

# TEST REPORT

Reference No..... : WTX22X10199745W001  
FCC ID ..... : 2AV4C-U280MS0110BK  
Applicant ..... : Eaton Corporation  
Address ..... : 10000 Woodward Avenue, Woodridge IL 60517, USA  
Manufacturer ..... : DONGGUAN CE LINK LIMITED  
Address ..... : 22 Dongkang Road, Dalingshan Town, Dongguan City, Guangdong  
Province, China.  
Product Name ..... : 10-Watt Adjustable Magnetic Wireless Charging Pad with Stand, 3 ft. Cable  
Model No..... : U280M-S01-10-BK  
Standards ..... : FCC Part 18  
Date of Receipt sample .... : 2022-10-08  
Date of Test..... : 2022-10-08 to 2022-11-07  
Date of Issue ..... : 2022-11-07  
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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**Report version**

Version No.	Date of issue	Description
Rev.00	2022-11-07	Original
/	/	/

## 1. GENERAL INFORMATION

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### 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:	10-Watt Adjustable Magnetic Wireless Charging Pad with Stand, 3 ft. Cable
Trade Name:	Tripp Lite
Model No.:	U280M-S01-10-BK
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
Power adapter	ASK
Antenna Type:	Coil Antenna
Rated Voltage:	Input: 5V, 9V Output: 5V, 7.5V, 9V
Rated Current:	Input: 2A Output: 1A, 1.1A
Rated Power:	Output: 5W,7.5W,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 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: output 5W
TM2	Wireless Charging	Connect to the adapter;	AC120V/60Hz for adapter; Wireless charging: output 10W

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
Adapter	Xiaomi	MDY-11-EX	/
Smart phone	Apple	IPhone 12 Pro Max	/
wireless charging tester	YBZ	YBZ wireless charging tester	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB-C Cable	1.25	Unshielded	Without Ferrite

**1.6 Measurement Uncertainty**

<b>Measurement uncertainty</b>		
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	3113A0671 7	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	2944A1017 9	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

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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:

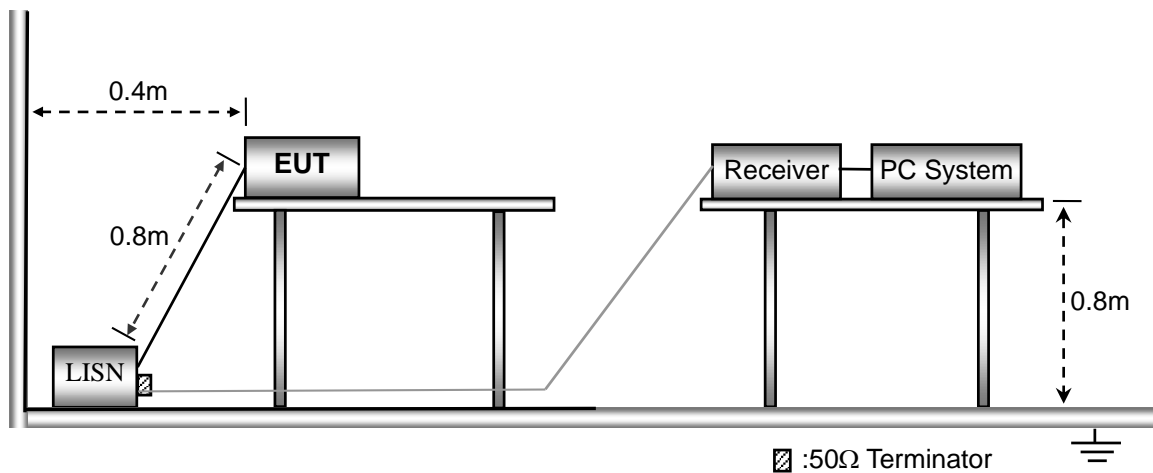
Frequency (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

