

TEST REPORT

Reference No...... : WTD25D02042370W001
Applicant..... : SM TEK GROUP INC
Address..... : 132 32ND ST STE #402 BROOKLYN NY 11232 United States
Manufacturer : SM TEK GROUP INC
Address : 132 32ND ST STE #402 BROOKLYN NY 11232 United States
Product..... : Car charger
Model(s) : WM-MCW31-BK, WM-MCW31-WH, MCW31-BK, MCW31-WH
Standards..... : 47CFR FCC Part 18
Date of Receipt sample : 2025-06-06
Date of Test : 2025-06-12 to 2025-06-25
Date of Issue..... : 2025-06-26
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:
Waltek Testing Group Co., Ltd.

Address: No. 77, Houjie Section, Guantai Road, Houjie Town, Dongguan City, Guangdong, China
Tel: +86-769-2267 6998
Fax: +86-769-2267 6828

Compiled by:

Estel Qian

Estel Qian / Project Engineer

Approved by:

Deval Qin



Deval Qin / Designated Reviewer

1 Contents

	Page
COVER PAGE	1
1 CONTENTS	2
2 REVISION HISTORY	3
3 GENERAL INFORMATION	4
3.1 GENERAL DESCRIPTION OF E.U.T.	4
3.2 DETAILS OF E.U.T.	4
3.3 SUBCONTRACTED	4
3.4 ABNORMALITIES FROM STANDARD CONDITIONS	4
3.5 TEST FACILITY	5
3.6 TEST MODE	5
4 TEST SUMMARY	6
5 EQUIPMENT USED DURING TEST	7
5.1 EQUIPMENT LIST	7
5.2 DESCRIPTION OF SUPPORT UNITS	7
5.3 MEASUREMENT UNCERTAINTY	8
6 EMISSION TEST RESULTS	9
6.1 AC POWER LINE CONDUCTED EMISSION	9
6.2 RADIATION EMISSION	13
7 PHOTOGRAPHS–TEST SETUP	24
7.1 PHOTOGRAPH–AC POWER LINE CONDUCTED EMISSION TEST SETUP	24
7.2 PHOTOGRAPH–RADIATED EMISSION	24
8 PHOTOGRAPHS – CONSTRUCTIONAL DETAILS	26

2 Revision History

Test Report No.	Date of Receipt Sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTD25D02042370W001	2025-06-06	2025-06-12 to 2025-06-25	2025-06-26	Original	-	Valid

3 General Information

3.1 General Description of E.U.T.

Product : Car charger
Model(s)..... : WM-MCW31-BK, WM-MCW31-WH, MCW31-BK, MCW31-WH
Model Description..... : Only the model names are different.
Remark : Model WM-MCW31-BK was tested in the report.

3.2 Details of E.U.T.

Operation Frequency..... : 115-325kHz
Type of Modulation..... : Load modulation
Ratings : Input: DC 9V/12V 3A (MAX)
Output 1: Phone 15W(MAX)
Output 2: iWatch 2.5W(MAX)
Output 3: Earbuds 3.5W(MAX)

3.3 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☐ Yes ☒ No

If Yes, list the related test items and lab information:

Test Lab:N/A

Lab address:N/A

Test items: N/A

3.4 Abnormalities from Standard Conditions

None.

3.5 Test Facility

The test facility has a test site registered with the following organizations:

ISED CAB identifier: CN0013. Test Firm Registration No.: 7760A.

Waltek Testing Group Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A, October 15, 2016.

FCC Designation No.: CN1201. Test Firm Registration No.: 523476.

Waltek Testing Group 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. Registration number 523476, September 10, 2019.

3.6 Test Mode

Test Mode	Descriptions
Standby mode	EUT alone powered by AC/DC adapter
iWatch charge	iWatch only (The battery capacity is less than 5%)
AirPods charge	AirPods only (The battery capacity is less than 5%)
iPhone charge	iPhone only (The battery capacity is less than 5%)
3 in 1 charge	iWatch+ AirPods+ iPhone charge together (The battery capacity is less than 5%)

Note: EUT was investigated with client device under normal charging condition as above then worst value was only report.

4 Test Summary

Test Item	Test Requirement	Test Result
AC Power Line Conducted Emission	47CFR FCC Part 18	Pass
Radiated Emission	47CFR FCC Part 18	Pass

Remark:

Pass Test item meets the requirement

Fail Test item does not meet the requirement

N/A Test case does not apply to the test object

5 Equipment Used during Test

5.1 Equipment List

Conducted emissions from the AC mains power ports						
Item	Equipment	Manufacturer	Model No.	Serial No	Last Calibration Date	Calibration Due Date
1	EMI Test Receiver	R&S	ESCI	100947	2024-07-18	2025-07-17
2	LISN	R&S	ENV216	100115	2024-07-18	2025-07-17
3	Cable	Top	TYPE16(3.5M)	-	2024-07-18	2025-07-17
3m Semi-anechoic Chamber for Radiation(TDK)						
Item	Equipment	Manufacturer	Model No.	Serial No	Last Calibration Date	Calibration Due Date
1	Test Receiver	R&S	ESCI	101296	2025-04-19	2026-04-18
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2024-11-04	2025-11-03
3	Active Loop Antenna	Com-Power Corp.	AL-130R	10160007	2025-04-21	2026-04-20
4	Amplifier	ANRITSU	MH648A	M43381	2025-04-19	2026-04-18
5	Cable	HUBER+SUHNER	CBL2	525178	2025-04-19	2026-04-18

Test Software:

Test Item	Software name	Software version
Conduction disturbance Radiated Emission(3m)	EZ-EMC	EZ-EMC(RA-03A1-1)

5.2 Description of Support Units

Equipment	Manufacturer	Model No.	Series No.
iPhone	Apple	MQ8T2LL/A	/
iWatch	Apple	A1758	/
Wireless Charging Case	Apple	A2083	/

5.3 Measurement Uncertainty

Parameter	Uncertainty (Note 1)
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 3\%$
Conducted Emission (150kHz-30MHz)	$\pm 3.64\text{dB}$
Radiated Emission_3m (30MHz-1000MHz)	$\pm 4.53\text{ dB}$
Radiated Emission_10m (30MHz-1000MHz)	$\pm 5.24\text{ dB}$
Radiated Emission(1GHz~18GHz)	$\pm 5.03\text{dB}$

Note 1: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

6 Emission Test Results

6.1 AC Power Line Conducted Emission

Test Requirement..... : FCC Part 18

Test Method..... : FCC OST/MP-5

Test Result : Pass

Limit..... : 18.307

☐ All induction cooking ranges and ultrasonic equipment:

Frequency range (MHz)	Limit dB(uV)	
	Quasi-peak	Average
0.009-0.05	110	---
0.05-0.15	90-80*	---
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Remark: * Decreases with the logarithm of the frequency.
In the above table, the tighter limit applies at the band edges.

☒ All other part 18 consumer devices:

Frequency range (MHz)	Limit dB(uV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

Remark: * Decreases with the logarithm of the frequency.
In the above table, the tighter limit applies at the band edges.

