Verification of Compliance

The products

EUT : Switching Power Supply
Test Model : PSAA30R-120,
PSAA30R-150,
PSAA30R-240
Serial Model : PSAA30R-120ST

which produced by

PHIHONG TECHNOLOGY CO., LTD.
No. 568, Fuxing 3rd Rd., Guishan Dist.,Taoyuan City 33383, Taiwan (R.O.C.)

Has been tested by Taiwan Testing and Certification Center
And was found to comply with the EMC requirements on the basis of

EN 55032:2015+A1:2020 (Class B)
AS/NZS CISPR 32:2015 (Class B)
EN IEC 61000-3-2:2019+A1:2021
IEC 61000-3-2:2018+A1:2020
EN 61000-3-3:2013+A1:2019
IEC 61000-3-3:2013+A1:2017

EN 55035:2017+A11:2020
IEC 61000-4-2:2008
EN 61000-4-2:2009
IEC 61000-4-3:2020
EN IEC 61000-4-3:2020
IEC 61000-4-4:2012
EN 61000-4-4:2012
IEC 61000-4-5:2014+A1:2017
EN 61000-4-5:2014/A1:2017
IEC 61000-4-6:2013
EN 61000-4-6:2014
IEC 61000-4-8:2009
EN 61000-4-8:2010
IEC 61000-4-11:2020
EN IEC 61000-4-11:2020

EMC TESTING DEPARTMENT II
財團法人台灣商品檢測驗證中心 電磁相容試驗二部 林口實驗室
Taiwan Testing and Certification Center

Max Wu

Signature
Max Wu
Section Manager of EMC Testing Department II
Taiwan Testing and Certification Center

Report Number: 22-04-RBP-079
Date of Issue: May 19, 2022

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TAIWAN TESTING AND CERTIFICATION CENTER
NO. 34. LIN 5, DINGFU VIL., LINKOU DIST.,
NEW TAIPEI CITY, TAIWAN, 24442, R.O.C.
TEL:(02)26023052
INT:+886-2-26023052
FAX:(02)26010910
INT:+886-2-26010910

CE

EMC

TEST REPORT

Responsible Party : ***PHIHONG TECHNOLOGY CO., LTD.***

Description of Product : ***Switching Power Supply***

Test Model : ***PSAA30R-120, PSAA30R-150, PSAA30R-240***

Serial Model : ***PSAA30R-120ST***

Test Report File No. : ***22-04-RBP-079***

Date Test Item Received : ***Apr. 13, 2022***

Date Test Campaign Completed : ***May 10, 2022***

Date of Issue : ***May 19, 2022***

Test Performed by

TAIWAN TESTING AND CERTIFICATION CENTER
Linkou Testing Lab
NO. 34. LIN 5, DINGFU VIL., LINKOU DIST.,
NEW TAIPEI CITY, TAIWAN, 24442, R.O.C.
TEL : (02)26023052 FAX : (02)26010910
http:// www.etc.org.tw ; e-mail: emc@etc.org.tw

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Note : 1. The results of the Test Report relate only to the items tested.
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1 TEST REPORT CERTIFICATION

Client	:	PHIHONG TECHNOLOGY CO., LTD.
Address	:	No. 568, Fuxing 3rd Rd., Guishan Dist.,Taoyuan City 33383, Taiwan (R.O.C.)
EUT	:	Switching Power Supply
Test Model	:	PSAA30R-120, PSAA30R-150, PSAA30R-240
Serial Model	:	PSAA30R-120ST
Regulations applied	:	
Emissions	:	EN 55032:2015+A1:2020 (Class B) AS/NZS CISPR 32:2015 (Class B) EN IEC 61000-3-2:2019+A1:2021 *IEC 61000-3-2:2018+A1:2020* EN 61000-3-3:2013+A1:2019 *IEC 61000-3-3:2013+A1:2017*
Immunity	:	EN 55035:2017+A11:2020 IEC 61000-4-2:2008 *EN 61000-4-2:2009* IEC 61000-4-3:2020 *EN IEC 61000-4-3:2020* IEC 61000-4-4:2012 *EN 61000-4-4:2012* IEC 61000-4-5:2014+A1:2017 *EN 61000-4-5:2014/A1:2017* IEC 61000-4-6:2013 *EN 61000-4-6:2014* IEC 61000-4-8:2009 *EN 61000-4-8:2010* IEC 61000-4-11:2020 *EN IEC 61000-4-11:2020*
Note	:	Test standard version according to customer requirements.

The testing described in this report has been carried out to the best of our knowledge and ability, and our responsibility is limited to the exercise of reasonable care. This certification is not intended to relieve the sellers from their legal and/or contractual obligations. Besides, the “Comment Issues” highlight above is important information for this test report. Responsible must read carefully about the description.

Test Engineer : Peter Liao
(Peter Liao, Engineer)

Check By : Chris Wu
(Chris Wu, Supervisor)

Approve & Authorized : Max Wu
Max Wu
EMC Dept. II of TAIWAN TESTING AND CERTIFICATION CENTER

Laboratory Introduction: Taiwan Testing and Certification Center is recognized, filed and mutual recognition arrangement as following:

❶ ISO/IEC 17025: BSMI, TAF, NCC, CCIBLAC, UL, Compliance
❷ Filing: FCC, ISED, VCCI
❸ MRA: Australia, Hong Kong, New Zealand, Singapore, USA, Japan, Korea, China, APLAC through TAF

2 GENERAL INFORMATIONS

2.1 Description of EUT

Switching Power Supply

2.2 Related Information of EUT

Power Supply	:	(1)Test Model: PSAA30R-120 Input: 100-240Vac 50-60Hz 0.8A Output: 12Vdc, 2.5A (2)Test Model: PSAA30R-150 Input: 100-240Vac 50-60Hz 0.8A Output: 15Vdc, 2.0A (3)Test Model: PSAA30R-240 Input: 100-240Vac 50-60Hz 0.8A Output: 24Vdc, 1.25A
Test Power	:	230Vac 50Hz
Highest working Frequency	:	65kHz
DC Power Line	:	[X] Nonshielded [ ] Shielded [ ] None, Length: 2.2 m

2.3 Tested Configuration

The EUT was connected with other devices.

Following peripheral devices and interface cables were connected during the measurement:

Device	Manufacturer	Test Model	Description
Switching Power Supply *	----	PSAA30R-120, PSAA30R-150, PSAA30R-240 PSAA30R-120ST	2.2m Unshielded DC Power Line.
Load	SHINE TIME	SR Type	----

Remark "*" means equipment under test.

2.4 Deviation Record

No deviations were required.

2.5 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Electromagnetic Interference		
Measurement	Frequency	Uncertainty
Conducted emissions	9kHz ~ 30MHz	±3.34dB(Mains)(LISN)
Conducted emission at telecommunication ports		±3.38dB(Voltage)(T2/T4/CAT 6)
		±2.86dB(Current)
Disturbance power	30MHz ~ 1GHz	±4.08dB
Radiated electromagnetic disturbances	9kHz ~ 30MHz	±3.12dB
Radiated emissions	30MHz ~ 1GHz	±4.20dB(30MHz≦f≦300MHz)
		±4.44dB(300MHz＜f≦1GHz)
	Above 1GHz	±4.44dB(1GHz≦f≦18GHz)
		±3.02dB(18GHz≦f≦40GHz)
Harmonics Current Emissions	---	±1.283%(V)、1.496%(A)
Voltage Fluctuations and Flicker	---	±1.283%(V)、1.496%(A)
Electromagnetic Susceptibility		
Measurement	Item	Uncertainty
Electrostatic Discharges (ESD)	---	±0.22(A)、58.67(V)
Radiated RF electromagnetic Fields	---	±1.2(dBμV)
Electrical Fast Transients and bursts	---	±2.95(V)
Surges	---	±2.95(V)
Conducted Disturbances, induced by RF fields	---	±2.5(dB)
Power-frequency Magnetic Field	---	±2.98(dB)
Voltage Dips, Interruptions, and variations	---	±4.18(V)

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

The test result(s) does not consider the uncertainty of measurement when the test standard(s) and/or test method which refer by the labs has the limit or judgments for the test result(s).

2.6 Description of Test Mode

The EUT is designed with AC power supply of 100-240Vac, 50-60Hz or radiated emission evaluation, 230Vac/50Hz had been covered during the pre-test. The worst radiated emission data was found at 230Vac/50Hz and recorded in the applied test report.

The EUT has been pre-tested under following modes, and mode 1 is the worst case for final emission test.

Test Mode	Test Condition
1	Operating, Output at Full Load

2.7 Modification Record

No modifications were required. (That is the EUT complied with the requirement as tested.)

