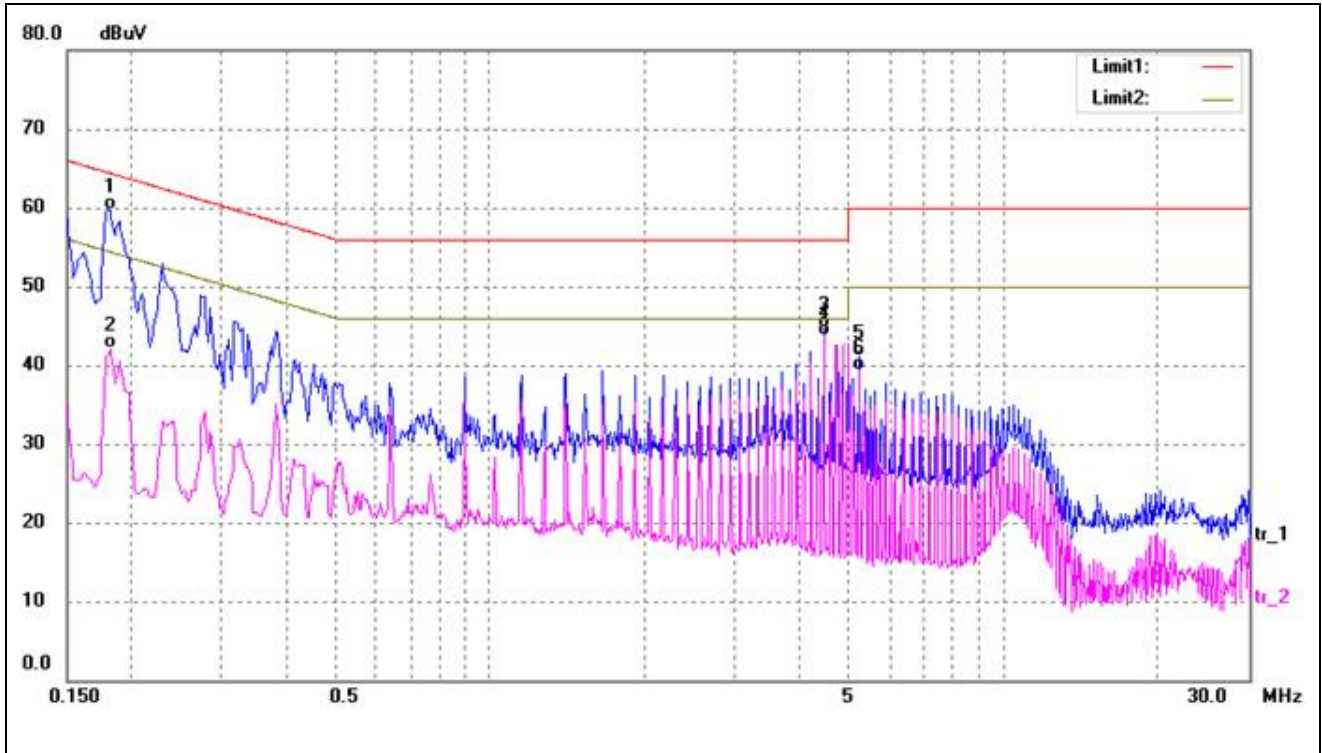
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1860	49.49	10.26	59.75	64.21	-4.46	QP
2	0.1900	33.08	10.26	43.34	54.04	-10.70	AVG
3	4.4700	34.62	10.23	44.85	56.00	-11.15	QP
4*	4.4700	33.54	10.23	43.77	46.00	-2.23	AVG
5	5.2340	30.34	10.22	40.56	60.00	-19.44	QP
6	5.2340	29.19	10.22	39.41	50.00	-10.59	AVG

Test mode:	TM2	Polarity:	Neutral
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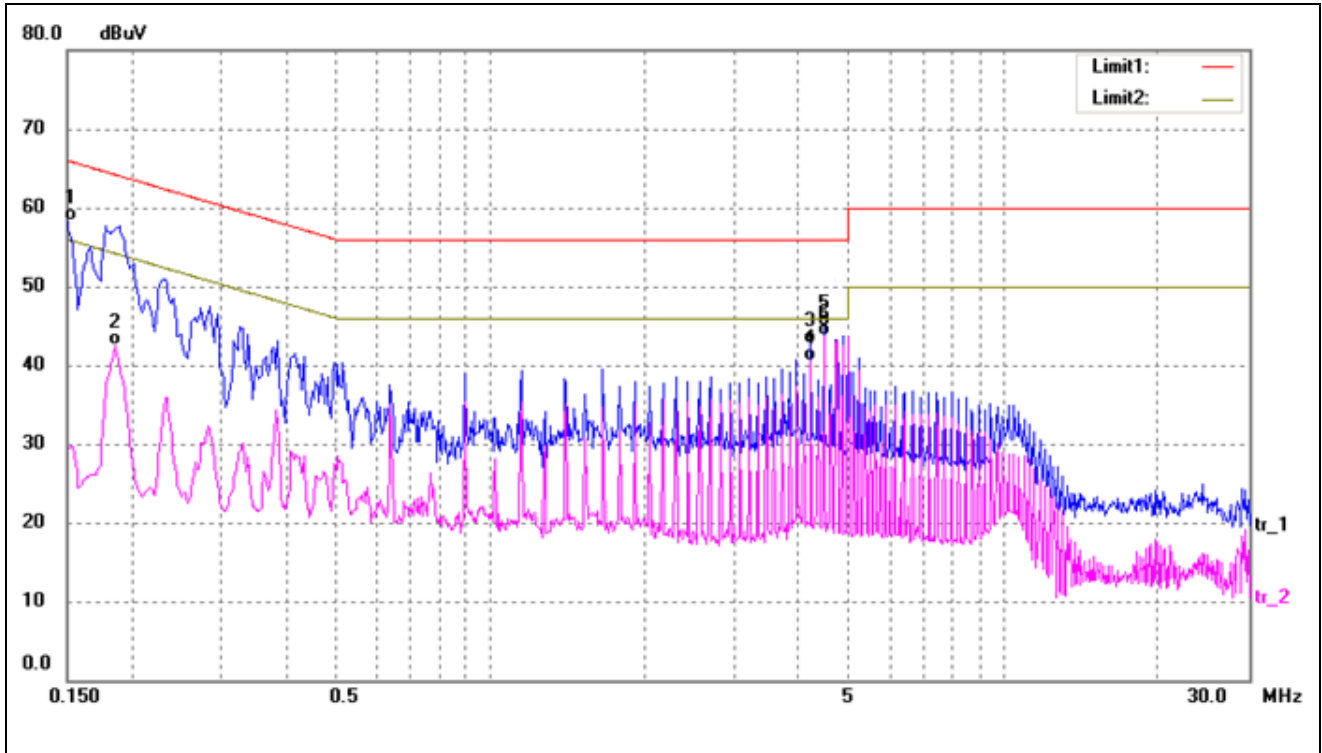
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1900	30.19	10.26	40.45	54.04	-13.59	AVG
2	0.1940	49.60	10.27	59.87	63.86	-3.99	QP
3	4.4700	34.66	10.23	44.89	56.00	-11.11	QP
4*	4.4700	33.30	10.23	43.53	46.00	-2.47	AVG
5	4.8540	34.11	10.23	44.34	56.00	-11.66	QP
6	4.8540	32.52	10.23	42.75	46.00	-3.25	AVG

