

TEST REPORT

Reference No..... : WTX24X10247316W001
FCC ID..... : A4X-MPP48-1TCNA-F
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 Charger
Model No..... : MPP48-1TCNA-F
Standards..... : **47 CFR FCC Part 18**
Date of Receipt sample..... : 2024-10-25
Date of Test..... : 2024-10-25 to 2024-11-13
Date of Issue..... : 2024-11-13
Test Report Form No..... : WTX_FCC Part 18_001
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:

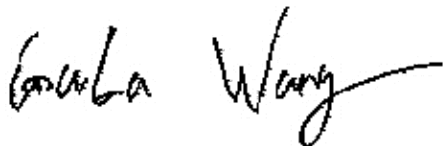
Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,

Block 70 Bao'an District, Shenzhen, Guangdong, China

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Email: sem@waltek.com.cn

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	12
3. CONDUCTED EMISSIONS	13
3.1 STANDARD APPLICABLE	13
3.2 TEST PROCEDURE	13
3.3 BASIC TEST SETUP BLOCK DIAGRAM	13
3.4 ENVIRONMENTAL CONDITIONS	13
3.5 TEST RECEIVER SETUP	14
3.6 SUMMARY OF TEST RESULTS/PLOTS	14
4. RADIATED EMISSIONS	23
4.1 TEST PROCEDURE	23
4.2 TEST RECEIVER SETUP	24
4.3 CORRECTED AMPLITUDE & MARGIN CALCULATION	24
4.4 ENVIRONMENTAL CONDITIONS	25
4.5 SUMMARY OF TEST RESULTS/PLOTS	25
APPENDIX PHOTOGRAPHS	37

Report version

Version No.	Date of issue	Description
Rev.00	2024-11-13	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: Part of lots CNSG-04, CNSG-06 Van Trung Industrial Zone, Van Trung Ward, Viet Yen Town, Bac Giang Province, Vietnam

General Description of EUT	
Product Name:	QI2 Wireless Charger
Trade Name:	CE-LINK
Model No.:	MPP48-1TCNA-F
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:	Output1: 5W (128 kHz) /15W(128/360kHz) Phone Output2: 5W(110~205 kHz) AirPods Output3: 3W(326.5/1.778MHz) Apple Watch
Modulation Type:	ASK
Antenna Type:	Coil Antenna
Antenna Gain:	0dBi
Rated Voltage:	Input: 20V Output 4: 5V/9V/12V/15V
Rated Current:	Input: 3A Output 4: 3A/3A/2.5A/2A
Rate Power:	Output 1: 5W/15W Output 2: 5W Output 3: 3W Output 4: 30W Max
<i>Note The Antenna Gain is provided by the customer and can affect the validity of results.</i>	

1.2 Test Standards

The tests were performed according to following standards:

47 CFR FCC Part 18: Industrial, Scientific, and medical medical equipment.

MP5-1986: FCC METHODS OF MESUREMENTS OF RADIO NOISE EMISSIONS FROM INDUSTRIAL, SCIENTIFIC, AND MEDICAL EQUIPMENT.

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	AC120V/60Hz for adapter	Input: DC20V3A; Wireless charging: output 5W(Phone)
TM2	Wireless Charging	AC120V/60Hz for adapter	Input: DC20V3A; Wireless charging: output 15W(Phone)
TM3	Wireless Charging	AC120V/60Hz for adapter	Input: DC20V3A; Wireless charging: output 5W(Airpods)
TM4	Wireless Charging	AC120V/60Hz for adapter	Input: DC20V3A ; Wireless charging: output 3W(Apple Watch)

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	HUAWEI	HW-200325CP0	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
Type-C Cable	1.4	Unshielded	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

Fixed asset Number	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
WTXE1004A 1-001	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2024-02-27	2025-02-26
WTXE1103A 1003	Attenuator	Pasternack	PE4007-4	/	2024-02-24	2025-02-23
WTXE1003A 1-005	Coaxial Cable	/	0M4RFC	/	2024-07-03	2025-01-03
☒ Chamber A: Below 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2024-02-24	2025-02-23
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2024-02-24	2025-02-23
WTXE1007A 1001	Amplifier	HP	8447F	2805A034 75	2024-02-24	2025-02-23
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2025-02-25
WTXE1010A 1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2024-02-24	2025-02-23
WTXE1104A 1032-1	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
WTXE1104A 1032-2	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
WTXE1104A 1032-3	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
☒ Chamber A: Above 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2024-02-24	2025-02-23
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2024-02-24	2025-02-23
WTXE1065A 1001	Amplifier	C&D	PAP-1G18	2002	2024-02-27	2025-02-26
WTXE1010A 1005	Horn Antenna	ETS	3117	00086197	2024-02-26	2025-02-25
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2025-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2024-02-29	2025-02-28
WTXE1104A 1033-1	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14
WTXE1104A	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14

1033-2						
WTXE1104A 1033-3	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14
☐ Chamber B: Below 1GHz						
WTXE1010A 1006	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
WTXE1038A 1001	Amplifier	Agilent	8447D	2944A104 57	2024-02-24	2025-02-23
WTXE1001A 1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2024-02-24	2025-02-23
WTXE1104A 1031-1	Coaxial Cable	/	1.5MRFC-LWB3	/	2024-07-03	2025-07-02
WTXE1104A 1031-2	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
WTXE1104A 1031-3	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
☐ Chamber C: Below 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2024-02-27	2025-02-26
WTXE1010A 1013-1	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2024-04-18	2027-04-17
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2025-02-25
WTXE1007A 1002	Amplifier	HP	8447F	2944A038 69	2024-02-24	2025-02-23
WTXE1104A 1034-1	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1034-2	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1034-3	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
☐ Chamber C: Above 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2024-02-27	2025-02-26
WTXE1103A 1005	Horn Antenna	POAM	RTF-118A	1820	2023-03-10	2026-03-09
WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806 235	2024-02-27	2025-02-26
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2025-03-16
WTXE1003A	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2024-02-29	2025-02-28

1001						
WTXE1104A 1035-1	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1035-2	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1035-3	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
☒ Conducted Room 1#						
WTXE1104A 1029	EMI Test Receiver	Rohde & Schwarz	ESCI	100525	2024-12-08	2025-12-07
WTXE1002A 1001	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2024-02-24	2025-02-23
WTXE1003A 1001	AC LISN	Schwarz beck	NSLK8126	8126-279	2024-02-24	2025-02-23
WTXE1104A 1036	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
WTXE1104A 1038	Coaxial Cable	/	6MRFC-DP	/	2024-07-03	2025-07-02
☐ Conducted Room 2#						
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2024-02-24	2025-02-23
WTXE1003A 1003	LISN	Rohde & Schwarz	ENV 216	100097	2024-02-24	2025-02-23
WTXE1104A 1037	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission A)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission B)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission C)	Farad	EZ-EMC	RA-03A1-2 (1.1.4.2)
EMI Test Software (Conducted Emission Room 1#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3
EMI Test Software (Conducted Emission Room 2#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3

*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

N/A: Not applicable.

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:

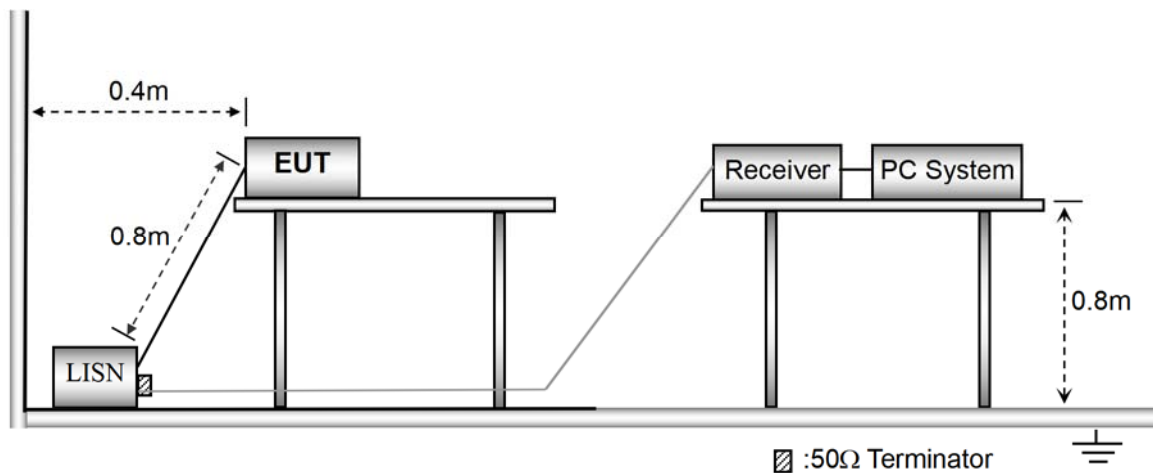
Frequency (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