☐ RF lighting devices:

Frequency range (MHz)	Maximum RF line voltage measured with a 50 uH/50 ohm LISN(uV)
Non-consumer equipment	
0.45-1.6	1000
1.6-30	3000
Consumer equipment	
0.45-2.51	250
2.51-3.0	3000
3.0-30	250

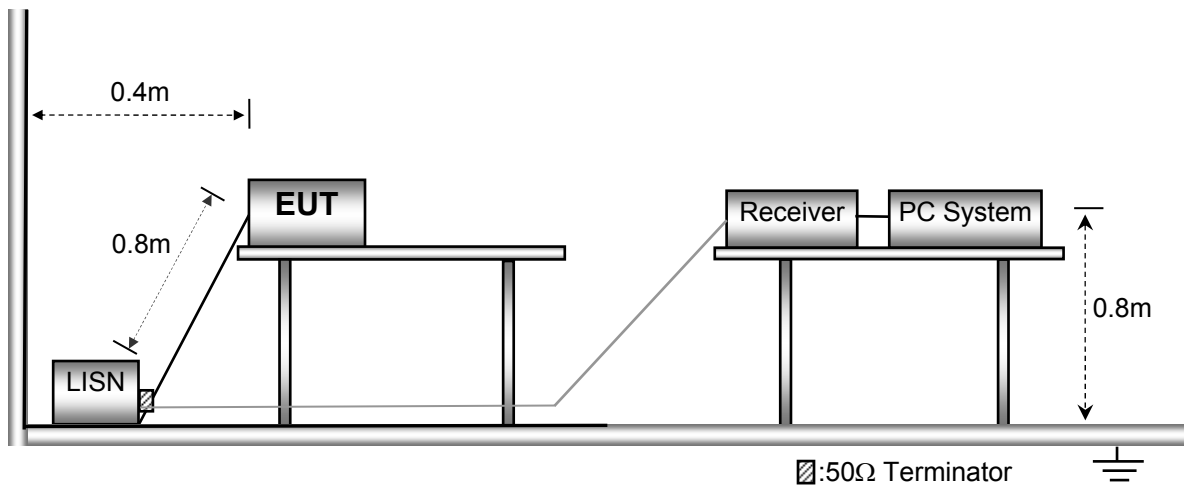
6.1.1 E.U.T. Operation

Operating Environment:

Temperature : 26.1°C
Humidity : 64.3%RH
Atmospheric Pressure : 101.2kPa
EUT Operation..... : Refer to section 5.4.

6.1.2 Block Diagram of Test Setup

The AC Power Line Conducted Emissions tests were performed in accordance with the FCC OST/MP-5.

