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.

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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	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emission (150kHz-30MHz)	±3.64dB
Radiated Emission_3m (30MHz-1000MHz)	±4.53 dB
Radiated Emission_10m (30MHz-1000MHz)	±5.24 dB
Radiated Emission(1GHz~18GHz)	±5.03dB

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 ConductedEmission

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

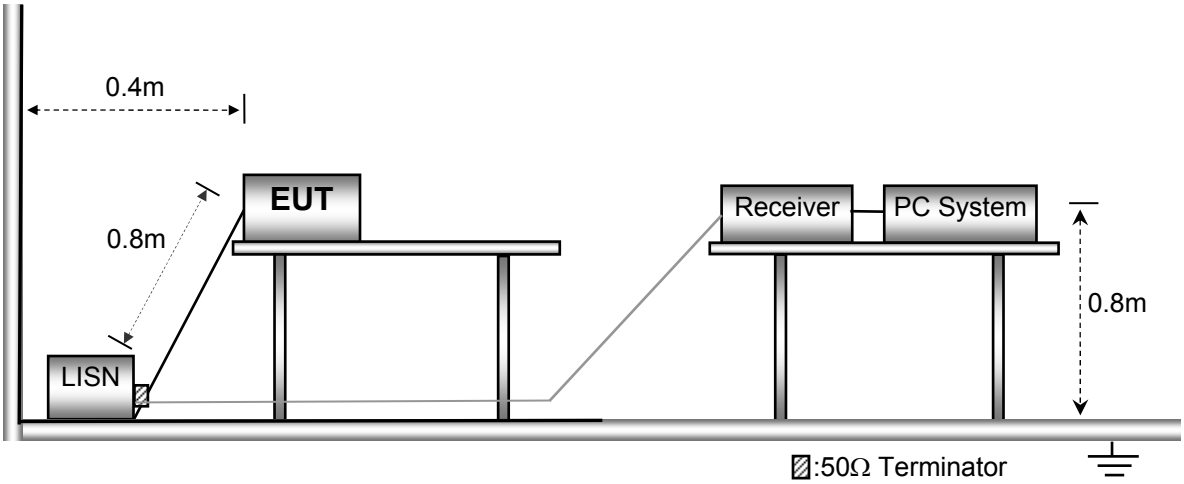
Humidity..... : 64.3%RH

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.

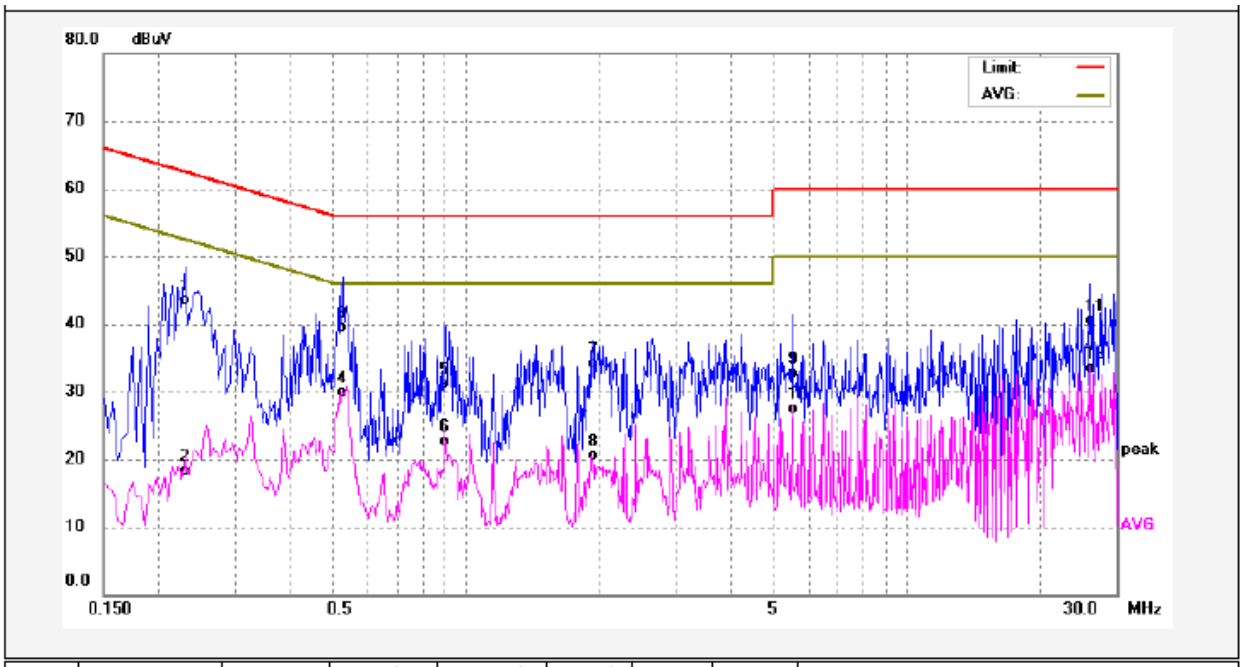


6.1.3 Measurement Data

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.