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

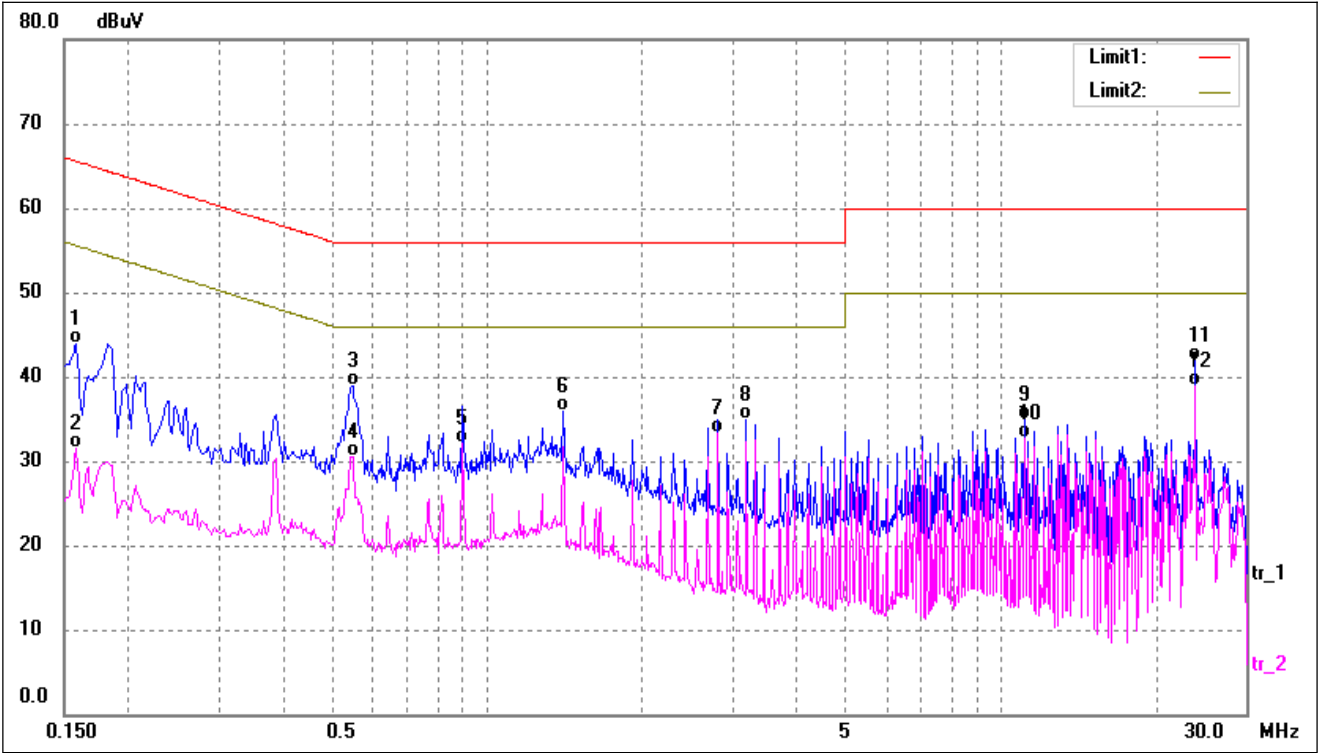
3.5 Test Receiver Setup

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

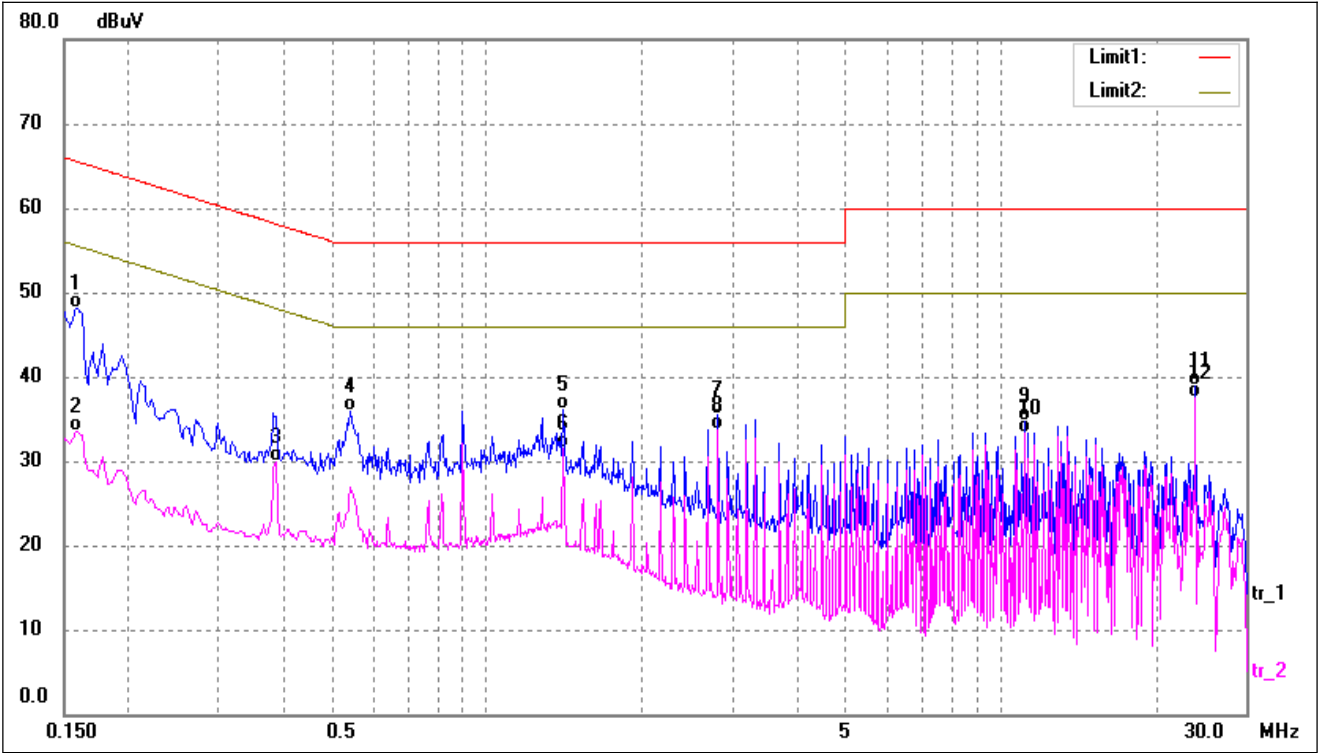
3.6 Summary of Test Results/Plots

Test mode:	TM1	Polarity:	Line
------------	-----	-----------	------



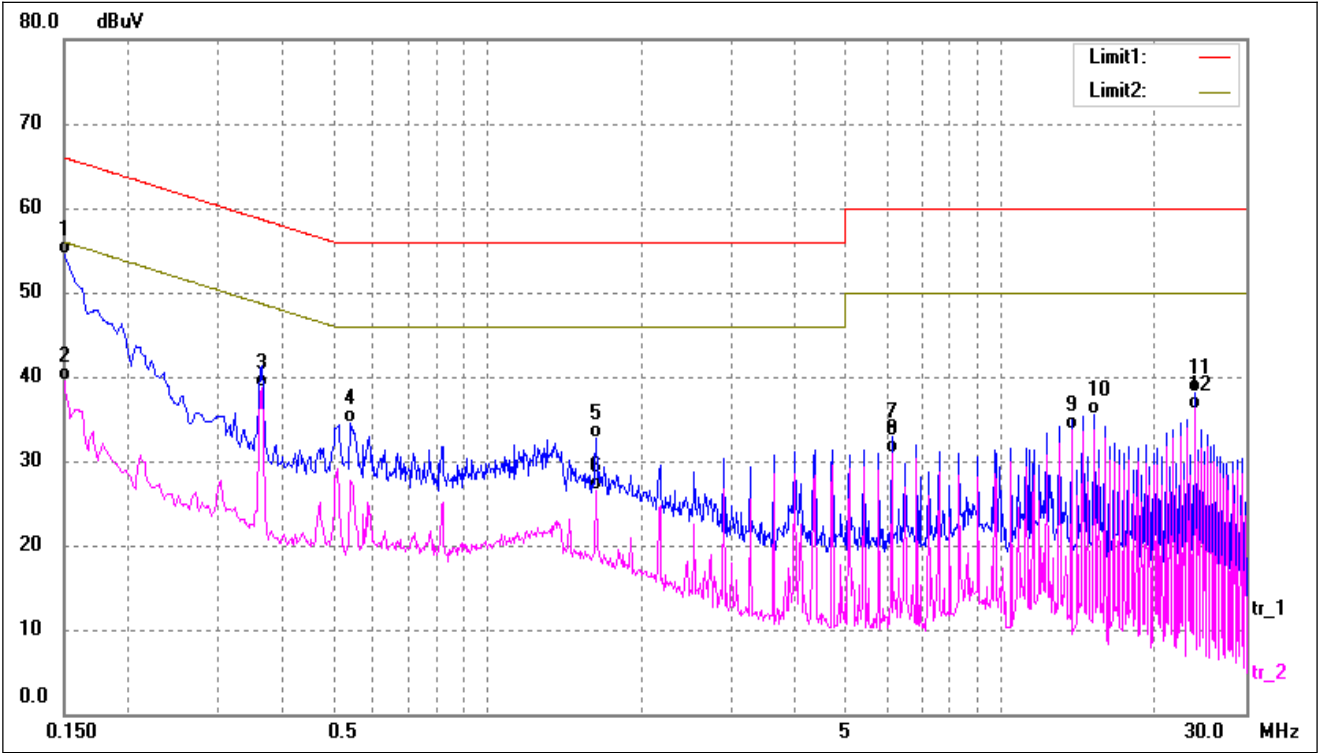
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1580	34.17	9.73	43.90	65.56	-21.66	QP
2	0.1580	21.73	9.73	31.46	55.56	-24.10	AVG
3	0.5460	29.15	9.73	38.88	56.00	-17.12	QP
4	0.5460	20.82	9.73	30.55	46.00	-15.45	AVG
5	0.8980	22.40	9.67	32.07	46.00	-13.93	AVG
6	1.4100	26.34	9.65	35.99	56.00	-20.01	QP
7	2.8179	23.60	9.62	33.22	46.00	-12.78	AVG
8	3.2020	25.22	9.63	34.85	56.00	-21.15	QP
9	11.1420	24.93	9.90	34.83	60.00	-25.17	QP
10	11.1420	22.84	9.90	32.74	50.00	-17.26	AVG
11	23.9619	31.68	10.15	41.83	60.00	-18.17	QP
12*	23.9619	28.80	10.15	38.95	50.00	-11.05	AVG

Test mode:	TM1	Polarity:	Neutral
------------	-----	-----------	---------



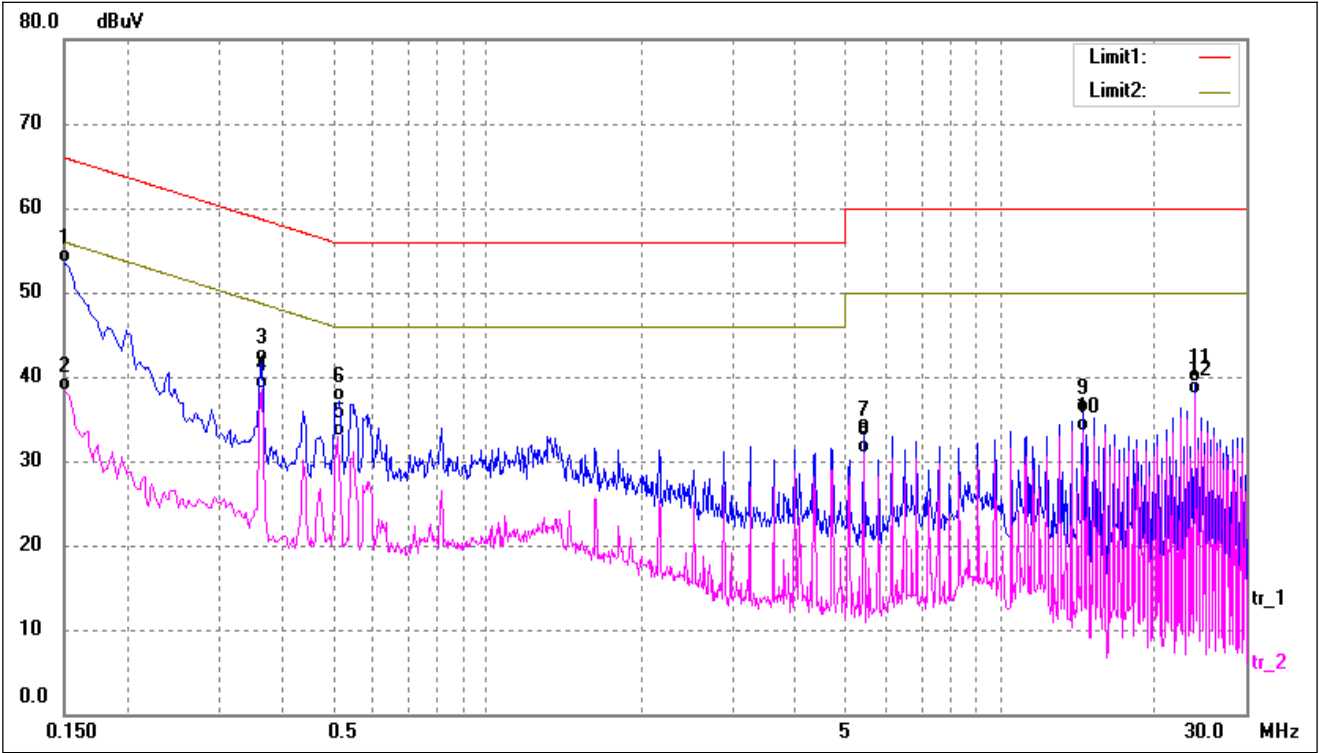
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1580	38.45	9.73	48.18	65.56	-17.38	QP
2	0.1580	23.76	9.73	33.49	55.56	-22.07	AVG
3	0.3860	20.22	9.68	29.90	48.15	-18.25	AVG
4	0.5420	26.10	9.73	35.83	56.00	-20.17	QP
5	1.4099	26.40	9.65	36.05	56.00	-19.95	QP
6	1.4099	21.92	9.65	31.57	46.00	-14.43	AVG
7	2.8180	25.90	9.62	35.52	56.00	-20.48	QP
8*	2.8180	24.04	9.62	33.66	46.00	-12.34	AVG
9	11.1419	24.90	9.90	34.80	60.00	-25.20	QP
10	11.1419	23.31	9.90	33.21	50.00	-16.79	AVG
11	23.9579	28.76	10.15	38.91	60.00	-21.09	QP
12	23.9579	27.35	10.15	37.50	50.00	-12.50	AVG

