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检测
TESTING
CNAS L6478

TEST REPORT

Reference No.	:	WTF25F11309486E
Applicant	:	Restore Solutions Pty Ltd.
Address	:	4 Sourris Court Carina QLD 4152
Manufacturer	:	Ningbo A-One Electrical Appliances Co., Ltd.
Address	:	No.32 Yingyu Road, Chengdong Industrial Park,Daxu Town, XiangshanCounty,Ningbo City Zhejiang Province, CHINA
Product Name	:	Blower
Model No.	:	AT3200
Test specification	:	AS/NZS CISPR 14.1:2021
Date of Receipt sample	:	2025-11-24
Date of Test	:	2025-11-24 to 2025-11-29
Date of Issue	:	2025-11-29
Test Report Form No.	:	WEH-CISPR14A-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: 1/F., Building 19, Sunlink Machinery City, Xingye 4 Road,
Guanglong Industrial Park, Chihua Neighborhood Committee, Chencun,
Shunde District, Foshan, Guangdong, China
Tel:+86-757-23811398 Fax:+86-757-23811381 E-mail:info@waltek.com.cn

Tested by: Leo Feng

Leo Feng

Approved by: Danny zhou

Danny Zhou

1 Test Summary

EMISSION			
Test Item	**Test Standard**	**Class / Severity**	**Result**
Mains Terminal Disturbance Voltage, 150kHz to 30MHz	AS/NZS CISPR 14.1:2021	Clause 4.3.3	Pass
Disturbance Power, 30MHz to 300MHz	AS/NZS CISPR 14.1:2021	Clause 4.3.4	N/A
Discontinuous Disturbance (Click)	AS/NZS CISPR 14.1:2021	Clause 4.4.2	Pass
Radiated Disturbance, 30MHz to 1000MHz	AS/NZS CISPR 14.1:2021	Clause 4.3.4	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

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3 General Information

3.1 General Description of E.U.T.

Product Name ..... : Blower

Model No. ..... : AT3200

Remark ..... : ---

3.2 Details of E.U.T.

Technical Data ..... : AC 220-240V, 50Hz, 190W

3.3 Description of Support Units

The EUT has been tested as an independent unit. AT3200 is the test sample. All tests were performed in the condition of AC 240V/50Hz input.

3.4 Standards Applicable for Testing

The tests were performed according to following standards:

AS/NZS CISPR 14.1:2021	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1:Emission

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 an 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

☐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 7	HUBER+SUHNER	CBL2-NN-6M	223NN624	Valid
4.	Switch	CD	RSU-A4 18G	RSUA4008	Valid
☒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 22	Times Microwave Systems	LMR195UF-BMNM-5.00M	---	Valid
4.	Switch	ESE	RSU/M2	---	Valid
☐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 12	YIHENG	LMR195UF-NMNM-2.5	---	Valid
4.	Manual RF Switch	Top Precision	SW-2	RSU0402	Valid
☒Discontinuous Disturbance					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Status**
1.	Discontinues Disturbance Analyzer	TESEQ	DIA1512D	28302	Valid
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Valid
☐Radiated Disturbance (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.	Cable 20	Times Microwave Systems	RG223-NMNM-10M	---	Valid
5.	Cable 21	Times Microwave Systems	RG223-NMNM-3M	---	Valid

☒Radiated Disturbance (30MHz to 1GHz) 2#					
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Status**
1.	3m Semi-anechoic Chamber	YIHENG	9m×6m×6m	YH2021071801	Valid
2.	EMI Test Receiver	R&S	ESR7	102454	Valid
3.	Trilog Broadband Antenna	SCHWARZBECK	VULB 9163	01418	Valid
4.	Cable 14	YIHENG	LMR240UF-NMSM-7.5	---	Valid

☐: ***Not Used***
☒: ***Used***

4.1 Software List

Description	Manufacturer	Model	Version
EMI Test Software (Conducted Disturbance 1#)	FARATRONIC	EZ-EMC	EMEC-3A1
EMI Test Software (Conducted Disturbance 2#)	FARATRONIC	EZ-CON	FARAD-3A1.1+
EMI Test Software (Conducted Disturbance 3#)	FARATRONIC	EZ-EMC	EMC-CON 3A1.1+
EMI Test Software (Radiated Disturbance 1#)	FARATRONIC	EZ-EMC	RA-03A1-2
EMI Test Software (Radiated Disturbance 2#)	FARATRONIC	EZ-EMC	RA-03A1-2
Click Test Software	SCHAFFNER	DIS9966	V2.5

4.2 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conducted Emission	150kHz~30MHz	±2.6dB	(1)
Radiated Disturbance	30MHz~1GHz	±4.5dB	(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 is any measured disturbance level exceeds the disturbance limt.

