



TEST REPORT

Reference No...... : WTF22F04065109E
Applicant..... : Foshan Leilong Electric Appliance Co., Ltd
Address..... : 3rd Floor, B Building Zhongteng Jinguan Industry Zone, No. 2 Weiye Road, Beijiao Town Shunde District, Foshan City Guangdong, China
Manufacturer : The same as above
Address..... : The same as above
Product Name..... : Automatic cat litter Box
Model No...... : MSP-01, MSP-02, MSP-03, MSP-04, MSP-05, MSP-06, MSP-07, MSP-08, MSP-09, MSP-01W, MSP-02W, MSP-03W, MSP-04W, MSP-05W, MSP-06W, MSP-07W, MSP-08W, MSP-09W
Test specification..... : 47 CFR PART 15 SUBPART B (Oct.,2020)
Date of Receipt sample : 2022-04-12
Date of Test : 2022-04-12 to 2022-05-27
Date of Issue..... : 2022-05-30
Test Report Form No...... : WEO-FCC15A-01B
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 (Foshan) Co., Ltd.

Address: No.13-19, 2/F., 2nd Building, Sunlink International Machinery City,
Chencun, Shunde District, Foshan, Guangdong, China

Tel:+86-757-23811398

Fax:+86-757-23811381

E-mail:info@waltek.com.cn

Tested by:

Leo Feng

Approved by:

Danny Zhou



1 Test Summary

Test Item	Test Requirement	Class	Test Method	Test Result
Conducted Emission	47 CFR PART 15 SUBPART B (Oct.,2020)	Class B	ANSI C63.4: 2014	Pass
Radiated Emission	47 CFR PART 15 SUBPART B (Oct.,2020)	Class B	ANSI C63.4: 2014	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

WALTEK



2 Contents

	Page
COVER PAGE	1
1 TEST SUMMARY	2
2 CONTENTS	3
3 GENERAL INFORMATION	4
3.1 GENERAL DESCRIPTION OF E.U.T.	4
3.2 DETAILS OF E.U.T.....	4
3.3 DESCRIPTION OF SUPPORT UNITS.....	4
3.4 STANDARDS APPLICABLE FOR TESTING	4
3.5 TEST FACILITY	5
3.6 SUBCONTRACTED.....	5
3.7 ABNORMALITIES FROM STANDARD CONDITIONS	5
4 EQUIPMENT USED DURING TEST	6
4.1 SOFTWARE LIST	7
4.2 MEASUREMENT UNCERTAINTY	7
4.3 SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT.....	7
4.4 DECISION RULE.....	7
5 EMISSION TEST RESULTS	8
5.1 CONDUCTED EMISSION.....	8
5.1.1 <i>E.U.T. Operation</i>	8
5.1.2 <i>Block Diagram of Test Setup</i>	8
5.1.3 <i>Measurement Data</i>	8
5.1.4 <i>Corrected Amplitude & Margin Calculation</i>	9
5.1.5 <i>Conducted Emission Test Data</i>	9
5.2 RADIATED EMISSION	11
5.2.1 <i>E.U.T. Operation</i>	11
5.2.2 <i>Block Diagram of Test Setup</i>	11
5.2.3 <i>Measurement Data</i>	11
5.2.4 <i>Corrected Amplitude & Margin Calculation</i>	12
5.2.5 <i>Radiated Emission Test Data</i>	12
6 PHOTOGRAPHS – TEST SETUP	14
6.1 PHOTOGRAPH – CONDUCTED EMISSION TEST SETUP.....	14
6.2 PHOTOGRAPH – RADIATED EMISSION TEST SETUP.....	14
7 PHOTOGRAPHS – CONSTRUCTIONAL DETAILS	15
7.1 EUT – EXTERNAL VIEW	15



3 General Information

3.1 General Description of E.U.T.

Product Name : Automatic cat litter Box

Model No. : MSP-01, MSP-02, MSP-03, MSP-04, MSP-05, MSP-06, MSP-07, MSP-08, MSP-09, MSP-01W, MSP-02W, MSP-03W, MSP-04W, MSP-05W, MSP-06W, MSP-07W, MSP-08W, MSP-09W

Remark : All models have the same circuit diagram and internal construction, only different in model names.
Therefore the EMC tests were performed on model MSP-01.