Test mode:	TM2	Polarity:	Line
------------	-----	-----------	------



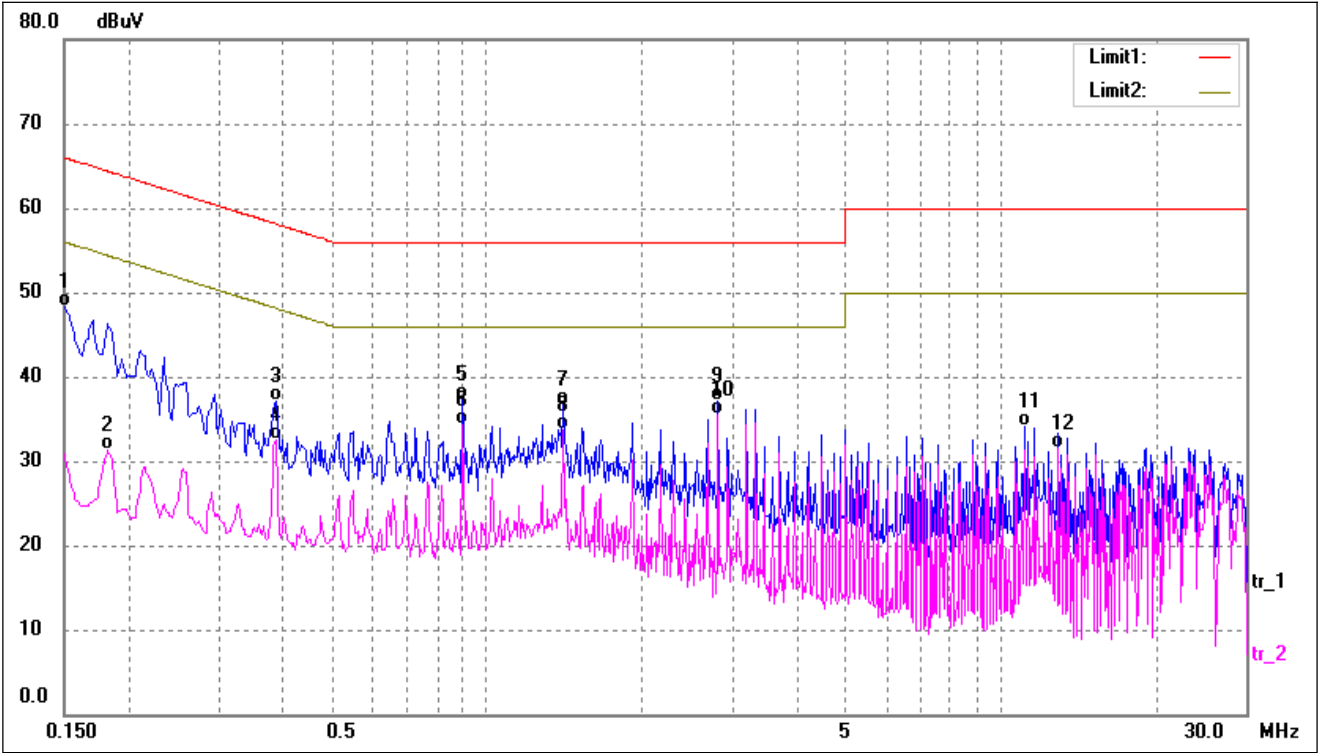
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	44.71	9.76	54.47	65.99	-11.52	QP
2	0.1500	29.65	9.76	39.41	55.99	-16.58	AVG
3*	0.3620	29.05	9.67	38.72	48.68	-9.96	AVG
4	0.5420	24.79	9.73	34.52	56.00	-21.48	QP
5	1.6340	23.13	9.64	32.77	56.00	-23.23	QP
6	1.6340	16.95	9.64	26.59	46.00	-19.41	AVG
7	6.1420	23.10	9.76	32.86	60.00	-27.14	QP
8	6.1420	21.17	9.76	30.93	50.00	-19.07	AVG
9	13.7300	23.80	9.95	33.75	50.00	-16.25	AVG
10	15.1740	25.45	9.99	35.44	60.00	-24.56	QP
11	23.9500	27.98	10.15	38.13	60.00	-21.87	QP
12	23.9500	26.05	10.15	36.20	50.00	-13.80	AVG

Test mode:	TM2	Polarity:	Neutral
------------	-----	-----------	---------



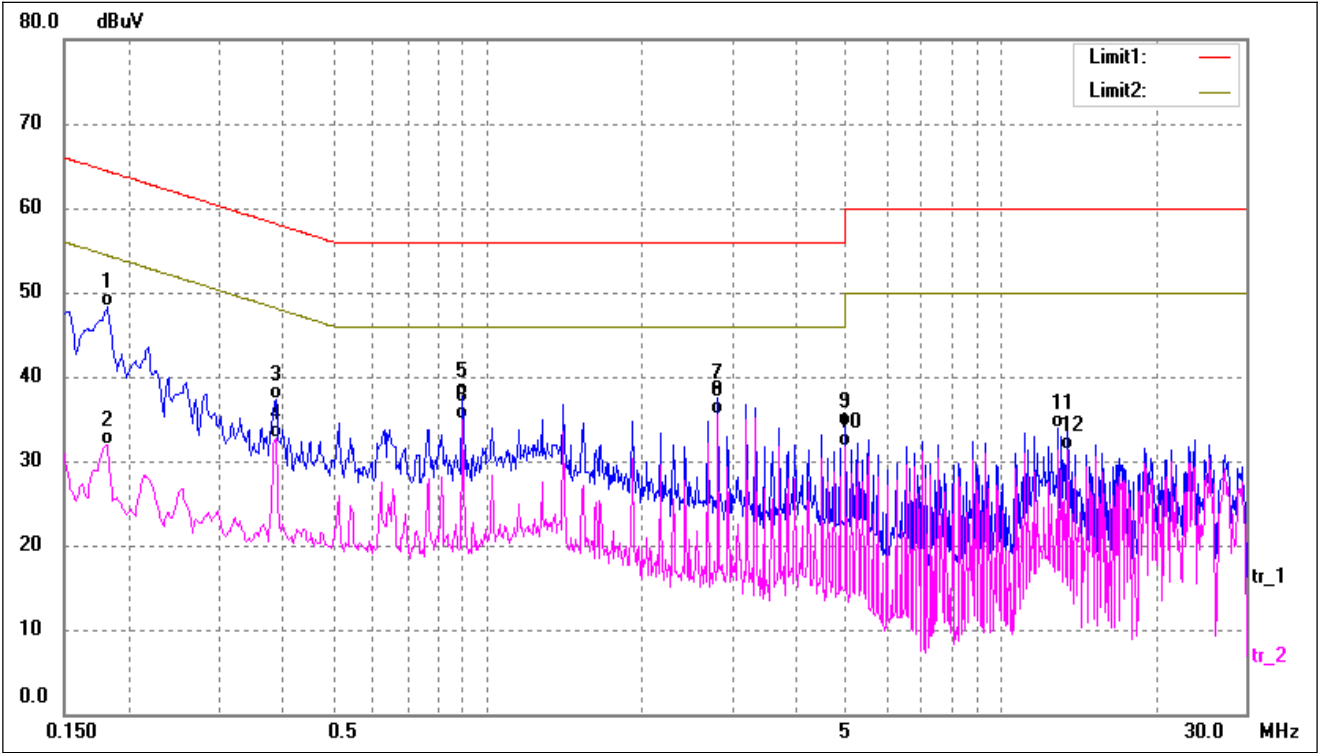
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	43.79	9.76	53.55	65.99	-12.44	QP
2	0.1500	28.64	9.76	38.40	55.99	-17.59	AVG
3	0.3620	32.05	9.67	41.72	58.68	-16.96	QP
4*	0.3620	28.83	9.67	38.50	48.68	-10.18	AVG
5	0.5100	23.10	9.74	32.84	46.00	-13.16	AVG
6	0.5140	27.30	9.74	37.04	56.00	-18.96	QP
7	5.4180	23.30	9.72	33.02	60.00	-26.98	QP
8	5.4180	21.18	9.72	30.90	50.00	-19.10	AVG
9	14.4460	25.66	9.97	35.63	60.00	-24.37	QP
10	14.4460	23.50	9.97	33.47	50.00	-16.53	AVG
11	23.9540	29.10	10.15	39.25	60.00	-20.75	QP
12	23.9540	27.71	10.15	37.86	50.00	-12.14	AVG