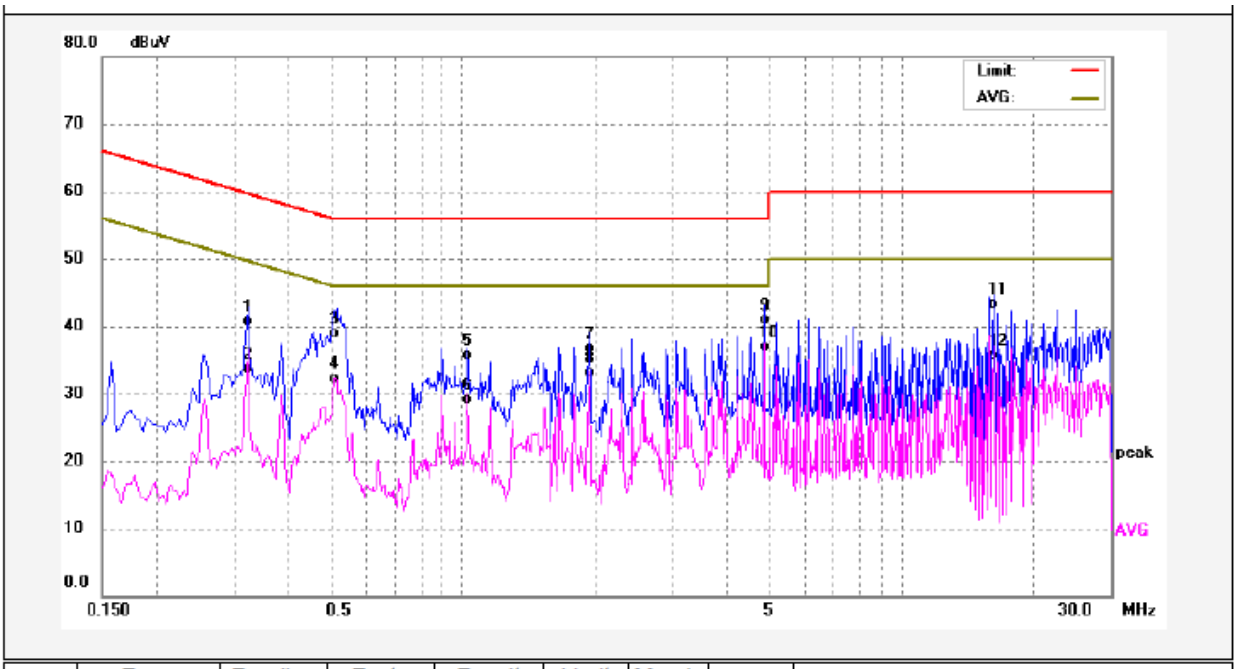
6.1.4 AC Power Line ConductedEmission Test Data

Live Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.2300	33.51	10.01	43.52	62.45	-18.93	QP	
2	0.2300	8.25	10.01	18.26	52.45	-34.19	AVG	
3	0.5260	29.57	9.95	39.52	56.00	-16.48	QP	
4	0.5260	19.88	9.95	29.83	46.00	-16.17	AVG	
5	0.8980	21.04	9.99	31.03	56.00	-24.97	QP	
6	0.8980	12.79	9.99	22.78	46.00	-23.22	AVG	
7	1.9420	24.21	9.94	34.15	56.00	-21.85	QP	
8	1.9420	10.57	9.94	20.51	46.00	-25.49	AVG	
9	5.5060	22.70	9.99	32.69	60.00	-27.31	QP	
10	5.5060	17.59	9.99	27.58	50.00	-22.42	AVG	
11	26.2180	28.42	12.16	40.58	60.00	-19.42	QP	
12	26.2180	21.31	12.16	33.47	50.00	-16.53	AVG	

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 μV/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 μV/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