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 Mains Terminals Disturbance Voltage, 150kHz to 30MHz

Test Requirement..... : AS/NZS CISPR 14.1

Test Method..... : AS/NZS CISPR 14.1

Test Result..... : Pass

Frequency Range..... : 150kHz to 30MHz

Class/Severity..... : Table 5 of AS/NZS CISPR 14.1

5.1.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 20.8°C

Humidity..... : 49.3%RH

Atmospheric Pressure ..... : 101.2kPa

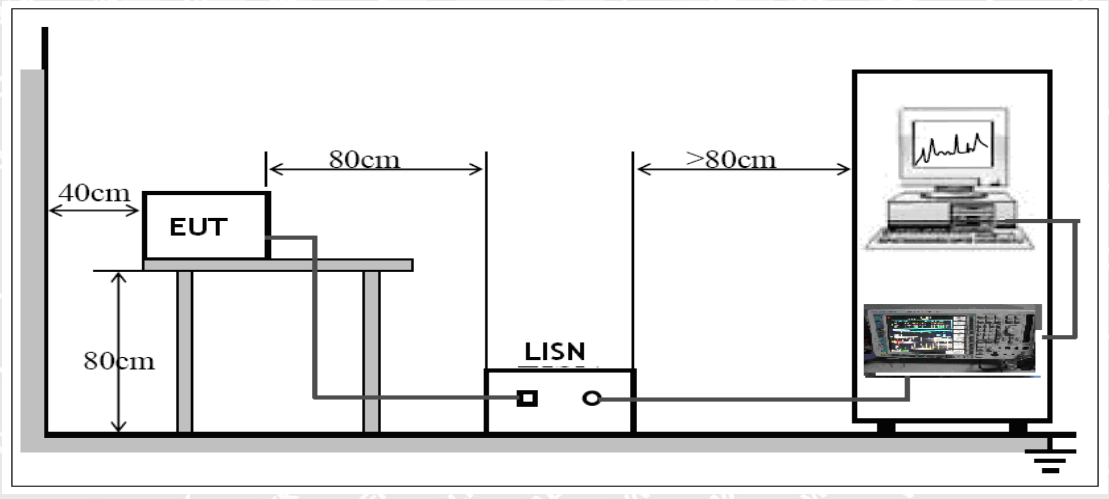
EUT Operation:

Input Voltage ..... : AC 240V/50Hz

Operating Mode..... : Max power mode

5.1.2 Block Diagram of Test Setup

The Mains Terminals Disturbance Voltage tests were performed in accordance with the AS/NZS CISPR 14.1.



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 Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Measurement = Reading Level + Correct Factor