Test mode:	TM3	Polarity:	Line
------------	-----	-----------	------



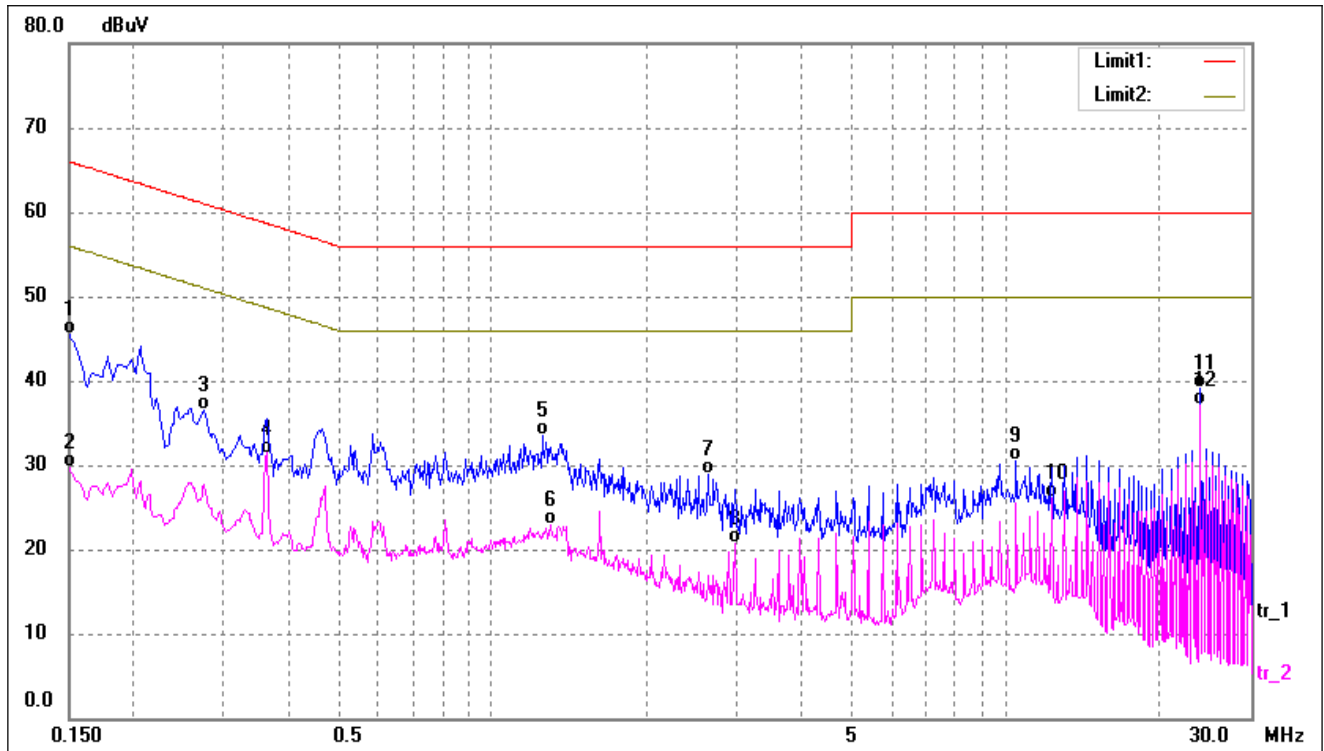
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	38.62	9.76	48.38	65.99	-17.61	QP
2	0.1819	21.66	9.64	31.30	54.39	-23.09	AVG
3	0.3860	27.48	9.68	37.16	58.15	-20.99	QP
4	0.3860	22.77	9.68	32.45	48.15	-15.70	AVG
5	0.8980	27.68	9.67	37.35	56.00	-18.65	QP
6	0.8980	24.66	9.67	34.33	46.00	-11.67	AVG
7	1.4100	27.14	9.65	36.79	56.00	-19.21	QP
8	1.4100	24.03	9.65	33.68	46.00	-12.32	AVG
9	2.8179	27.58	9.62	37.20	56.00	-18.80	QP
10*	2.8179	25.85	9.62	35.47	46.00	-10.53	AVG
11	11.1420	24.27	9.90	34.17	60.00	-25.83	QP
12	12.9340	21.48	9.94	31.42	50.00	-18.58	AVG

Test mode:	TM3	Polarity:	Neutral
------------	-----	-----------	---------



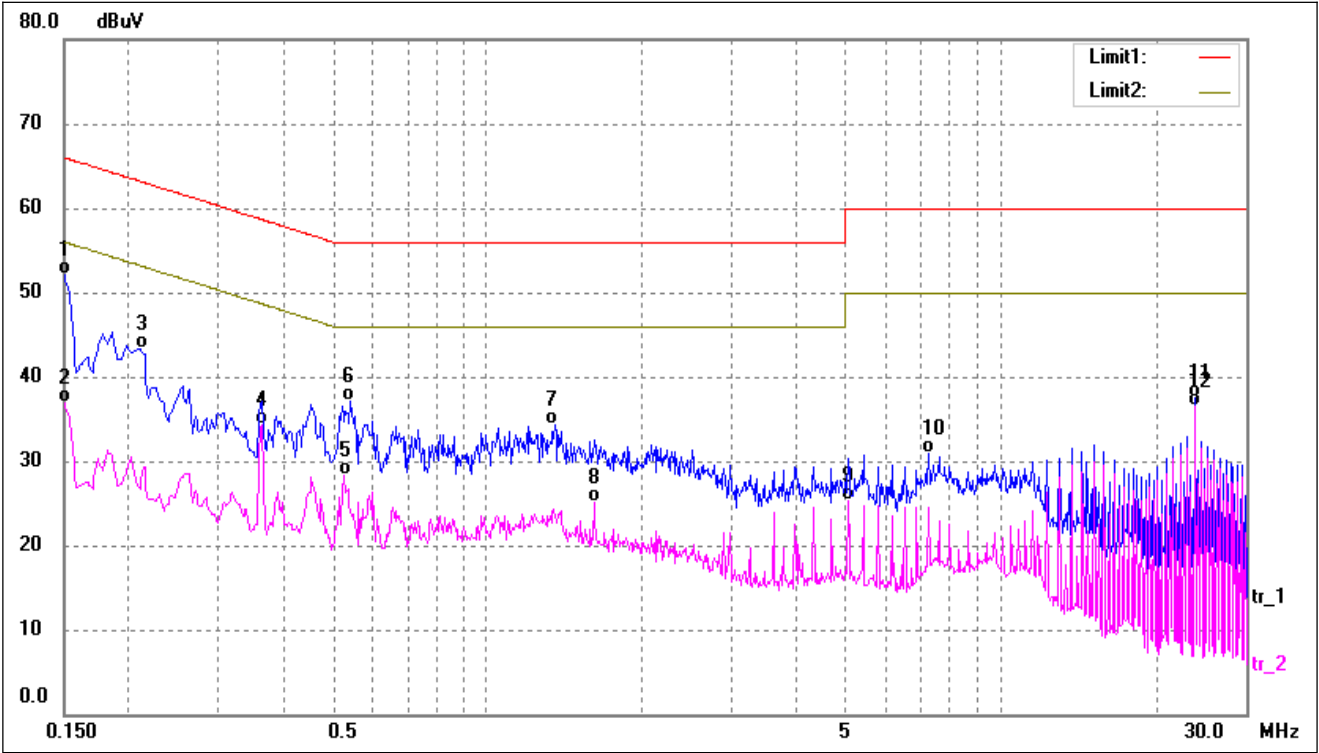
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1819	38.72	9.64	48.36	64.39	-16.03	QP
2	0.1819	22.33	9.64	31.97	54.39	-22.42	AVG
3	0.3860	27.57	9.68	37.25	58.15	-20.90	QP
4	0.3860	23.09	9.68	32.77	48.15	-15.38	AVG
5	0.8980	28.08	9.67	37.75	56.00	-18.25	QP
6	0.8980	25.24	9.67	34.91	46.00	-11.09	AVG
7	2.8179	27.83	9.62	37.45	56.00	-18.55	QP
8*	2.8179	25.90	9.62	35.52	46.00	-10.48	AVG
9	4.9940	24.39	9.71	34.10	56.00	-21.90	QP
10	4.9940	22.02	9.71	31.73	46.00	-14.27	AVG
11	12.9340	23.91	9.94	33.85	60.00	-26.15	QP
12	13.4460	21.44	9.95	31.39	50.00	-18.61	AVG

Test mode:	TM4	Polarity:	Line
------------	-----	-----------	------



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	35.69	9.76	45.45	65.99	-20.54	QP
2	0.1500	19.99	9.76	29.75	55.99	-26.24	AVG
3	0.2740	26.92	9.62	36.54	60.99	-24.45	QP
4	0.3620	21.73	9.67	31.40	48.68	-17.28	AVG
5*	1.2500	23.84	9.66	33.50	46.00	-12.50	AVG
6	1.2980	13.30	9.65	22.95	46.00	-23.05	AVG
7	2.6300	19.27	9.62	28.89	56.00	-27.11	QP
8	2.9739	11.17	9.62	20.79	46.00	-25.21	AVG
9	10.4660	20.54	9.89	30.43	60.00	-29.57	QP
10	12.2700	16.14	9.93	26.07	50.00	-23.93	AVG
11	23.9540	29.00	10.15	39.15	60.00	-20.85	QP
12	23.9540	26.96	10.15	37.11	50.00	-12.89	AVG

Test mode:	TM4	Polarity:	Neutral
------------	-----	-----------	---------



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1500	42.36	9.76	52.12	65.99	-13.87	QP
2	0.1500	27.13	9.76	36.89	55.99	-19.10	AVG
3	0.2100	33.74	9.58	43.32	63.20	-19.88	QP
4	0.3620	24.66	9.67	34.33	48.68	-14.35	AVG
5	0.5260	18.61	9.73	28.34	46.00	-17.66	AVG
6	0.5420	27.47	9.73	37.20	56.00	-18.80	QP
7	1.3580	24.69	9.65	34.34	56.00	-21.66	QP
8	1.6180	15.45	9.64	25.09	46.00	-20.91	AVG
9	5.0540	15.69	9.71	25.40	50.00	-24.60	AVG
10	7.2180	21.15	9.80	30.95	60.00	-29.05	QP
11	23.9540	27.31	10.15	37.46	60.00	-22.54	QP
12*	23.9540	26.31	10.15	36.46	50.00	-13.54	AVG