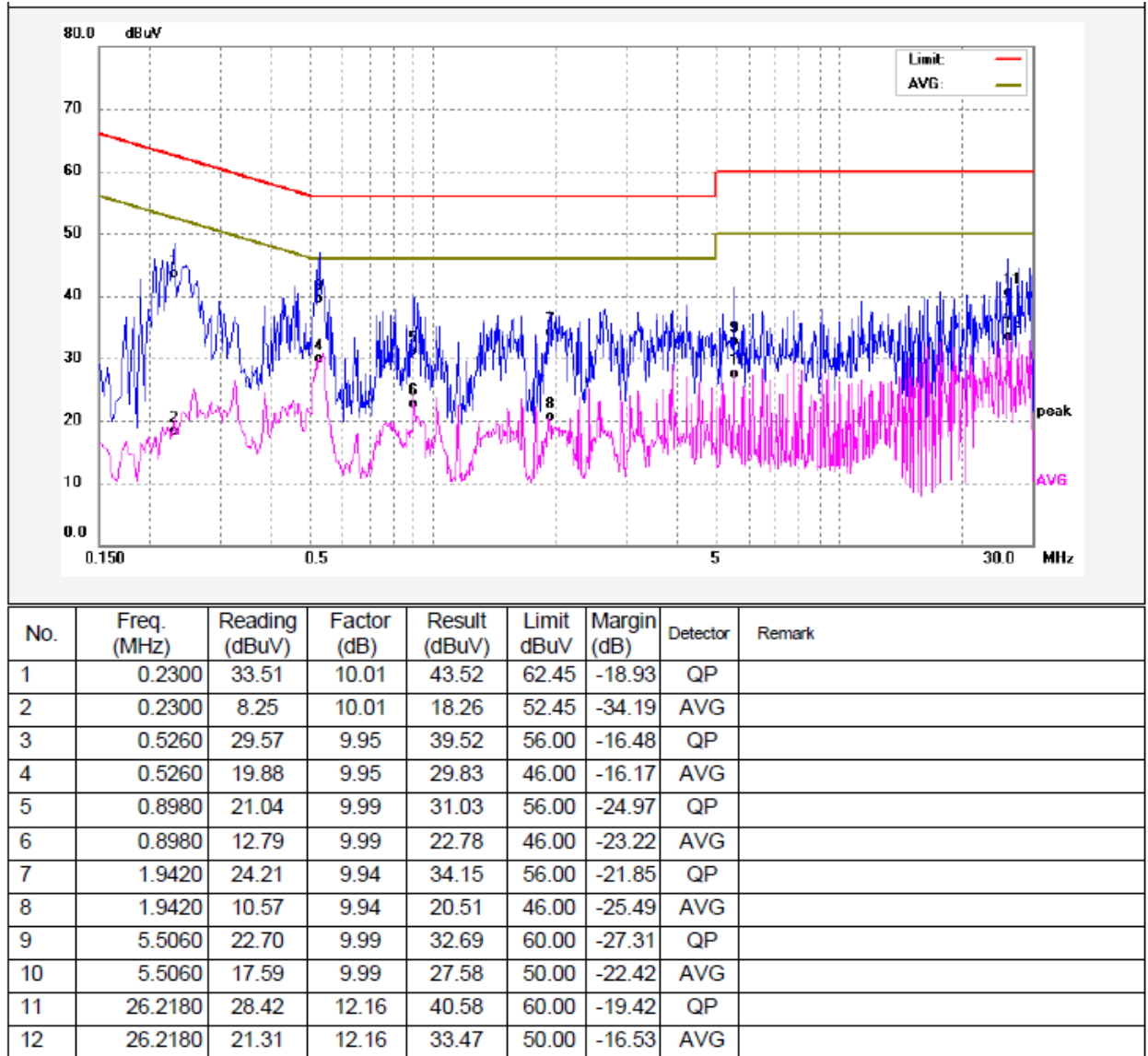


6.1.3 Measurement Data

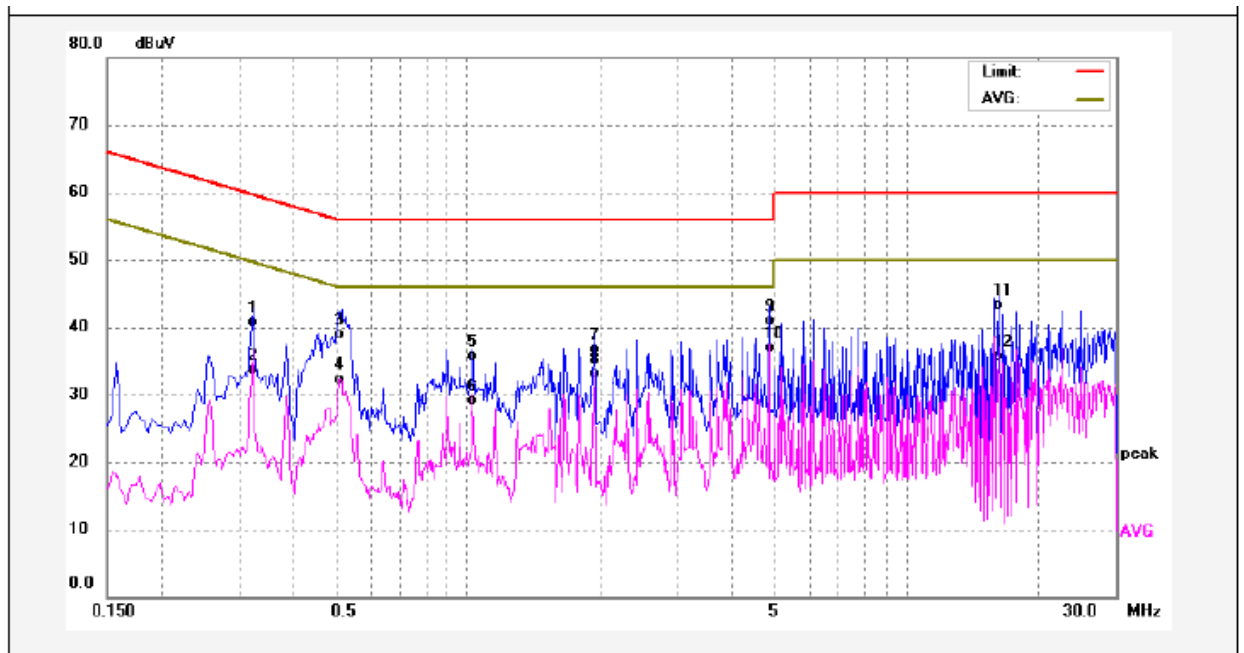
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line. According to the data in section 6.1.4, the EUT complied with the FCC PART 18.307 standards.

6.1.4 AC Power Line Conducted Emission Test Data

Live Line:



Neutral Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.3220	30.71	9.98	40.69	59.65	-18.96	QP	
2	0.3220	23.77	9.98	33.75	49.65	-15.90	AVG	
3	0.5140	28.88	10.05	38.93	56.00	-17.07	QP	
4	0.5140	22.19	10.05	32.24	46.00	-13.76	AVG	
5	1.0220	25.94	9.82	35.76	56.00	-20.24	QP	
6	1.0220	19.28	9.82	29.10	46.00	-16.90	AVG	
7	1.9420	26.74	10.00	36.74	56.00	-19.26	QP	
8	1.9420	23.07	10.00	33.07	46.00	-12.93	AVG	
9	4.8540	30.77	10.08	40.85	56.00	-15.15	QP	
10	4.8540	26.80	10.08	36.88	46.00	-9.12	AVG	
11	16.1780	32.16	11.13	43.29	60.00	-16.71	QP	
12	16.1780	24.54	11.13	35.67	50.00	-14.33	AVG	

6.2 Radiation Emission

Test Requirement..... : FCC Part 18
 Test Method..... : FCC OST/MP-5
 Test Result : Pass
 Limit : 47CFR FCC part 18 §18.305

■ Table 1

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
☒ Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500 500 or more	25 25 x SQRT (power/500)	300 (1)300
	Any NON-ISM frequency	Below 500 500 or more	15 15 x SQRT (power/500)	300 (1)300
☐ Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz Above 5,725 MHz	Any Any	10 (2)	1600 (2)
☐ Medical diathermy	Any ISM frequency Any non- ISM frequency	Any Any	25 15	300 300
☐ Ultrasonic	Below 490 kHz	Below 500 500 or more	2,400/F(kHz) 2,400/F(kHz)x SQRT(power/500)	300 (3)300
	490 to 1,600 kHz Above 1,600 kHz	Any Any	2,400/F(kHz) 15	30 30
☐ Induction cooking ranges	Below 90 kHz On or above 90 kHz	Any Any	1,500 300	(4)30 (4)30

- (1) Field strength may not exceed 10 $\mu\text{V/m}$ at 1600 meters. Consumer equipment operating below 1000 MHz is not permitted the increase in field strength otherwise permitted here for power over 500 watts.
- (2) Reduced to the greatest extent possible.
- (3) Field strength may not exceed 10 $\mu\text{V/m}$ at 1600 meters. Consumer equipment is not permitted the increase in field strength otherwise permitted here for over 500 watts.
- (4) Induction cooking ranges manufactured prior to February 1, 1980, shall be subject to the field strength limits for miscellaneous ISM equipment.

Note : The field strength limit and distance shown in the following Table 2 are the conversion of the requirement in Table 1.

□Table 2

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (dBuV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500	57.5	10

□The for RF lighting devices field strength limits

Frequency (MHz)	Field strength limit at 30 meters (μV/m)
Non-consumer equipment:	
30-88	30
88-216	50
216-1000	70
Consumer equipment:	
30-88	10
88-216	15
216-1000	20

Notes:

1. The tighter limit shall apply at the boundary between two frequency ranges.

6.2.1 E.U.T. Operation

Operating Environment:

Temperature : 24.6°C

Humidity : 56.1%RH

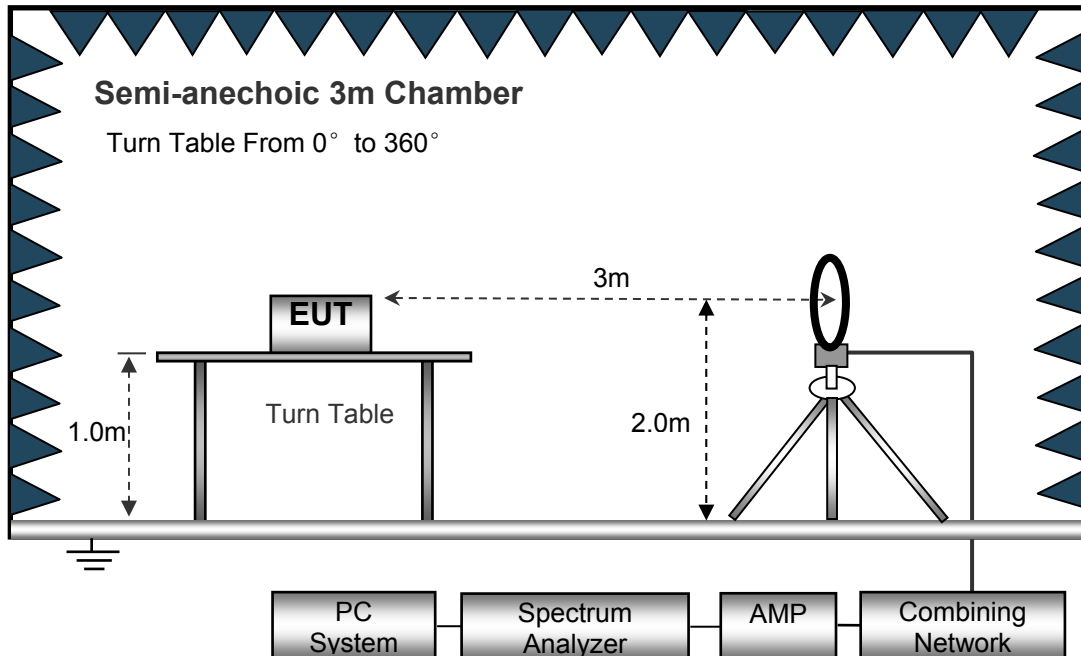
Atmospheric Pressure : 101.8kPa

EUT Operation : Refer to section 3.6.