3.2 Details of E.U.T.

Technical Data : For Box: DC 12V, 10W
For Power Supply:
INPUT: 100-120V~, 50/60Hz, 1A Max; OUTPUT: DC 12V, 1.5A

3.3 Description of Support Units

The EUT has been tested as an independent unit. MSP-01 is the test sample. Both tests were performed in the condition of AC 120V/60Hz input.

3.4 Standards Applicable for Testing

The tests were performed according to following standards:

47 CFR PART 15 SUBPART B (Oct.,2020) Radio frequency devices



3.5 Test Facility

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

- **ISED – Registration No.: 21895**

Waltek Testing Group (Foshan) Co., Ltd. has been registered and fully described in a report filed with the Innovation, Science and Economic Development Canada (ISED). The acceptance letter from the ISED is maintained in our files. Registration ISED number: 21895, March 12, 2019

- **FCC – Registration No.: 820106**

Waltek Testing Group (Foshan) 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 820106, August 16, 2018

- **NVLAP – Lab Code: 600191-0**

Waltek Testing Group (Foshan) Co., Ltd. EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 600191-0.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

3.6 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 items: --

Lab information: --

3.7 Abnormalities from Standard Conditions

None.



4 Equipment Used during Test

<input checked="" type="checkbox"/> Mains Terminal Disturbance Voltage (Conducted Emission) 1#					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	EMI Test Receiver	R&S	ESR3	102423	Valid
2.	LISN	R&S	ENV216	101343	Valid
3.	Cable	HUBER+SUHNER	CBL2-NN-6M	223NN624	Valid
4.	Switch	CD	RSU-A4 18G	RSUA4008	Valid
<input type="checkbox"/> Mains Terminal Disturbance Voltage (Conducted Emission) 2#					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	EMI Test Receiver	R&S	ESCI	101178	Valid
2.	LISN	R&S	ENV216	101215	Valid
3.	Cable	HUBER+SUHNER	CBL2-NN-6M	6102701	Valid
4.	Switch	ESE	RSU/M2	---	Valid
<input type="checkbox"/> Mains Terminal Disturbance Voltage (Conducted Emission) 3#					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	EMI Test Receiver	R&S	ESR3	102842	Valid
2.	LISN	R&S	ENV216	101542	Valid
3.	Cable	YIHENG	LMR195UF-NMNM-2.5	---	Valid
4.	Manual RF Switch	YIHENG	SW-2	RSU0402	Valid
<input checked="" type="checkbox"/> Radiated Emission (30MHz to 1GHz) 1#					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	3m Semi-anechoic Chamber	CHANGCHUANG	9m×6m×6m	-	Valid
2.	EMI Test Receiver	R&S	ESR7	101566	Valid
3.	Trilog Broadband Antenna	SCHWARZBECK	VULB 9162	9162-117	Valid
4.	Coaxial Cable (below 1GHz)	H+S	CBL3-NN-12+3 m	214NN320	Valid
<input type="checkbox"/> Radiated Emission (30MHz to 1GHz) 2#					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	3m Semi-anechoic Chamber	YIHENG	10m×5.3m×3.5m	YH2021071804	Valid
2.	EMI Test Receiver	R&S	ESR7	102454	Valid
3.	Trilog Broadband Antenna	SCHWARZBECK	VULB 9163	01418	Valid
4.	Coaxial Cable (below 1GHz)	Times-Microwave Systems	LMR240UF-NMSM-7.5	-	Valid