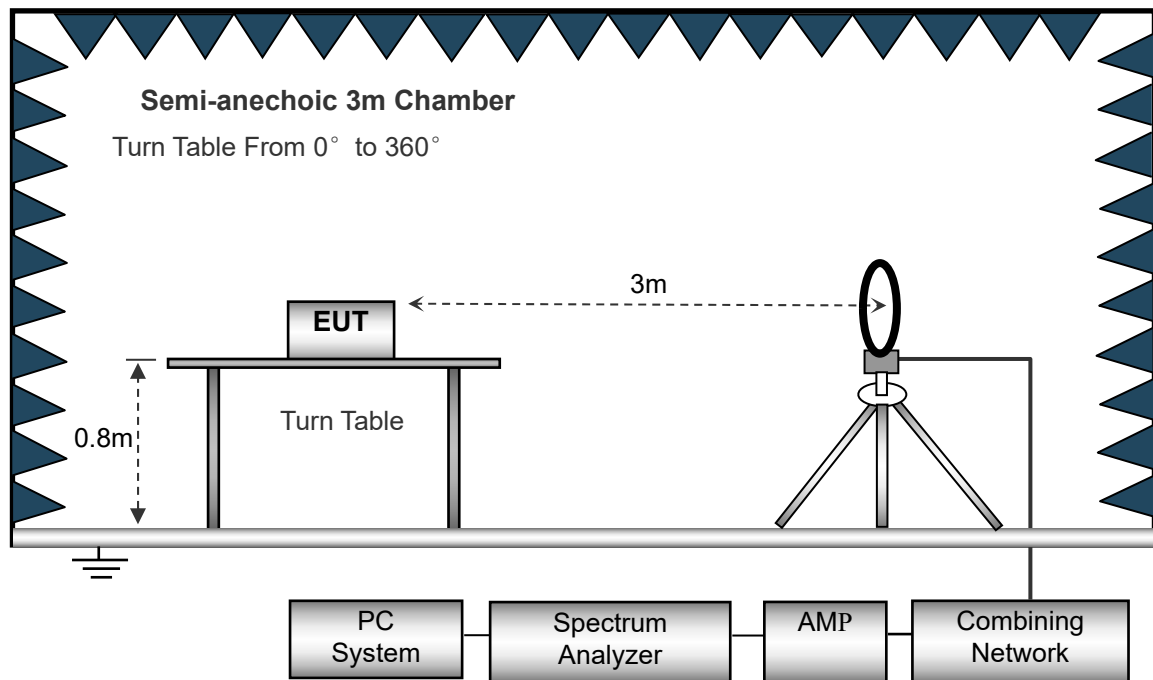
4. Radiated Emissions

4.1 Test Procedure

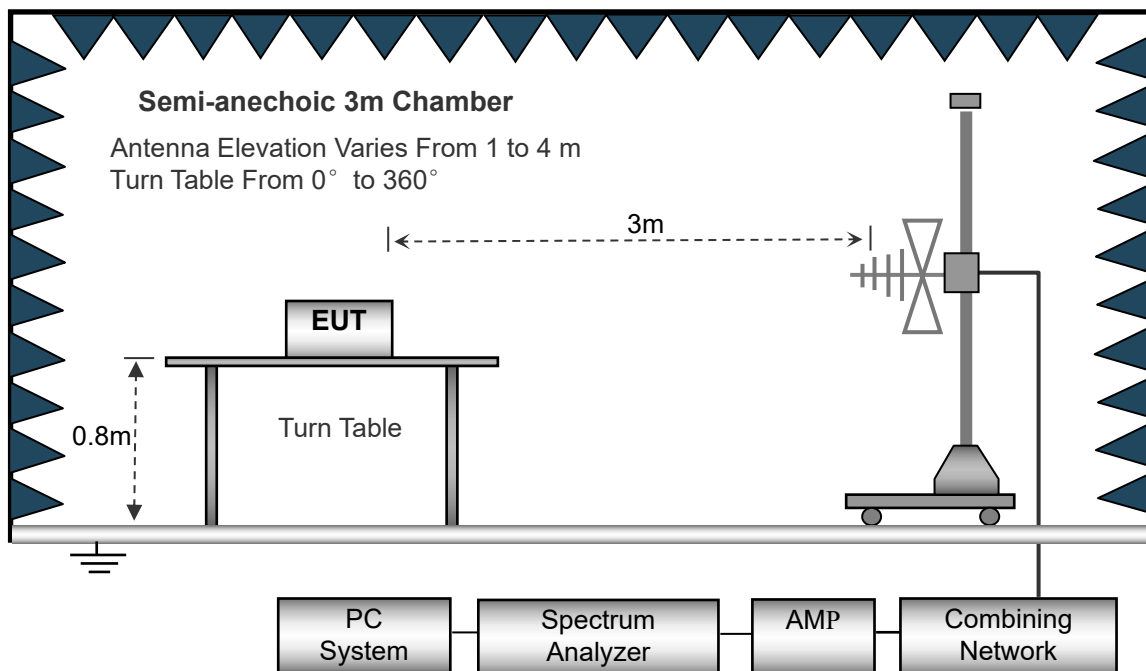
The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 18.305 Limit.

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

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:

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

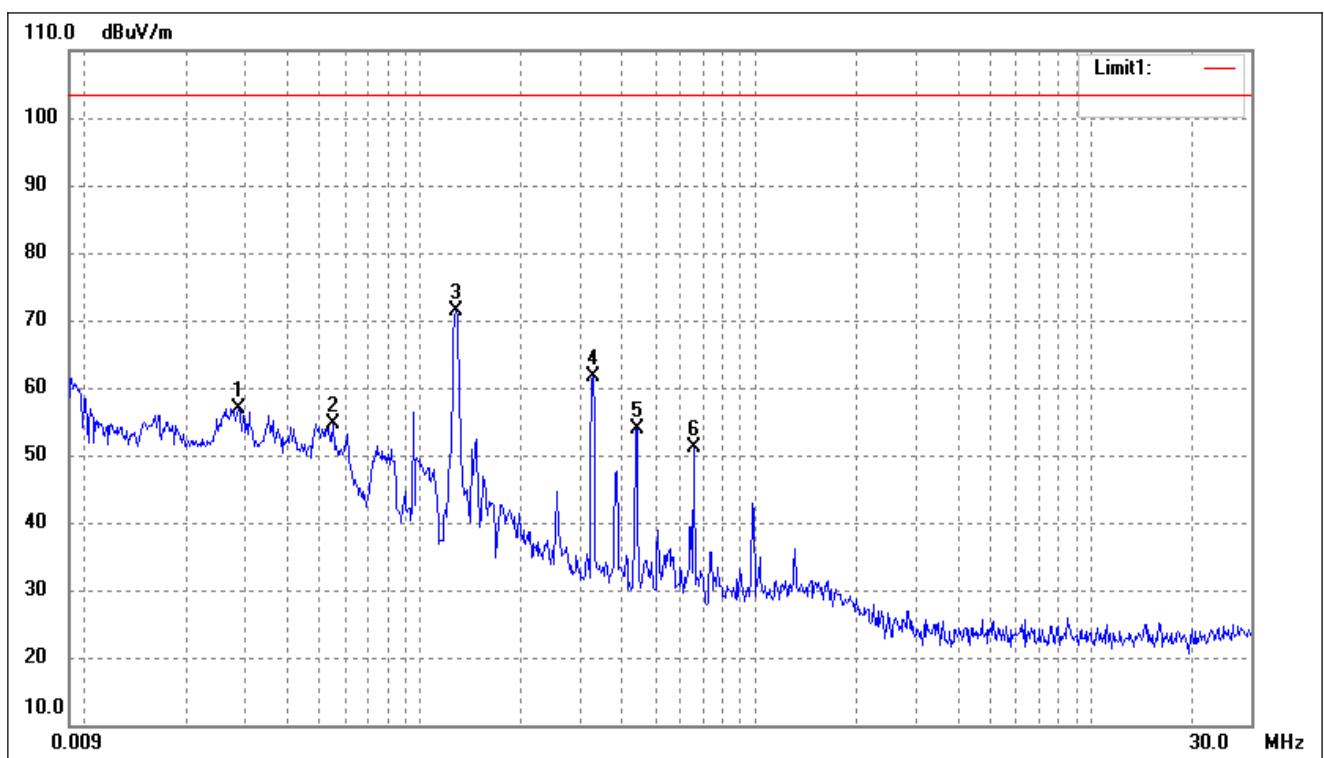
4.4 Environmental Conditions

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

4.5 Summary of Test Results/Plots

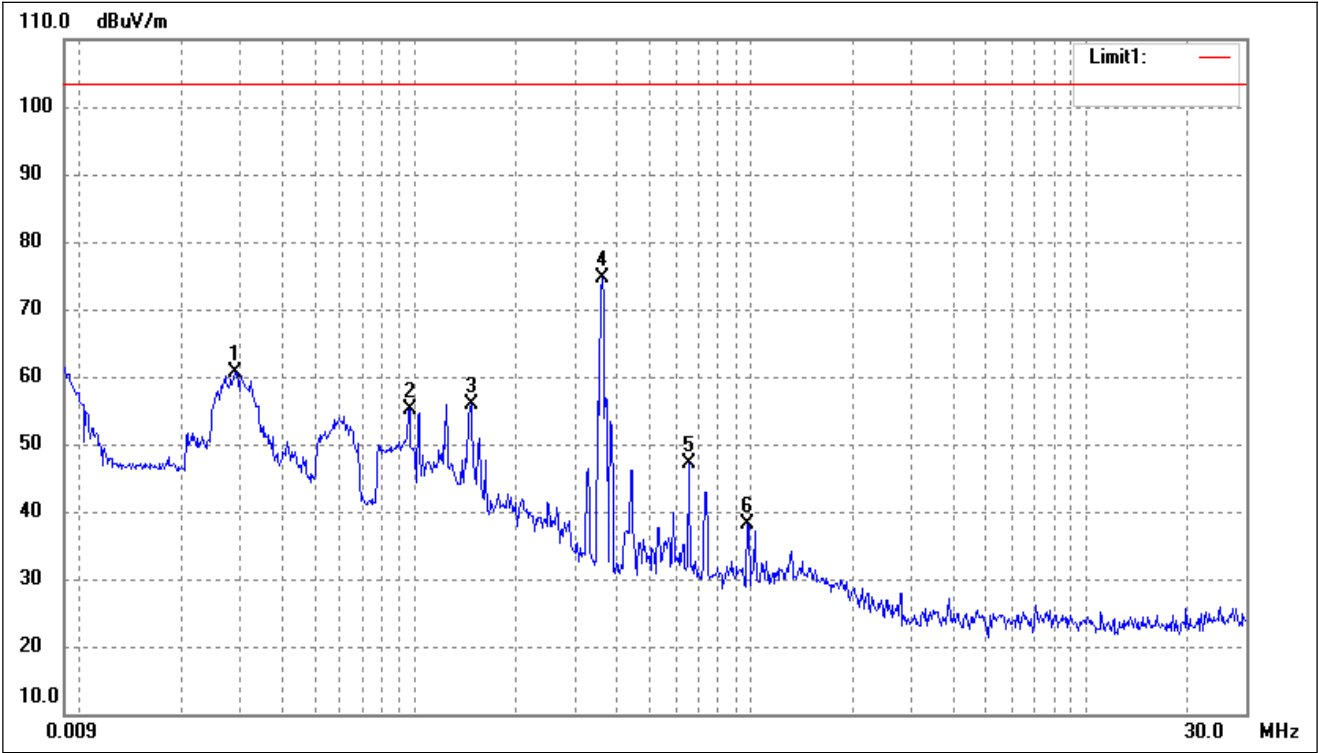
Plot of Radiated Emissions Test Data (Below 30MHz)

Test mode:	TM1	Polarity:	Vertical
------------	-----	-----------	----------



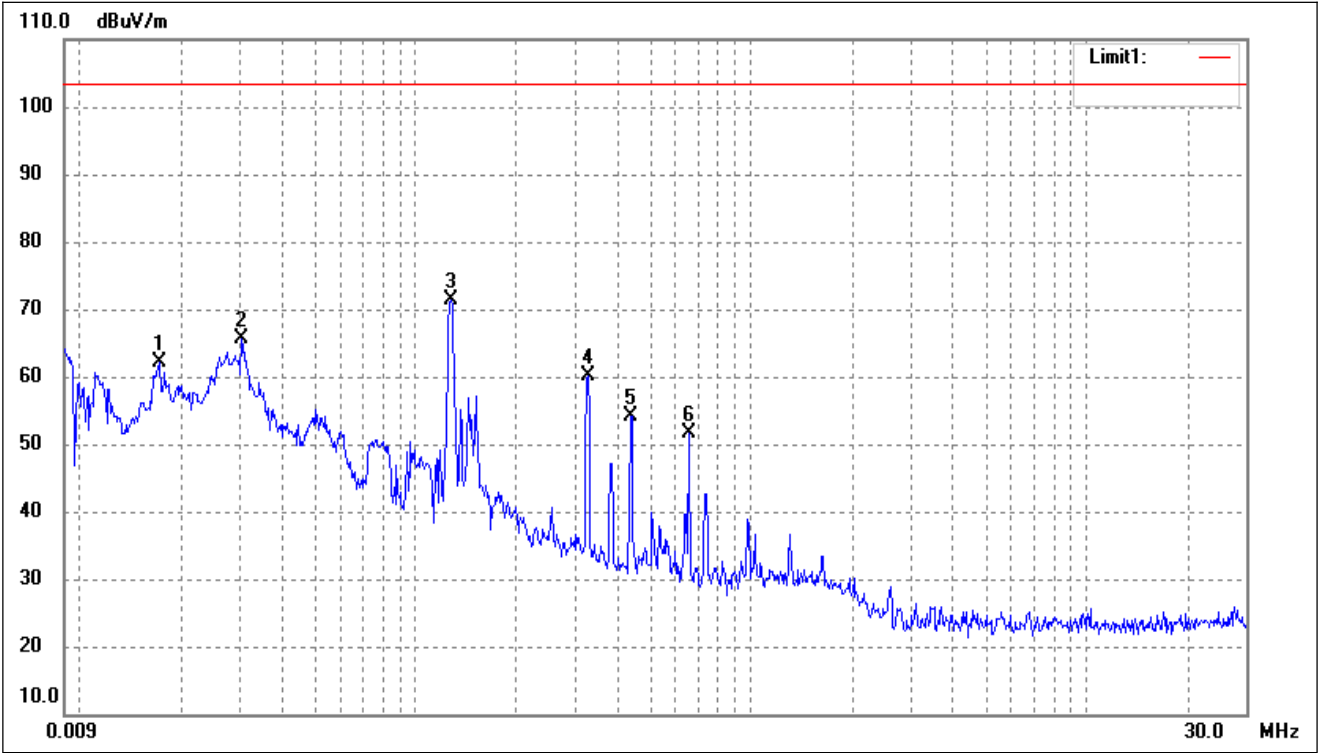
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	0.0287	63.69	-6.76	56.93	103.50	-46.57	-	-	peak
2	0.0549	62.07	-7.33	54.74	103.50	-48.76	-	-	peak
3	0.1277	79.25	-7.95	71.30	103.50	-32.20	-	-	peak
4	0.3272	69.90	-8.38	61.52	103.50	-41.98	-	-	peak
5	0.4418	62.26	-8.31	53.95	103.50	-49.55	-	-	peak
6	0.6521	59.27	-8.14	51.13	103.50	-52.37	-	-	peak