#### 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:	23.5° C
Relative Humidity:	54%
ATM Pressure:	1016 mbar

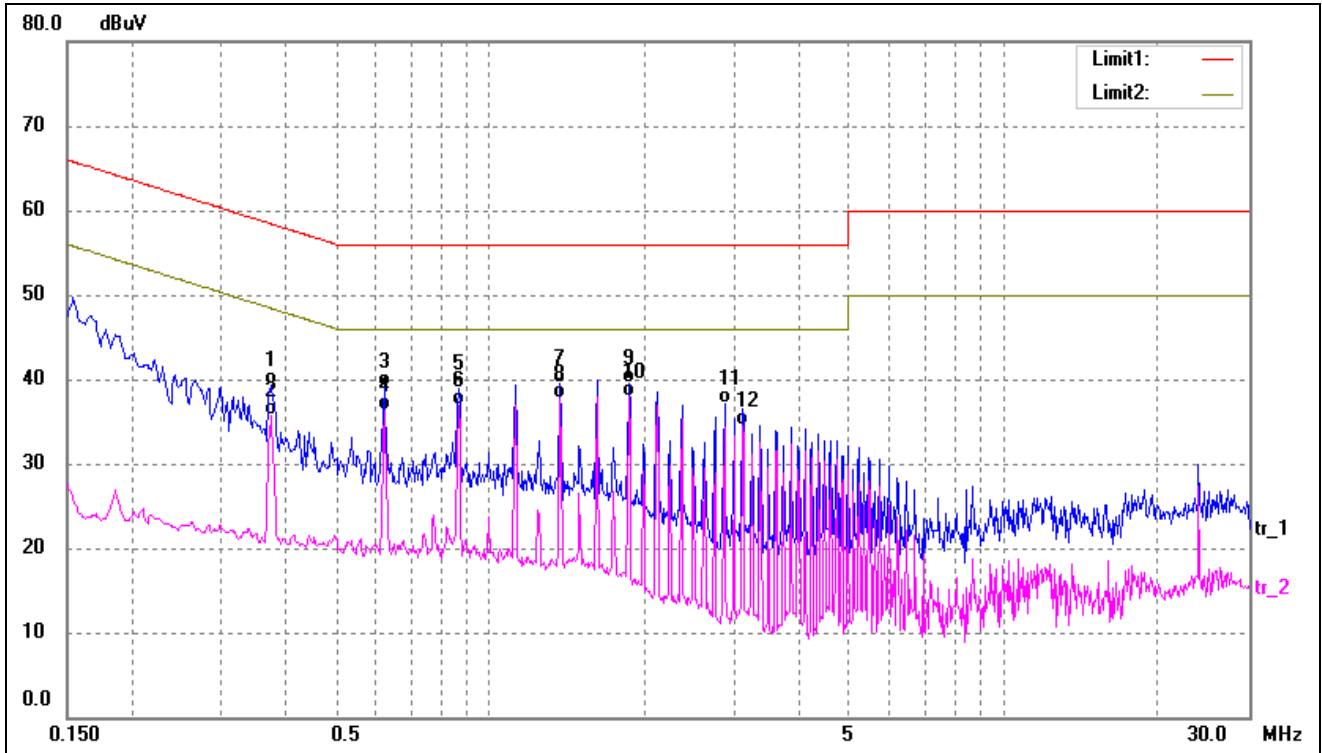
### 3.5 Test Receiver Setup

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

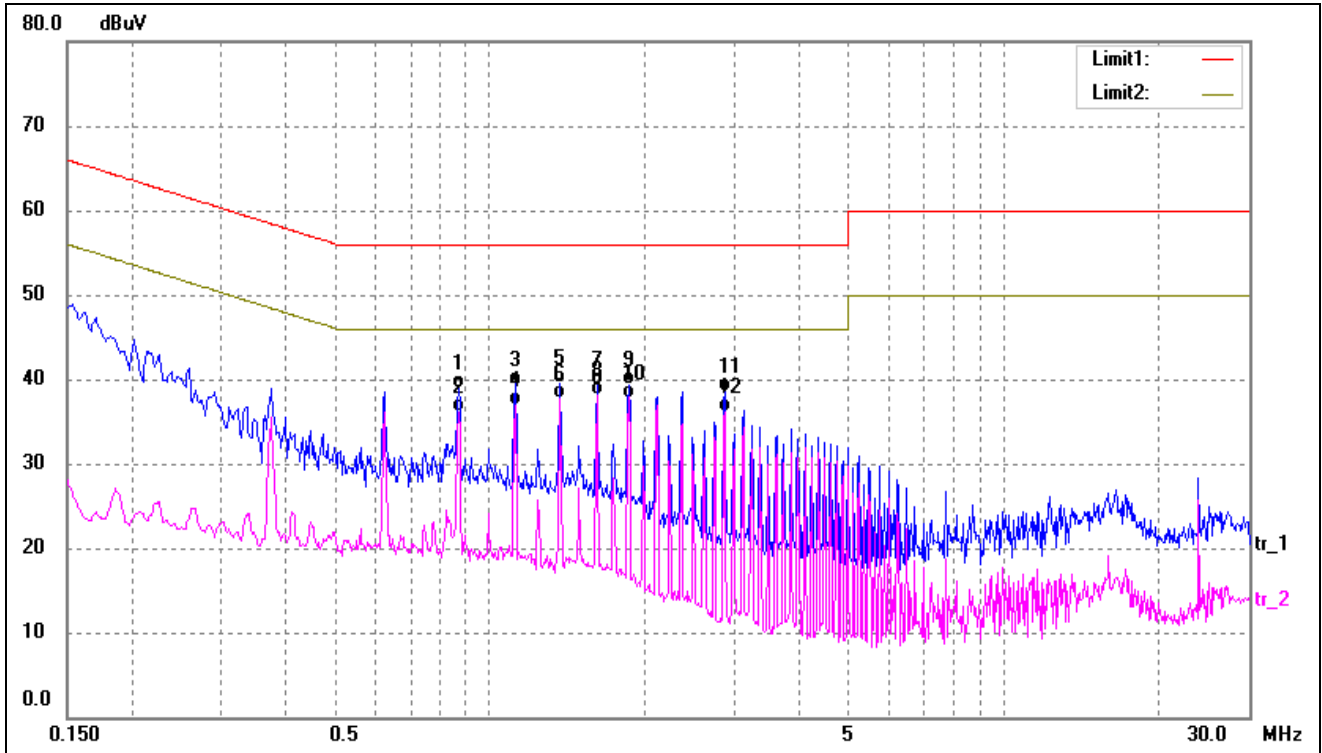
### 3.6 Summary of Test Results/Plots

Test mode:	TM1	Polarity:	Line
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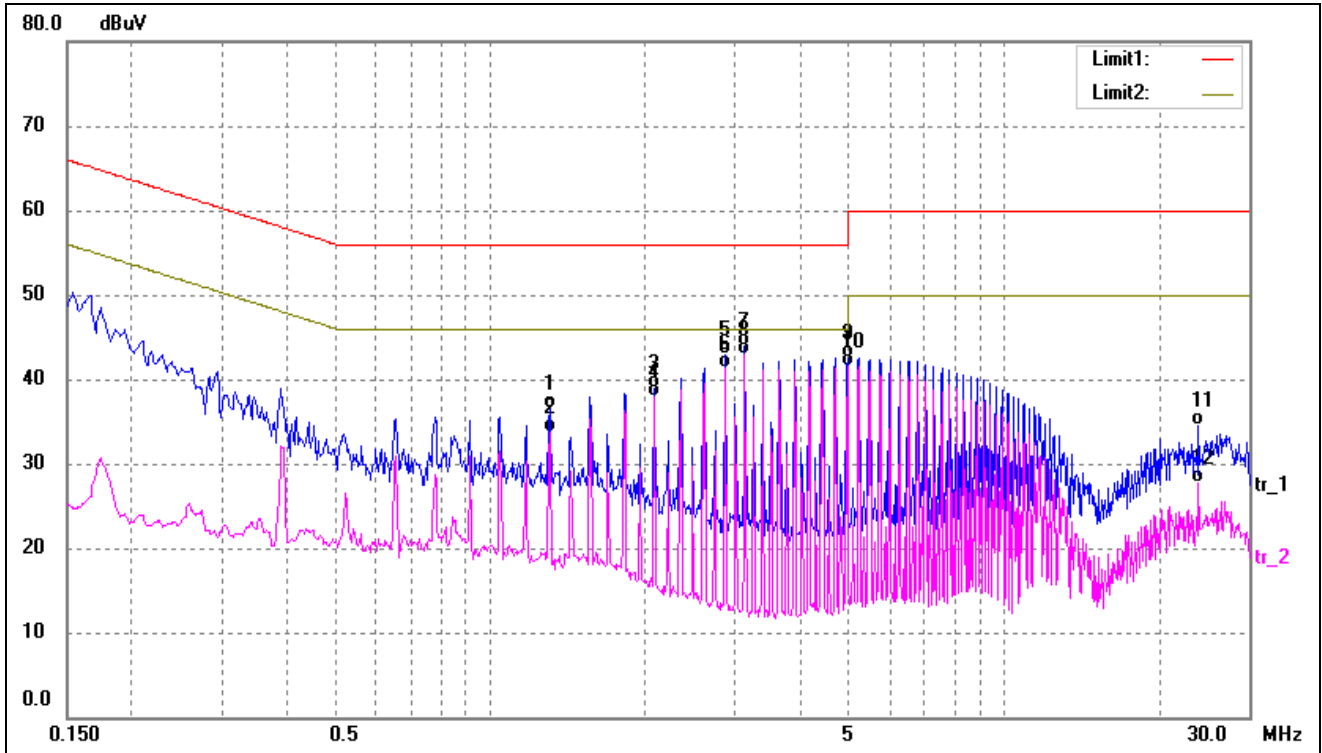
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.3740	29.01	10.23	39.24	58.41	-19.17	QP
2	0.3740	25.39	10.23	35.62	48.41	-12.79	AVG
3	0.6220	28.92	10.20	39.12	56.00	-16.88	QP
4	0.6220	26.19	10.20	36.39	46.00	-9.61	AVG
5	0.8700	28.71	10.16	38.87	56.00	-17.13	QP
6	0.8700	26.77	10.16	36.93	46.00	-9.07	AVG
7	1.3700	29.34	10.18	39.52	56.00	-16.48	QP
8	1.3700	27.53	10.18	37.71	46.00	-8.29	AVG