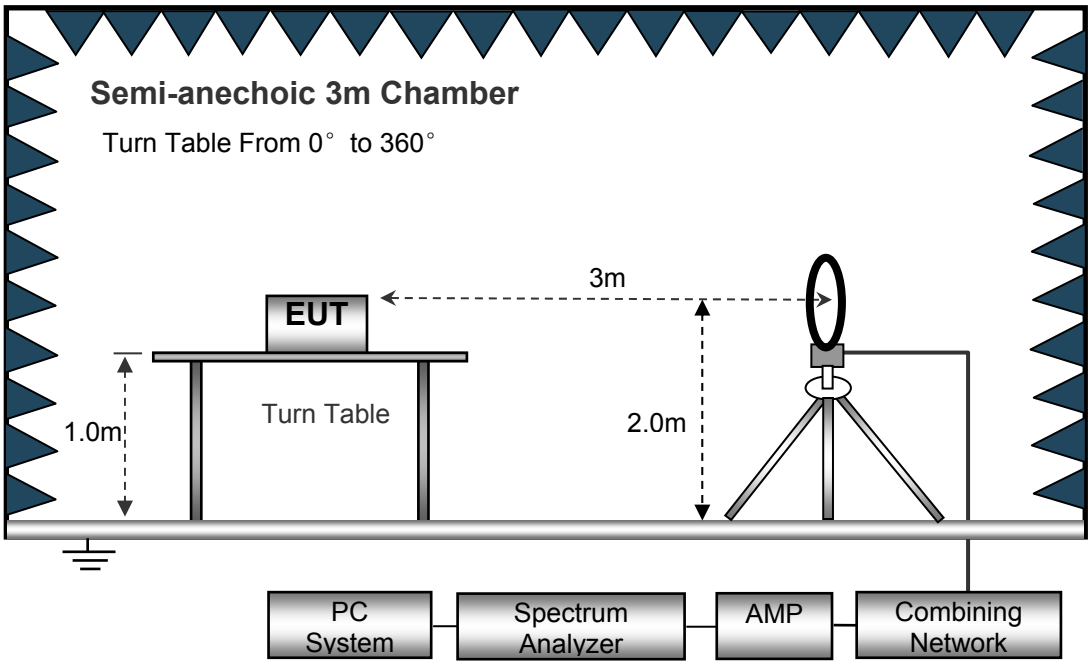
Atmospheric Pressure ..... : 101.8kPa

EUT Operation..... : Refer to section 3.6.