3 SUMAPRY OF TEST RESULTS

Emission			
Test Item	**Standard**	**Result/Remarks**	**Verdict**
Conducted Emissions	EN 55032	**(A) Test Model: PSAA30R-120** Minimum passing margin is -18.27 dB at 0.1874 MHz **(B) Test Model: PSAA30R-150** Minimum passing margin is -16.74 dB at 4.9780 MHz **(C) Test Model: PSAA30R-240** Minimum passing margin is -17.46 dB at 0.1976 MHz	Pass
Conducted Telecommunication ports	EN 55032	--	N/A
Radiated Emissions 30-1000 MHz	EN 55032	**(A) Test Model: PSAA30R-120** Minimum passing margin is -4.65 dB at 35.8200 MHz **(B) Test Model: PSAA30R-150** Minimum passing margin is -4.17 dB at 31.9400 MHz **(C) Test Model: PSAA30R-240** Minimum passing margin is -4.32 dB at 78.5000 MHz	Pass
Radiated Emissions Above 1GHz	EN 55032	--	N/A
Harmonics Current Emissions	EN IEC 61000-3-2	The harmonics current values were under the limits of the class A equipment	Pass
Voltage Fluctuations and Flicker	EN 61000-3-3	The voltage fluctuations and flicker values were under the limits	Pass

Immunity				
Test Item	**Standard**	**Requirement**	**Result/Remarks**	**Verdict**
Electrostatic Discharge Immunity	IEC 61000-4-2	Criterion B (or better)	Performance Criterion A	Pass
RF Radiated Fields Immunity	IEC 61000-4-3	Criterion A	Performance Criterion A	Pass
EFT/Burst Immunity	IEC 61000-4-4	Criterion B	Performance Criterion A	Pass
Surge Immunity	IEC 61000-4-5	Criterion B	Performance Criterion A	Pass
RF Common Mode Immunity	IEC 61000-4-6	Criterion A	Performance Criterion A	Pass
Power Frequency Magnetic Field Immunity	IEC 61000-4-8	Criterion A	Performance Criterion A	Pass
Voltage Interruptions and Voltage Dips Immunity	IEC 61000-4-11	Criterion C (or better)	Performance Criterion B	Pass

4 TEST DATA & RELATED INFORMATIONS

4.1 Emissions

4.1.1 Conducted Emissions Test

4.1.1.1 Limit of Conducted Emission Measurement

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15-0.5	79	66	66-56	56-46
0.5-5	73	60	56	46
5-30	73	60	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.1.1.2 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESCI	13054420-001 (101209)	2021/12/01	2022/11/30
PULSE LIMITER	Schwarzbeck	VTSD 9561 F-N	13056701-003 (00335)	2022/04/13	2023/04/12
LISN	Schwarzbeck	NSLK 8127 PLC	8127PLC-784 (13057743-001)	2022/02/27	2023/02/26

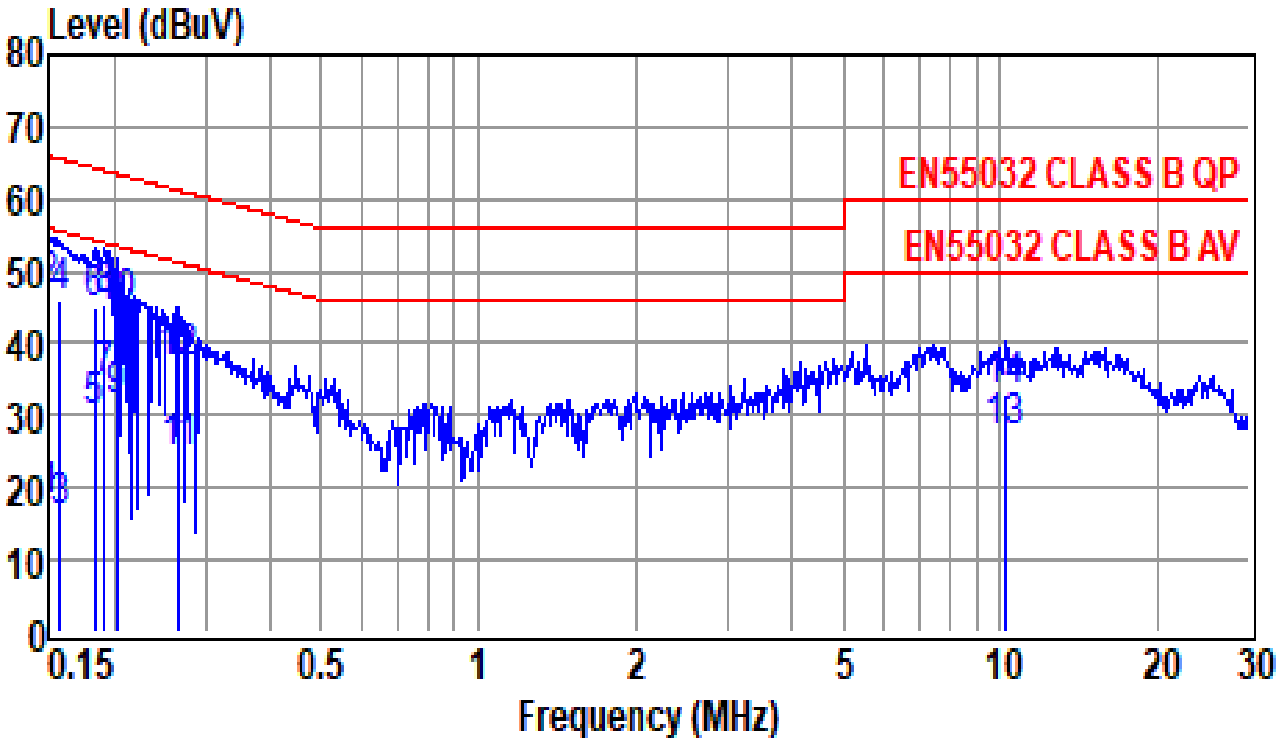
4.1.1.3 Conducted Emissions Test Data

1. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-120 Test Date : May 09, 2022

Climatic Condition	Ambient Temperature: 24 ℃ Relative Humidity: 61 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

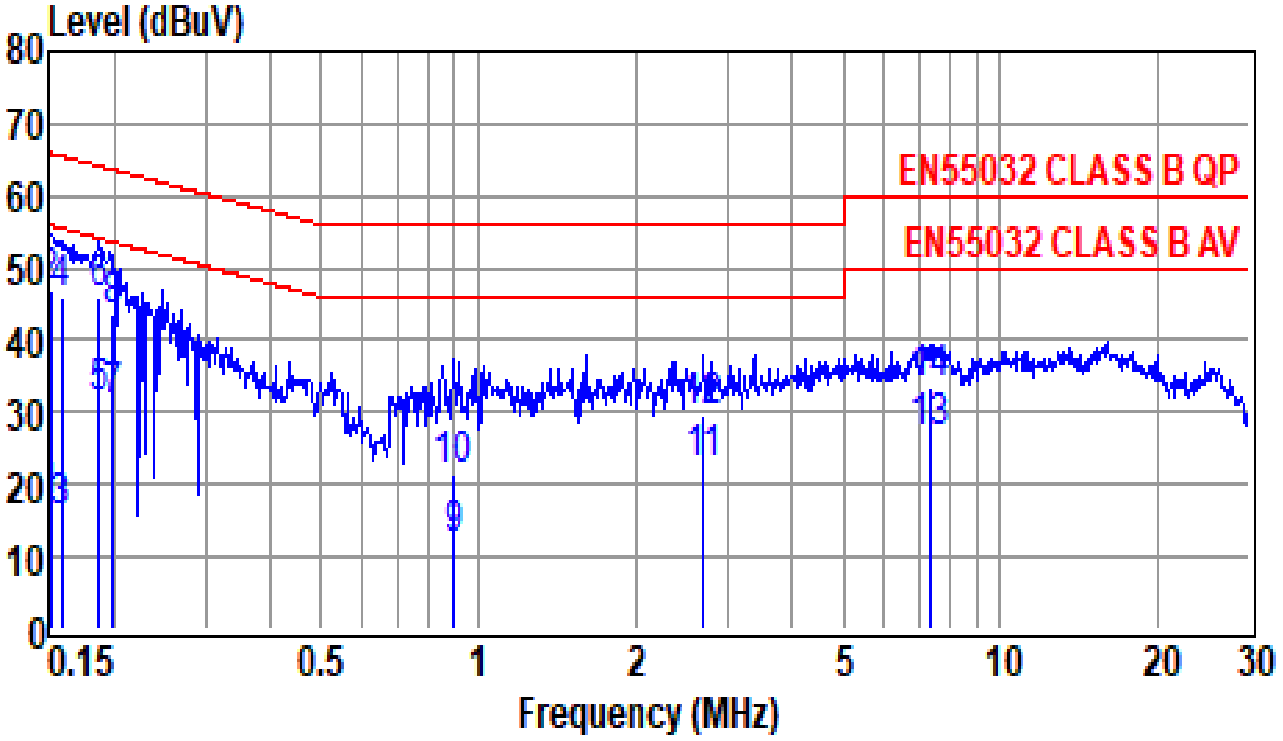


Site	: conducted #1	Date	: 2022-05-09
Condition	: EN55032 CLASS B QP	LISN	: NEUTRAL
Tem / Hum	: 24 ℃ / 61%	Test Mode	: Full Load
EUT	: Switching Power Supply	Power Rating	: 230Vac/50Hz
Engineer	: Peter Liao	Model	: PSAA30R-120

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	0.1508	7.56	10.04	17.60	55.96	-38.36	Average
	0.1508	37.12	10.04	47.16	65.96	-18.80	QP
	0.1582	6.32	10.04	16.36	55.56	-39.20	Average
	0.1582	36.16	10.04	46.20	65.56	-19.36	QP
	0.1844	20.14	10.04	30.18	54.28	-24.10	Average
	0.1844	35.01	10.04	45.05	64.28	-19.23	QP
	0.1924	24.50	10.04	34.54	53.93	-19.39	Average
*	0.1924	35.44	10.04	45.48	63.93	-18.45	QP
	0.2029	21.39	10.04	31.43	53.49	-22.06	Average
	0.2029	34.62	10.04	44.66	63.49	-18.83	QP
	0.2672	14.44	10.04	24.48	51.20	-26.72	Average
	0.2672	26.65	10.04	36.69	61.20	-24.51	QP
	10.1790	16.89	10.24	27.13	50.00	-22.87	Average
	10.1790	22.64	10.24	32.88	60.00	-27.12	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss+ Pulse Limiter Factor
3. ” * ” mean this data is the worst emission level