9	1.8660	29.31	10.24	39.55	56.00	-16.45	QP
10*	1.8660	27.75	10.24	37.99	46.00	-8.01	AVG
11	2.8580	26.75	10.27	37.02	56.00	-18.98	QP
12	3.1060	24.20	10.28	34.48	46.00	-11.52	AVG

Test mode:	TM1	Polarity:	Neutral
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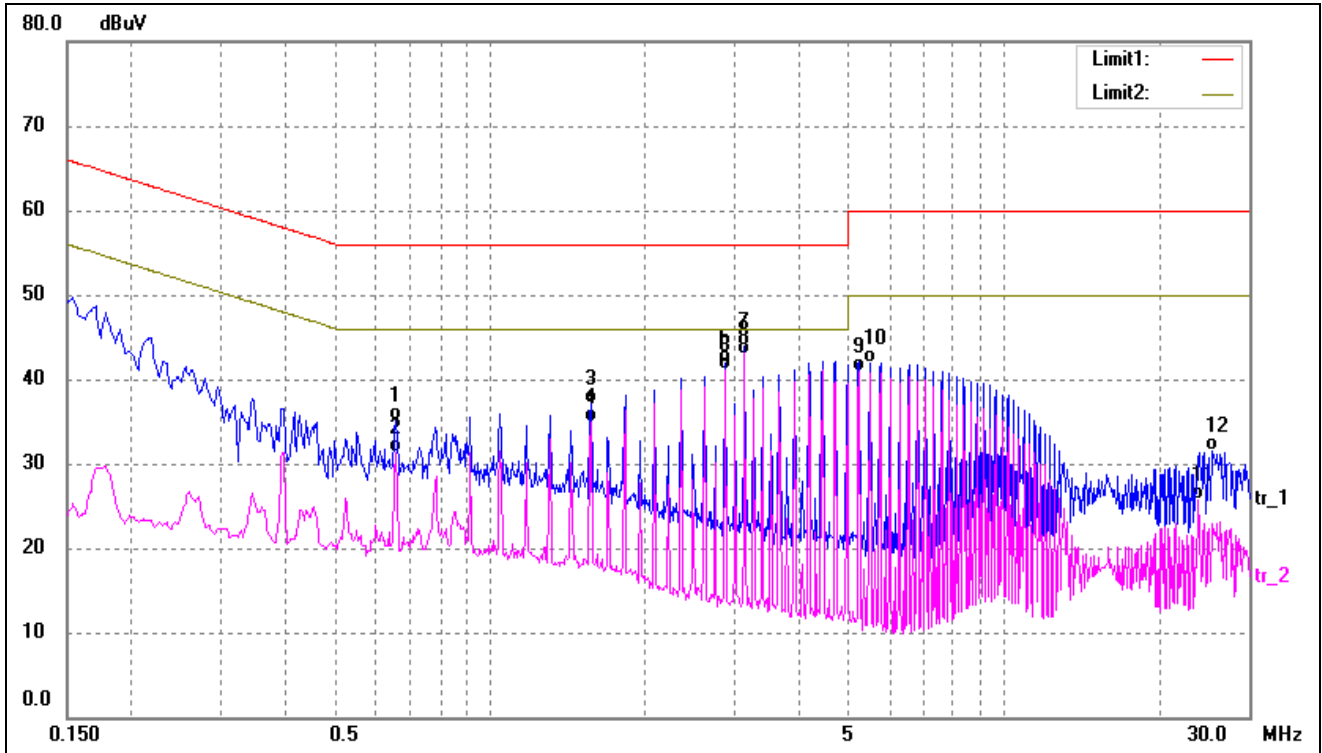
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.8700	28.67	10.16	38.83	56.00	-17.17	QP
2	0.8700	25.93	10.16	36.09	46.00	-9.91	AVG
3	1.1180	29.25	10.15	39.40	56.00	-16.60	QP
4	1.1180	26.81	10.15	36.96	46.00	-9.04	AVG
5	1.3660	29.37	10.18	39.55	56.00	-16.45	QP
6	1.3660	27.54	10.18	37.72	46.00	-8.28	AVG
7	1.6180	29.17	10.21	39.38	56.00	-16.62	QP
8*	1.6180	27.81	10.21	38.02	46.00	-7.98	AVG
9	1.8660	29.01	10.24	39.25	56.00	-16.75	QP
10	1.8660	27.56	10.24	37.80	46.00	-8.20	AVG
11	2.8620	28.31	10.27	38.58	56.00	-17.42	QP
12	2.8620	25.74	10.27	36.01	46.00	-9.99	AVG