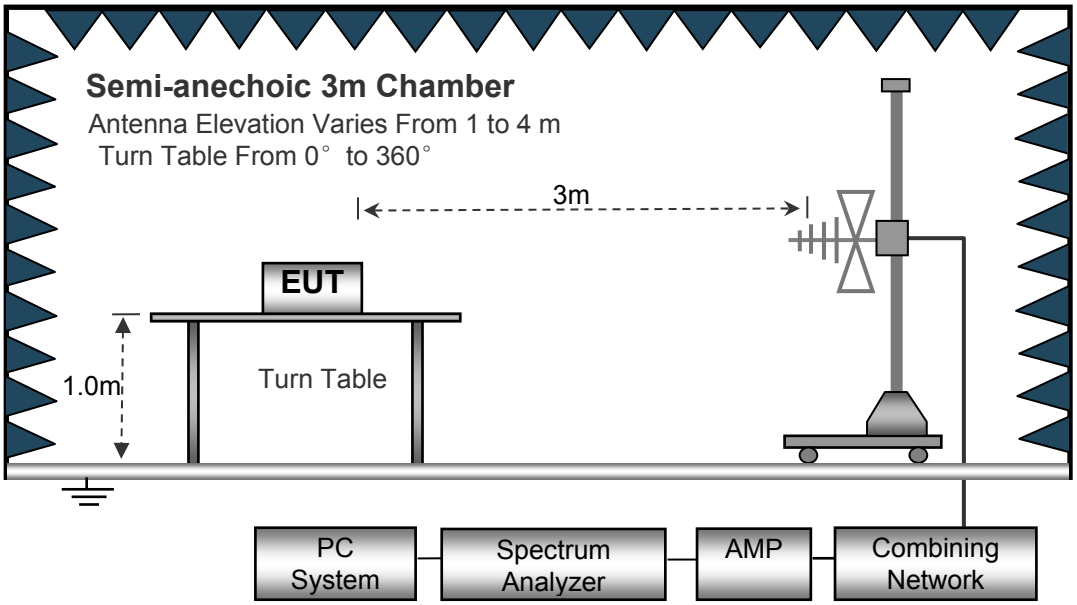
6.2.2 Block Diagram of Test Setup

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



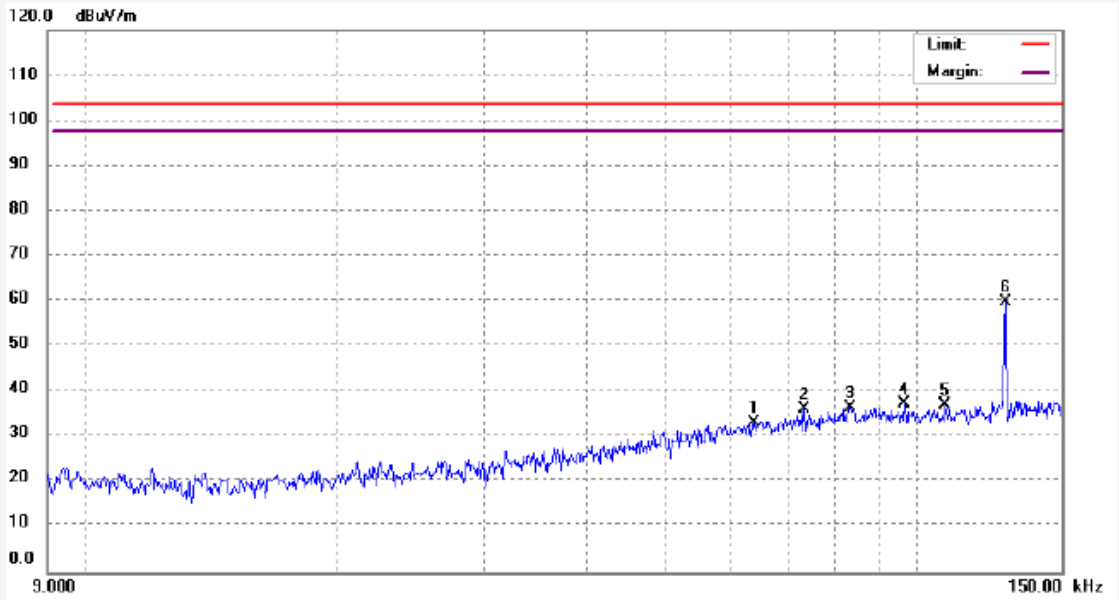
6.2.3 Measurement Data

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

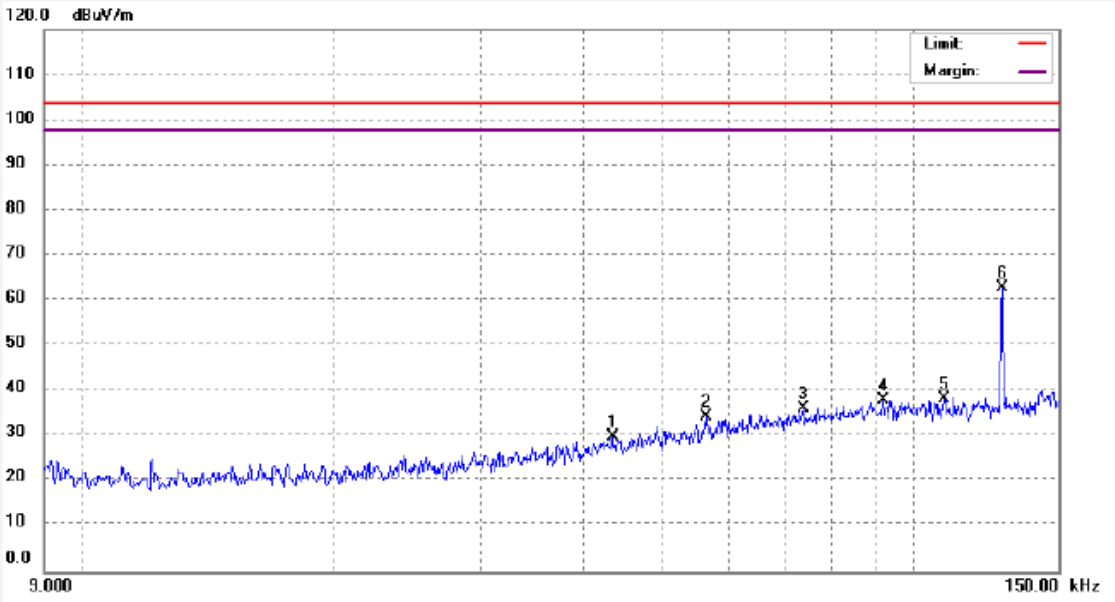
9kHz to 150kHz

Antenna Orientation: Parallel



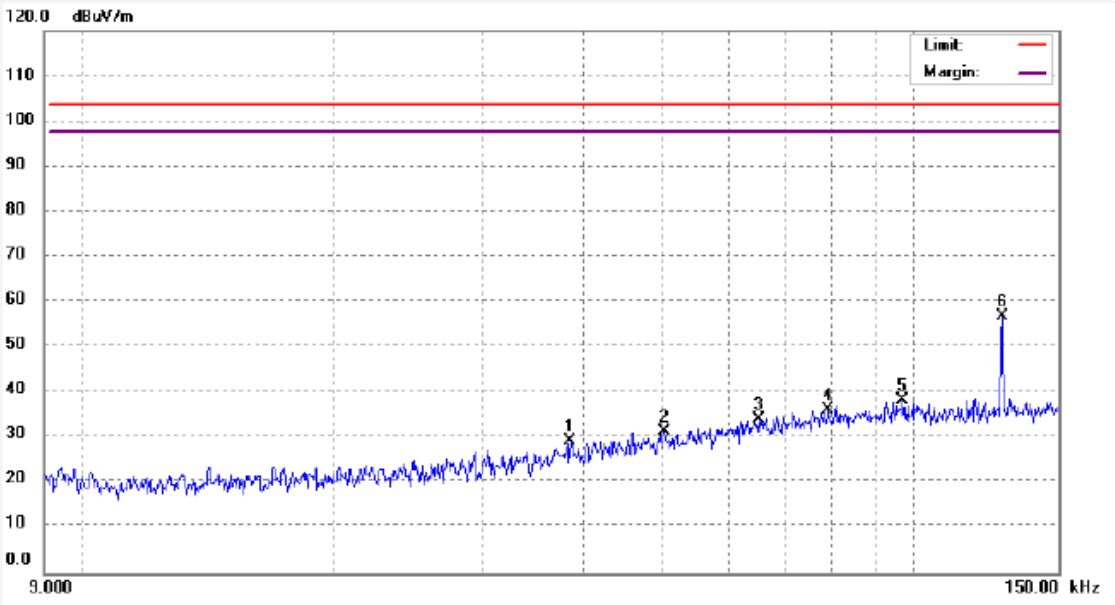
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.0638	47.69	-14.61	33.08	103.50	-70.42	peak	
2	0.0734	50.57	-14.53	36.04	103.50	-67.46	peak	
3	0.0832	51.07	-14.50	36.57	103.50	-66.93	peak	
4	0.0966	51.98	-14.66	37.32	103.50	-66.18	peak	
5	0.1082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