Test mode:	TM3	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1820	49.46	10.26	59.72	64.39	-4.67	QP
2	0.1820	31.81	10.26	42.07	54.39	-12.32	AVG
3	4.4700	34.50	10.23	44.73	56.00	-11.27	QP
4*	4.4700	33.50	10.23	43.73	46.00	-2.27	AVG
5	5.2340	30.84	10.22	41.06	60.00	-18.94	QP
6	5.2340	29.14	10.22	39.36	50.00	-10.64	AVG

Test mode:	TM3	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	48.01	10.25	58.26	66.00	-7.74	QP
2	0.1860	32.27	10.26	42.53	54.21	-11.68	AVG
3	4.2140	32.40	10.24	42.64	56.00	-13.36	QP
4	4.2140	30.17	10.24	40.41	46.00	-5.59	AVG
5	4.4700	34.63	10.23	44.86	56.00	-11.14	QP
6*	4.4700	33.38	10.23	43.61	46.00	-2.39	AVG



## 4. Radiated Emissions

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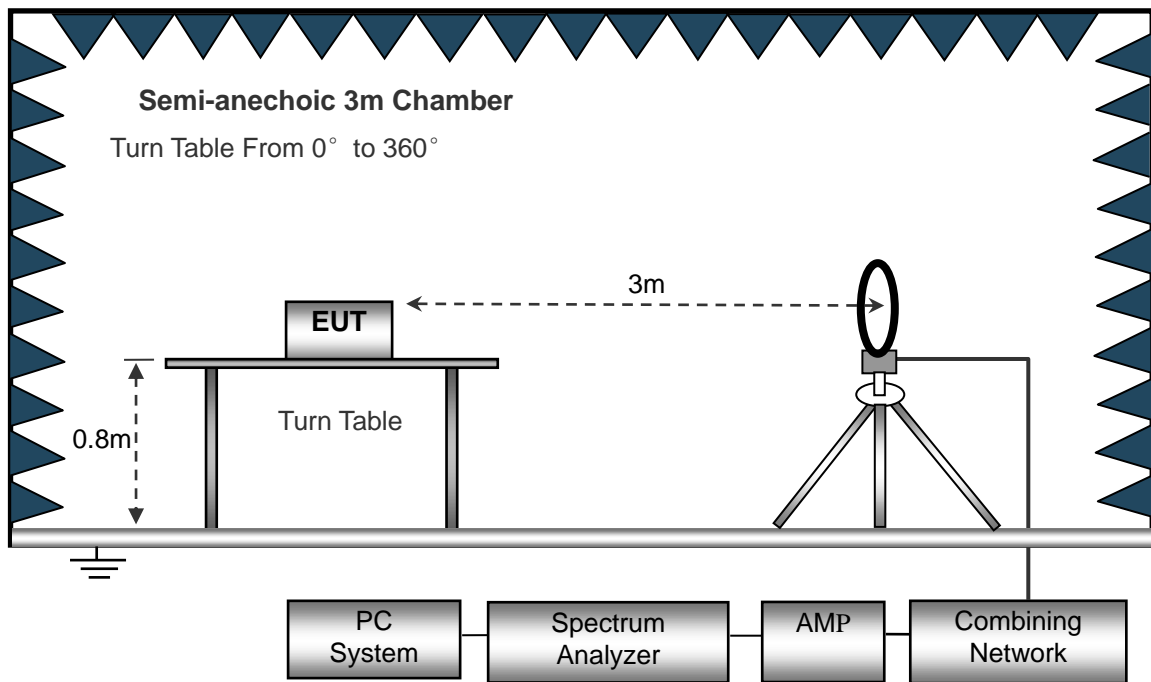
### 4.1 Test Procedure

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.

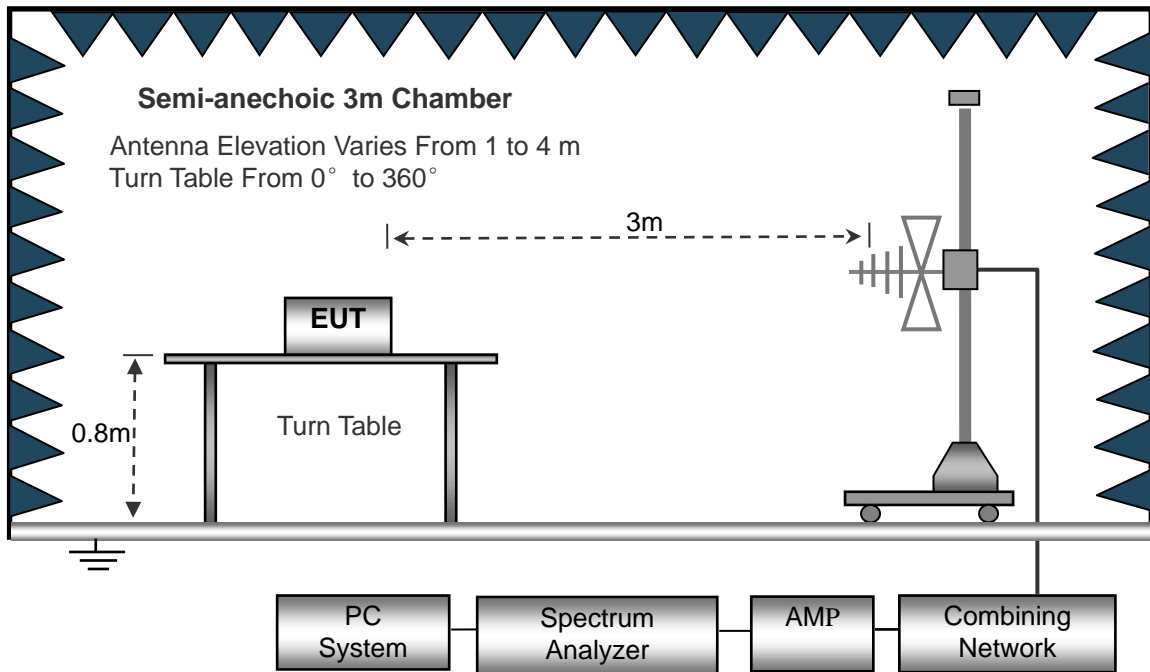
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