Test mode:	TM2	Polarity:	Line
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	1.3060	26.36	10.17	36.53	56.00	-19.47	QP
2	1.3060	23.62	10.17	33.79	46.00	-12.21	AVG
3	2.0900	28.71	10.25	38.96	56.00	-17.04	QP
4	2.0900	27.56	10.25	37.81	46.00	-8.19	AVG
5	2.8740	32.60	10.27	42.87	56.00	-13.13	QP
6	2.8740	30.95	10.27	41.22	46.00	-4.78	AVG
7	3.1340	33.58	10.28	43.86	56.00	-12.14	QP
8*	3.1340	32.57	10.28	42.85	46.00	-3.15	AVG
9	4.9660	32.25	10.33	42.58	56.00	-13.42	QP
10	4.9660	31.22	10.33	41.55	46.00	-4.45	AVG
11	24.0020	24.12	10.38	34.50	60.00	-25.50	QP
12	24.0020	17.34	10.38	27.72	50.00	-22.28	AVG

Test mode:	TM2	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.6540	25.00	10.20	35.20	56.00	-20.80	QP
2	0.6540	21.04	10.20	31.24	46.00	-14.76	AVG
3	1.5700	26.98	10.21	37.19	56.00	-18.81	QP
4	1.5700	24.62	10.21	34.83	46.00	-11.17	AVG
5	2.8699	31.59	10.27	41.86	56.00	-14.14	QP
6	2.8699	30.81	10.27	41.08	46.00	-4.92	AVG
7	3.1300	33.66	10.28	43.94	56.00	-12.06	QP
8*	3.1300	32.61	10.28	42.89	46.00	-3.11	AVG
9	5.2220	30.59	10.33	40.92	50.00	-9.08	AVG
10	5.4820	31.59	10.33	41.92	60.00	-18.08	QP
11	24.0020	15.42	10.38	25.80	50.00	-24.20	AVG
12	25.3420	21.19	10.38	31.57	60.00	-28.43	QP