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.0434	44.42	-14.65	29.77	103.50	-73.73	peak	
2	0.0563	49.10	-14.69	34.41	103.50	-69.09	peak	
3	0.0738	50.78	-14.52	36.26	103.50	-67.24	peak	
4	0.0921	52.60	-14.60	38.00	103.50	-65.50	peak	
5	0.1091	53.06	-14.76	38.30	103.50	-65.20	peak	
6	0.1281	77.86	-14.91	62.95	103.50	-40.55	peak	

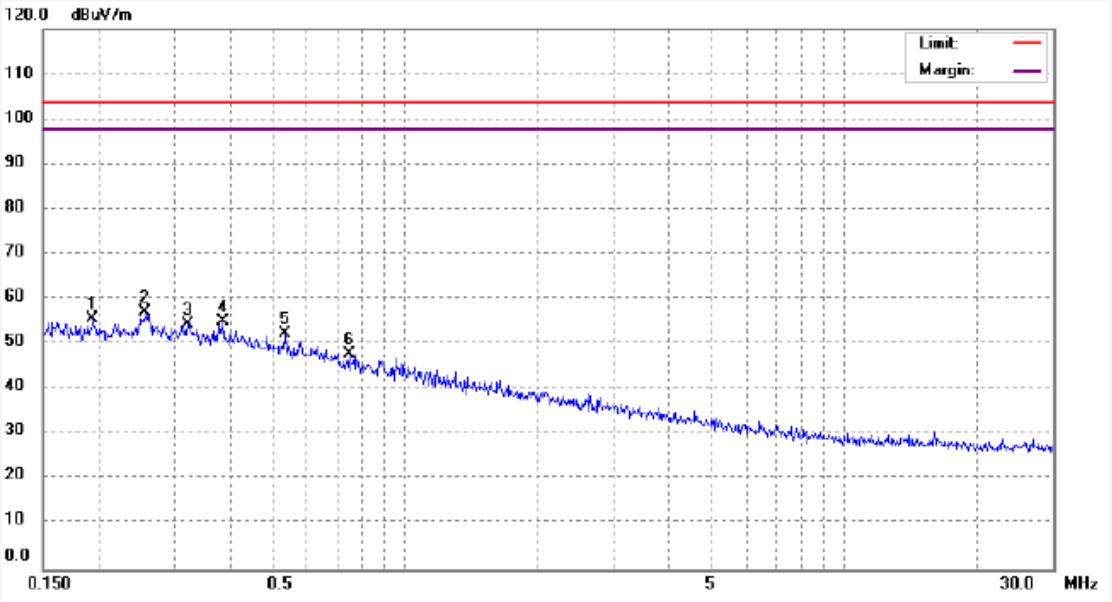
Antenna Orientation: Ground parallel



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.0386	43.74	-14.59	29.15	103.50	-74.35	peak	
2	0.0502	46.18	-14.74	31.44	103.50	-72.06	peak	
3	0.0651	48.58	-14.61	33.97	103.50	-69.53	peak	
4	0.0792	50.55	-14.48	36.07	103.50	-67.43	peak	
5	0.0971	52.94	-14.66	38.28	103.50	-65.22	peak	
6	0.1280	71.74	-14.91	56.83	103.50	-46.67	peak	