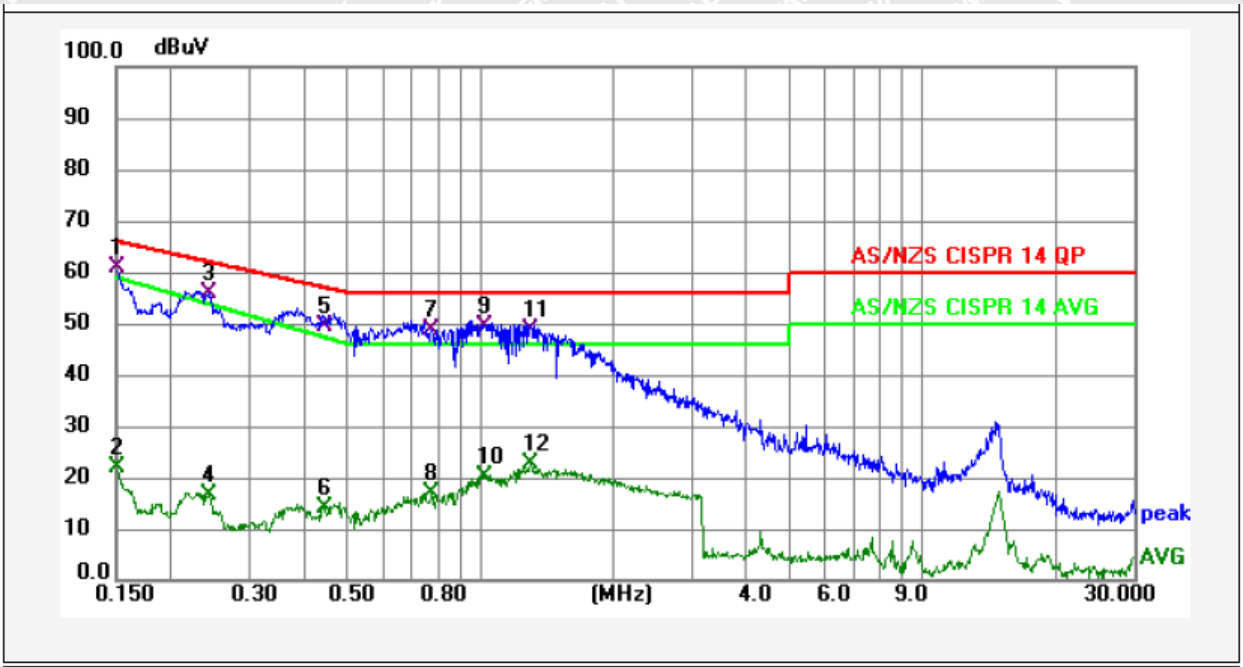
Correct Factor = LISN VDF + Cable Loss

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:

Margin = Measurement - Limit

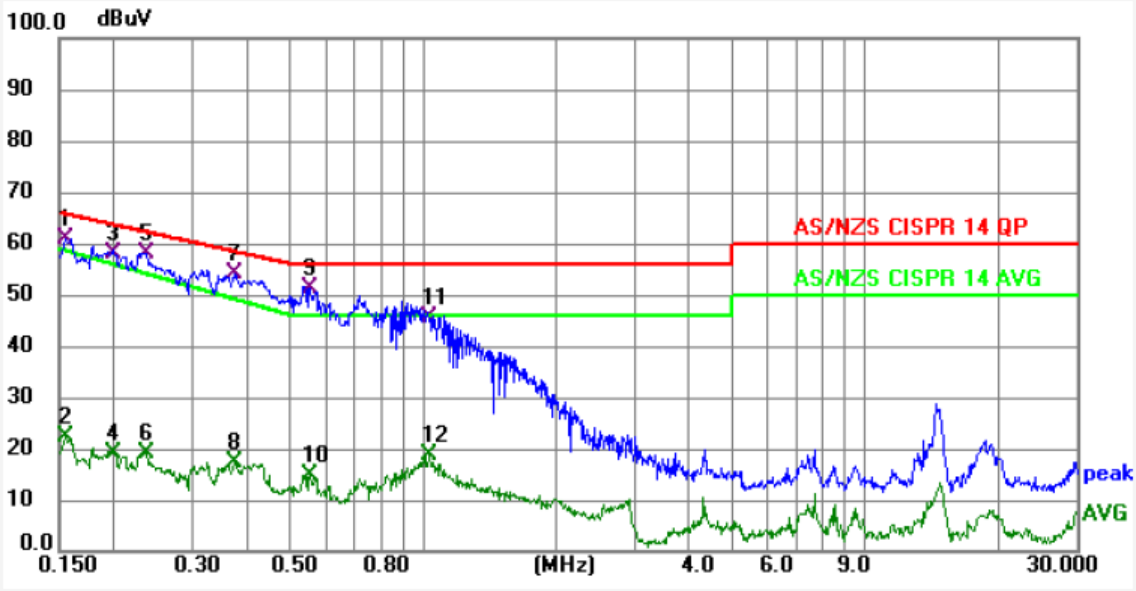
5.1.5 Mains Terminals Disturbance Voltage Test Data

Live Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	0.150	51.28	9.61	60.89	66.00	-5.11	QP	
2	0.150	12.23	9.61	21.84	59.00	-37.16	AVG	
3	0.244	46.20	9.61	55.81	61.96	-6.15	QP	
4	0.244	7.03	9.61	16.64	53.75	-37.11	AVG	
5	0.443	39.90	9.63	49.53	57.01	-7.48	QP	
6	0.443	4.58	9.63	14.21	47.31	-33.10	AVG	
7	0.775	38.93	9.67	48.60	56.00	-7.40	QP	
8	0.775	7.38	9.67	17.05	46.00	-28.95	AVG	
9	1.023	39.81	9.68	49.49	56.00	-6.51	QP	
10	1.023	10.42	9.68	20.10	46.00	-25.90	AVG	
11	1.298	38.90	9.69	48.59	56.00	-7.41	QP	
12	1.298	13.06	9.69	22.75	46.00	-23.25	AVG	