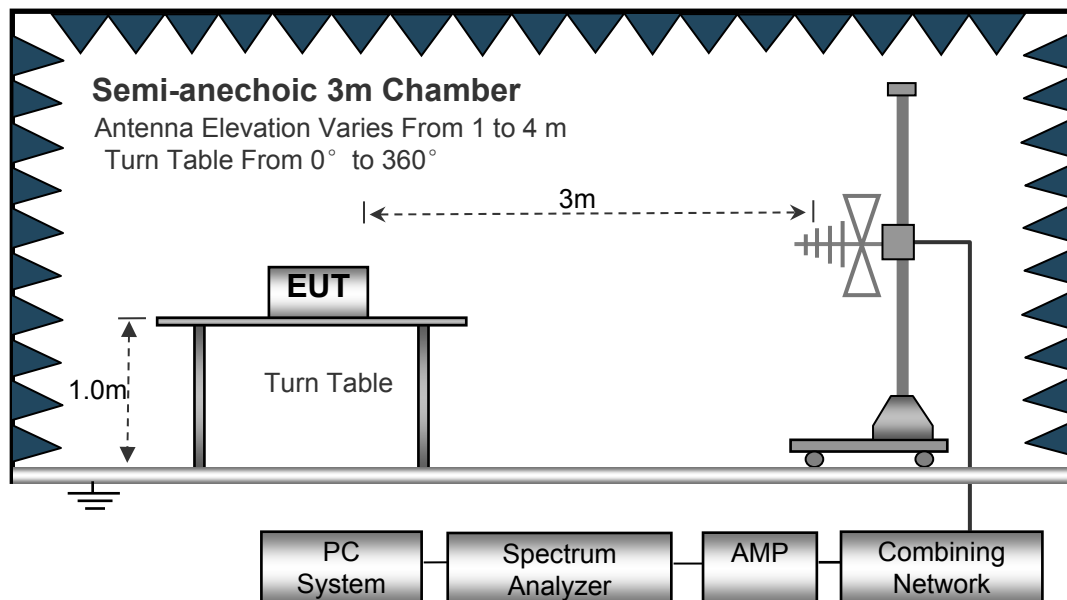
6.2.2 Block Diagram of Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the FCC/OET MP-5.

The test setup for emission measurement below 30MHz



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



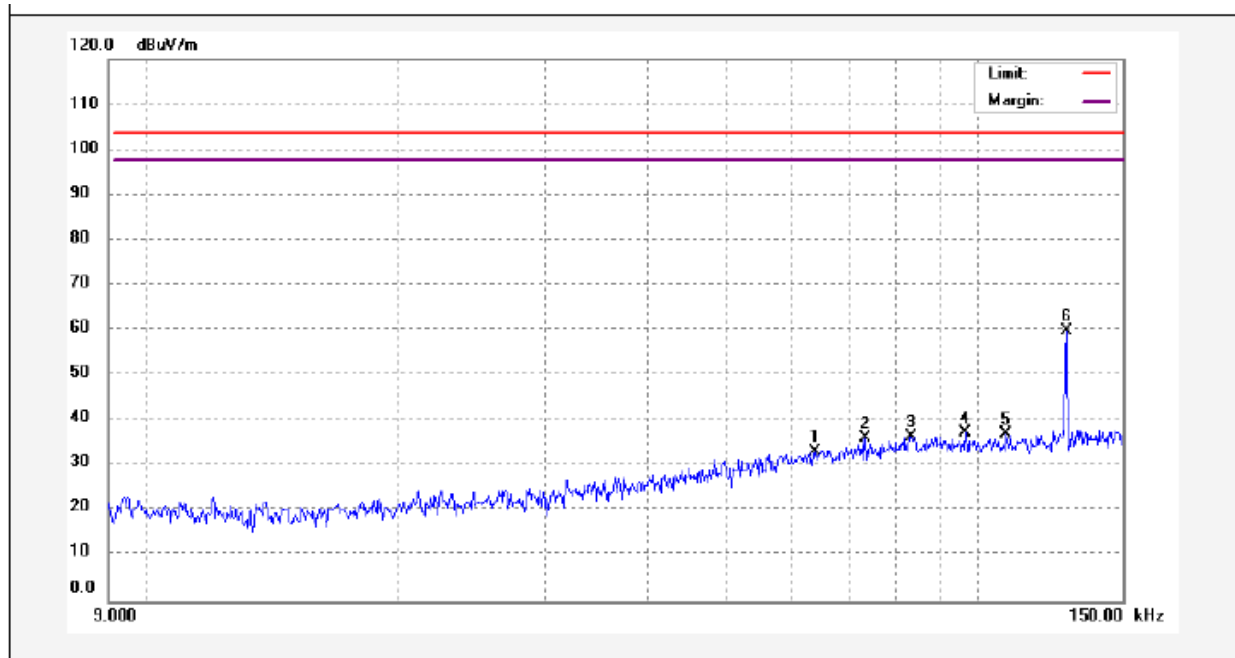
6.2.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Antenna Vertical Polarization and Antenna Horizontal Polarization. Quasi-peak measurements were performed if peak emissions were within 6dB of the Quasi-peak limit line.