: Not Used

: Used



4.1 Software List

Description	Manufacturer	Model	Version
EMI Test Software (Conducted Emission 1#)	FARATRONIC	EZ-EMC	EMEC-3A1
EMI Test Software (Conducted Emission 2#)	FARATRONIC	EZ-EMC	CON-03A1
EMI Test Software (Conducted Emission 3#)	FARATRONIC	EZ-EMC	COM 3A1.1
EMI Test Software (Radiated Emission 1#)	FARATRONIC	EZ-EMC	RA-03A1-1
EMI Test Software (Radiated Emission 2#)	FARATRONIC	EZ-EMC	RA-03A1-1

4.2 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conducted Emission	150kHz~30MHz	±3.2dB	(1)
Radiated Emission	30MHz~1GHz	±4.1dB	(1)

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

4.3 Special Accessories and Auxiliary Equipment

Item	Equipment	Technical Data	Manufacturer	Model No.	Serial No.
1.	/	/	/	/	/

4.4 Decision Rule

Compliance or non-compliance with a disturbance limit shall be determined in the following manner.

If U_{LAB} is less than or equal to U_{cispr} , then

- Compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- Non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{LAB} is greater than U_{cispr} , then

- Compliance is deemed to occur if no measured disturbance level, increased by $(U_{LAB} - U_{cispr})$, exceeds the disturbance limit;
- Non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{LAB} - U_{cispr})$, exceeds the disturbance limit.



5 Emission Test Results

5.1 Conducted Emission

Test Requirement	:	47 CFR PART 15, SUBPART B
Test Method	:	ANSI C63.4
Test Result	:	Pass
Test Limit	:	47 CFR PART 15, SUBPART B Section 15.107
Frequency Range	:	150kHz to 30MHz
Class	:	Class B

5.1.1 E.U.T. Operation

Operating Environment:

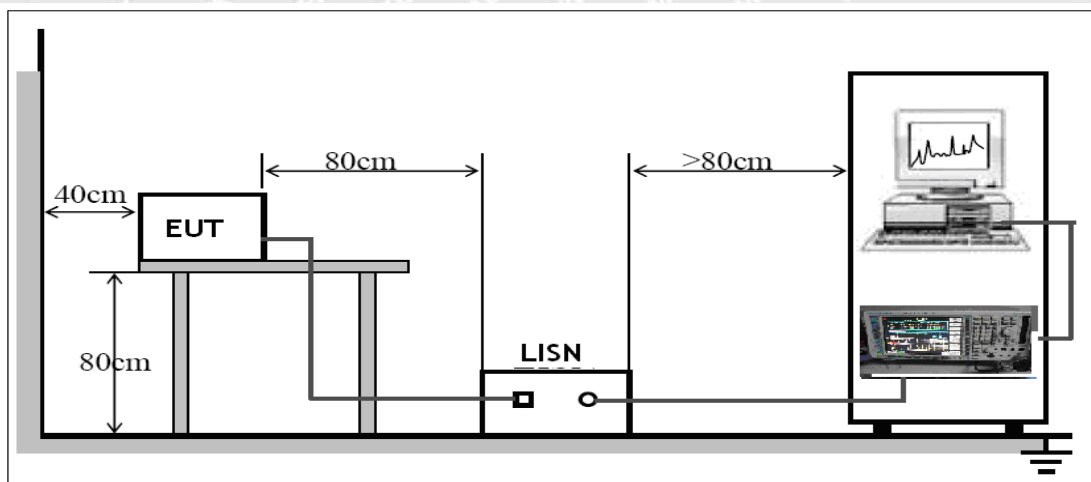
Temperature	:	24.8°C
Humidity	:	49.3%RH
Atmospheric Pressure	:	101.2 kPa

EUT Operation:

Input Voltage	:	AC 120V/60Hz
Operating Mode	:	Working mode

5.1.2 Block Diagram of Test Setup

The Conducted Emission tests were performed in accordance with the ANSI C63.4.



5.1.3 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.