Neutral Line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	0.155	51.51	9.52	61.03	65.73	-4.70	QP	
2	0.155	12.73	9.52	22.25	58.65	-36.40	AVG	
3	0.199	48.36	9.53	57.89	63.65	-5.76	QP	
4	0.199	9.40	9.53	18.93	55.95	-37.02	AVG	
5	0.235	48.64	9.54	58.18	62.27	-4.09	QP	
6	0.235	9.48	9.54	19.02	54.15	-35.13	AVG	
7	0.373	44.57	9.56	54.13	58.43	-4.30	QP	
8	0.373	7.92	9.56	17.48	49.16	-31.68	AVG	
9	0.555	41.75	9.58	51.33	56.00	-4.67	QP	
10	0.555	5.21	9.58	14.79	46.00	-31.21	AVG	
11	1.036	35.85	9.60	45.45	56.00	-10.55	QP	
12	1.036	9.16	9.60	18.76	46.00	-27.24	AVG	

5.2 Discontinuous Disturbance (Click)

Test Requirement..... : AS/NZS CISPR 14.1

Test Method..... : AS/NZS CISPR 14.1

Test Result..... : Pass

Frequency Range..... : 150kHz to 30MHz

Class/Severity..... : Clause 4.4.2 of AS/NZS CISPR 14.1

5.2.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 23.7°C

Humidity..... : 53.0%RH

Atmospheric Pressure ..... : 100.8kPa

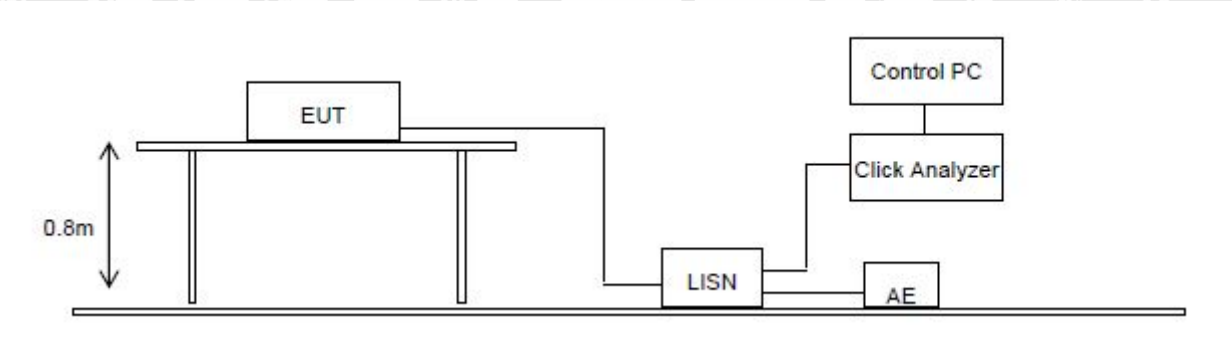
EUT Operation :

Input Voltage ..... : AC 240V/50Hz

Operating Mode..... : Max power mode

5.2.2 Block Diagram of Setup

The discontinuous disturbance test was performed in accordance with AS/NZS CISPR 14.1.



5.2.3 Measurement Data

If none of the caused clicks has a duration longer than 20ms, 90% of the caused clicks have a duration less than 10ms, and the click rate is not more than 5, then the product is deemed to comply with the click requirements of AS/NZS CISPR 14.1. See Clause 5.4.3.4 of AS/NZS CISPR 14.1 for further details.

5.2.4 Discontinuous Disturbance(Click) Test Results

Run A **Observation time T1=** 120 mins 0 secs

Frequency	150kHz	500kHz	1.4MHz	30MHz
Limit value (L)(dBuV)	66	56	56	60
Short clicks	0	0	0	0
Long clicks	0	0	0	0
Total (short + long) n	0	0	0	0
Click rate	0.00	0.00	0.00	0.00
Continuous Interference (max)	0.00sec	0.00sec	0.00sec	0.00sec

Switching operations: s= ---

Click rate formula: N= n / T1

Click rate used in calculating Run B limit : N1= --- **N2**= --- (used for 0.5MHz to 30MHz)