6.2.4 Radiated Emission Test Data, 9kHz to 30MHz

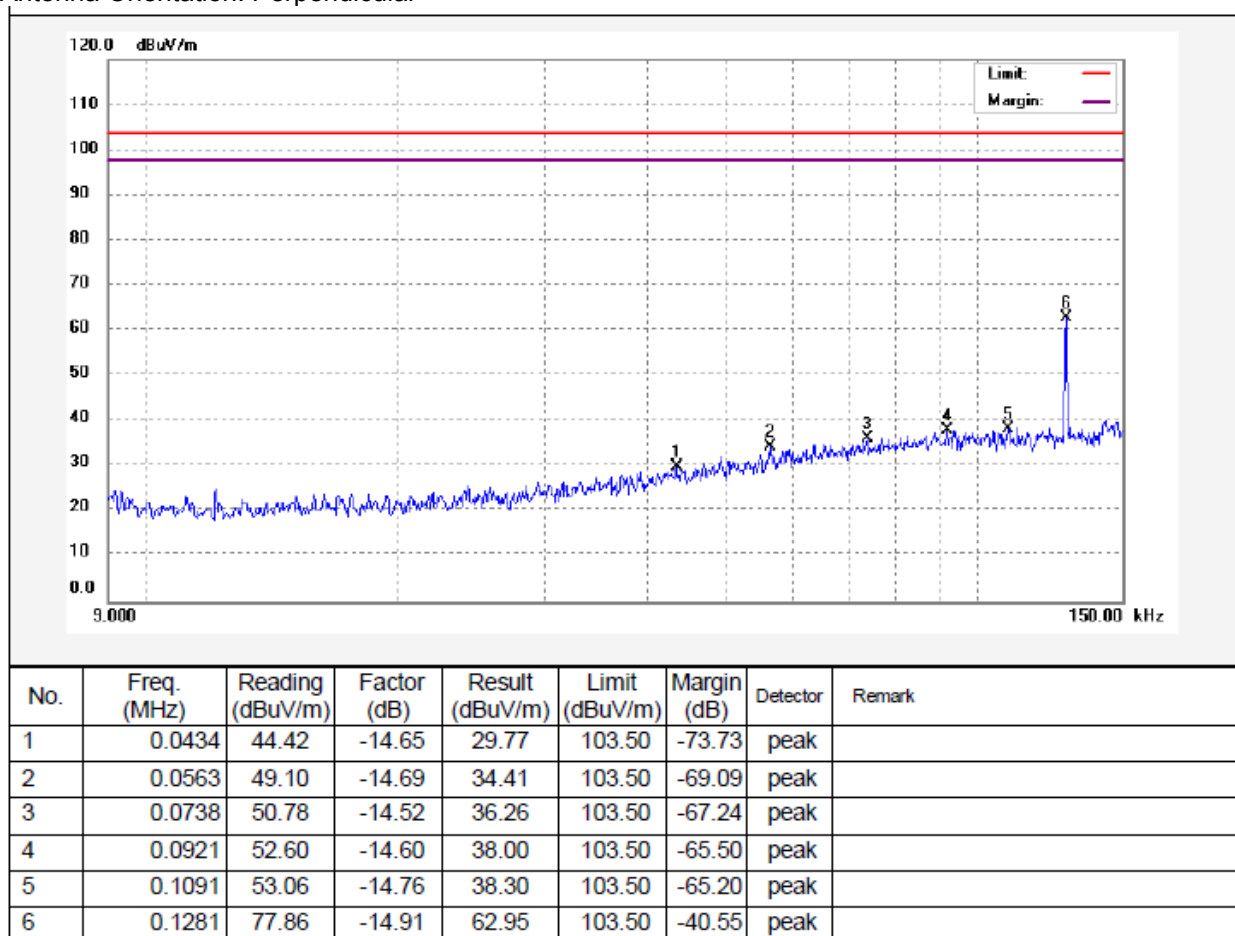
9kHz to 150kHz

Antenna Orientation: Parallel

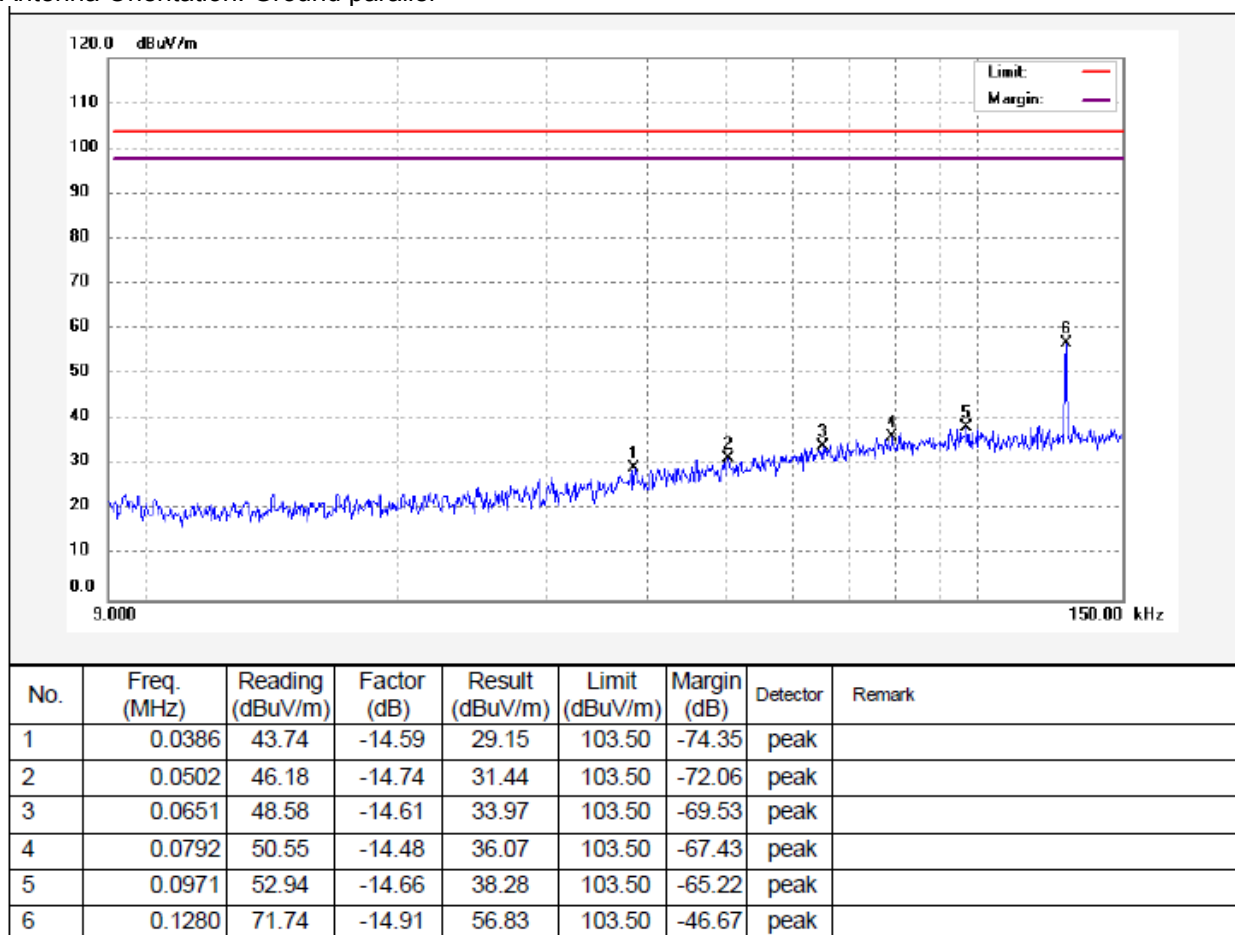


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.0638	47.69	-14.61	33.08	103.50	-70.42	peak	
2	0.0734	50.57	-14.53	36.04	103.50	-67.46	peak	
3	0.0832	51.07	-14.50	36.57	103.50	-66.93	peak	
4	0.0966	51.98	-14.66	37.32	103.50	-66.18	peak	
5	0.1082	51.85	-14.75	37.10	103.50	-66.40	peak	
6	0.1280	74.76	-14.91	59.85	103.50	-43.65	peak	