5.1.4 Corrected Amplitude & Margin Calculation

The Corrected factor is calculated by adding LISN VDF(Voltage Division Facotr), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

$$\text{Measurement} = \text{Reading Level} + \text{Correct Factor}$$

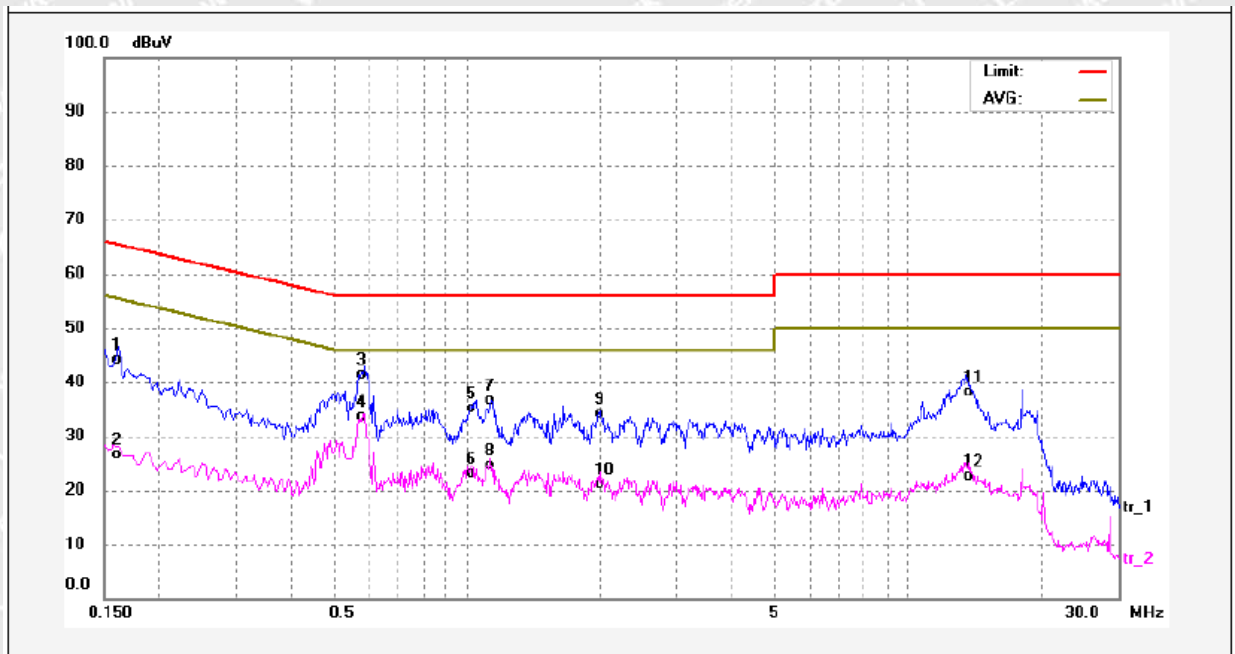
$$\text{Correct Facotor} = \text{LISN VDF} + \text{Cable Loss}$$