Run B **Observation time T2=** N/A

Frequency	150kHz	500kHz	1.4MHz	30MHz
Limit value (L)(dBuV) Lq = L + 20 log 30/N (max L + 44)	---	---	---	---
Short clicks	---	---	---	---
Long clicks	---	---	---	---
Total (short + long) n	---	---	---	---
% > Lq (max 25%) (total Run B clicks as percentage of Run A)	---	---	---	---

Remark:

1) The click rate N shall be determined at 150kHz for the frequency range 150kHz to 500kHz and at 500kHz for the frequency 500kHz to 30MHz ;
2) During RUN A, the click rate is not more than 5 and there is no long click. RUN B is unnecessary;

5.3 Radiated Disturbance, 30MHz to 1GHz

Test Requirement..... : AS/NZS CISPR 14.1

Test Method..... : AS/NZS CISPR 14.1

Test Result..... : Pass

Frequency Range..... : 30MHz to 1GHz

Class/Severity..... : Table 9 of AS/NZS CISPR 14.1

5.3.1 E.U.T. Operation

Operating Environment:

Temperature ..... : 22.4°C

Humidity..... : 51.3%RH

Atmospheric Pressure ..... : 101.1kPa

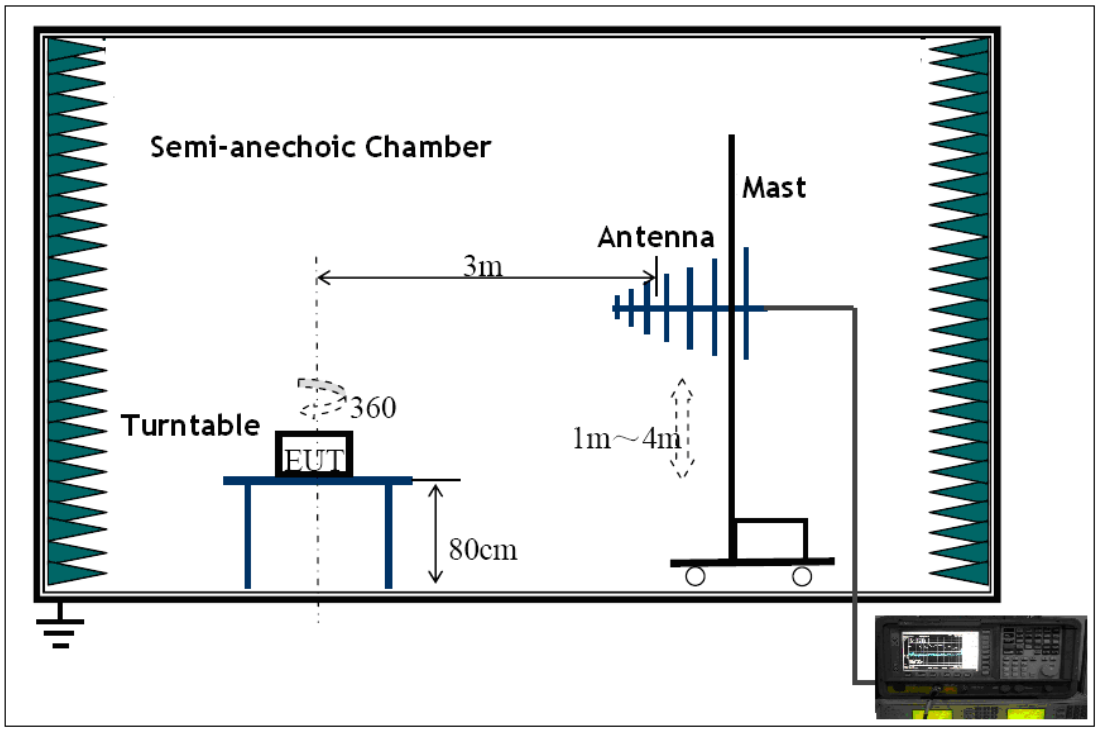
EUT Operation:

Input Voltage ..... : AC 240V/50Hz

Operating Mode..... : Max power mode

5.3.2 Block Diagram of Test Setup

The Radiated Disturbance test was performed in the 3m Semi- Anechoic Chamber test site and accordance with CISPR16-2-3.