Antenna Orientation: Perpendicular

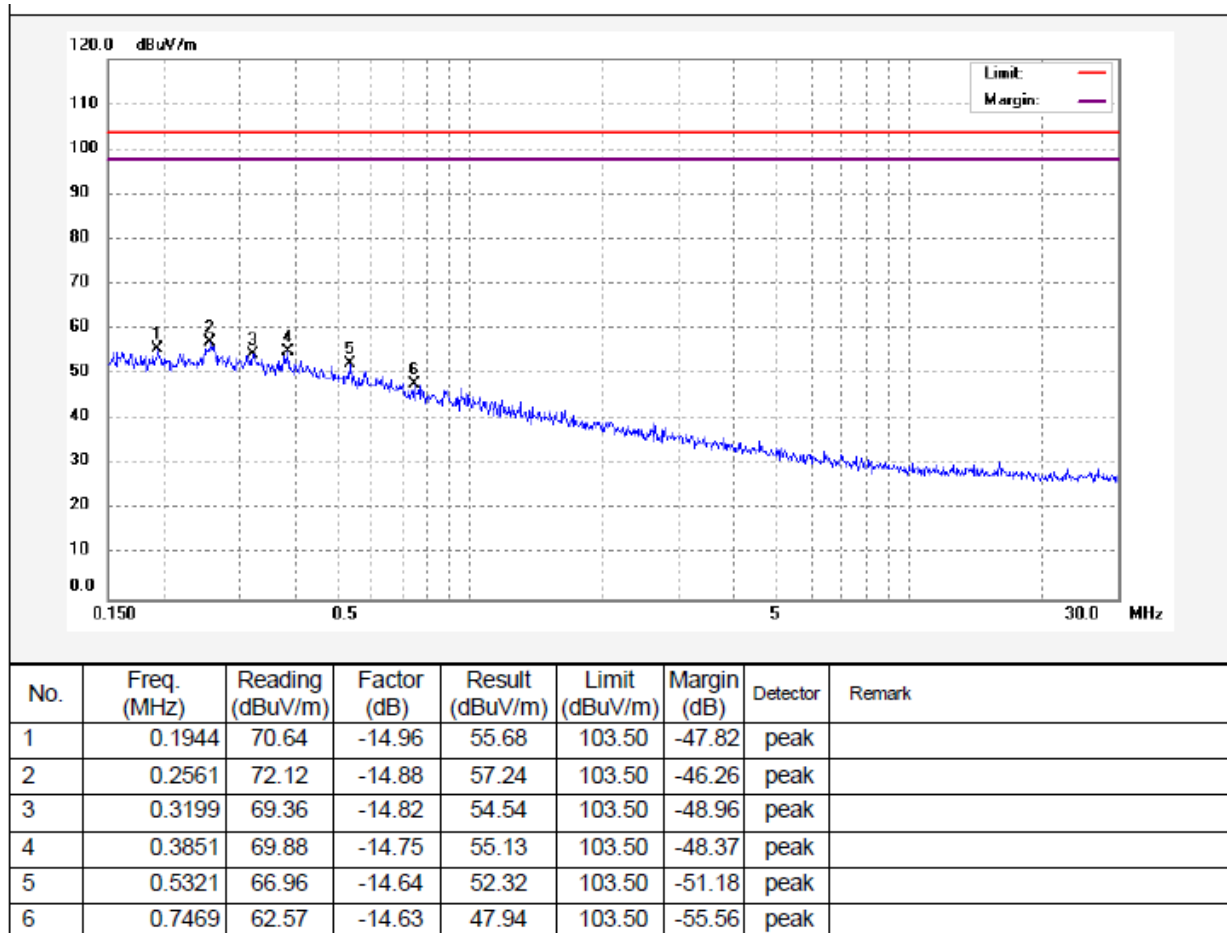


Antenna Orientation: Ground parallel

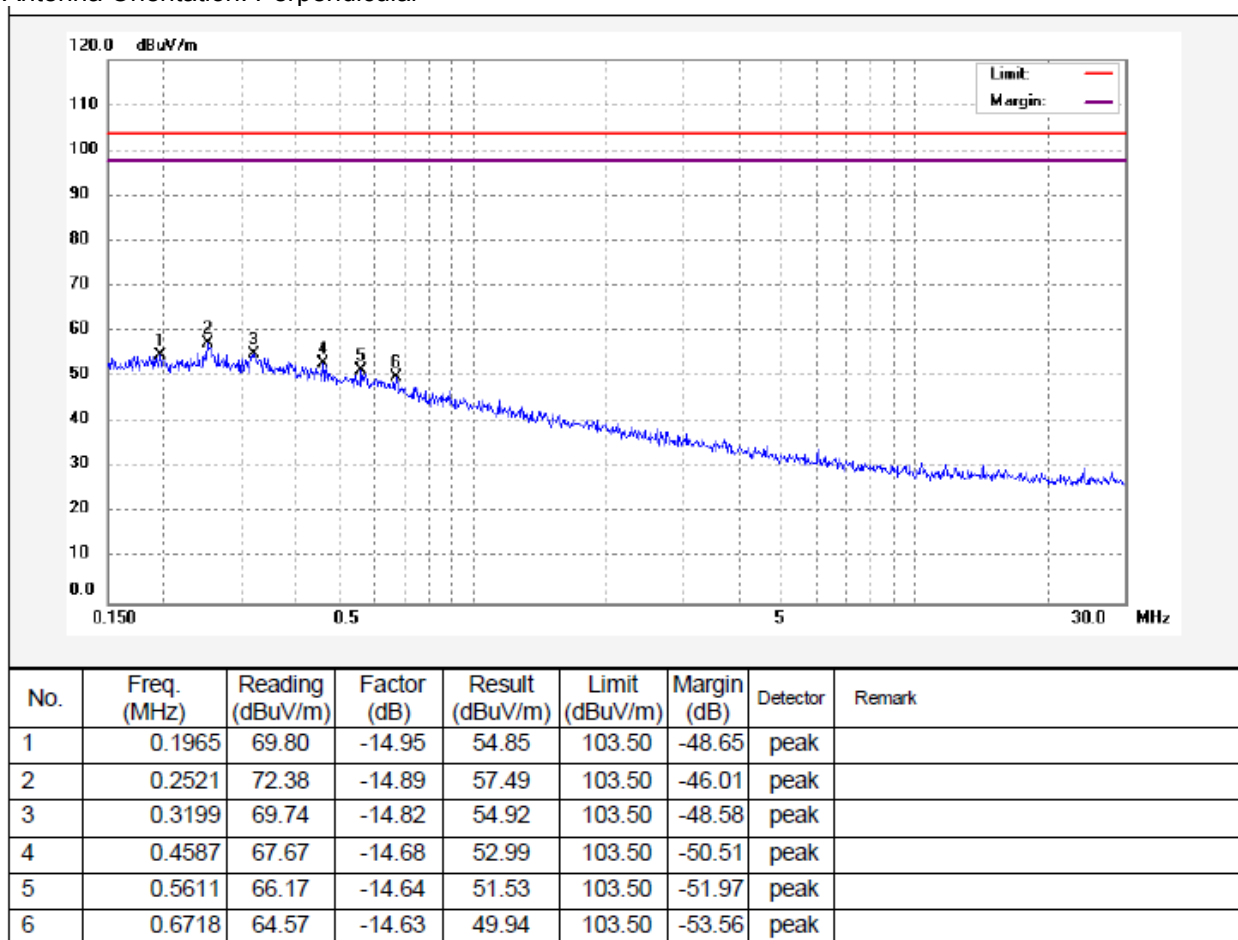


150kHz to 30MHz

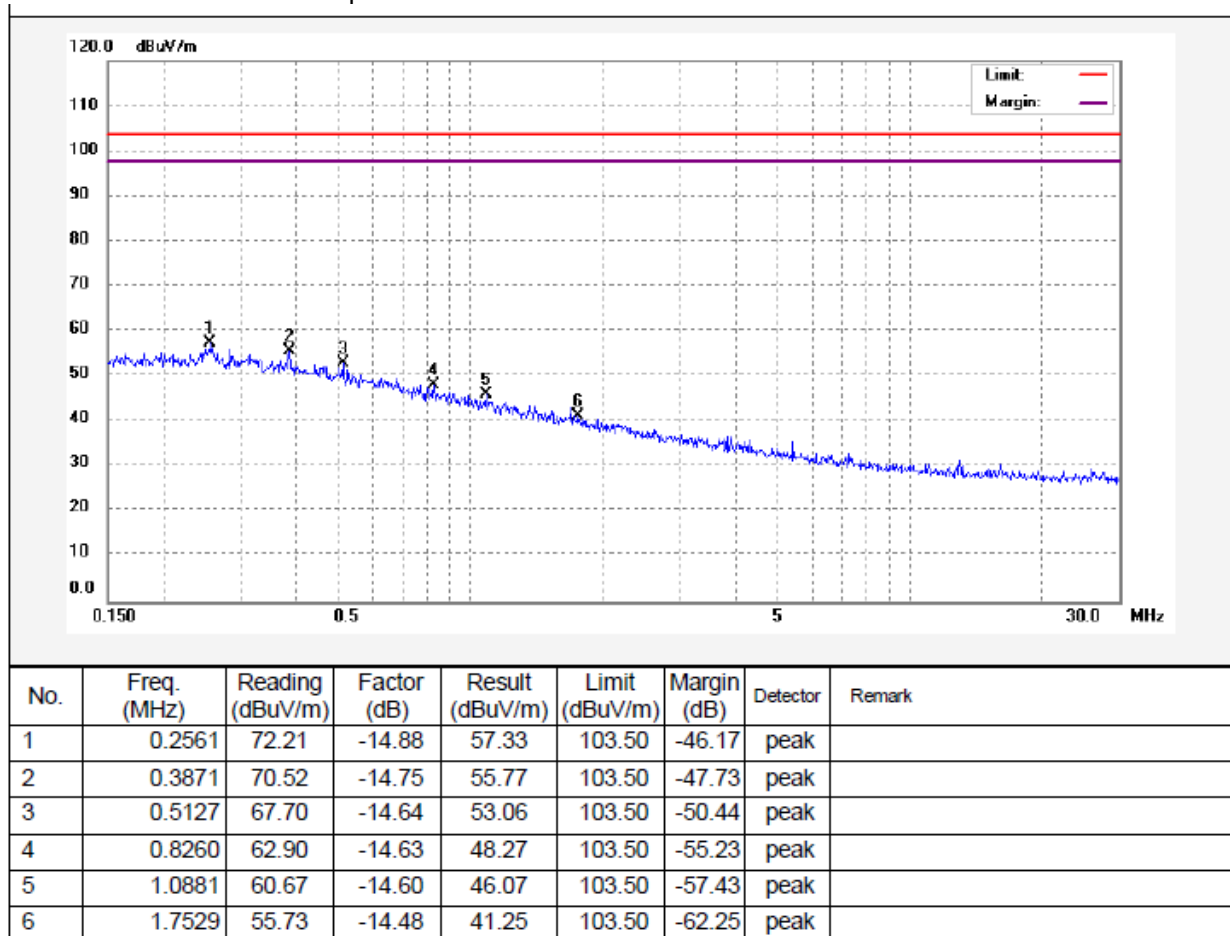
Antenna Orientation: Parallel



Antenna Orientation: Perpendicular