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Measurement}$$

5.1.5 Conducted Emission Test Data

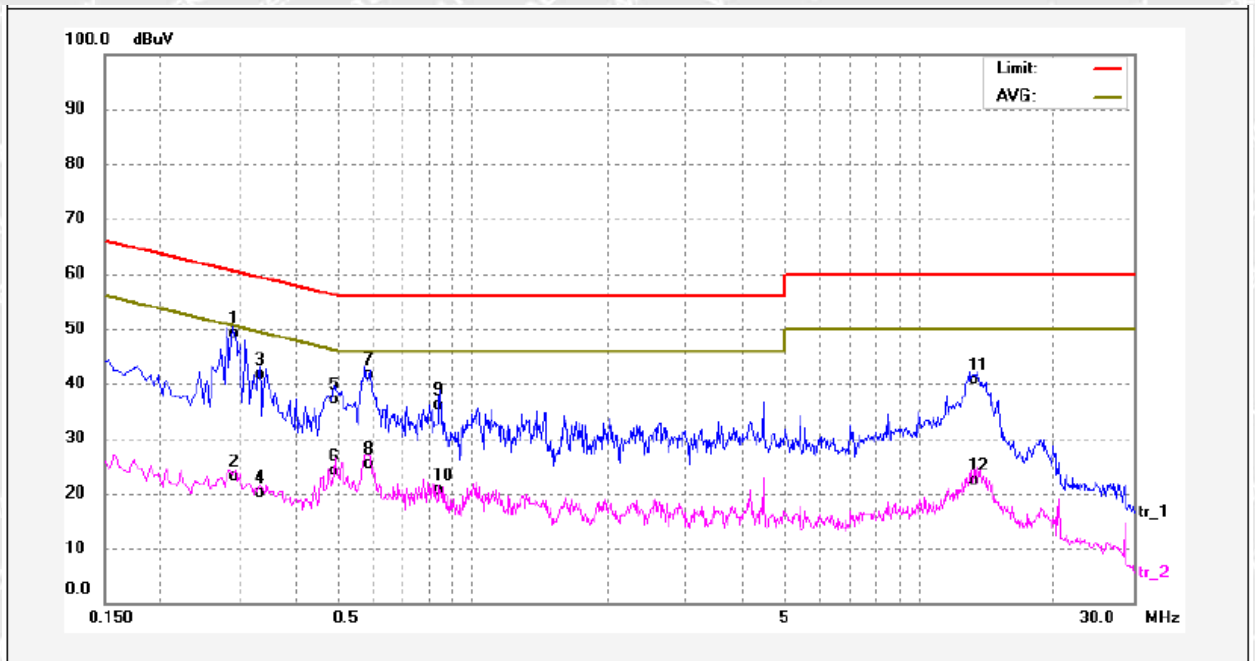
Live Line



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1620	33.47	9.65	43.12	65.36	-22.24	QP	
2	0.1620	15.96	9.65	25.61	55.36	-29.75	AVG	
3	0.5860	30.77	9.70	40.47	56.00	-15.53	QP	
4	0.5860	23.04	9.70	32.74	46.00	-13.26	AVG	
5	1.0260	24.44	9.71	34.15	56.00	-21.85	QP	
6	1.0260	12.31	9.71	22.02	46.00	-23.98	AVG	
7	1.1380	25.91	9.71	35.62	56.00	-20.38	QP	
8	1.1380	13.80	9.71	23.51	46.00	-22.49	AVG	
9	1.9980	23.44	9.76	33.20	56.00	-22.80	QP	
10	1.9980	10.42	9.76	20.18	46.00	-25.82	AVG	
11	13.7700	27.21	10.03	37.24	60.00	-22.76	QP	
12	13.7700	11.55	10.03	21.58	50.00	-28.42	AVG	



Neutral Line



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	0.2909	38.48	9.67	48.15	60.50	-12.35	QP	
2	0.2909	12.53	9.67	22.20	50.50	-28.30	AVG	
3	0.3339	30.96	9.67	40.63	59.35	-18.72	QP	
4	0.3339	9.56	9.67	19.23	49.35	-30.12	AVG	
5	0.4900	26.53	9.70	36.23	56.17	-19.94	QP	
6	0.4900	13.48	9.70	23.18	46.17	-22.99	AVG	
7	0.5899	30.81	9.70	40.51	56.00	-15.49	QP	
8	0.5899	14.57	9.70	24.27	46.00	-21.73	AVG	
9	0.8460	25.50	9.70	35.20	56.00	-20.80	QP	
10	0.8460	9.81	9.70	19.51	46.00	-26.49	AVG	
11	13.1420	29.60	10.05	39.65	60.00	-20.35	QP	
12	13.1420	11.25	10.05	21.30	50.00	-28.70	AVG	



5.2 Radiated Emission

Test Requirement	:	47 CFR PART 15, SUBPART B
Test Method	:	ANSI C63.4
Test Limit	:	47 CFR PART 15, SUBPART B Section 15.109
Test Result	:	Pass
Frequency Range	:	30MHz to 1000MHz
Class	:	Class B