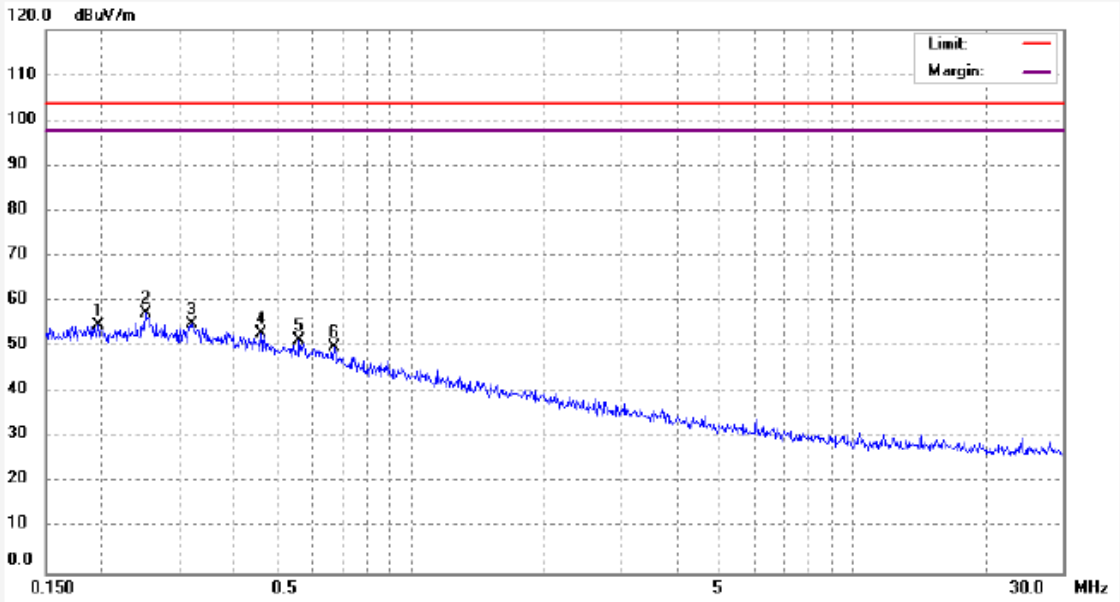
150kHz to 30MHz

Antenna Orientation: Parallel



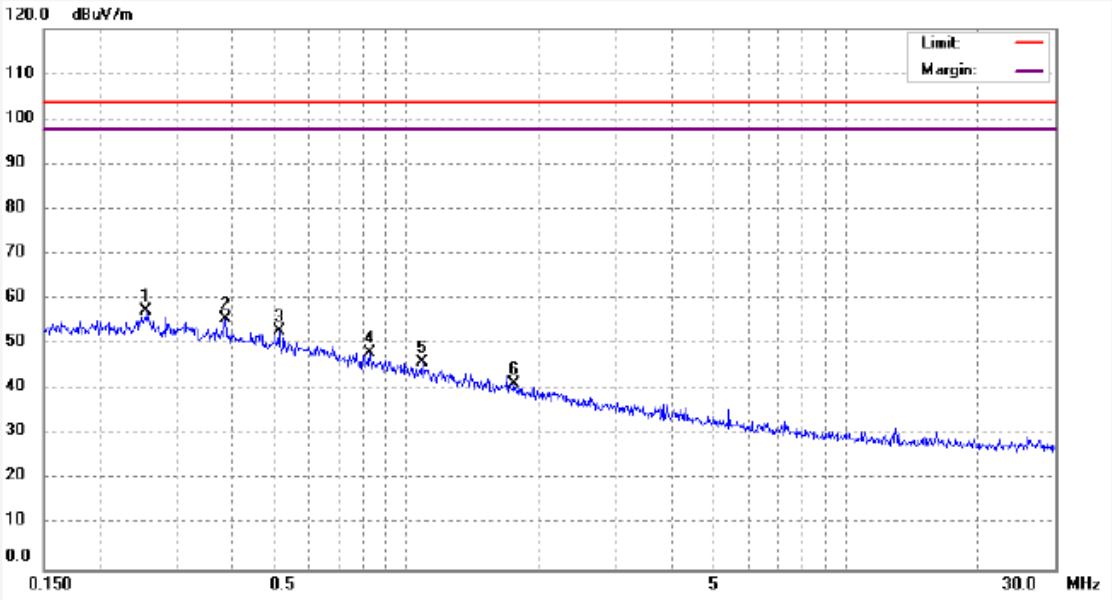
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.1944	70.64	-14.96	55.68	103.50	-47.82	peak	
2	0.2561	72.12	-14.88	57.24	103.50	-46.26	peak	
3	0.3199	69.36	-14.82	54.54	103.50	-48.96	peak	
4	0.3851	69.88	-14.75	55.13	103.50	-48.37	peak	
5	0.5321	66.96	-14.64	52.32	103.50	-51.18	peak	
6	0.7469	62.57	-14.63	47.94	103.50	-55.56	peak	

Antenna Orientation: Perpendicular



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.1965	69.80	-14.95	54.85	103.50	-48.65	peak	
2	0.2521	72.38	-14.89	57.49	103.50	-46.01	peak	
3	0.3199	69.74	-14.82	54.92	103.50	-48.58	peak	
4	0.4587	67.67	-14.68	52.99	103.50	-50.51	peak	
5	0.5611	66.17	-14.64	51.53	103.50	-51.97	peak	
6	0.6718	64.57	-14.63	49.94	103.50	-53.56	peak	