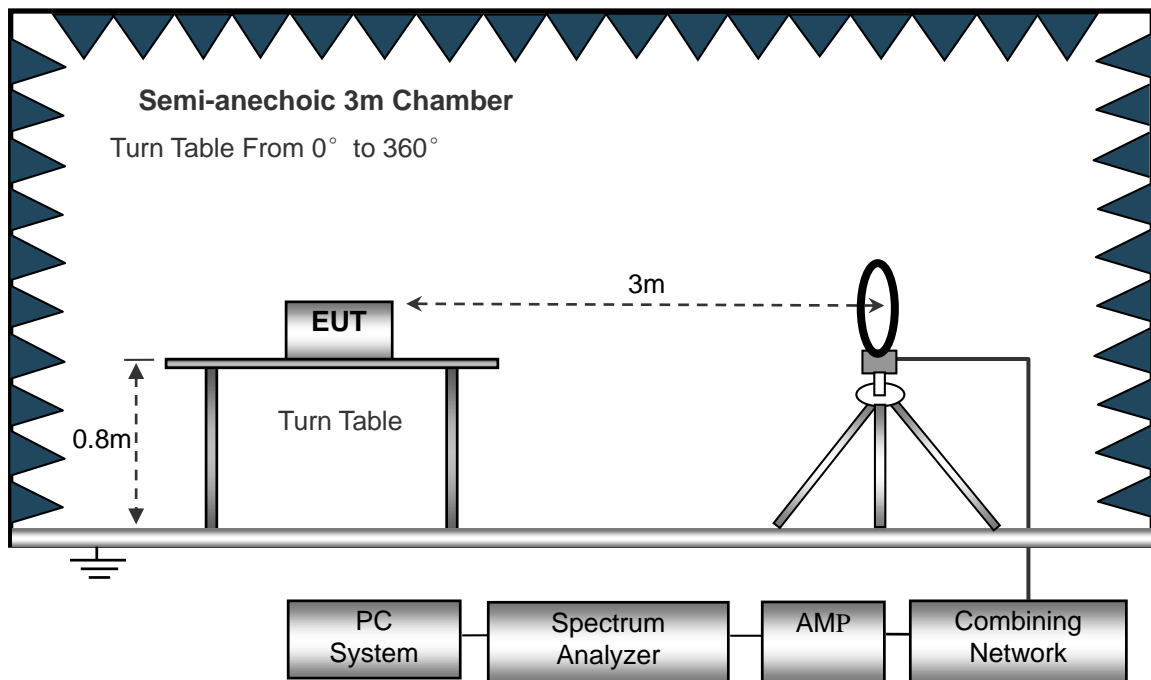
## 4. Radiated Emissions

### 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.

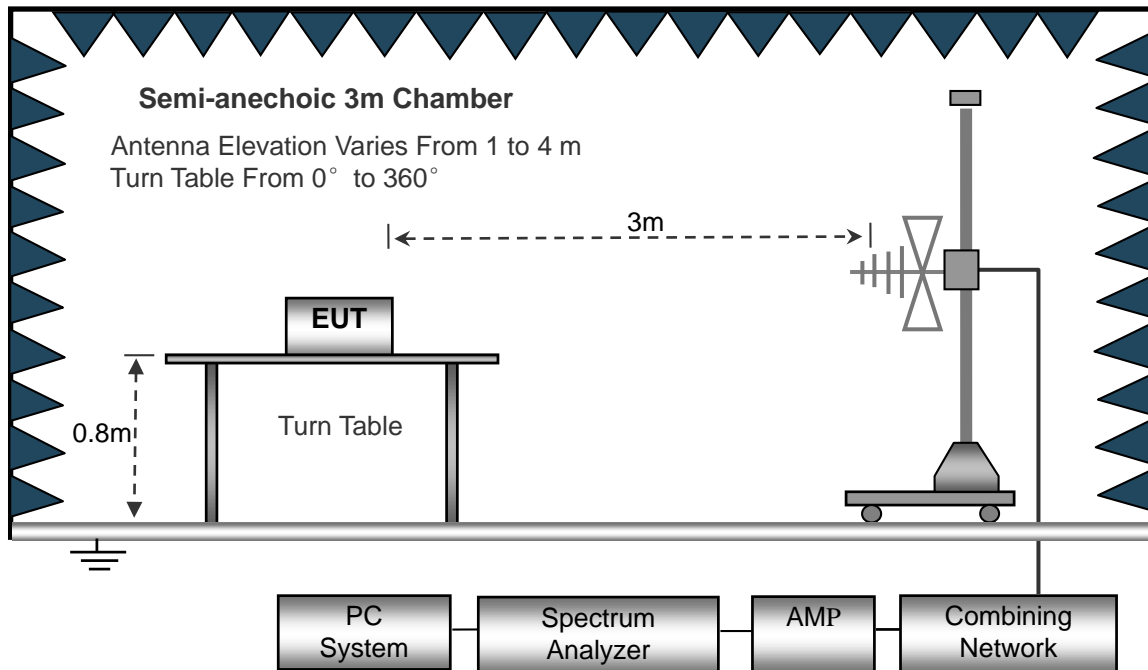
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

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 $\mu$ 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:

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

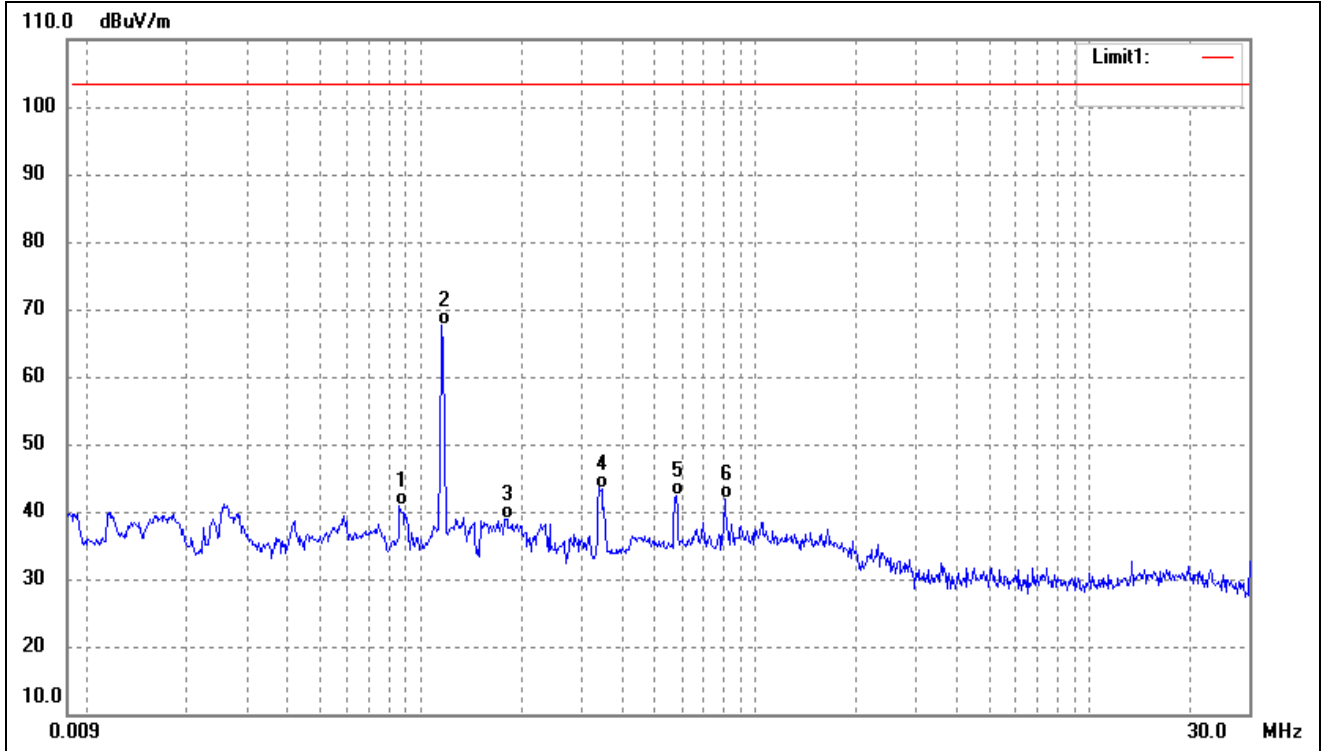
**4.4 Environmental Conditions**

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

**4.5 Summary of Test Results/Plots**

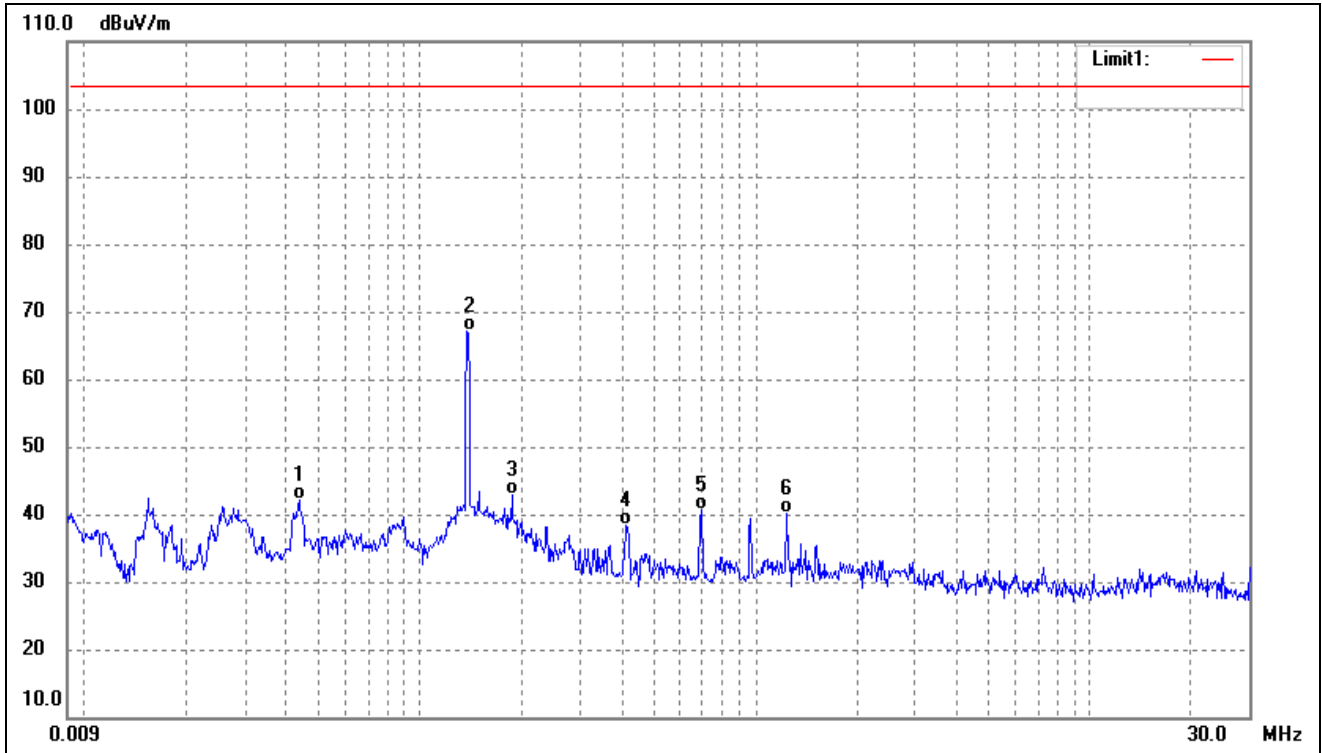
**Plot of Radiated Emissions Test Data (Below 30MHz)**

Test mode:	TM1	Polarity:	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	0.0859	47.02	-6.14	40.88	103.50	-62.62	-	-	QP
2	0.1158	74.14	-6.52	67.62	103.50	-35.88	-	-	QP
3	0.1786	45.79	-6.86	38.93	103.50	-64.57	-	-	QP
4	0.3410	51.23	-7.73	43.50	103.50	-60.00	-	-	QP
5	0.5762	49.63	-7.19	42.44	103.50	-61.06	-	-	QP
6	0.8084	48.89	-6.95	41.94	103.50	-61.56	-	-	QP

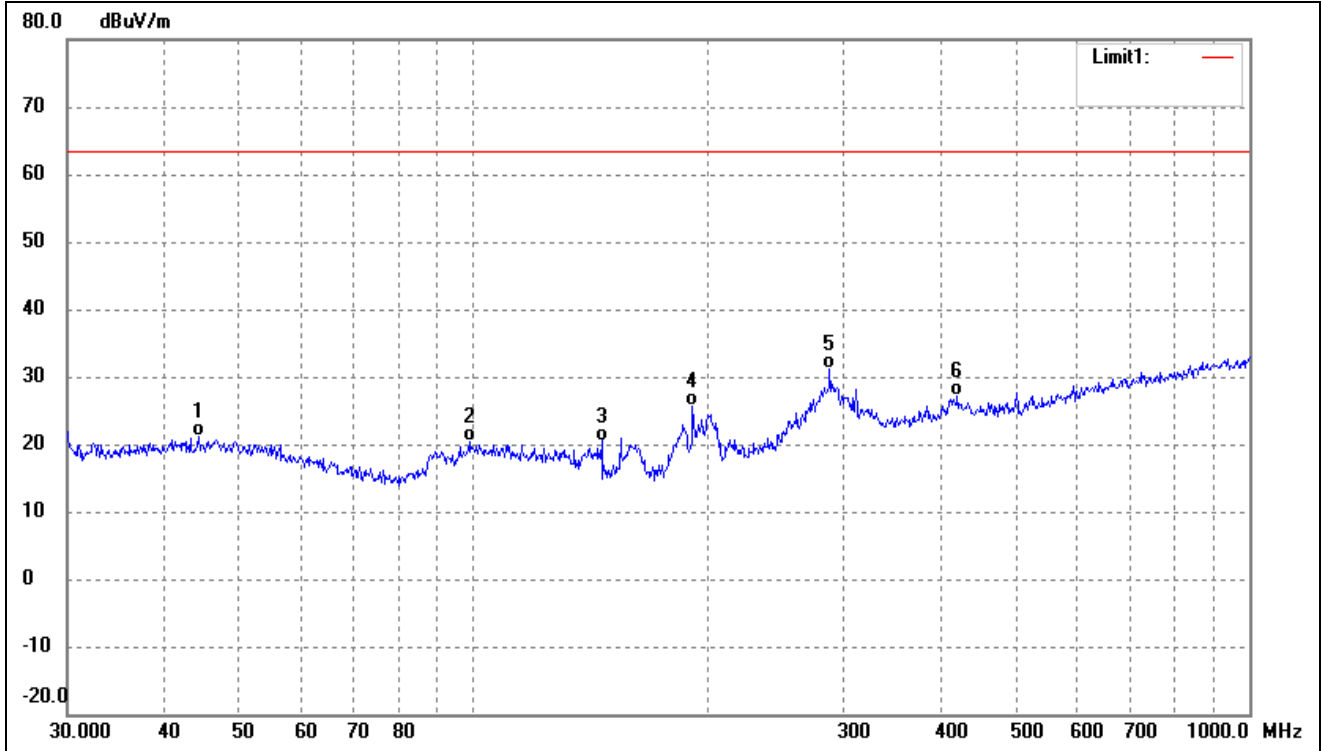
Test mode:	TM2	Polarity:	Horizontal
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No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	0.0437	48.03	-5.78	42.25	103.50	-61.25	-	-	QP
2	0.1386	73.40	-6.39	67.01	103.50	-36.49	-	-	QP
3	0.1874	49.59	-6.61	42.98	103.50	-60.52	-	-	QP
4	0.4148	46.06	-7.66	38.40	103.50	-65.10	-	-	QP
5	0.6895	47.29	-6.67	40.62	103.50	-62.88	-	-	QP
6	1.2419	40.05	0.00	40.05	103.50	-63.45	-	-	QP