5.3.3 Measurement Data

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

5.3.4 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:

Corr. Ampl. = Indicated Reading + Corr. Factor

Corr.Factor=Antenna Factor + Cable Factor - Amplifier Gain

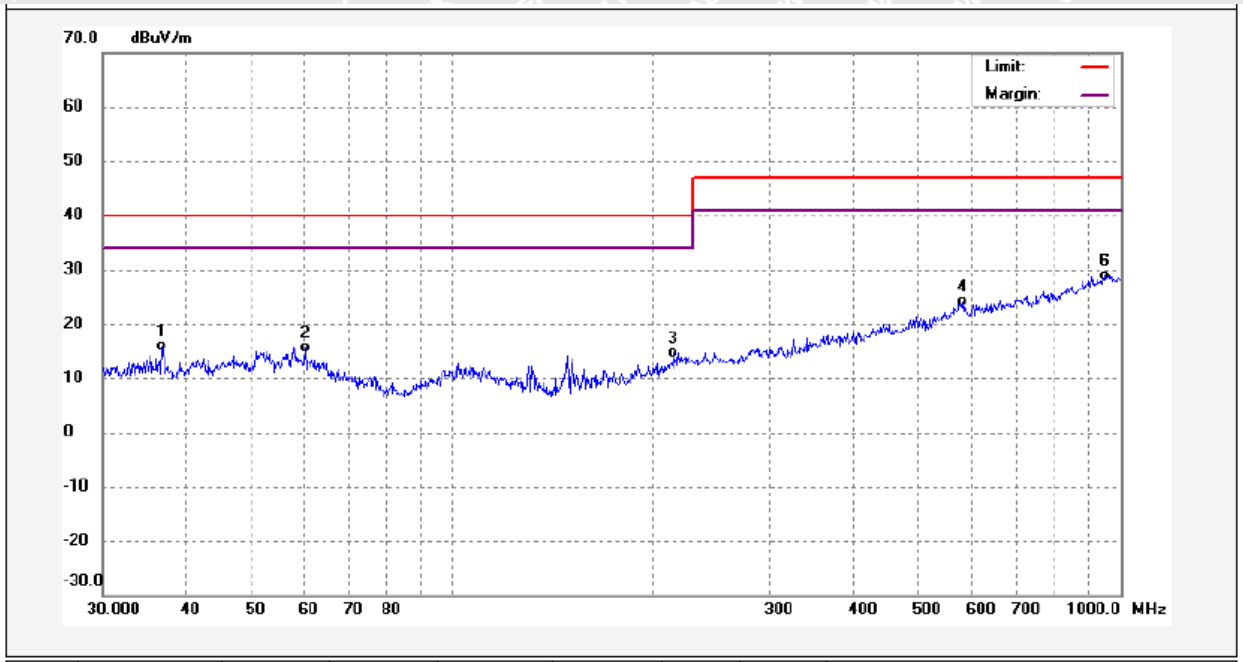
The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit.

The equation for margin calculation is as follows:

Margin = Corr. Ampl. – Limit

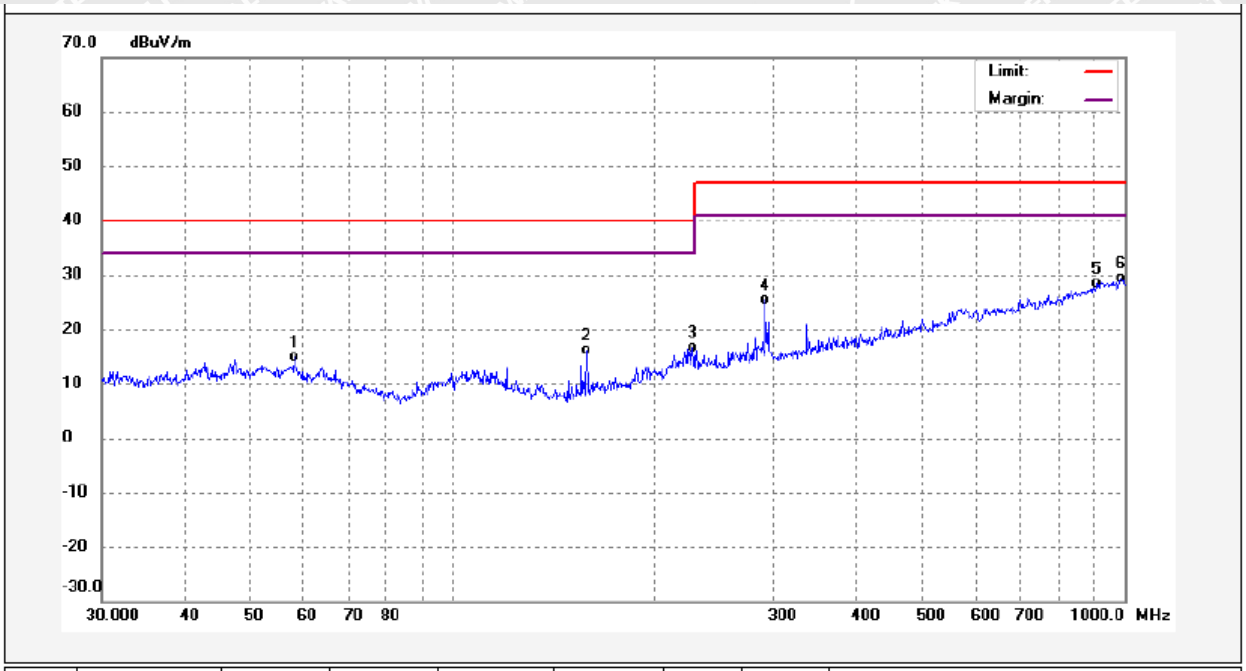
5.3.5 Radiated Disturbance Test Data

Vertical Polarization:



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	36.8436	3.32	12.67	15.99	40.00	-24.01	QP	
2	60.4495	1.89	13.81	15.70	40.00	-24.30	QP	
3	214.7401	0.57	14.12	14.69	40.00	-25.31	QP	
4	580.9063	1.42	22.78	24.20	47.00	-22.80	QP	
5	950.4259	1.31	27.63	28.94	47.00	-18.06	QP	
6	950.4259	1.31	27.63	28.94	47.00	-18.06	QP	

Horizontal Polarization:

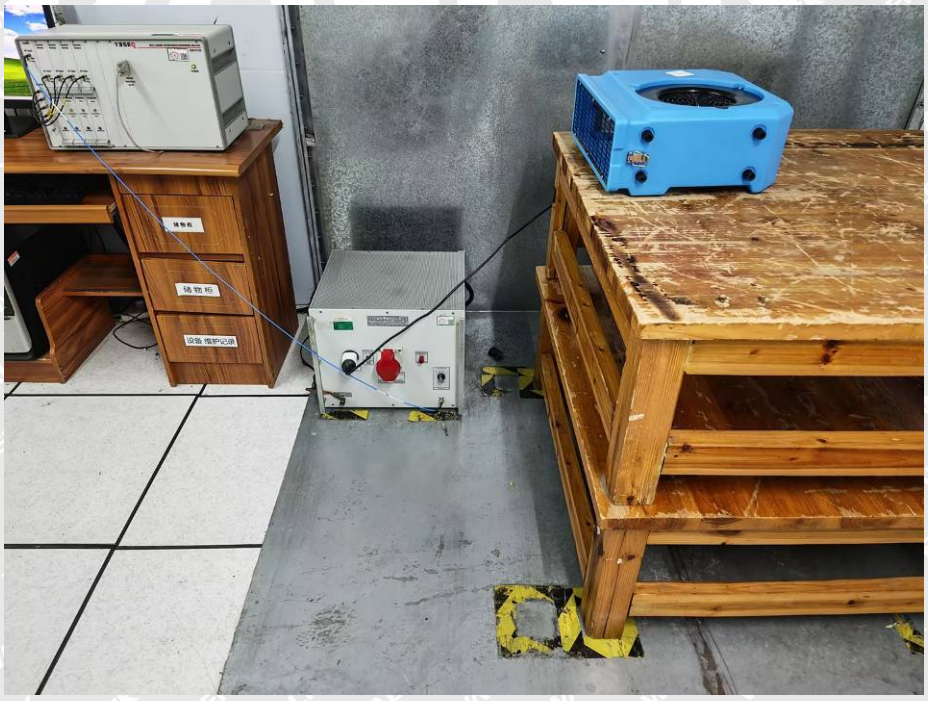


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	58.1010	0.56	14.30	14.86	40.00	-25.14	QP	
2	158.1677	6.02	10.17	16.19	40.00	-23.81	QP	
3	228.4904	2.45	14.27	16.72	40.00	-23.28	QP	
4	292.5708	9.71	15.61	25.32	47.00	-21.68	QP	
5	912.8620	1.47	26.88	28.35	47.00	-18.65	QP	
6	991.6195	1.49	27.85	29.34	47.00	-17.66	QP	