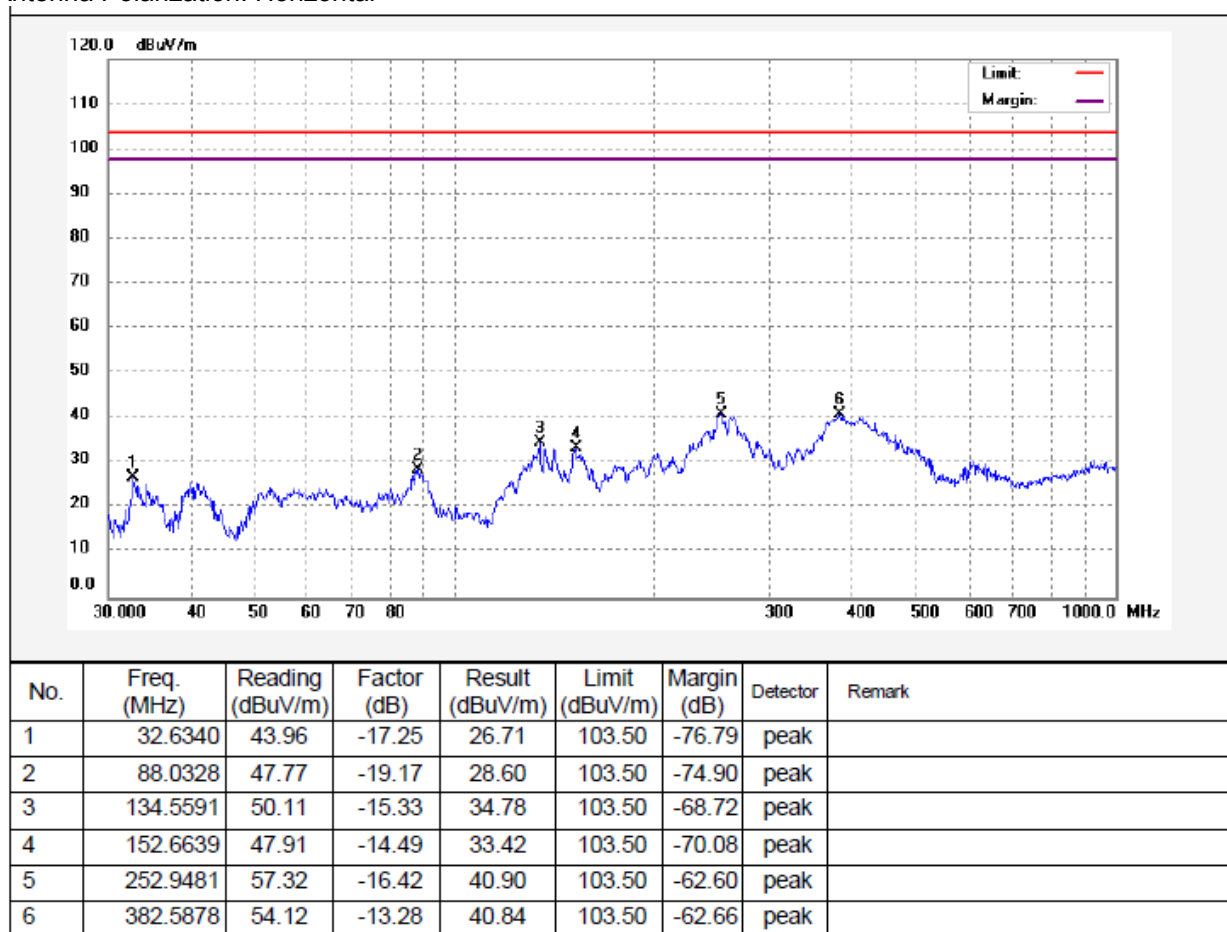


Antenna Orientation: Ground parallel

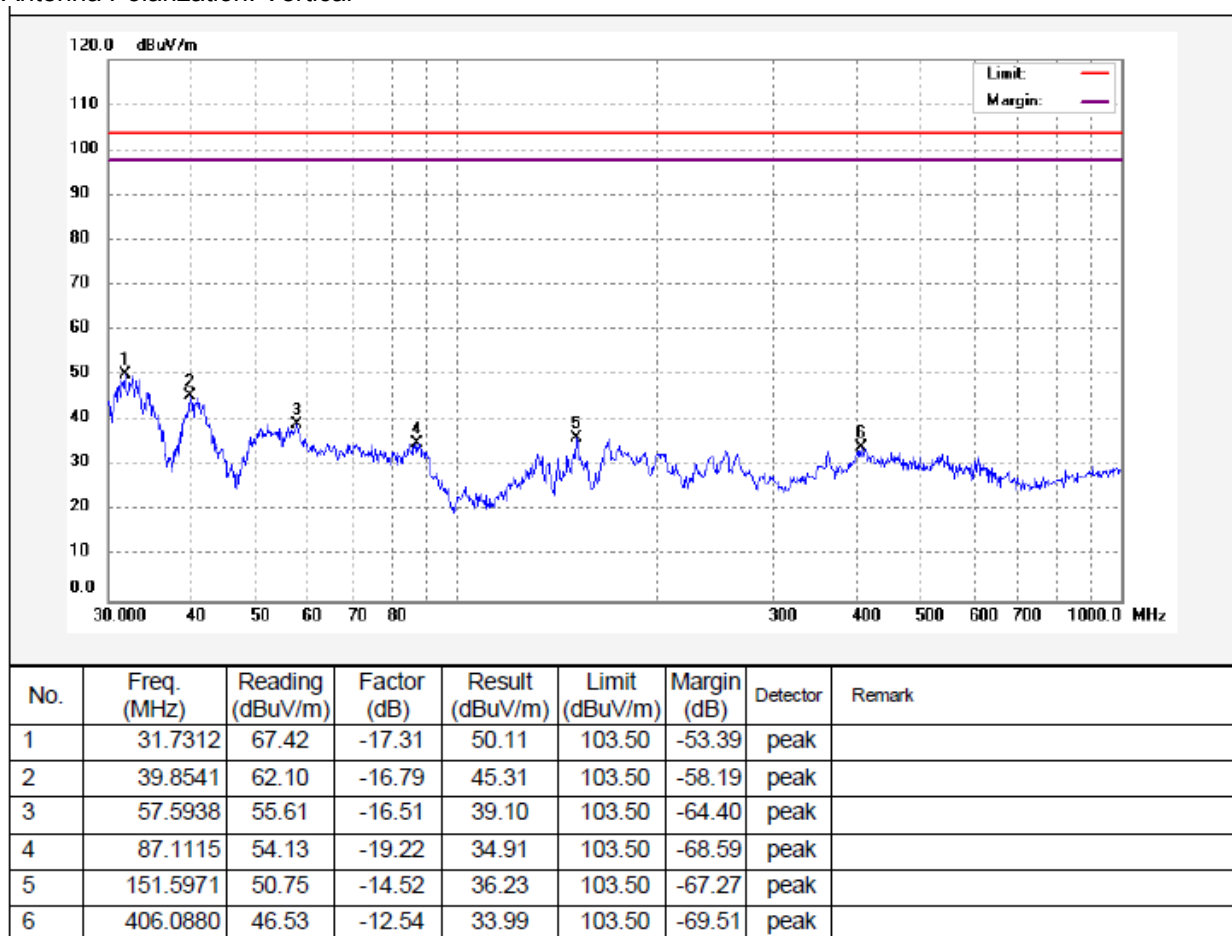


6.2.5 Radiated Emission Test Data, 30MHz to 1000MHz

Antenna Polarization: Horizontal



Antenna Polarization: Vertical



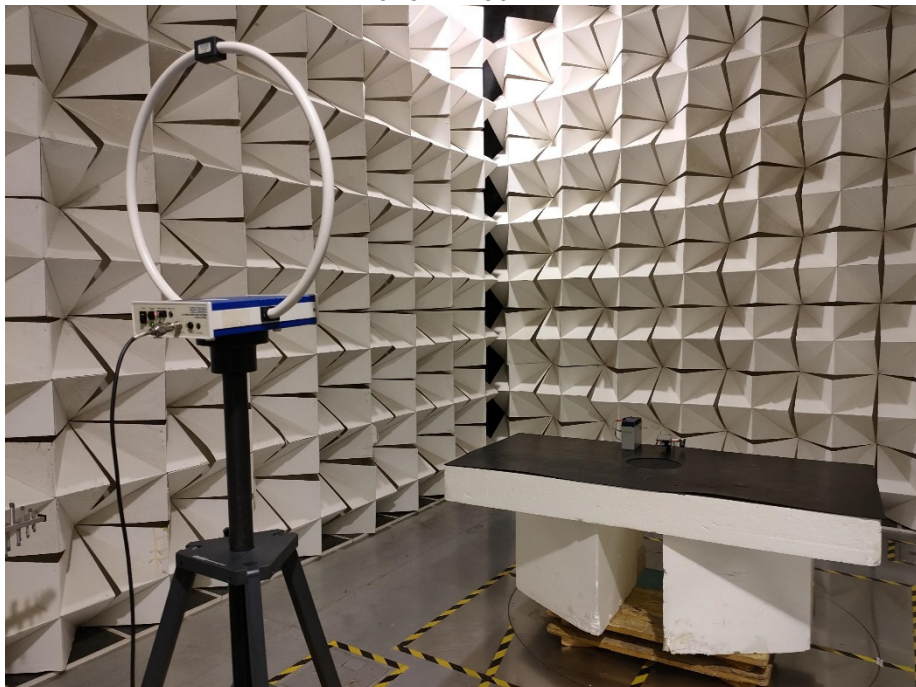
7 Photographs–Test Setup