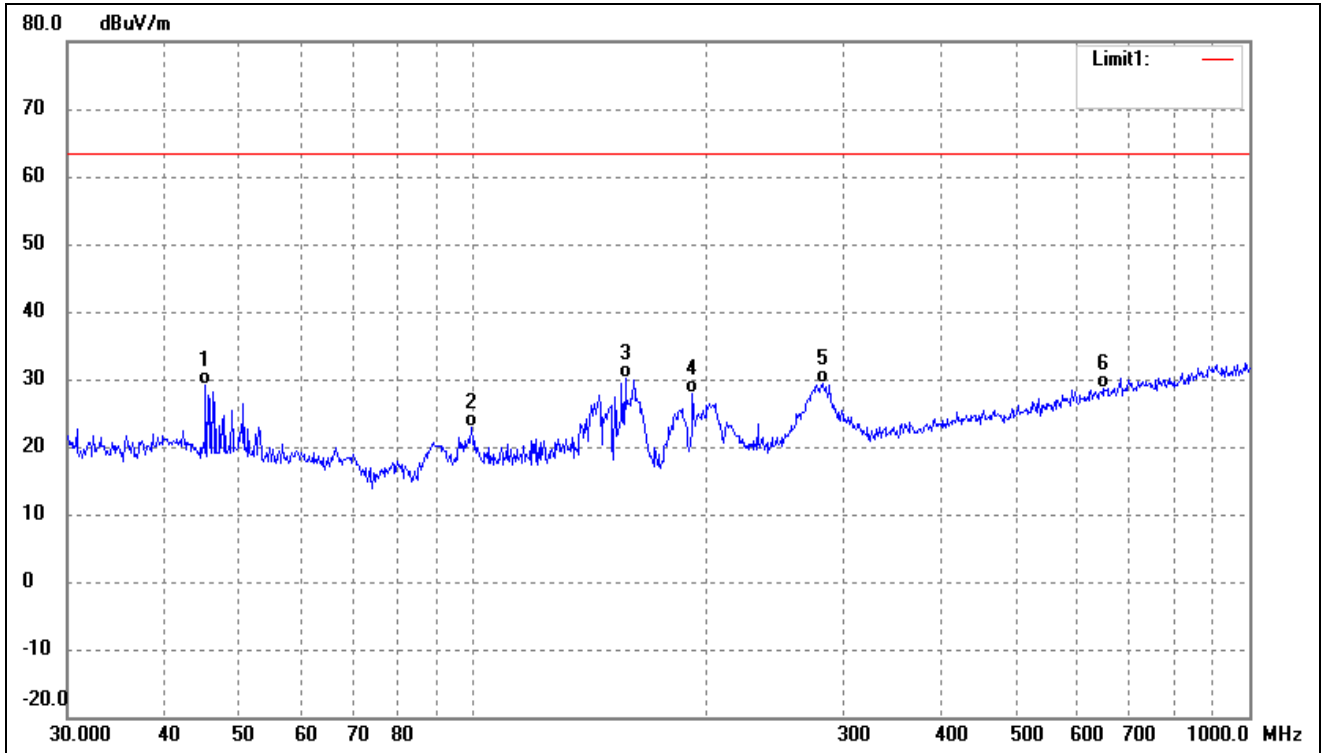
**Plot of Radiated Emissions Test Data ( Above 30MHz)**

Test mode:	TM1	Polarity:	Horizontal
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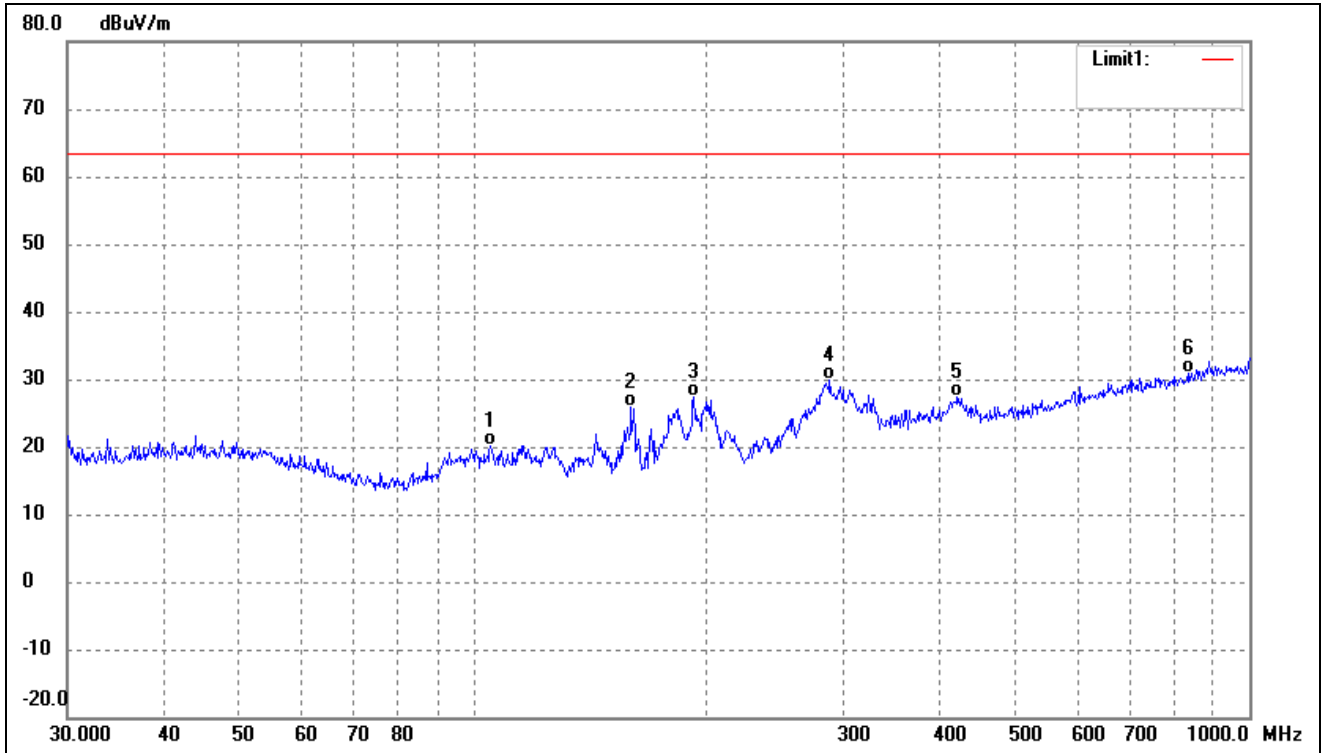
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	44.2752	28.30	-7.21	21.09	63.50	-42.41	-	-	QP
2	98.8326	28.67	-8.38	20.29	63.50	-43.21	-	-	QP
3	146.3735	32.07	-11.57	20.50	63.50	-43.00	-	-	QP
4	191.7450	34.51	-8.76	25.75	63.50	-37.75	-	-	QP
5	287.9904	36.50	-5.42	31.08	63.50	-32.42	-	-	QP
6	420.5803	30.15	-3.08	27.07	63.50	-36.43	-	-	QP