Site	: conducted #1	Date	: 2022-05-09
Condition	: EN55032 CLASS B QP	LISN	: LINE
Tem / Hum	: 24 ℃ / 61%	Test Mode	: Full Load
EUT	: Switching Power Supply	Power Rating	: 230Vac/50Hz
Engineer	: Peter Liao	Model	: PSAA30R-120

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	0.1516	7.31	10.04	17.35	55.91	-38.56	Average
	0.1516	36.84	10.04	46.88	65.91	-19.03	QP
	0.1590	5.93	10.04	15.97	55.52	-39.55	Average
	0.1590	35.86	10.04	45.90	65.52	-19.62	QP
	0.1874	21.38	10.04	31.42	54.15	-22.73	Average
*	0.1874	35.84	10.04	45.88	64.15	-18.27	QP
	0.1997	21.16	10.04	31.20	53.62	-22.42	Average
	0.1997	33.66	10.04	43.70	63.62	-19.92	QP
	0.8992	2.06	10.07	12.13	46.00	-33.87	Average
	0.8992	11.68	10.07	21.75	56.00	-34.25	QP
	2.7070	12.34	10.13	22.47	46.00	-23.53	Average
	2.7070	19.57	10.13	29.70	56.00	-26.30	QP
	7.3290	16.47	10.22	26.69	50.00	-23.31	Average
	7.3290	23.25	10.22	33.47	60.00	-26.53	QP

Note :

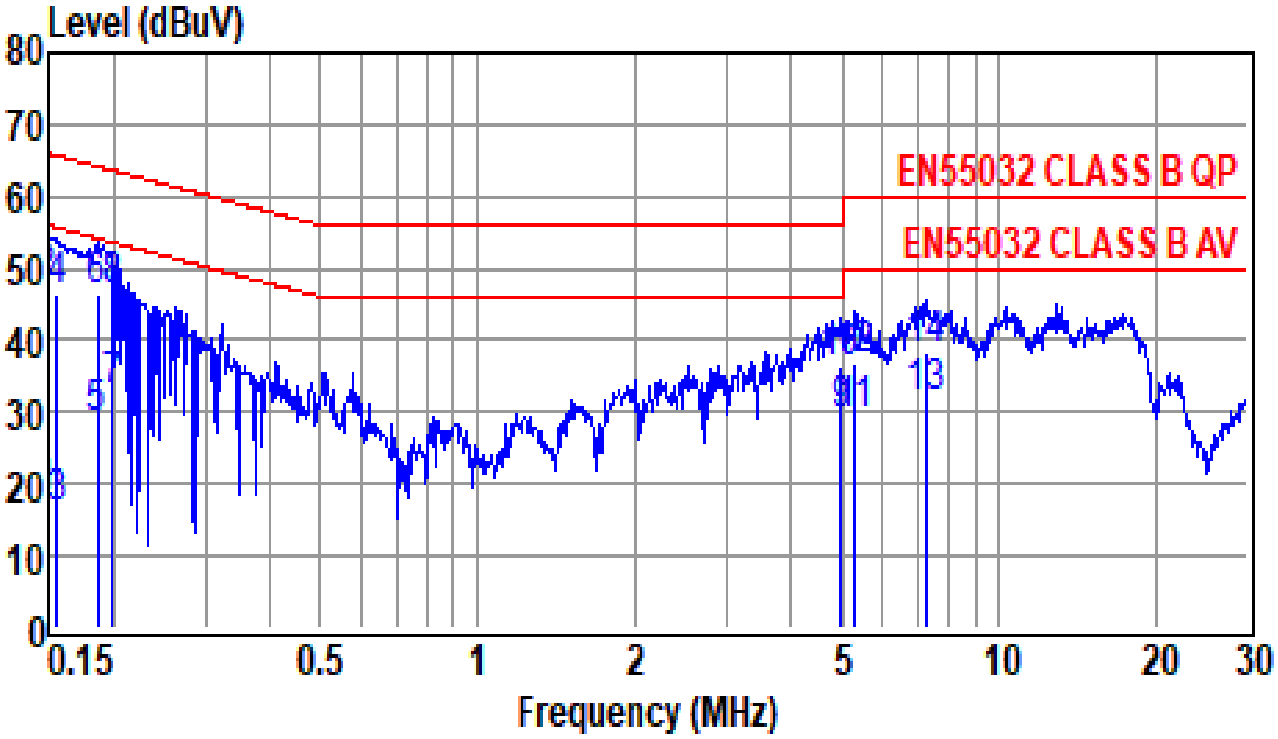
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss+ Pulse Limiter Factor
3. ” * ” mean this data is the worst emission level

2. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-150 Test Date : May 09, 2022

Climatic Condition	Ambient Temperature: 24 ℃ Relative Humidity: 61 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

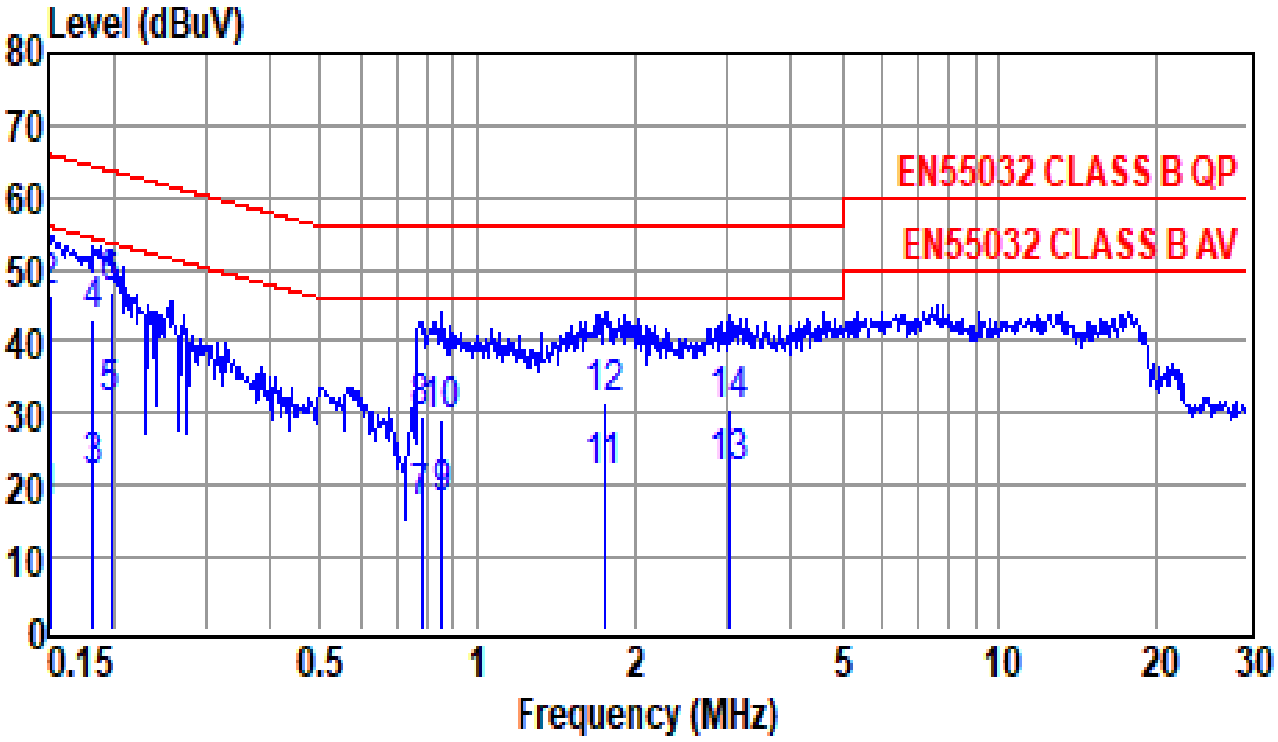


Site	: conducted #1	Date	: 2022-05-09
Condition	: EN55032 CLASS B QP	LISN	: NEUTRAL
Tem / Hum	: 24 ℃ / 61%	Test Mode	: Full Load
EUT	: Switching Power Supply	Power Rating	: 230Vac/50Hz
Engineer	: Peter Liao	Model	: PSAA30R-150

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	0.1500	7.83	10.03	17.86	56.00	-38.14	Average
	0.1500	37.19	10.03	47.22	66.00	-18.78	QP
	0.1557	6.38	10.04	16.42	55.69	-39.27	Average
	0.1557	36.54	10.04	46.58	65.69	-19.11	QP
	0.1864	18.90	10.04	28.94	54.20	-25.26	Average
	0.1864	36.29	10.04	46.33	64.20	-17.87	QP
	0.1997	22.54	10.04	32.58	53.62	-21.04	Average
	0.1997	36.21	10.04	46.25	63.62	-17.37	QP
*	4.9780	19.08	10.18	29.26	46.00	-16.74	Average
	4.9780	26.36	10.18	36.54	56.00	-19.46	QP
	5.3050	19.01	10.18	29.19	50.00	-20.81	Average
	5.3050	26.85	10.18	37.03	60.00	-22.97	QP
	7.2900	21.26	10.21	31.47	50.00	-18.53	Average
	7.2900	27.91	10.21	38.12	60.00	-21.88	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss+ Pulse Limiter Factor
3. ” * ” mean this data is the worst emission level



Site	: conducted #1		Date	: 2022-05-09
Condition	: EN55032 CLASS B QP		LISN	: LINE
Tem / Hum	: 24 ℃ / 61%		Test Mode	: Full Load
EUT	: Switching Power Supply		Power Rating	: 230Vac/50Hz
Engineer	: Peter Liao		Model	: PSAA30R-150