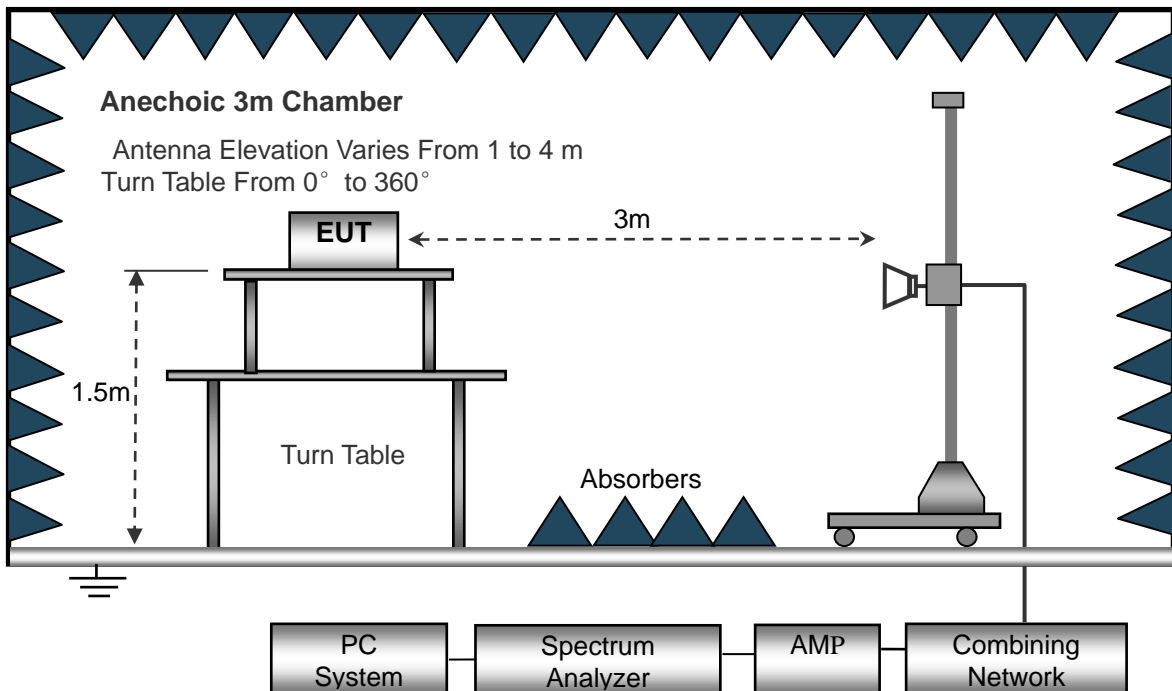
The test setup for emission measurement below 30MHz..



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



The test setup for emission measurement above 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

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

## 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 $\mu$ V means the emission is 6dB $\mu$ 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

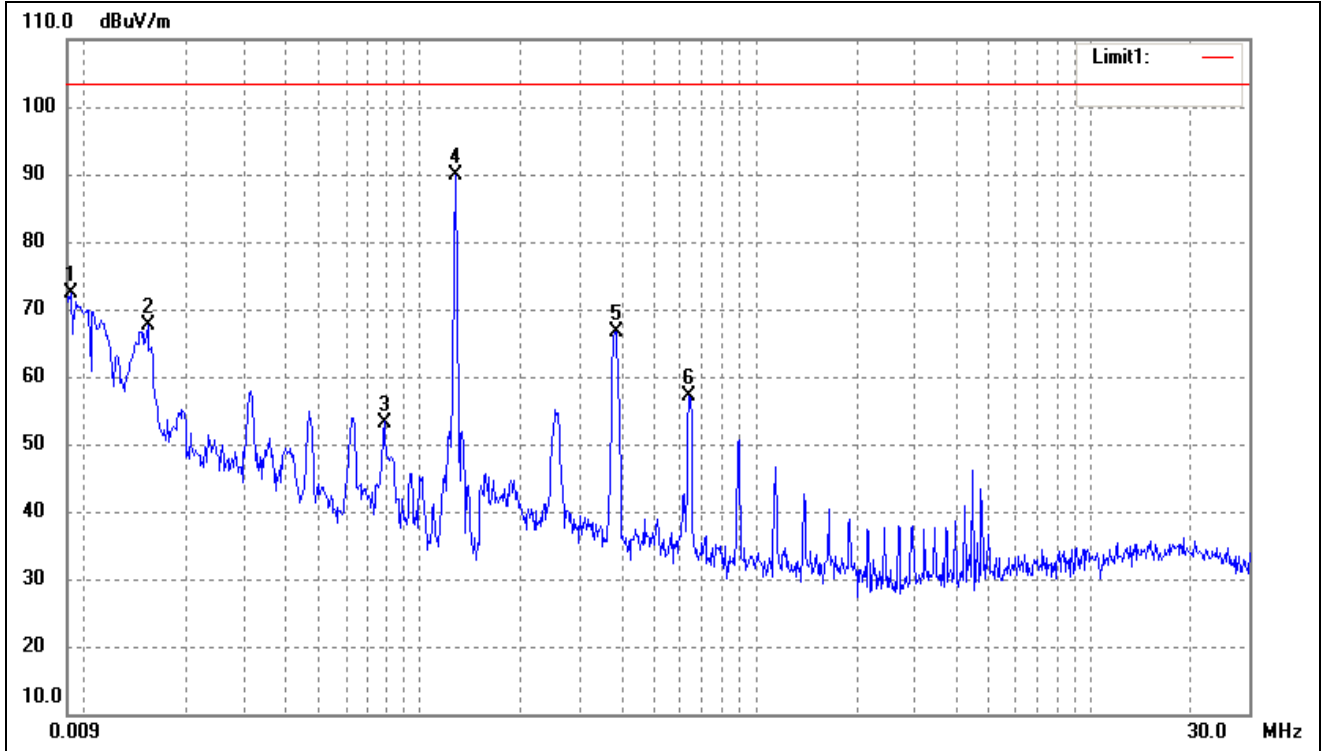
Temperature:	22 °C
Relative Humidity:	54 %
ATM Pressure:	1011 mbar