5.2.1 E.U.T. Operation

Operating Environment:

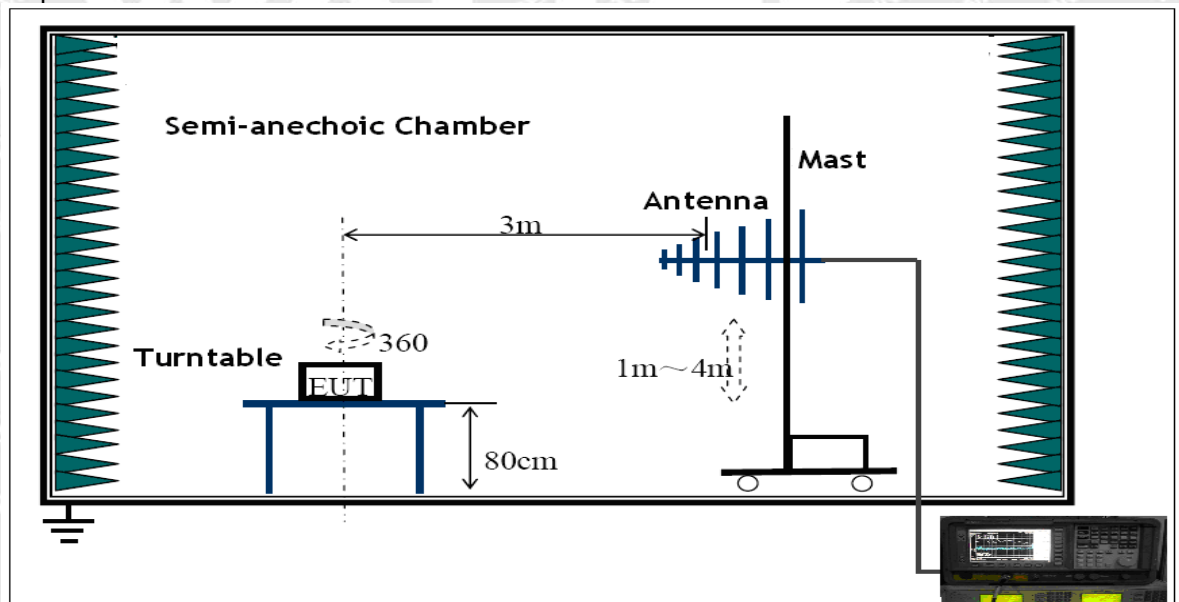
Temperature	:	21.3°C
Humidity	:	48.5%RH
Atmospheric Pressure	:	101.2 kPa

EUT Operation:

Input Voltage	:	AC 120V/60Hz
Operating Mode	:	Working mode

5.2.2 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 ANSI C63.4.



5.2.3 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.