Test mode:	TM2	Polarity:	Vertical
------------	-----	-----------	----------



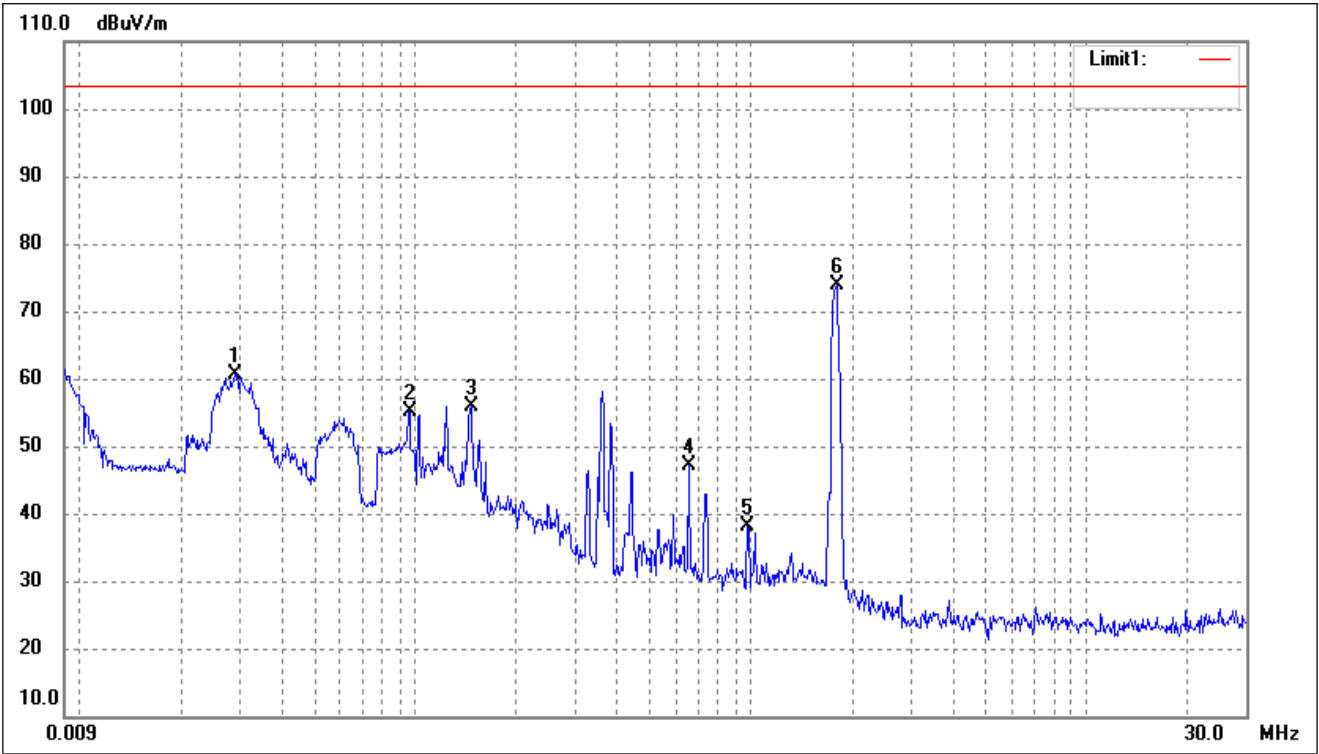
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	0.0289	67.44	-6.77	60.67	103.50	-42.83	-	-	peak
2	0.0961	62.91	-7.86	55.05	103.50	-48.45	-	-	peak
3	0.1466	63.90	-7.99	55.91	103.50	-47.59	-	-	peak
4	0.3607	82.90	-8.36	74.54	103.50	-28.96	-	-	peak
5	0.6521	55.33	-8.14	47.19	103.50	-56.31	-	-	peak
6	0.9783	46.08	-7.95	38.13	103.50	-65.37	-	-	peak

Test mode:	TM3	Polarity:	Vertical
------------	-----	-----------	----------



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	0.0174	68.61	-6.54	62.07	103.50	-41.43	-	-	peak
2	0.0304	72.39	-6.80	65.59	103.50	-37.91	-	-	peak
3	0.1277	79.35	-7.95	71.40	103.50	-32.10	-	-	peak
4	0.3272	68.61	-8.38	60.23	103.50	-43.27	-	-	peak
5	0.4382	62.33	-8.31	54.02	103.50	-49.48	-	-	peak
6	0.6521	59.87	-8.14	51.73	103.50	-51.77	-	-	peak

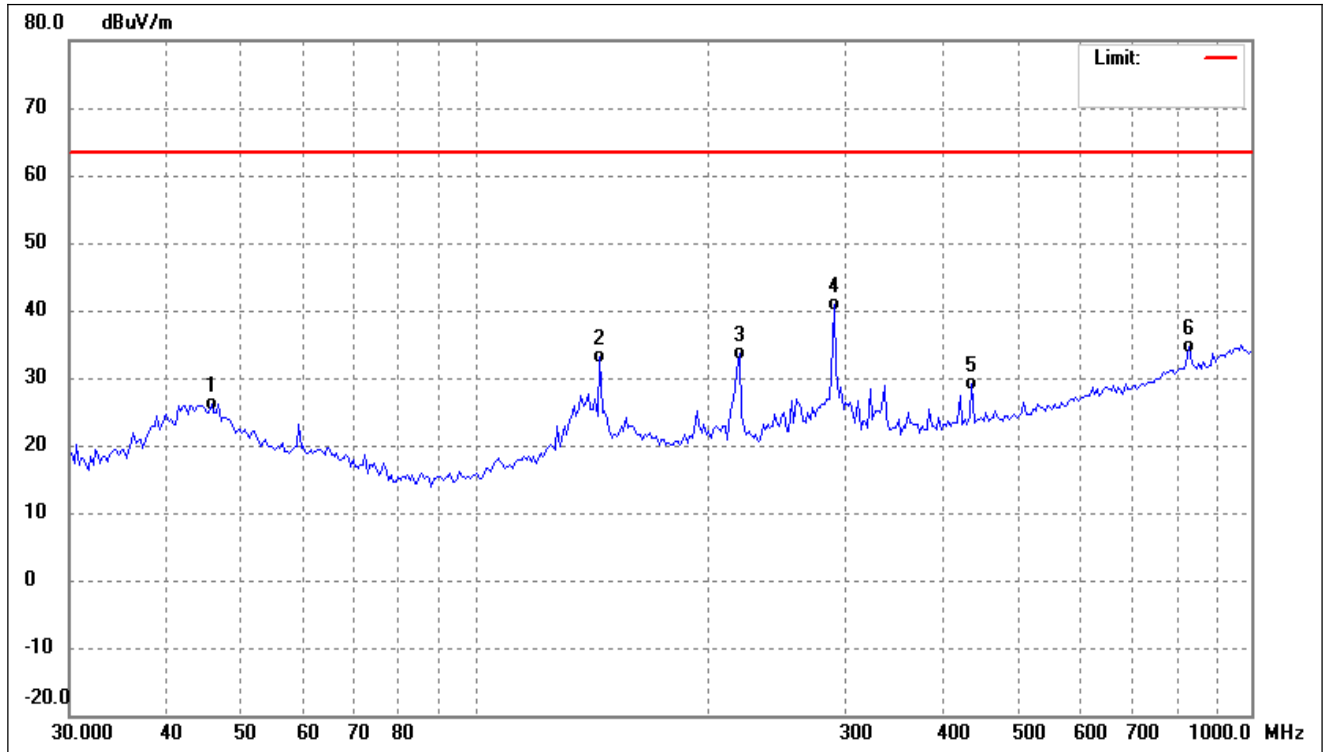
Test mode:	TM4	Polarity:	Vertical
------------	-----	-----------	----------



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	0.0289	67.44	-6.77	60.67	103.50	-42.83	-	-	peak
2	0.0961	62.91	-7.86	55.05	103.50	-48.45	-	-	peak
3	0.1466	63.90	-7.99	55.91	103.50	-47.59	-	-	peak
4	0.6521	55.33	-8.14	47.19	103.50	-56.31	-	-	peak
5	0.9783	46.08	-7.95	38.13	103.50	-65.37	-	-	peak
6	1.8122	81.78	-7.87	73.91	103.50	-29.59	-	-	peak