## 4.5 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 18.305 rule, and had the worst margin of:

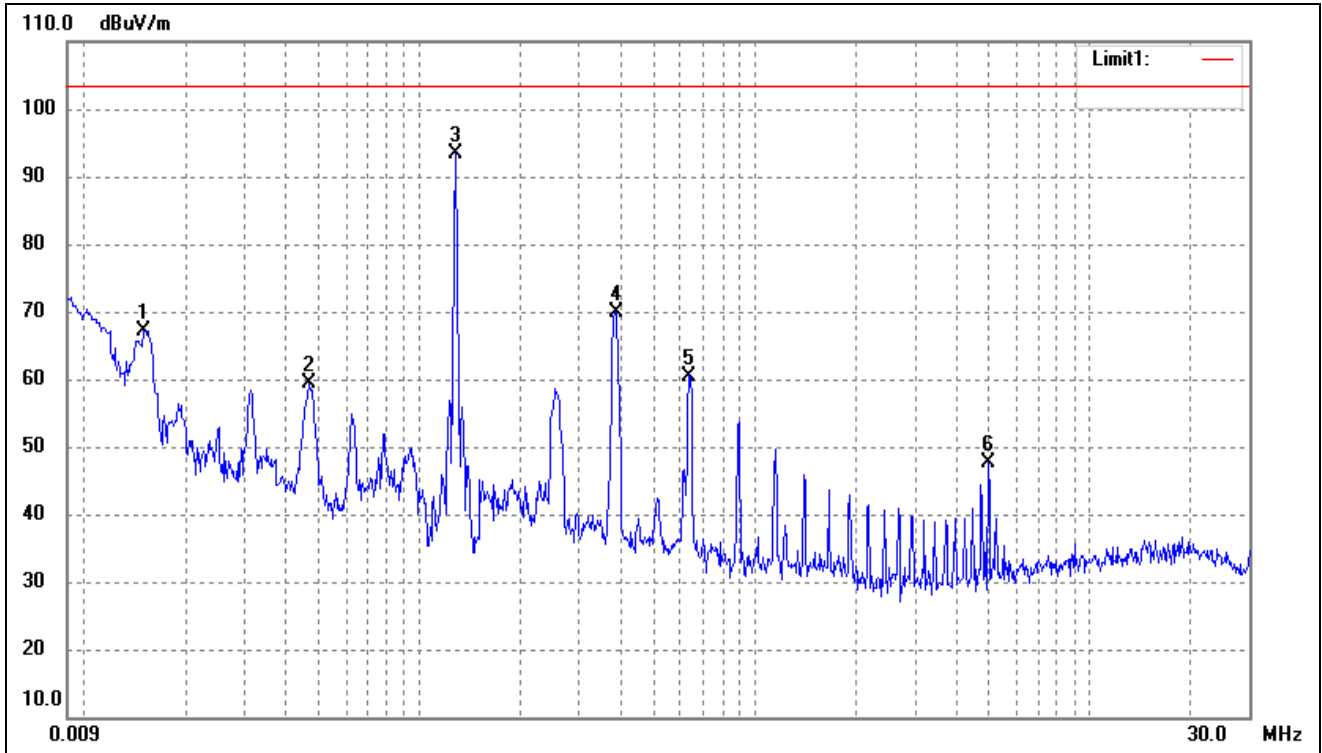
**Plot of Radiated Emissions Test Data (Below 30MHz)**

Test mode:	TM1	Polarity:	Horizontal
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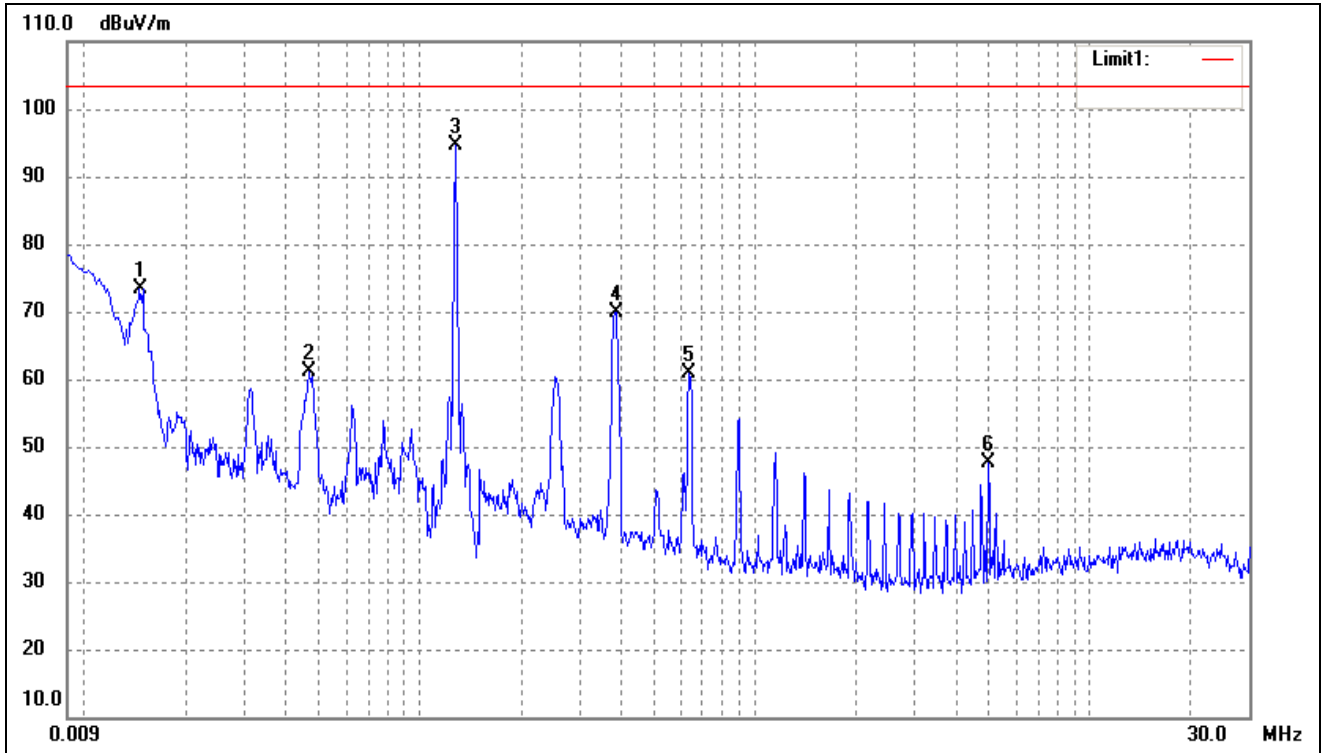
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	0.0091	78.55	-6.29	72.26	103.50	-31.24	-	-	peak
2	0.0154	74.25	-6.60	67.65	103.50	-35.85	-	-	peak
3	0.0783	58.51	-5.26	53.25	103.50	-50.25	-	-	peak
4	0.1278	94.99	-5.13	89.86	103.50	-13.64	-	-	peak
5	0.3832	74.44	-7.83	66.61	103.50	-36.89	-	-	peak
6	0.6372	64.28	-7.03	57.25	103.50	-46.25	-	-	peak