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	0.1516	7.28	10.04	17.32	55.91	-38.59	Average
	0.1516	36.63	10.04	46.67	65.91	-19.24	QP
	0.1825	11.29	10.04	21.33	54.37	-33.04	Average
	0.1825	33.28	10.04	43.32	64.37	-21.05	QP
	0.1986	21.57	10.04	31.61	53.67	-22.06	Average
*	0.1986	36.82	10.04	46.86	63.67	-16.81	QP
	0.7793	7.21	10.07	17.28	46.00	-28.72	Average
	0.7793	19.43	10.07	29.50	56.00	-26.50	QP
	0.8528	7.43	10.07	17.50	46.00	-28.50	Average
	0.8528	19.10	10.07	29.17	56.00	-26.83	QP
	1.7530	11.57	10.10	21.67	46.00	-24.33	Average
	1.7530	21.53	10.10	31.63	56.00	-24.37	QP
	3.0250	11.87	10.13	22.00	46.00	-24.00	Average
	3.0250	20.62	10.13	30.75	56.00	-25.25	QP

Note :

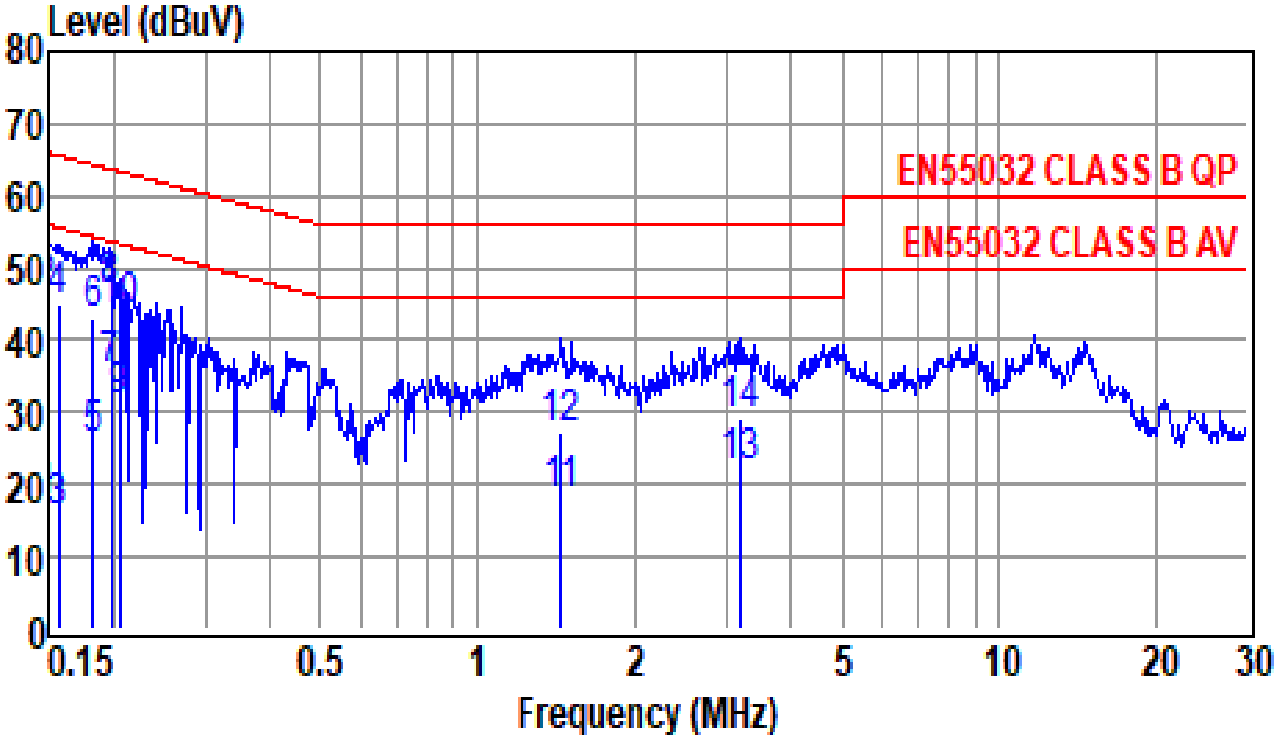
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss+ Pulse Limiter Factor
3. ” * ” mean this data is the worst emission level

3. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-240 Test Date : May 09, 2022

Climatic Condition	Ambient Temperature: 24 ℃ Relative Humidity: 61 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

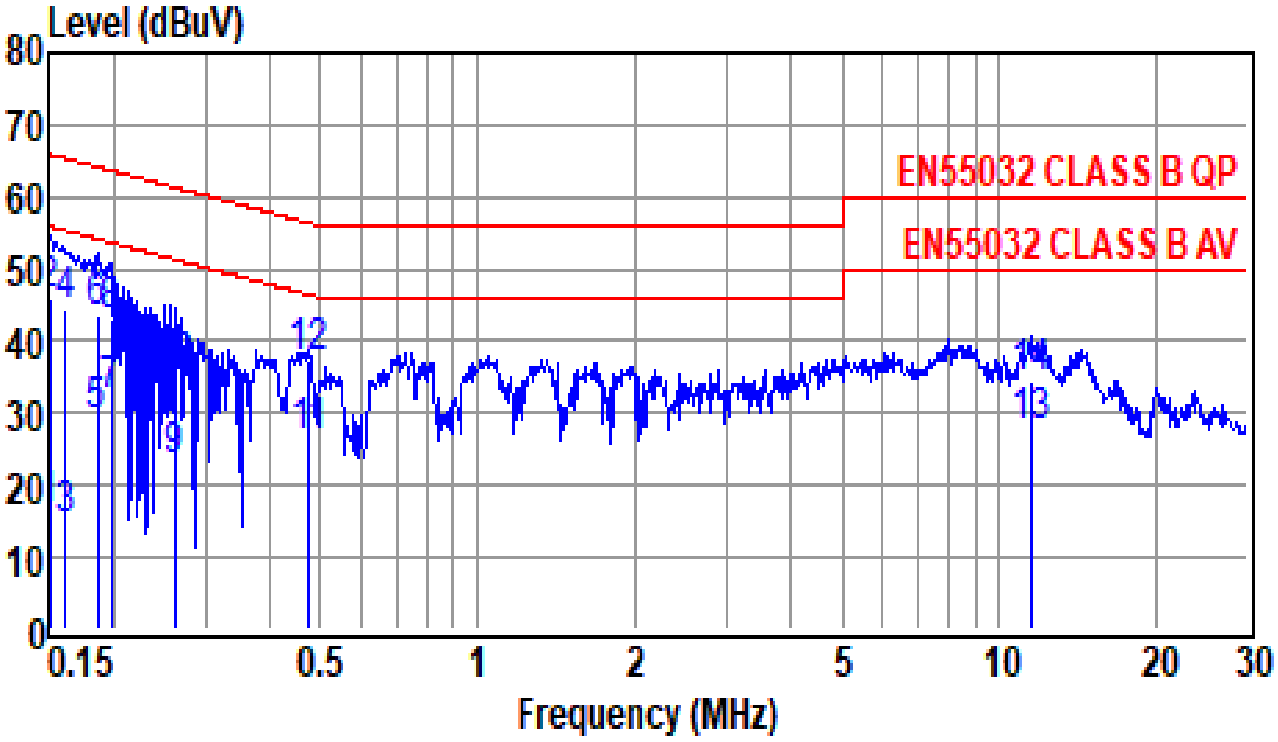


Site	: conducted #1	Date	: 2022-05-09
Condition	: EN55032 CLASS B QP	LISN	: NEUTRAL
Tem / Hum	: 24 ℃ / 61%	Test Mode	: Full Load
EUT	: Switching Power Supply	Power Rating	: 230Vac/50Hz
Engineer	: Peter Liao	Model	: PSAA30R-240

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	0.1500	7.43	10.03	17.46	56.00	-38.54	Average
	0.1500	35.86	10.03	45.89	66.00	-20.11	QP
	0.1573	5.77	10.04	15.81	55.60	-39.79	Average
	0.1573	35.02	10.04	45.06	65.60	-20.54	QP
	0.1835	16.05	10.04	26.09	54.33	-28.24	Average
	0.1835	33.17	10.04	43.21	64.33	-21.12	QP
	0.1976	25.38	10.04	35.42	53.71	-18.29	Average
*	0.1976	36.21	10.04	46.25	63.71	-17.46	QP
	0.2051	21.27	10.04	31.31	53.40	-22.09	Average
	0.2051	33.53	10.04	43.57	63.40	-19.83	QP
	1.4490	8.20	10.08	18.28	46.00	-27.72	Average
	1.4490	17.43	10.08	27.51	56.00	-28.49	QP
	3.2070	11.80	10.14	21.94	46.00	-24.06	Average
	3.2070	18.86	10.14	29.00	56.00	-27.00	QP

Note :

1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss+ Pulse Limiter Factor
3. ” * ” mean this data is the worst emission level



Site	: conducted #1	Date	: 2022-05-09	
Condition	: EN55032 CLASS B QP	LISN	: LINE	
Tem / Hum	: 24 ℃ / 61%	Test Mode	: Full Load	
EUT	: Switching Power Supply	Power Rating	: 230Vac/50Hz	
Engineer	: Peter Liao	Model	: PSAA30R-240	

	Freq (MHz)	Reading (dBuV)	Factor (dB)	Emission Level (dBuV)	Limit Line (dBuV)	Over Limit (dB)	Remark
	0.1516	6.42	10.04	16.46	55.91	-39.45	Average
	0.1516	36.11	10.04	46.15	65.91	-19.76	QP
	0.1624	4.63	10.04	14.67	55.34	-40.67	Average
	0.1624	34.63	10.04	44.67	65.34	-20.67	QP
	0.1864	19.06	10.04	29.10	54.20	-25.10	Average
	0.1864	33.58	10.04	43.62	64.20	-20.58	QP
	0.1986	22.19	10.04	32.23	53.67	-21.44	Average
	0.1986	32.92	10.04	42.96	63.67	-20.71	QP
	0.2630	13.06	10.04	23.10	51.34	-28.24	Average
	0.2630	25.43	10.04	35.47	61.34	-25.87	QP
	0.4761	16.16	10.06	26.22	46.41	-20.19	Average
*	0.4761	27.28	10.06	37.34	56.41	-19.07	QP
	11.6210	17.69	10.26	27.95	50.00	-22.05	Average
	11.6210	24.11	10.26	34.37	60.00	-25.63	QP