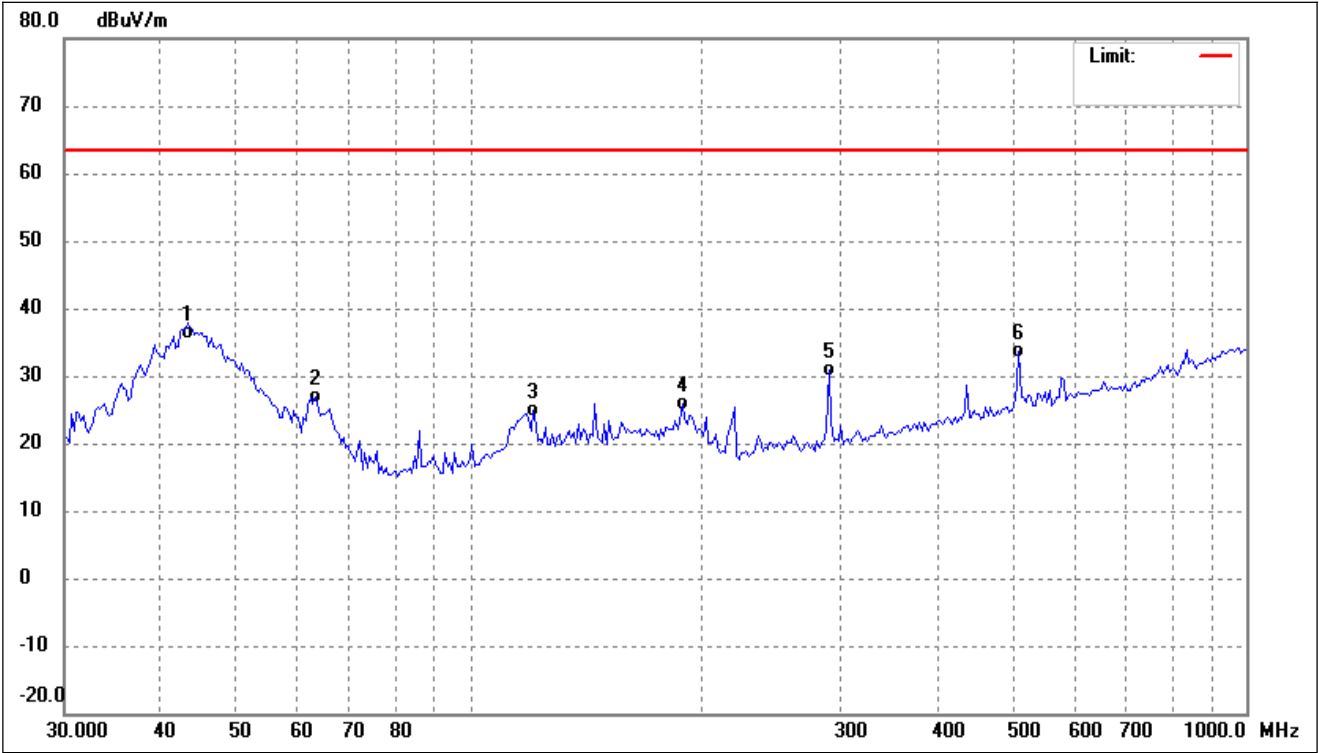
Plot of Radiated Emissions Test Data (Above 30MHz)

Test mode:	TM1	Polarity:	Horizontal
------------	-----	-----------	------------



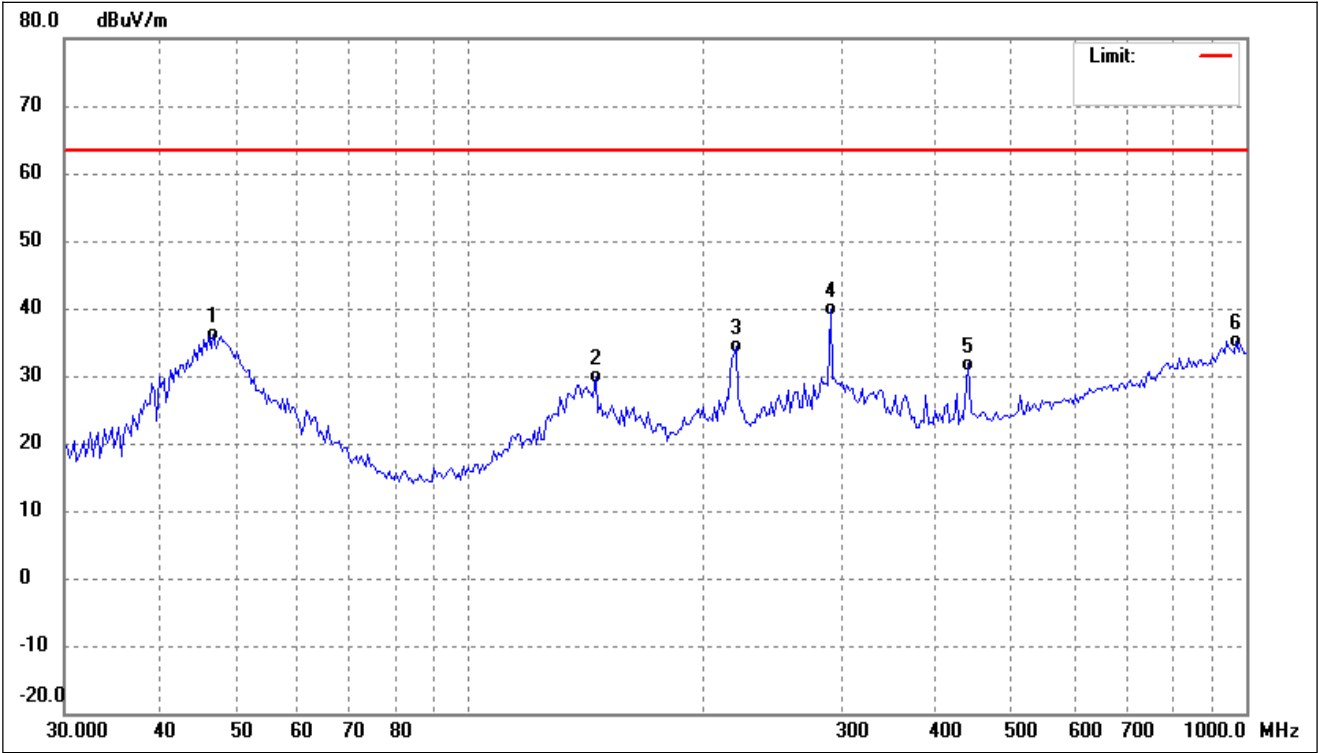
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	45.7333	34.10	-7.90	26.20	63.50	-37.30	-	-	QP
2	144.7899	41.74	-8.49	33.25	63.50	-30.25	-	-	QP
3	219.1785	45.17	-11.52	33.65	63.50	-29.85	-	-	QP
4	290.3168	49.13	-8.17	40.96	63.50	-22.54	-	-	QP
5	436.3956	34.61	-5.47	29.14	63.50	-34.36	-	-	QP
6	833.0127	33.31	1.36	34.67	63.50	-28.83	-	-	QP

Test mode:	TM1	Polarity:	Vertical
------------	-----	-----------	----------



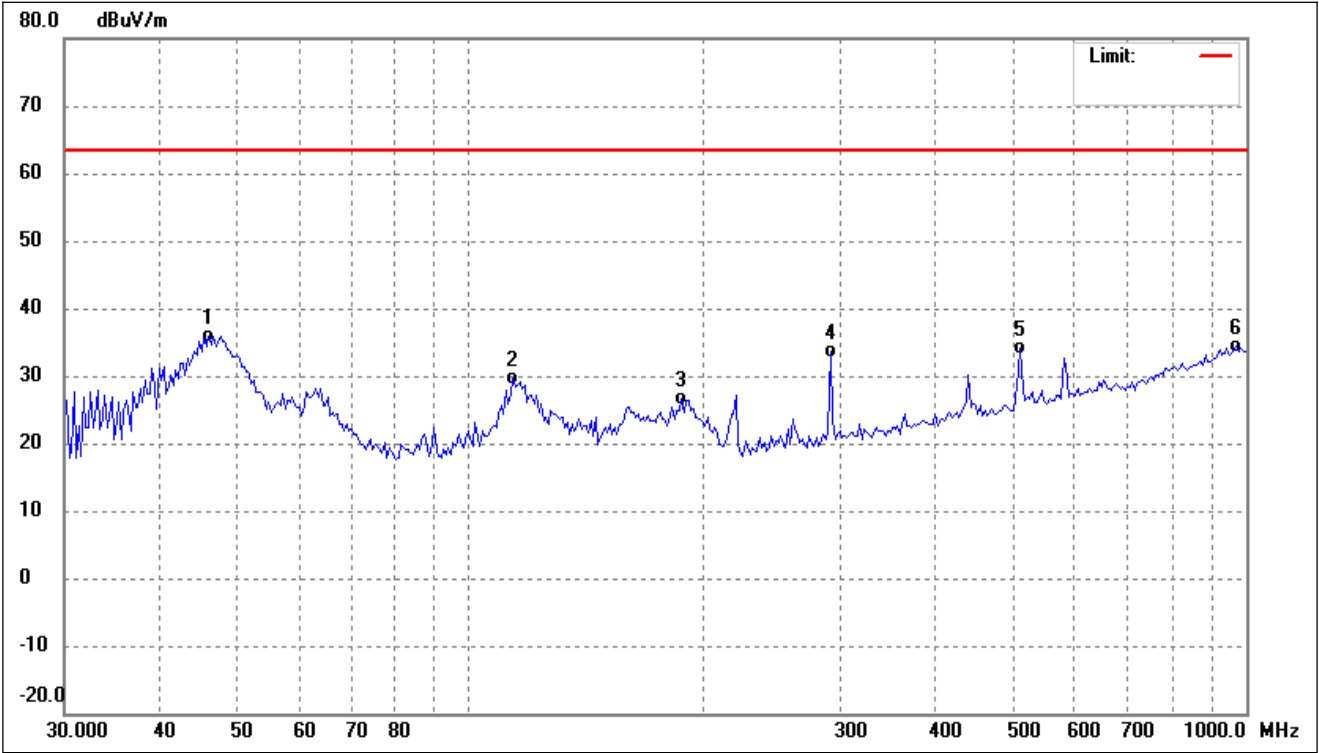
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	43.2333	44.35	-7.95	36.40	63.50	-27.10	-	-	QP
2	63.1857	35.88	-9.01	26.87	63.50	-36.63	-	-	QP
3	120.6118	34.95	-9.97	24.98	63.50	-38.52	-	-	QP
4	187.7833	36.40	-10.59	25.81	63.50	-37.69	-	-	QP
5	290.3170	38.97	-8.17	30.80	63.50	-32.70	-	-	QP
6	509.3559	38.26	-4.62	33.64	63.50	-29.86	-	-	QP

Test mode:	TM2	Polarity:	Horizontal
------------	-----	-----------	------------



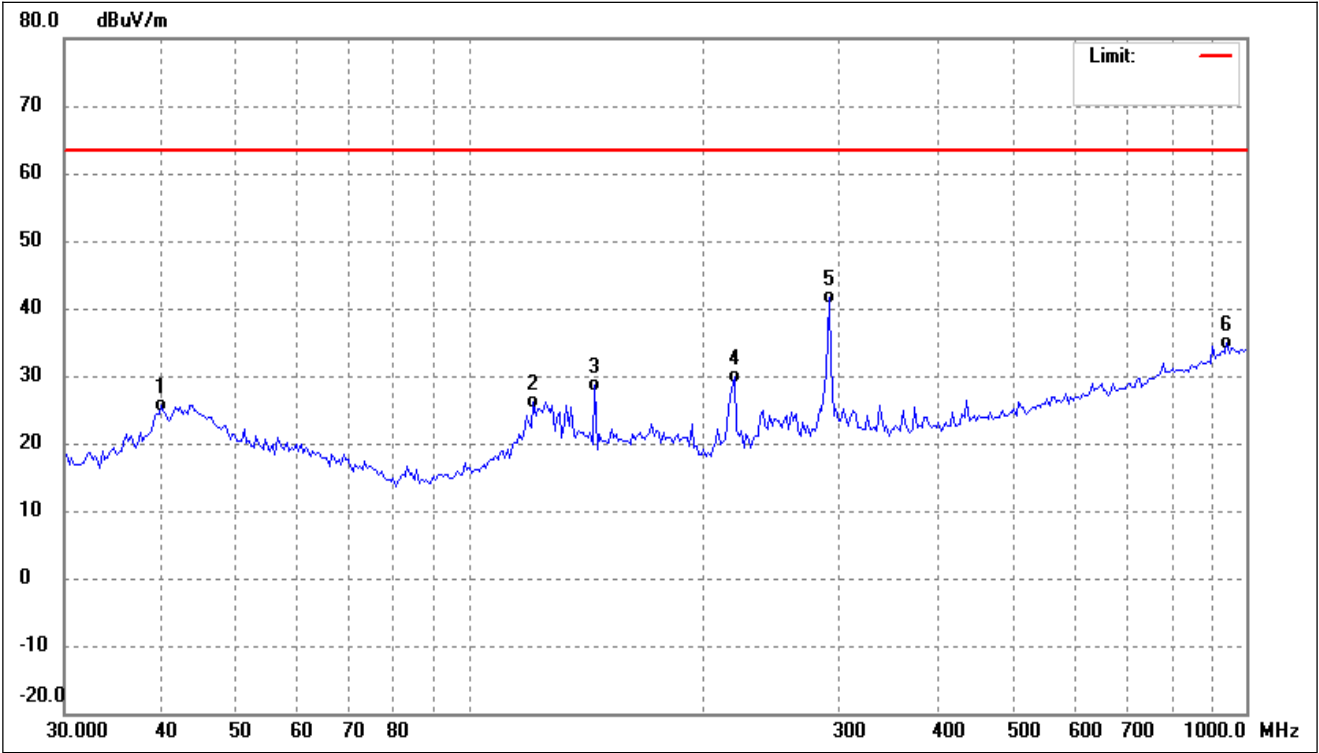
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	46.7077	44.00	-7.83	36.17	63.50	-27.33	-	-	QP
2	144.7899	38.29	-8.49	29.80	63.50	-33.70	-	-	QP
3	219.1785	46.01	-11.52	34.49	63.50	-29.01	-	-	QP
4	291.6431	47.98	-8.13	39.85	63.50	-23.65	-	-	QP
5	436.3956	37.19	-5.47	31.72	63.50	-31.78	-	-	QP
6	965.4742	31.75	3.37	35.12	63.50	-28.38	-	-	QP