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	0.0149	73.74	-6.58	67.16	103.50	-36.34	-	-	peak
2	0.0466	64.31	-4.96	59.35	103.50	-44.15	-	-	peak
3	0.1278	98.62	-5.13	93.49	103.50	-10.01	-	-	peak
4	0.3832	77.81	-7.83	69.98	103.50	-33.52	-	-	peak
5	0.6371	68.14	-7.64	60.50	103.50	-43.00	-	-	peak
6	4.9782	52.17	-4.42	47.75	103.50	-55.75	-	-	peak

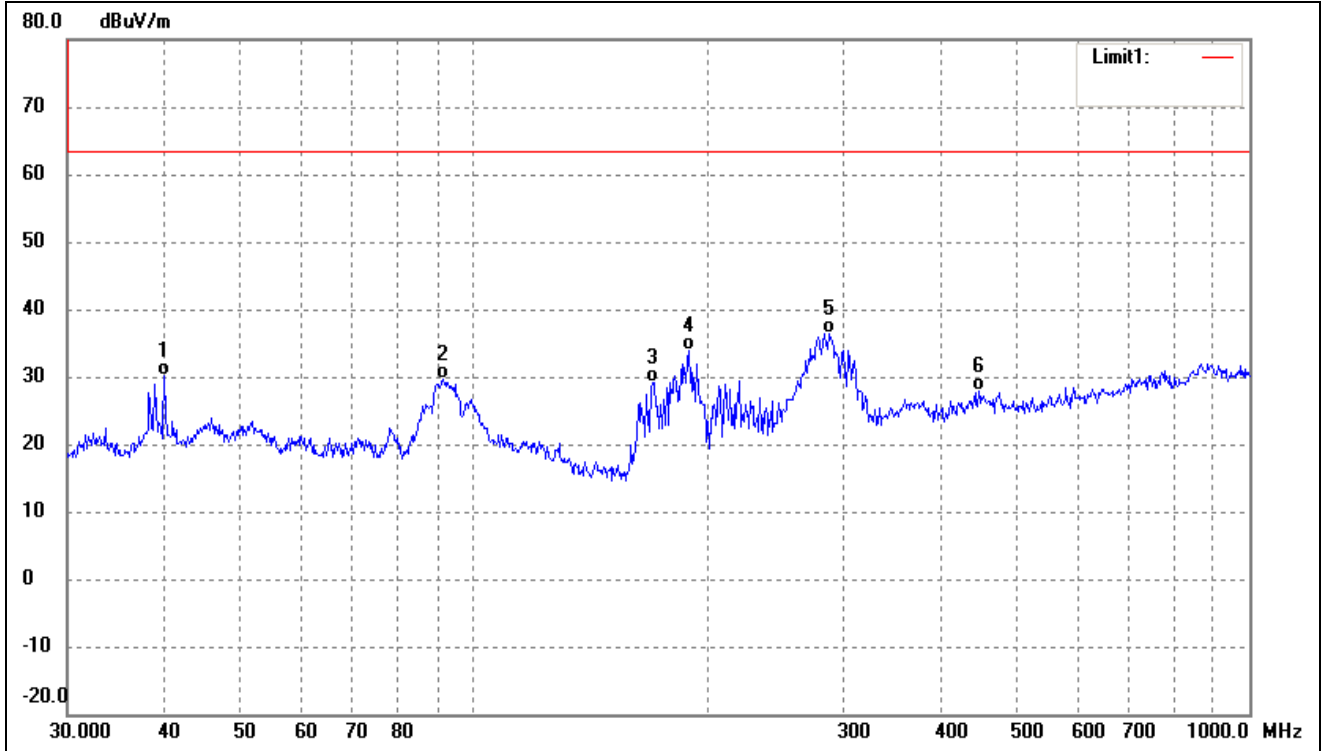
Test mode:	TM3	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	0.0147	80.01	-6.57	73.44	103.50	-30.06	-	-	peak
2	0.0468	66.08	-4.95	61.13	103.50	-42.37	-	-	peak
3	0.1278	99.69	-5.13	94.56	103.50	-8.94	-	-	peak
4	0.3832	77.72	-7.83	69.89	103.50	-33.61	-	-	peak
5	0.6372	67.79	-7.03	60.76	103.50	-42.74	-	-	peak
6	4.9782	52.02	-4.42	47.60	103.50	-55.90	-	-	peak