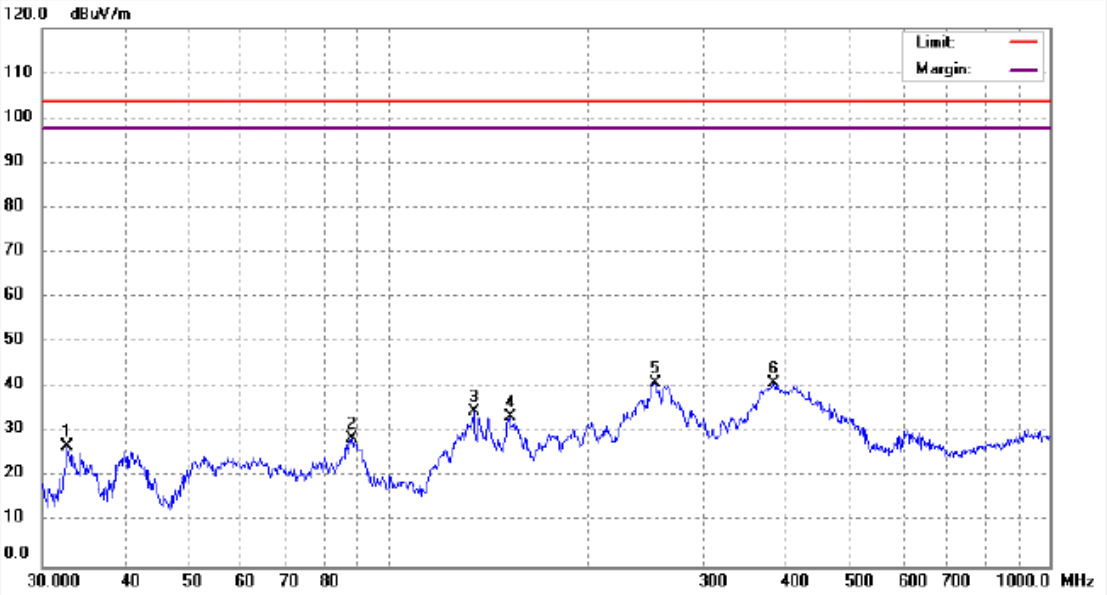
Antenna Orientation: Ground parallel



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	0.2561	72.21	-14.88	57.33	103.50	-46.17	peak	
2	0.3871	70.52	-14.75	55.77	103.50	-47.73	peak	
3	0.5127	67.70	-14.64	53.06	103.50	-50.44	peak	
4	0.8260	62.90	-14.63	48.27	103.50	-55.23	peak	
5	1.0881	60.67	-14.60	46.07	103.50	-57.43	peak	
6	1.7529	55.73	-14.48	41.25	103.50	-62.25	peak	

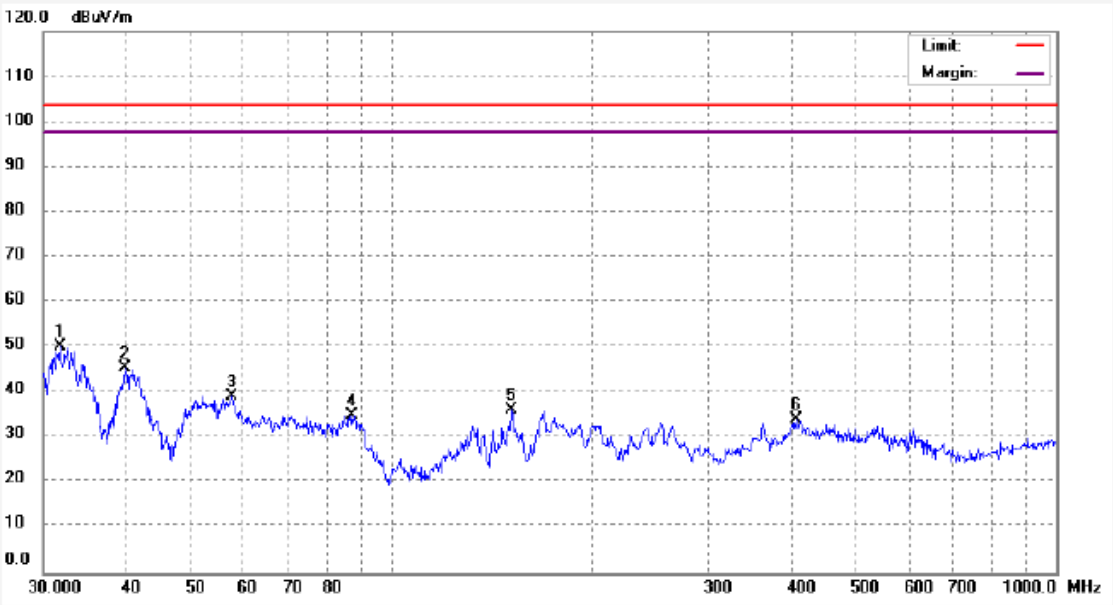
6.2.5 Radiated Emission Test Data,30MHz to 1000MHz

Antenna Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	32.6340	43.96	-17.25	26.71	103.50	-76.79	peak	
2	88.0328	47.77	-19.17	28.60	103.50	-74.90	peak	
3	134.5591	50.11	-15.33	34.78	103.50	-68.72	peak	
4	152.6639	47.91	-14.49	33.42	103.50	-70.08	peak	
5	252.9481	57.32	-16.42	40.90	103.50	-62.60	peak	
6	382.5878	54.12	-13.28	40.84	103.50	-62.66	peak	