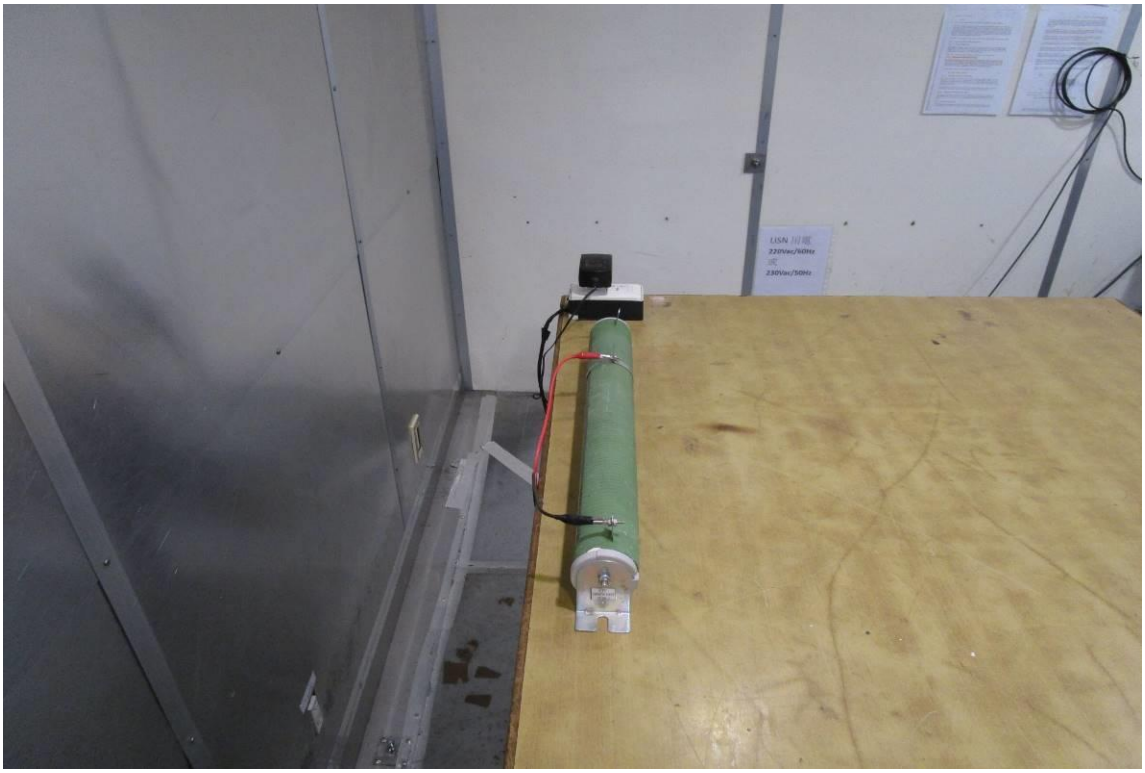
Note :

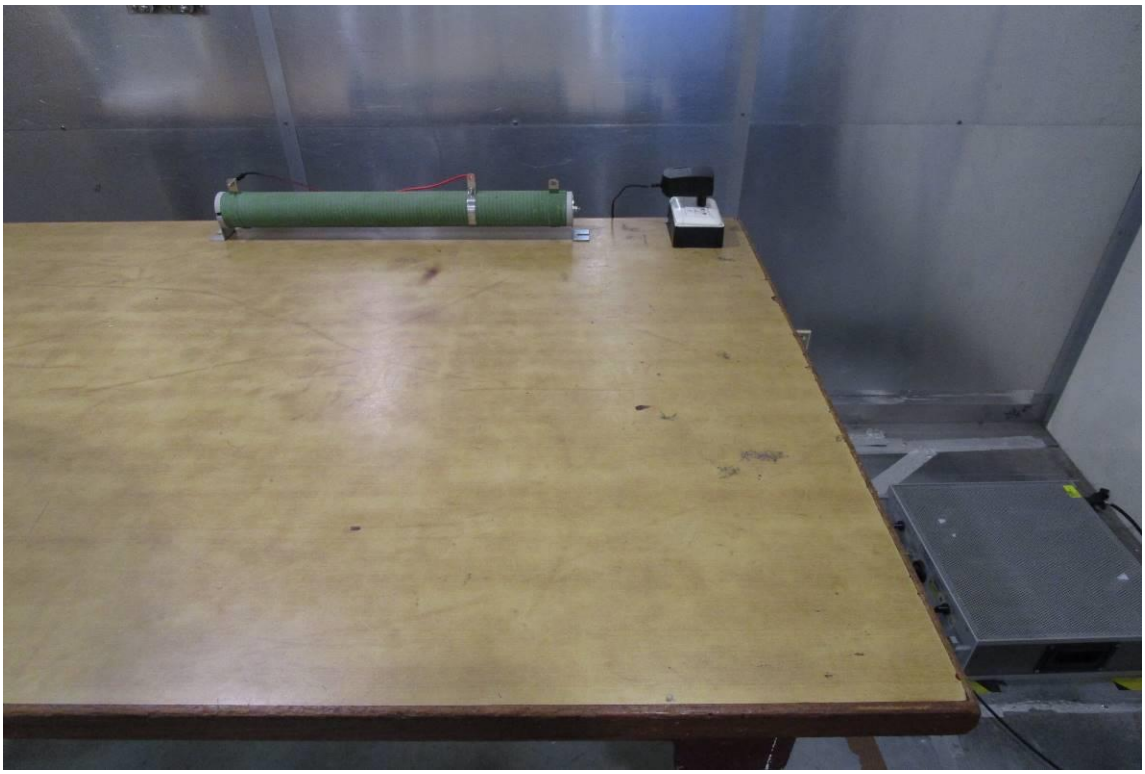
1. Result = Reading + Factor
2. Factor = LISN Factor + Cable Loss+ Pulse Limiter Factor
3. ” * ” mean this data is the worst emission level

4.1.1.4 Conducted Emissions Test Setup Photos

Model: PSAA30R-120

Model: PSAA30R-150





Model: PSAA30R-240

4.1.2 Conducted Telecommunication ports Test

4.1.2.1 Conducted Telecommunication ports Test Data

1. Operating Conditions of The EUT : ___

Test Date :

Climatic Condition	Ambient Temperature: __ ℃ Relative Humidity: __ %RH
Power Supply System	AC Power : ___ Vac ___ Hz
Test Set-up	Table-top Equipment

Not Applicable

4.1.3 Radiated Emissions Test

4.1.3.1 Limit of Radiated Emission Measurement.

Frequency (MHz)	Class A (at 10m)	Class B (at 10m)
	Quasi-peak (dBuV/m)	Quasi-peak (dBuV/m)
30-230	40	30
230-1000	47	37

Frequency (MHz)	Class A (at 3m)	Class B (at 3m)
	Quasi-peak (dBuV/m)	Quasi-peak (dBuV/m)
30-230	50	40
230-1000	57	47

Frequency (MHz)	Class A (at 3m)		Class B (at 3m)	
	Peak (dBuV/m)	Average (dBuV/m)	Peak (dBuV/m)	Average (dBuV/m)
1000-3000	76	56	70	50
3000-6000	80	60	74	54

NOTE: 1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

Frequency range of radiated measurement

Highest frequency generated or used within the EUT or on which the WUT operates or tunes (MHz)	Upper frequency of measurement rang (MHz)
Below 108	1000
108-500	2000
500-1000	5000
Above 1000	Up to 5 times of the highest frequency to 6 GHz, whichever is less

4.1.3.2 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
Bilog Antenna with 5dB Pad	ETC & JYEBAO	MCTD 2786 & FAT-NM5NF5T3G2 W5	13057618-002&RF-002(BL13J03015&RF-002)	2021/09/10	2022/09/09
Amplifier	HP	8447D	13040711-001	2021/09/22	2022/09/21
EMI Test Receiver	Rohde & Schwarz	ESU 40	13054416-001	2022/04/21	2023/04/20

4.1.3.3 Radiated Emissions Test Data

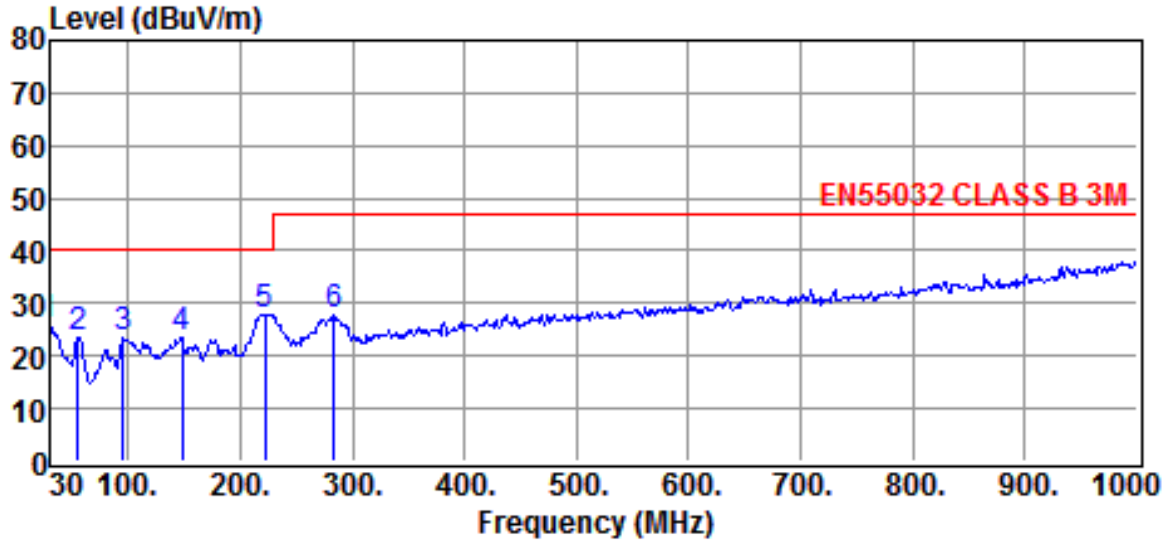
1. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-120 Test Date : May 10, 2022

Climatic Condition	Ambient Temperature: 25 ℃	Relative Humidity: 63 %RH
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	

Test data see the next pages.