Test mode:	TM2	Polarity:	Vertical
------------	-----	-----------	----------



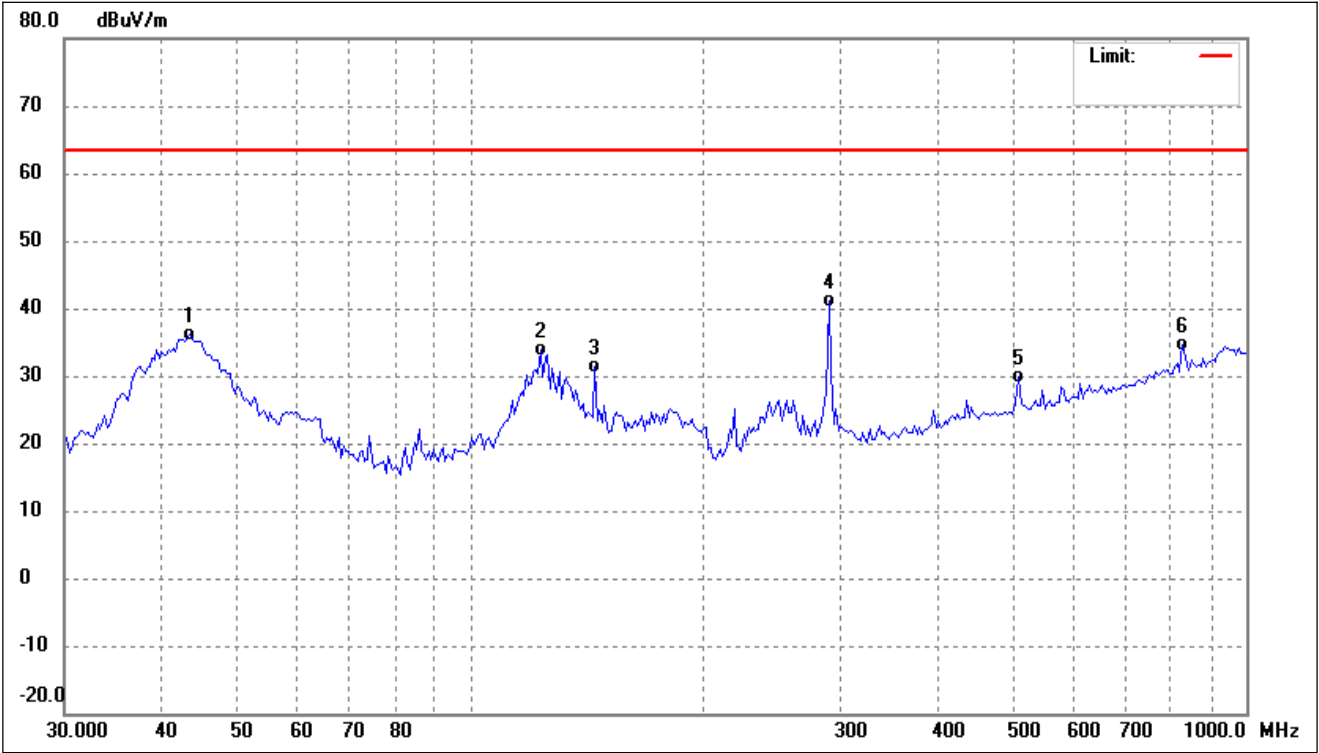
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	46.0955	43.87	-7.87	36.00	63.50	-27.50	-	-	QP
2	113.2200	40.35	-10.72	29.63	63.50	-33.87	-	-	QP
3	186.4684	37.09	-10.45	26.64	63.50	-36.86	-	-	QP
4	290.3170	41.80	-8.17	33.63	63.50	-29.87	-	-	QP
5	509.3559	38.81	-4.63	34.18	63.50	-29.32	-	-	QP
6	965.4742	31.09	3.37	34.46	63.50	-29.04	-	-	QP

Test mode:	TM3	Polarity:	Horizontal
------------	-----	-----------	------------



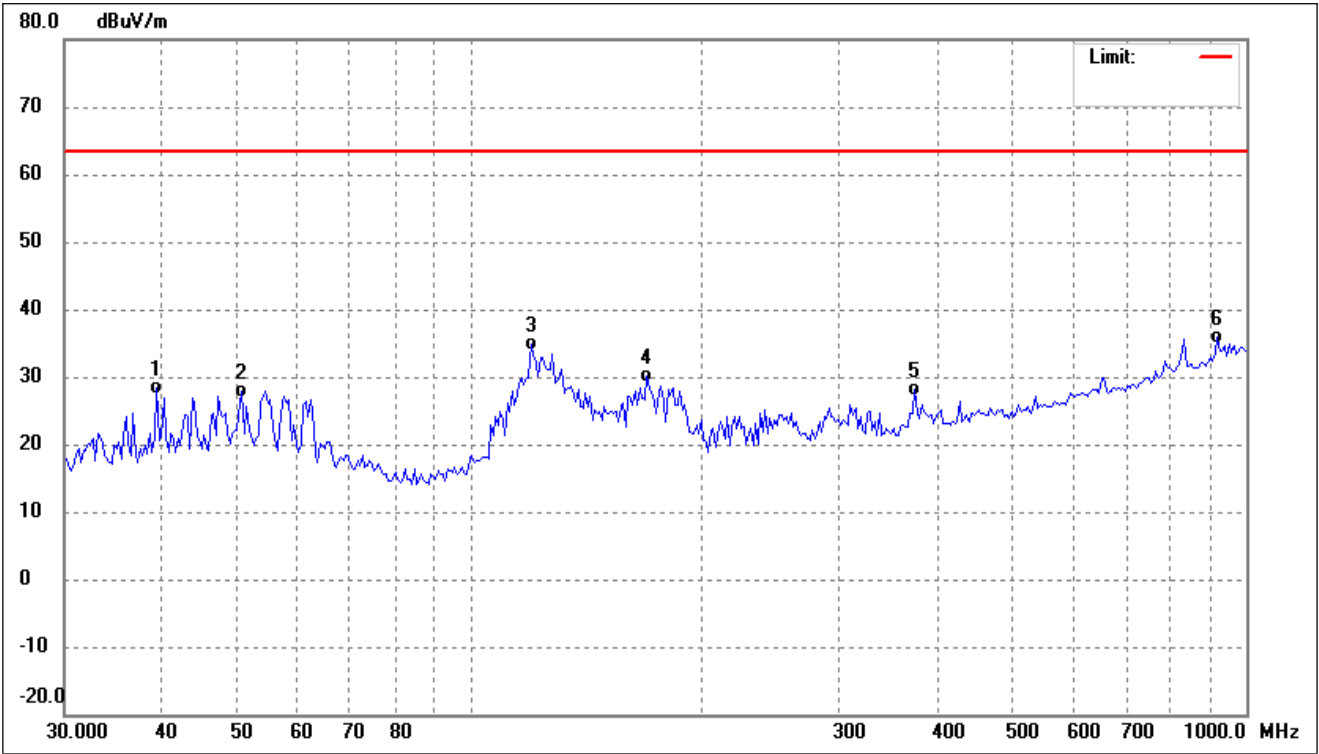
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	40.0173	33.52	-7.95	25.57	63.50	-37.93	-	-	QP
2	120.6118	36.18	-9.97	26.21	63.50	-37.29	-	-	QP
3	144.7899	37.03	-8.49	28.54	63.50	-34.96	-	-	QP
4	219.1785	41.43	-11.52	29.91	63.50	-33.59	-	-	QP
5	290.3170	49.91	-8.17	41.74	63.50	-21.76	-	-	QP
6	945.3336	31.81	3.19	35.00	63.50	-28.50	-	-	QP

Test mode:	TM3	Polarity:	Vertical
------------	-----	-----------	----------



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	43.5380	44.06	-7.95	36.11	63.50	-27.39	-	-	QP
2	123.1815	43.55	-9.79	33.76	63.50	-29.74	-	-	QP
3	144.7899	39.86	-8.49	31.37	63.50	-32.13	-	-	QP
4	290.3170	49.27	-8.17	41.10	63.50	-22.40	-	-	QP
5	509.3559	34.54	-4.62	29.92	63.50	-33.58	-	-	QP
6	827.1795	33.25	1.29	34.54	63.50	-28.96	-	-	QP

Test mode:	TM4	Polarity:	Horizontal
------------	-----	-----------	------------



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	39.4588	36.48	-8.07	28.41	63.50	-35.09	-	-	QP
2	50.8172	35.62	-7.67	27.95	63.50	-35.55	-	-	QP
3	119.7672	44.94	-10.03	34.91	63.50	-28.59	-	-	QP
4	168.9970	38.39	-8.29	30.10	63.50	-33.40	-	-	QP
5	373.8861	34.68	-6.62	28.06	63.50	-35.44	-	-	QP
6	919.1315	33.23	2.55	35.78	63.50	-27.72	-	-	QP

Test mode:	TM4	Polarity:	Vertical
------------	-----	-----------	----------



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	43.8451	42.84	-7.96	34.88	63.50	-28.62	-	-	QP
2	124.9248	48.21	-9.67	38.54	63.50	-24.96	-	-	QP
3	159.7586	41.35	-8.05	33.30	63.50	-30.20	-	-	QP
4	240.1442	37.88	-10.02	27.86	63.50	-35.64	-	-	QP
5	401.1050	38.42	-6.24	32.18	63.50	-31.32	-	-	QP
6	906.3041	34.54	2.24	36.78	63.50	-26.72	-	-	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 *****