7.1 Photograph–AC Power Line Conducted Emission Test Setup

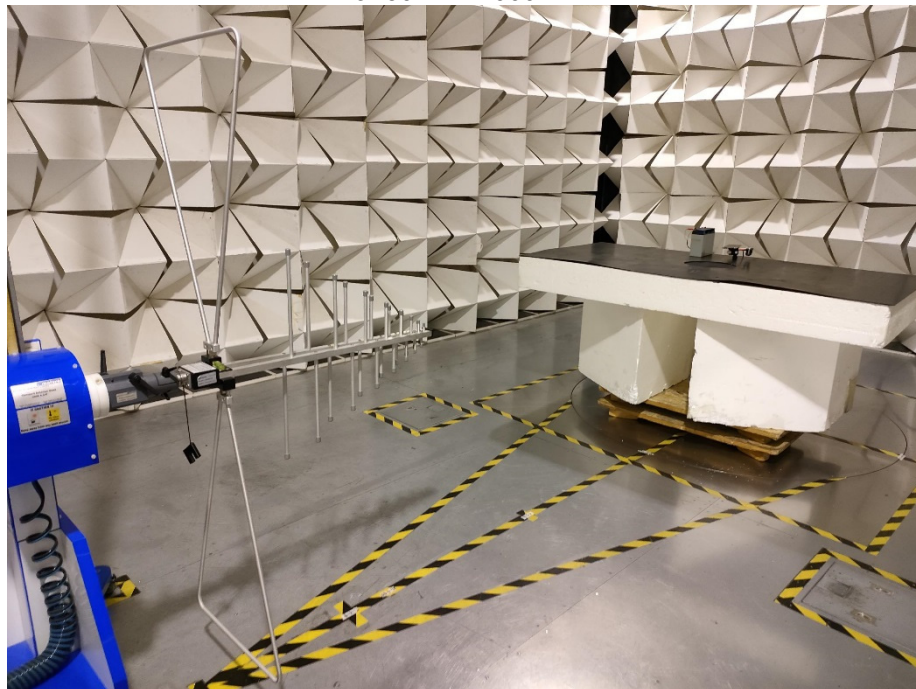


7.2 Photograph–Radiated Emission

For 9KHz-30MHz



For 30MHz-1000MHz



8 Photographs – Constructional Details

Note: Please refer to appendix: Appendix-WM-MCW31-BK-Photos.

=====End of Report=====