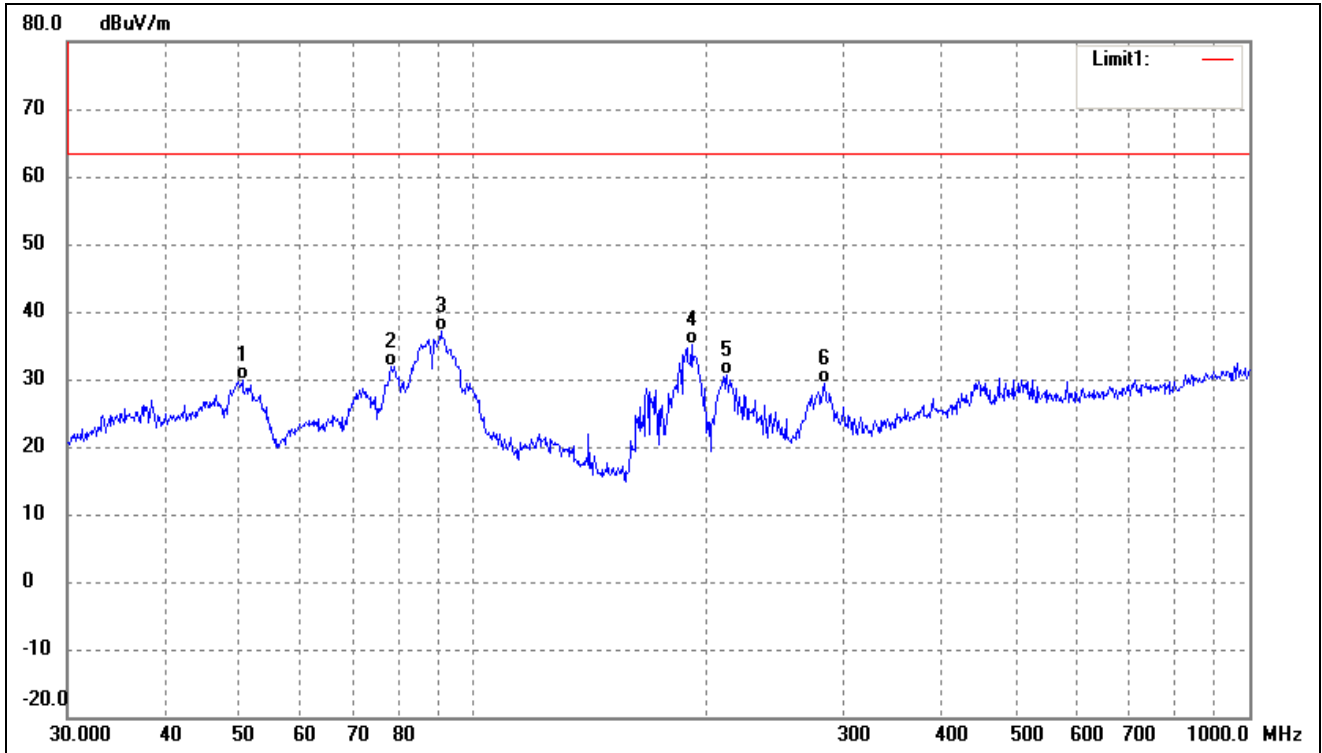
**Plot of Radiated Emissions Test Data ( Above 30MHz)**

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	39.9942	42.15	-11.98	30.17	63.50	-33.33	-	-	QP
2	91.4949	44.34	-14.71	29.63	63.50	-33.87	-	-	QP
3	170.1948	44.22	-15.01	29.21	63.50	-34.29	-	-	QP
4	189.7385	47.08	-13.15	33.93	63.50	-29.57	-	-	QP
5	286.9823	46.34	-9.87	36.47	63.50	-27.03	-	-	QP
6	447.9822	33.49	-5.61	27.88	63.50	-35.62	-	-	QP

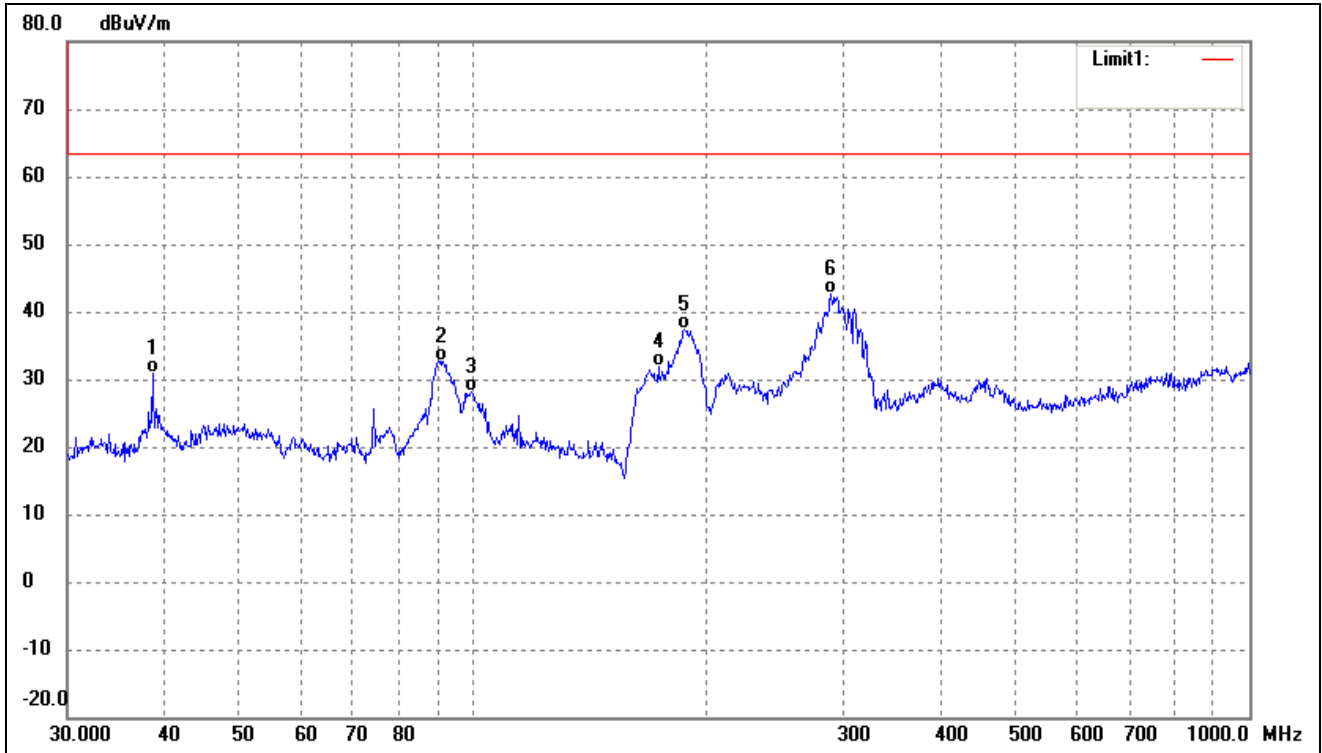
Test mode:	TM1	Polarity:	Vertical
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	50.4089	41.51	-11.65	29.86	63.50	-33.64	-	-	QP
2	78.4134	48.51	-16.57	31.94	63.50	-31.56	-	-	QP
3	90.8554	51.89	-14.82	37.07	63.50	-26.43	-	-	QP
4	191.0738	48.09	-13.05	35.04	63.50	-28.46	-	-	QP
5	212.2695	42.96	-12.28	30.68	63.50	-32.82	-	-	QP
6	283.9792	39.55	-10.10	29.45	63.50	-34.05	-	-	QP