5.2.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Corr. Factor}$$

$$\text{Corr. Factor} = \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

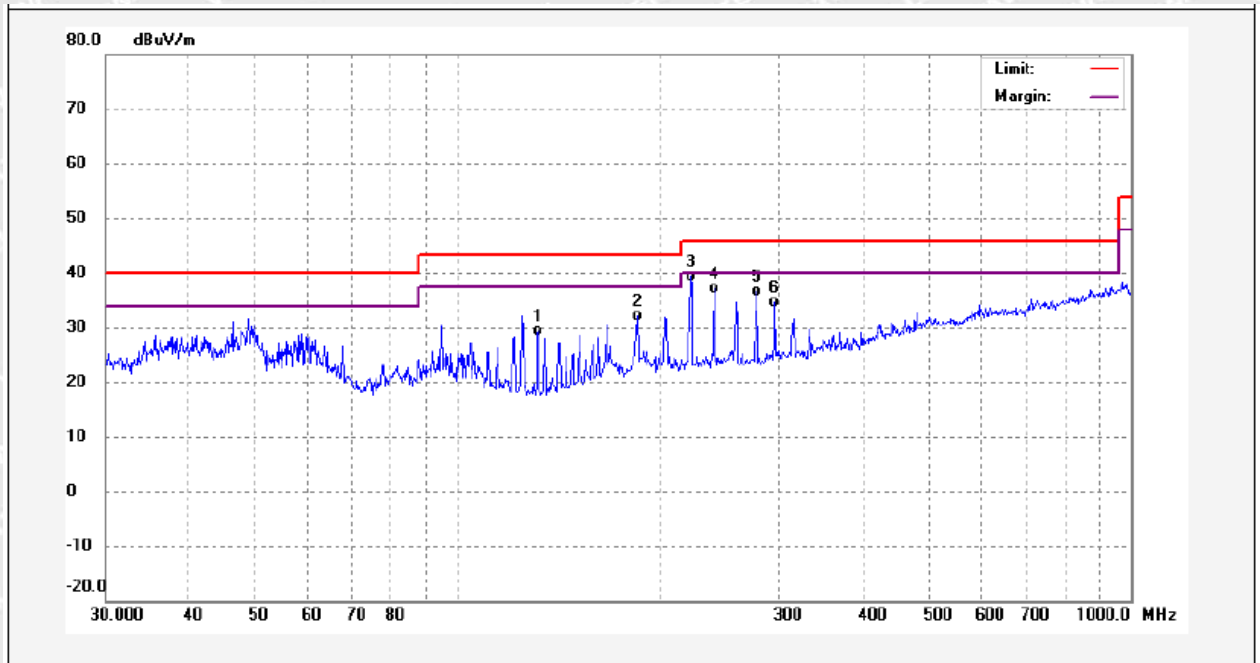
The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B.

The equation for margin calculation is as follows:

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

5.2.5 Radiated Emission Test Data

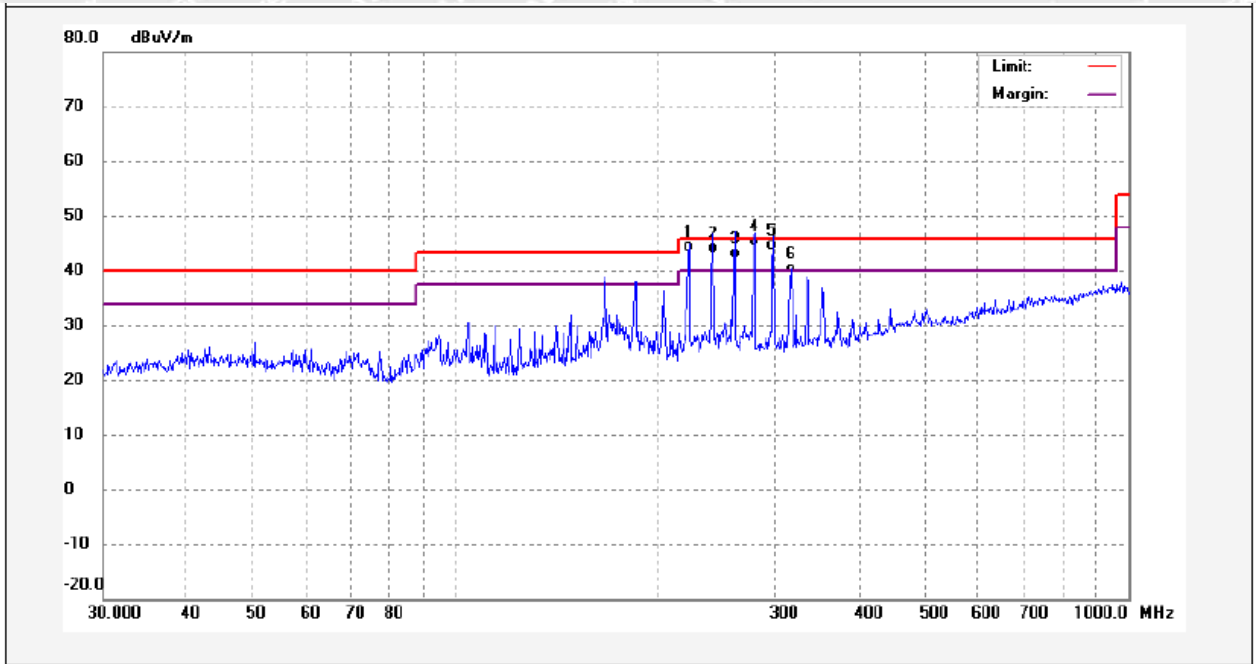
Vertical Polarization



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	131.7577	20.65	8.61	29.26	43.50	-14.24	QP	
2	185.4628	20.14	12.01	32.15	43.50	-11.35	QP	
3	222.8721	26.54	12.87	39.41	46.00	-6.59	QP	
4	241.4222	23.44	13.64	37.08	46.00	-8.92	QP	
5	278.3594	22.48	14.12	36.60	46.00	-9.40	QP	
6	297.1198	20.05	14.67	34.72	46.00	-11.28	QP	



Horizontal Polarization



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	222.6804	31.34	12.97	44.31	46.00	-1.69	QP	
2	241.7611	30.31	13.71	44.02	46.00	-1.98	QP	
3	260.4143	29.19	13.95	43.14	46.00	-2.86	QP	
4	278.5595	31.18	14.26	45.44	46.00	-0.56	QP	
5	297.1322	29.79	14.72	44.51	46.00	-1.49	QP	
6	316.1452	25.03	15.38	40.41	46.00	-5.59	QP	

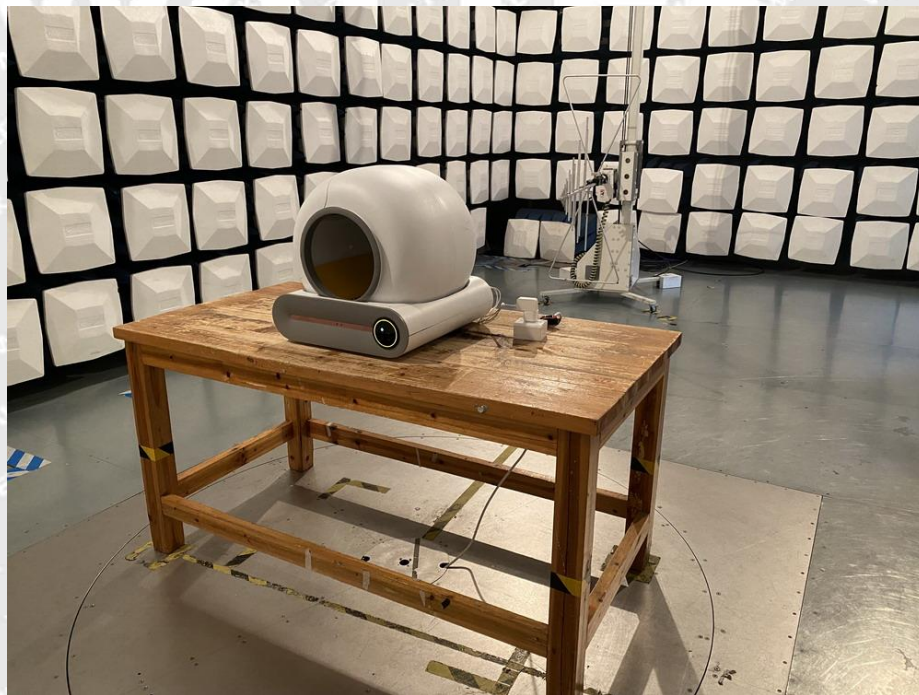


6 Photographs – Test Setup

6.1 Photograph – Conducted Emission Test Setup



6.2 Photograph – Radiated Emission Test Setup





7 Photographs – Constructional Details

7.1 EUT – External View



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