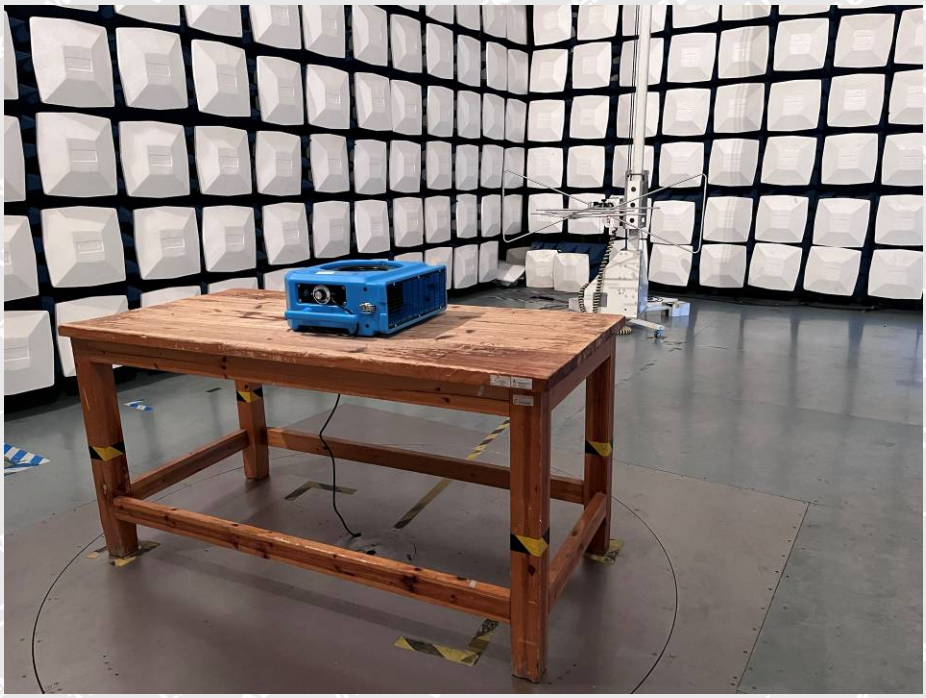
6 Photographs – Test Setup

6.1 Photograph – Mains Terminal Disturbance Voltage Test Setup

6.2 Photograph – Discontinuous Disturbance (Click) Test Setup

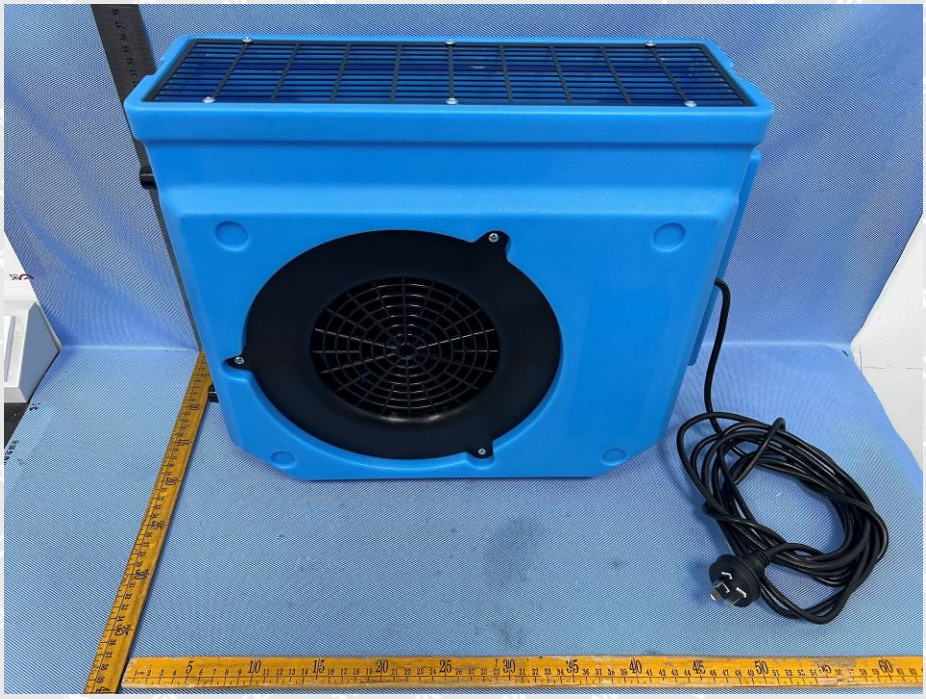


6.3 Photograph – Radiated Disturbance Test Setup



7 Photographs – Constructional Details

7.1 EUT – External View



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