Test mode:	TM1	Polarity:	Vertical
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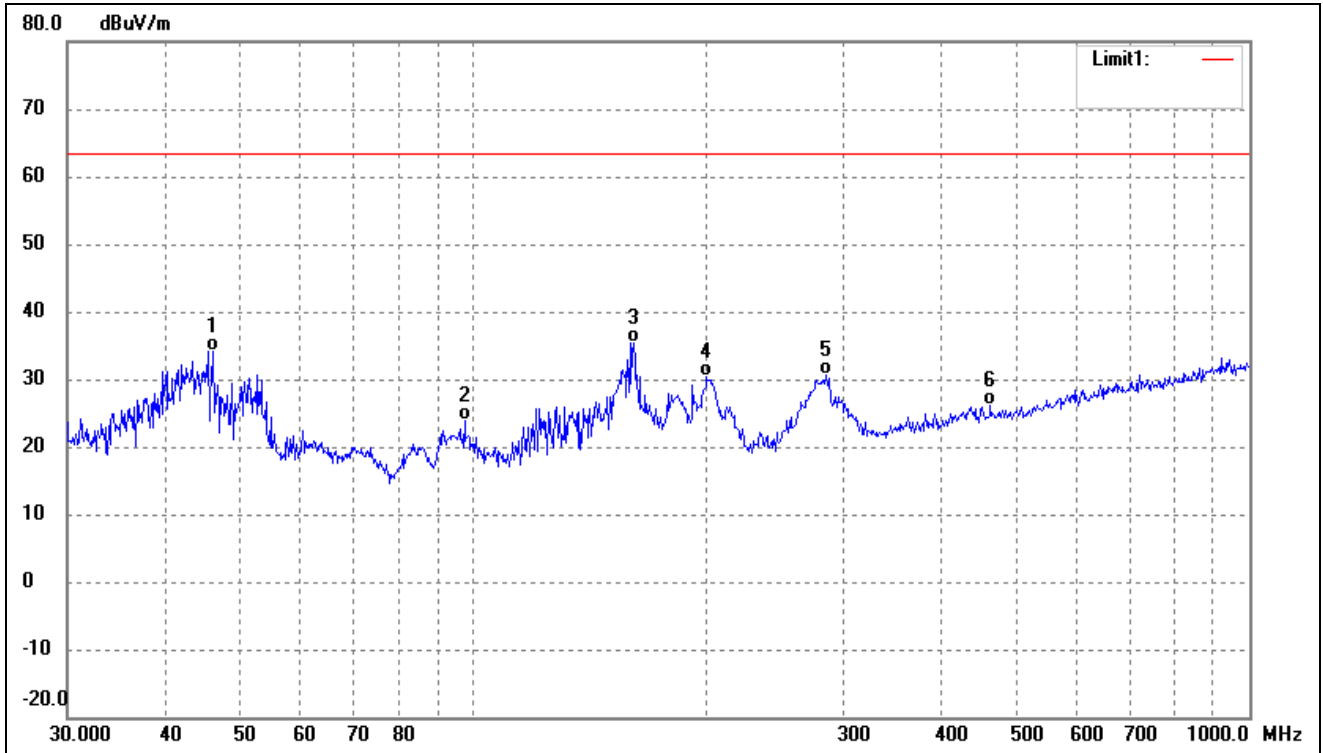
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ( )	Height (cm)	Remark
1	45.2166	36.32	-7.23	29.09	63.50	-34.41	-	-	QP
2	99.5281	31.06	-8.18	22.88	63.50	-40.62	-	-	QP
3	157.0074	41.35	-11.31	30.04	63.50	-33.46	-	-	QP
4	191.7450	36.59	-8.76	27.83	63.50	-35.67	-	-	QP
5	281.9946	34.97	-5.61	29.36	63.50	-34.14	-	-	QP
6	649.6597	28.02	0.57	28.59	63.50	-34.91	-	-	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	105.2718	28.11	-8.10	20.01	63.50	-43.49	-	-	QP
2	159.7844	37.04	-11.17	25.87	63.50	-37.63	-	-	QP
3	192.4186	36.10	-8.74	27.36	63.50	-36.14	-	-	QP
4	287.9904	35.37	-5.42	29.95	63.50	-33.55	-	-	QP
5	420.5803	30.36	-3.08	27.28	63.50	-36.22	-	-	QP
6	833.3171	27.84	2.92	30.76	63.50	-32.74	-	-	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	46.1779	41.48	-7.25	34.23	63.50	-29.27	-	-	QP
2	97.4560	32.72	-8.77	23.95	63.50	-39.55	-	-	QP
3	160.9089	46.49	-11.11	35.38	63.50	-28.12	-	-	QP
4	199.9856	38.69	-8.42	30.27	63.50	-33.23	-	-	QP
5	284.9767	36.09	-5.51	30.58	63.50	-32.92	-	-	QP
6	463.9696	28.75	-2.61	26.14	63.50	-37.36	-	-	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

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Please refer to “ANNEX”

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