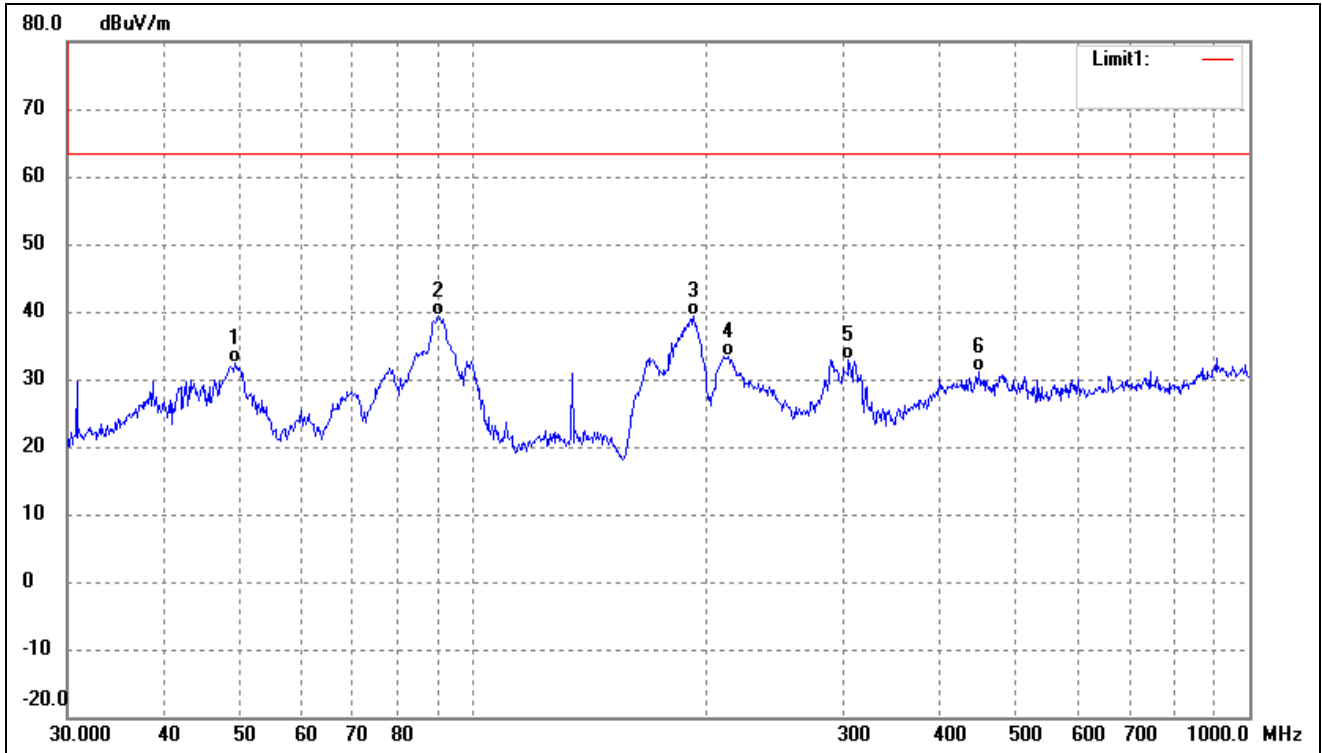


Test mode:	TM2	Polarity:	Horizontal
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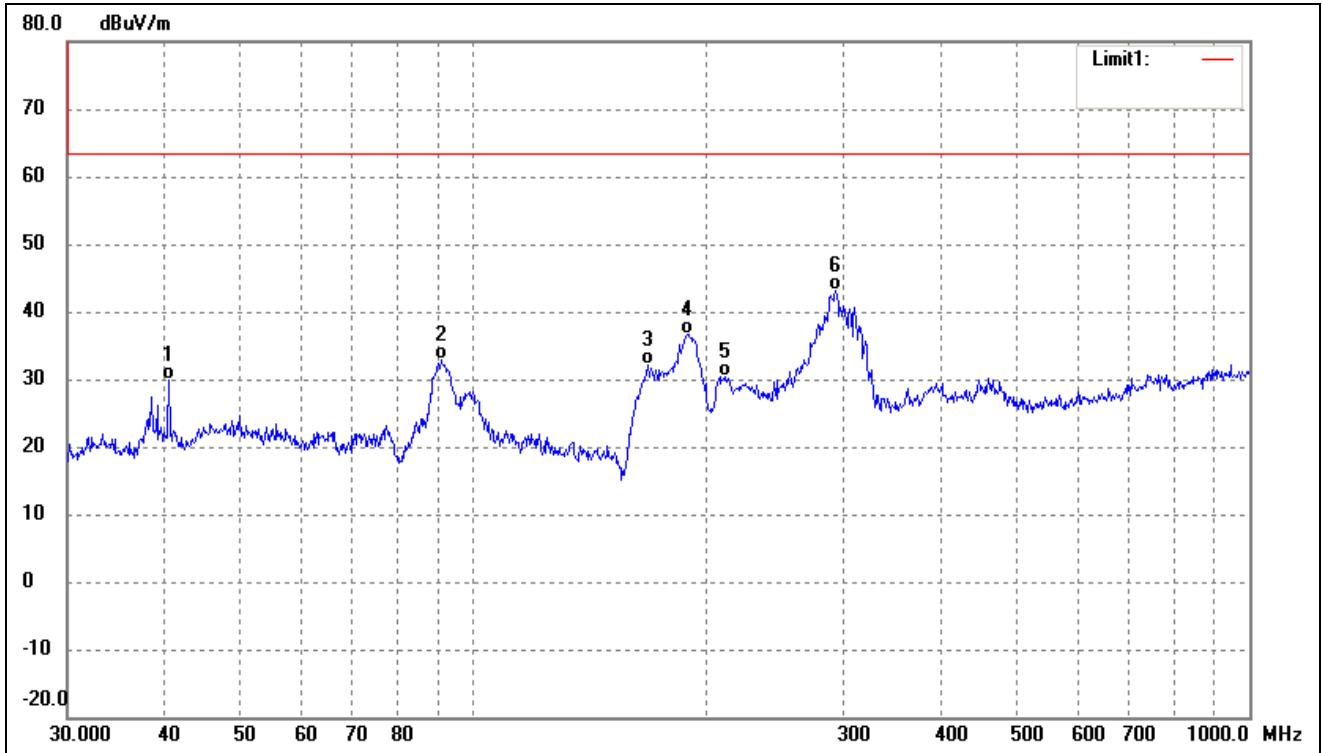
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	38.6161	43.48	-12.51	30.97	63.50	-32.53	-	-	QP
2	91.1746	47.50	-14.76	32.74	63.50	-30.76	-	-	QP
3	99.5281	41.54	-13.39	28.15	63.50	-35.35	-	-	QP
4	173.2051	46.63	-14.79	31.84	63.50	-31.66	-	-	QP
5	187.0958	50.74	-13.46	37.28	63.50	-26.22	-	-	QP
6	289.0021	52.33	-9.72	42.61	63.50	-20.89	-	-	QP