(30MHz to 1GHz)

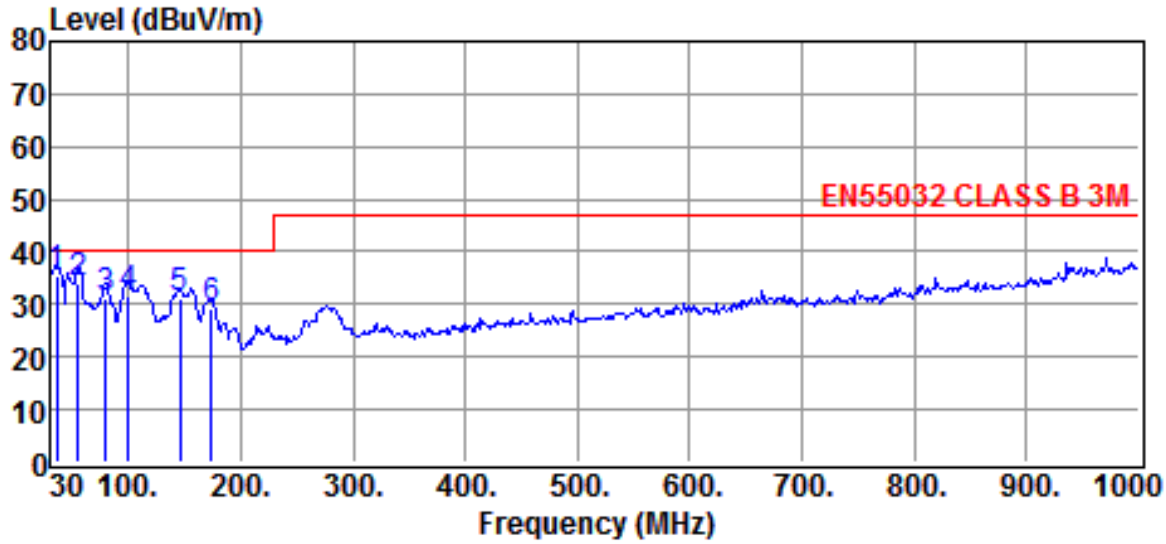


Site	:Chamber#2	Date	:2022-05-10
Limit	:EN55032 CLASS B 3M	Ant. Pol.	:HORIZONTAL
EUT	:Switching Power Supply	Model	:PSAA30R-120
Power Rating	:230Vac/50Hz	Temp.	:25˚C
Engineer	:Peter Liao	Humi.	:63 %
Test Mode	:Full Load		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	30.0000	27.87	-2.10	25.77	40.00	-14.23	QP
	55.2200	38.55	-14.94	23.61	40.00	-16.39	QP
	95.9600	34.55	-11.07	23.48	40.00	-16.52	QP
	148.3400	31.99	-8.45	23.54	40.00	-16.46	QP
*	222.0600	36.02	-8.03	27.99	40.00	-12.01	QP
	284.1400	32.65	-4.98	27.67	47.00	-19.33	QP

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ( )
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. ” * ” mean this data is the worst emission level.



Site	:Chamber#2	Date	:2022-05-10
Limit	:EN55032 CLASS B 3M	Ant. Pol.	:VERTICAL
EUT	:Switching Power Supply	Model	:PSAA30R-120
Power Rating	:230Vac/50Hz	Temp.	:25°C
Engineer	:Peter Liao	Humi.	:63 %
Test Mode	:Full Load		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
*	35.8200	40.56	-5.21	35.35	40.00	-4.65	QP
	55.2200	49.02	-14.94	34.08	40.00	-5.92	QP
	79.4700	44.60	-13.41	31.19	40.00	-8.81	QP
	99.8400	42.32	-10.63	31.69	40.00	-8.31	QP
	146.4000	39.32	-8.38	30.94	40.00	-9.06	QP
	173.5600	38.93	-9.58	29.35	40.00	-10.65	QP

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ( )
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. ” * ” mean this data is the worst emission level.

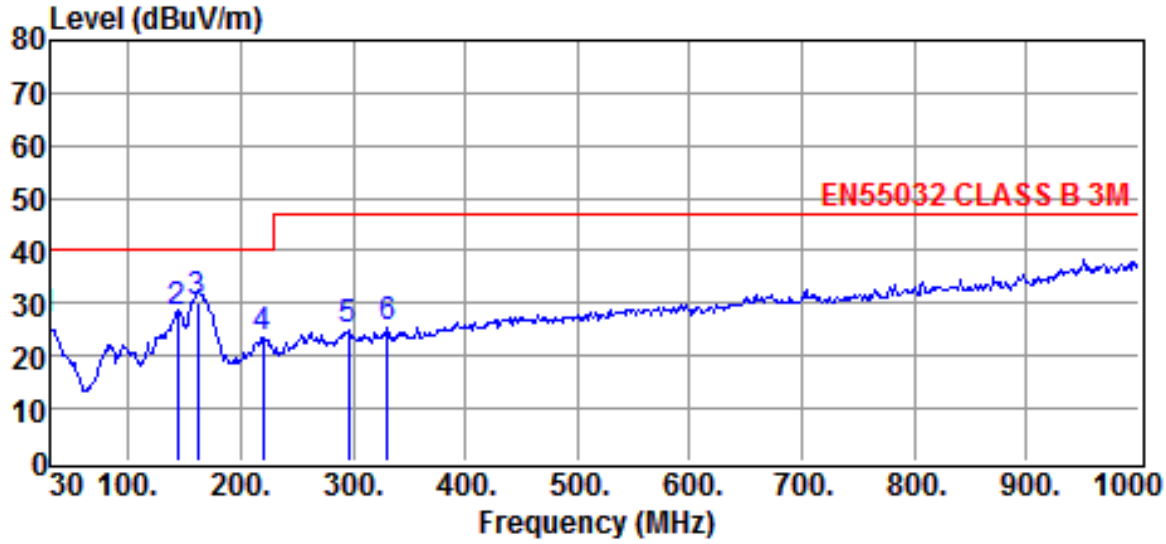
2. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-150 Test Date : May 10, 2022

Climatic Condition	Ambient Temperature: 25 ℃ Relative Humidity: 63 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

(30MHz to 1GHz)

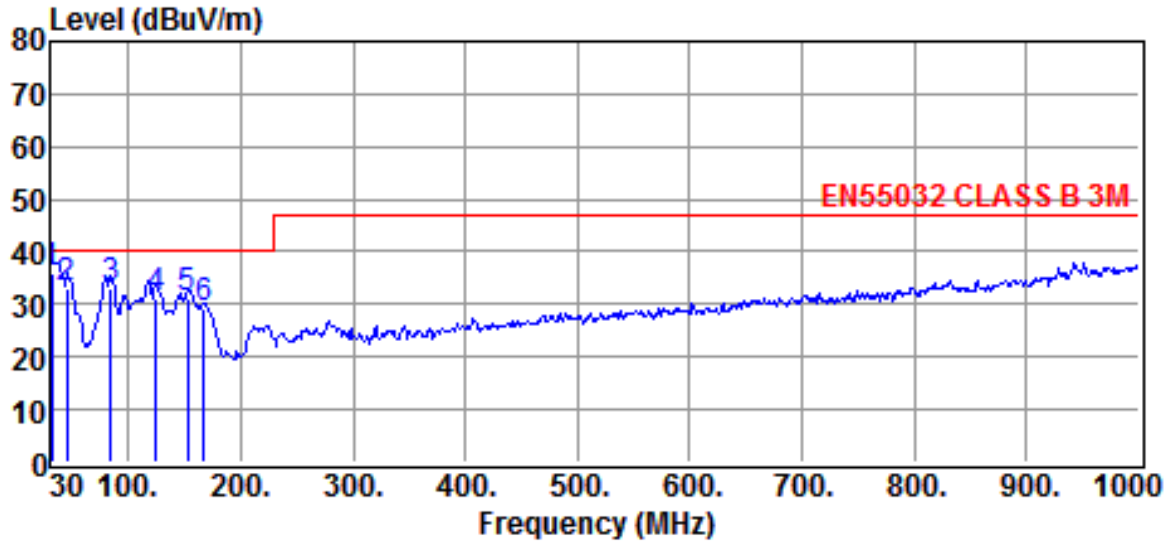


Site	:Chamber#2	Date	:2022-05-10
Limit	:EN55032 CLASS B 3M	Ant. Pol.	:HORIZONTAL
EUT	:Switching Power Supply	Model	:PSAA30R-150
Power Rating	:230Vac/50Hz	Temp.	:25°C
Engineer	:Peter Liao	Humi.	:63 %
Test Mode	:Full Load		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	30.0000	28.85	-2.10	26.75	40.00	-13.25	QP
	143.4900	36.72	-8.37	28.35	40.00	-11.65	QP
*	161.9200	38.92	-8.87	30.05	40.00	-9.95	QP
	220.1200	31.40	-8.00	23.40	40.00	-16.60	QP
	295.7800	28.92	-4.19	24.73	47.00	-22.27	QP
	330.7000	29.08	-3.53	25.55	47.00	-21.45	QP

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ( )
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. ” * ” mean this data is the worst emission level.