Antenna Polarization: Vertical



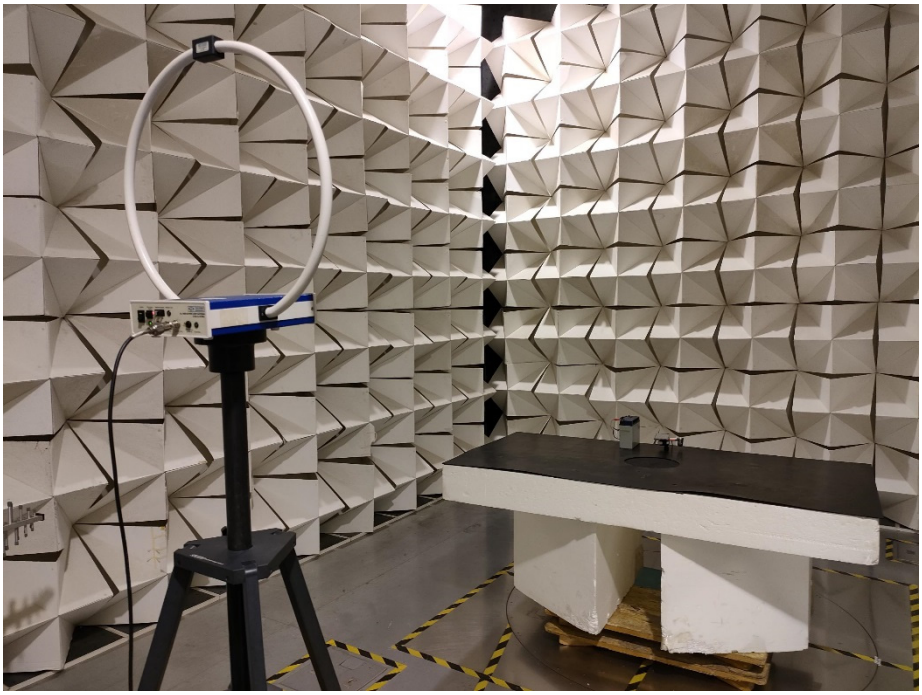
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	31.7312	67.42	-17.31	50.11	103.50	-53.39	peak	
2	39.8541	62.10	-16.79	45.31	103.50	-58.19	peak	
3	57.5938	55.61	-16.51	39.10	103.50	-64.40	peak	
4	87.1115	54.13	-19.22	34.91	103.50	-68.59	peak	
5	151.5971	50.75	-14.52	36.23	103.50	-67.27	peak	
6	406.0880	46.53	-12.54	33.99	103.50	-69.51	peak	

7 Photographs–Test Setup

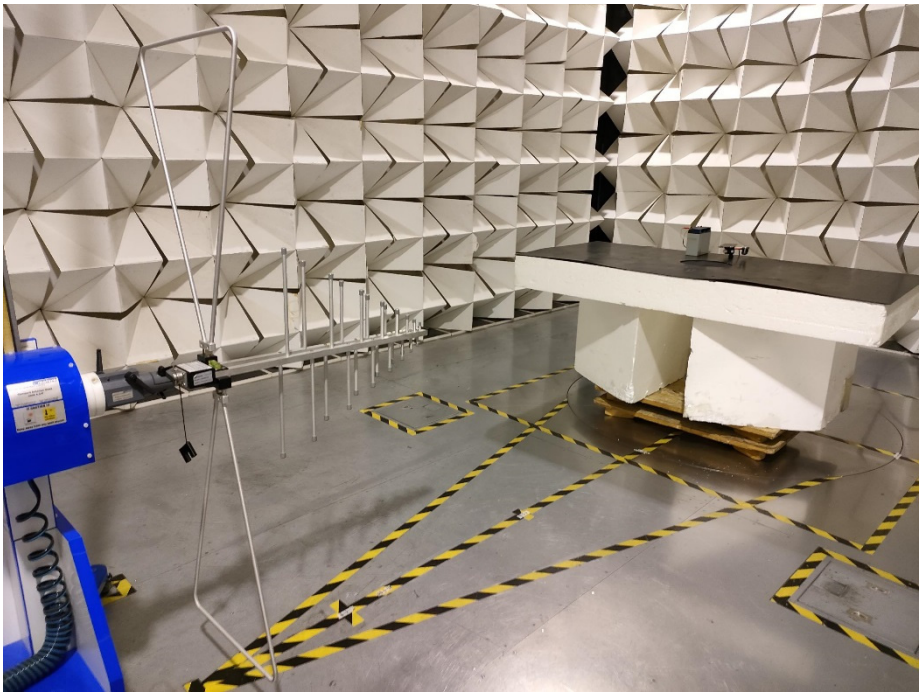
7.1 Photograph–AC Power Line ConductedEmission Test Setup

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======