Test mode:	TM2	Polarity:	Vertical
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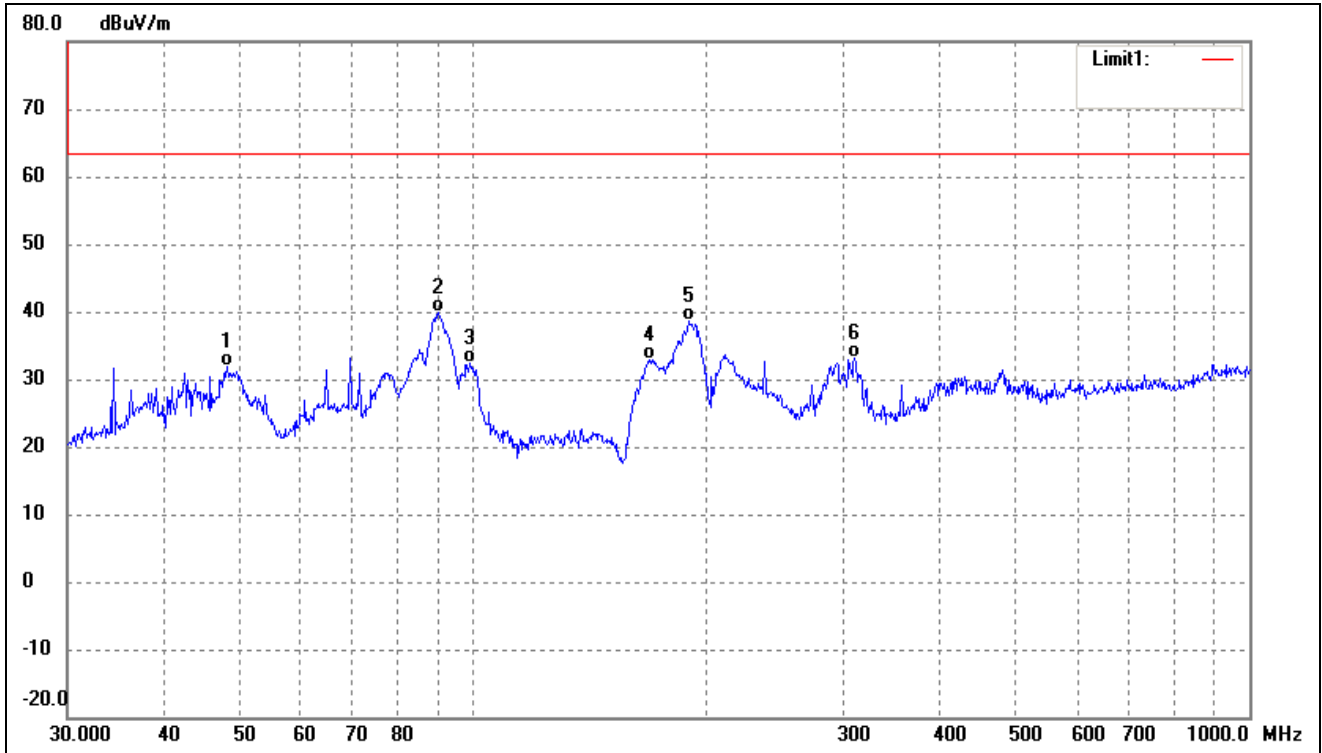
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	49.3594	43.89	-11.57	32.32	63.50	-31.18	-	-	QP
2	90.2205	54.28	-14.91	39.37	63.50	-24.13	-	-	QP
3	192.4186	52.39	-12.94	39.45	63.50	-24.05	-	-	QP
4	213.0151	45.70	-12.27	33.43	63.50	-30.07	-	-	QP
5	304.6100	41.81	-8.93	32.88	63.50	-30.62	-	-	QP
6	447.9822	36.70	-5.61	31.09	63.50	-32.41	-	-	QP

Test mode:	TM3	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	40.5591	41.74	-11.97	29.77	63.50	-33.73	-	-	QP
2	90.8554	47.77	-14.82	32.95	63.50	-30.55	-	-	QP
3	167.8243	47.16	-15.14	32.02	63.50	-31.48	-	-	QP
4	189.0743	49.83	-13.22	36.61	63.50	-26.89	-	-	QP
5	210.7860	42.71	-12.30	30.41	63.50	-33.09	-	-	QP
6	293.0842	52.53	-9.42	43.11	63.50	-20.39	-	-	QP

Test mode:	TM3	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	48.1626	43.41	-11.63	31.78	63.50	-31.72	-	-	QP
2	90.2205	54.82	-14.91	39.91	63.50	-23.59	-	-	QP
3	99.1797	45.82	-13.45	32.37	63.50	-31.13	-	-	QP
4	169.0054	48.05	-15.07	32.98	63.50	-30.52	-	-	QP
5	189.7385	51.71	-13.15	38.56	63.50	-24.94	-	-	QP
6	309.9977	42.01	-8.94	33.07	63.50	-30.43	-	-	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.

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