Site	:Chamber#2	Date	:2022-05-10
Limit	:EN55032 CLASS B 3M	Ant. Pol.	:VERTICAL
EUT	:Switching Power Supply	Model	:PSAA30R-150
Power Rating	:230Vac/50Hz	Temp.	:25°C
Engineer	:Peter Liao	Humi.	:63 %
Test Mode	:Full Load		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
*	31.9400	38.96	-3.13	35.83	40.00	-4.17	QP
	45.5200	43.15	-10.09	33.06	40.00	-6.94	QP
	84.3200	45.60	-12.78	32.82	40.00	-7.18	QP
	125.0600	40.12	-8.86	31.26	40.00	-8.74	QP
	152.2200	39.61	-8.52	31.09	40.00	-8.91	QP
	167.7400	38.27	-9.09	29.18	40.00	-10.82	QP

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ( )
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. ” * ” mean this data is the worst emission level.

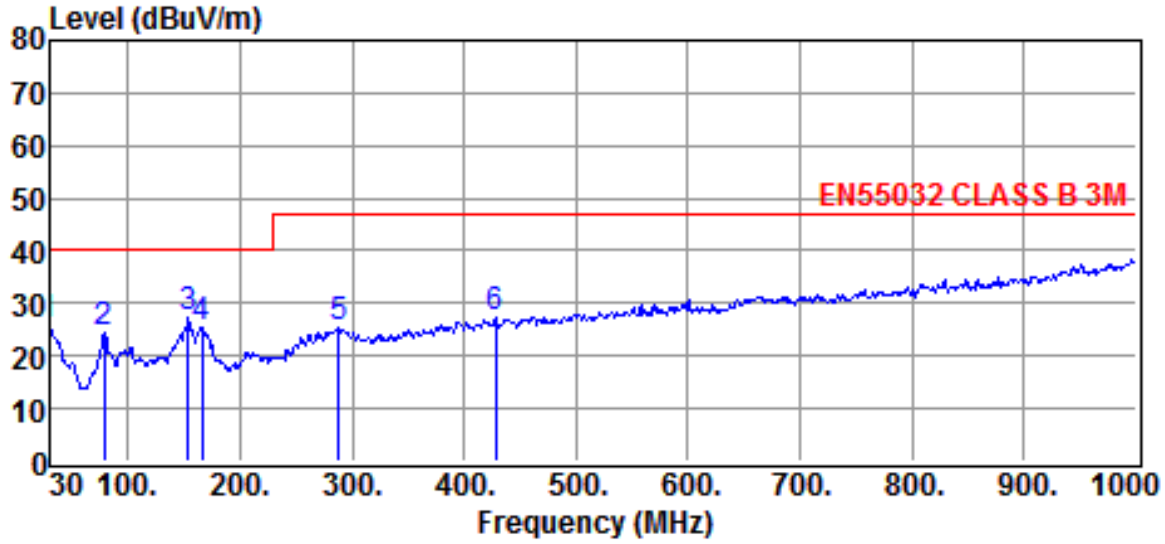
3. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-240 Test Date : May 10, 2022

Climatic Condition	Ambient Temperature: 25 ℃ Relative Humidity: 63 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test data see the next pages.

(30MHz to 1GHz)

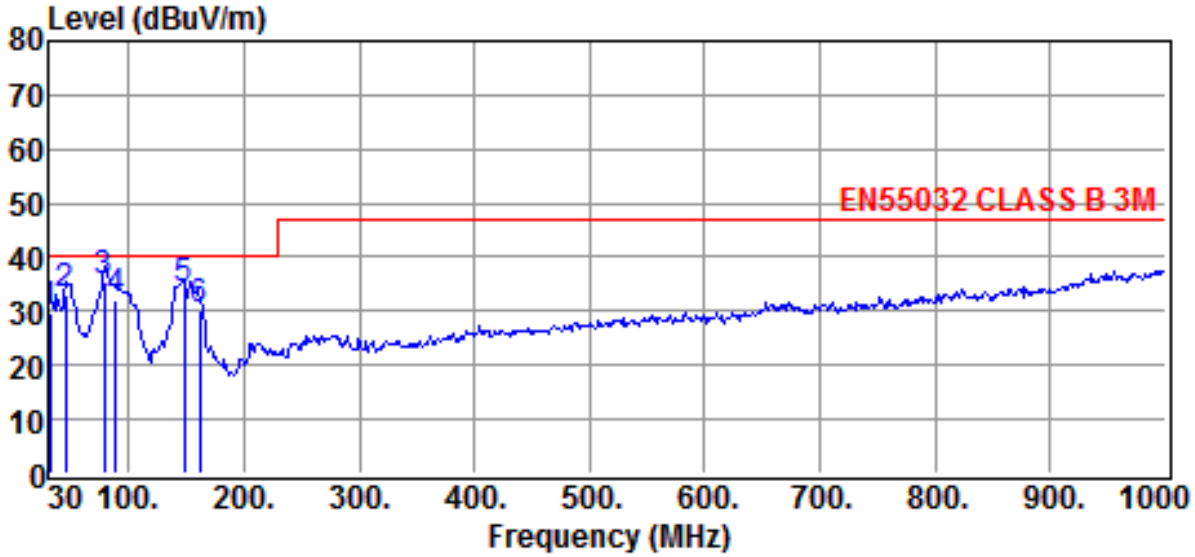


Site	:Chamber#2	Date	:2022-05-10
Limit	:EN55032 CLASS B 3M	Ant. Pol.	:HORIZONTAL
EUT	:Switching Power Supply	Model	:PSAA30R-240
Power Rating	:230Vac/50Hz	Temp.	:25˚C
Engineer	:Peter Liao	Humi.	:63 %
Test Mode	:Full Load		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	30.0000	28.16	-2.10	26.06	40.00	-13.94	QP
	78.5000	38.21	-13.63	24.58	40.00	-15.42	QP
*	154.1600	35.69	-8.57	27.12	40.00	-12.88	QP
	165.8000	34.43	-9.01	25.42	40.00	-14.58	QP
	288.0200	29.88	-4.70	25.18	47.00	-21.82	QP
	427.7000	29.06	-1.68	27.38	47.00	-19.62	QP

Note :

1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ( )
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. ” * ” mean this data is the worst emission level.



Site	:Chamber#2	Date	:2022-05-10
Limit	:EN55032 CLASS B 3M	Ant. Pol.	:VERTICAL
EUT	:Switching Power Supply	Model	:PSAA30R-240
Power Rating	:230Vac/50Hz	Temp.	:25°C
Engineer	:Peter Liao	Humi.	:63 %
Test Mode	:Full Load		

	Freq MHz	Reading dBuV	Correction Factor dB/m	Result dBuV/m	Limits dBuV/m	Over limit dB	Detector
	31.9400	32.88	-3.13	29.75	40.00	-10.25	QP
	45.5200	43.03	-10.09	32.94	40.00	-7.06	QP
*	78.5000	49.31	-13.63	35.68	40.00	-4.32	QP
	89.1700	44.21	-12.04	32.17	40.00	-7.83	QP
	148.3400	42.39	-8.45	33.94	40.00	-6.06	QP
	161.9200	38.86	-8.87	29.99	40.00	-10.01	QP

Note :

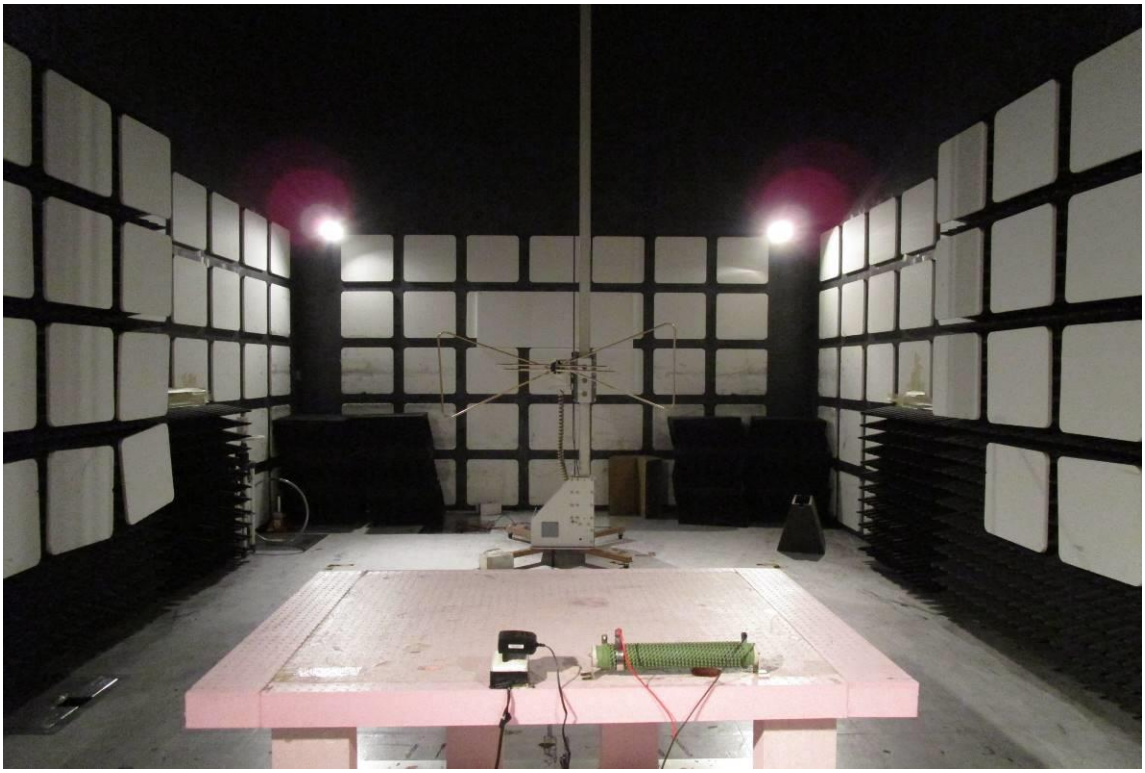
1. Result = Reading + Correction Factor
2. Average Result = Peak Result + Duty Factor ( )
3. Correction Factor = Antenna Factor + Cable Loss - Amplifier Gain (if any)
4. The margin value=Limit - Result
5. Above 1Ghz : Peak measurements are compared to the average limit - as peak measurements are below the average limit, they also comply with the peak limit.
6. ” * ” mean this data is the worst emission level.

(Above 1GHz)

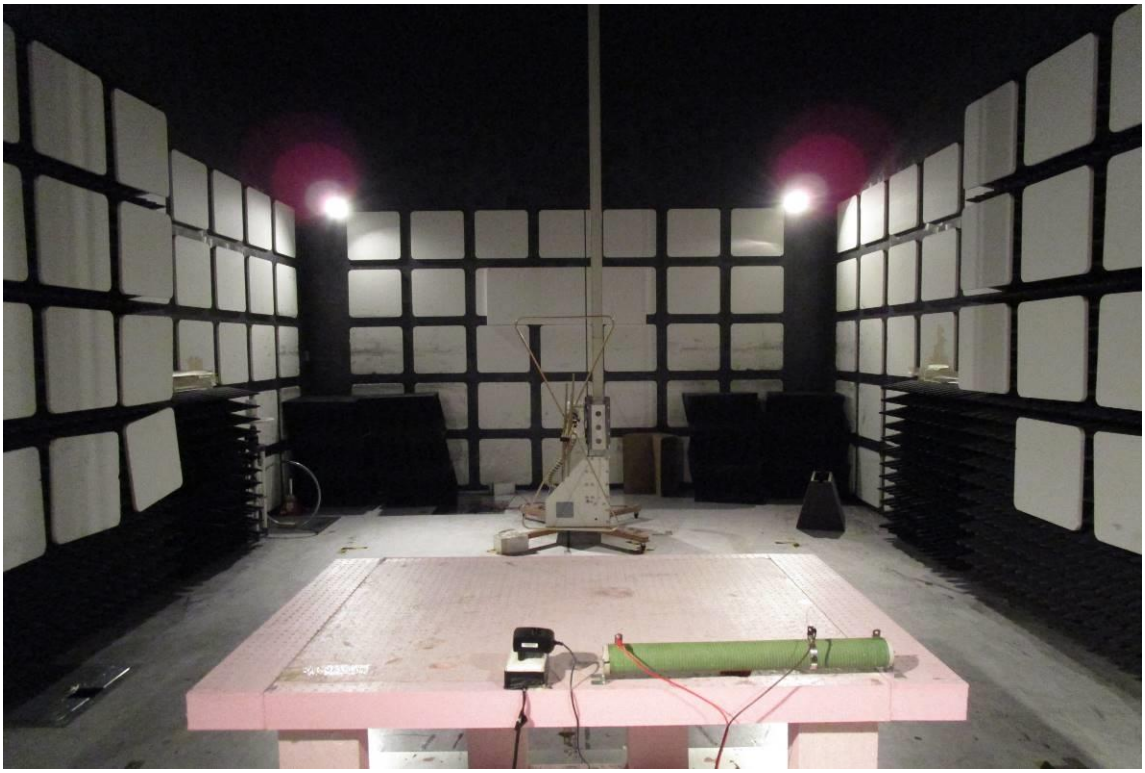
Not Applicable

4.1.3.4 Radiated Emissions Test Setup Photos

Model: PSAA30R-120



Model: PSAA30R-150



Model: PSAA30R-240

4.1.4 Harmonics Current Emissions Test

4.1.4.1 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
HARMONIC/FLICKER ANALYZER	KIKUSUI	KHA3000	13046506-001	2022/05/02	2023/05/01

4.1.4.2 Harmonics Current Emissions Test Data

1. Operating Conditions of The EUT : Operation Mode, Output at Full Load

Model: PSAA30R-120 Test Date : May 10, 2022

Climatic Condition	Ambient Temperature: 23 ℃ Relative Humidity: 61 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Judgment	
Final Test Result	Pass
L1 Test Result	Pass
L2 Test Result	---- (1P2W)
L3 Test Result	---- (1P2W)

Test Data of Total Values	
Total Current (max)	0.3776 A
Total Power (max)	33.582 W
Total Power Factor (max)	0.4151
Total Apparent Power (max)	81.047 VA
Total Reactive Power (max)	-73.761 var

Test Data of L1 Harmonics Current

Voltage (max)	214.97 V	THC (max)	0.3396 A
Current (max)	0.3776 A	POHC (max) / Limit	0.0912 A / ----- *4
Power (max)	33.582 W	Apparent Power (max)	81.047 VA
Power Factor (max)	0.4151	Reactive Power (max)	-73.762 var
Fundamental Current (max)	0.1619 A	THD (max)	210.15 %

Order	Limit1[A rms]	Limit2[A rms]	Ave[A rms]	Max[A rms]	LimitOver[s]
1	-----	-----	0.1617	0.1619	-----
2	1.0800	2.1600	0.0008	0.0008	0.0
3	2.3000	4.6000	0.1524	0.1525	0.0
4	0.4300	0.8600	0.0008	0.0008	0.0
5	1.1400	2.2800	0.1447	0.1448	0.0
6	0.3000	0.6000	0.0007	0.0007	0.0
7	0.7700	1.5400	0.1337	0.1338	0.0
8	0.2300	0.4600	0.0006	0.0007	0.0
9	0.4000	0.8000	0.1202	0.1203	0.0
10	0.1840	0.3680	0.0006	0.0007	0.0
11	0.3300	0.6600	0.1051	0.1052	0.0
12	0.1533	0.3067	0.0006	0.0007	0.0
13	0.2100	0.4200	0.0892	0.0895	0.0
14	0.1314	0.2629	0.0006	0.0007	0.0
15	0.1500	0.3000	0.0738	0.0741	0.0
16	0.1150	0.2300	0.0007	0.0008	0.0
17	0.1324	0.2647	0.0598	0.0602	0.0
18	0.1022	0.2044	0.0008	0.0008	0.0
19	0.1184	0.2368	0.0484	0.0488	0.0
20	0.0920	0.1840	0.0008	0.0009	0.0
21	0.1071	0.2143	0.0401	0.0405	0.0
22	0.0836	0.1673	0.0009	0.0009	0.0
23	0.0978	0.1957	0.0352	0.0356	0.0
24	0.0767	0.1533	0.0009	0.0009	0.0
25	0.0900	0.1800	0.0327	0.0331	0.0
26	0.0708	0.1415	0.0008	0.0009	0.0
27	0.0833	0.1667	0.0313	0.0316	0.0
28	0.0657	0.1314	0.0008	0.0009	0.0
29	0.0776	0.1552	0.0298	0.0301	0.0
30	0.0613	0.1227	0.0008	0.0009	0.0
31	0.0726	0.1452	0.0277	0.0280	0.0
32	0.0575	0.1150	0.0008	0.0009	0.0
33	0.0682	0.1364	0.0248	0.0251	0.0
34	0.0541	0.1082	0.0007	0.0008	0.0
35	0.0643	0.1286	0.0213	0.0217	0.0
36	0.0511	0.1022	0.0007	0.0008	0.0
37	0.0608	0.1216	0.0178	0.0181	0.0
38	0.0484	0.0968	0.0007	0.0007	0.0
39	0.0577	0.1154	0.0145	0.0147	0.0
40	0.0460	0.0920	0.0006	0.0007	0.0

2. Operating Conditions of The EUT : Operation Mode, Output at Full Load

Model: PSAA30R-150 Test Date : May 10, 2022

Climatic Condition	Ambient Temperature: 23 ℃	Relative Humidity: 61 %RH
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	

Judgment	
Final Test Result	Pass
L1 Test Result	Pass
L2 Test Result	---- (1P2W)
L3 Test Result	---- (1P2W)

Test Data of Total Values	
Total Current (max)	0.3533 A
Total Power (max)	30.851 W
Total Power Factor (max)	0.4008
Total Apparent Power (max)	77.070 VA
Total Reactive Power (max)	-70.625 var

Test Data of L1 Harmonics Current

Voltage (max)	218.24 V	THC (max)	0.3194 A
Current (max)	0.3533 A	POHC (max) / Limit	0.0907 A / ----- *4
Power (max)	30.851 W	Apparent Power (max)	77.070 VA
Power Factor (max)	0.4008	Reactive Power (max)	-70.626 var
Fundamental Current (max)	0.1474 A	THD (max)	216.84 %

Order	Limit1[A rms]	Limit2[A rms]	Ave[A rms]	Max[A rms]	LimitOver[s]
1	-----	-----	0.1473	0.1474	-----
2	1.0800	2.1600	0.0009	0.0010	0.0
3	2.3000	4.6000	0.1388	0.1389	0.0
4	0.4300	0.8600	0.0009	0.0010	0.0
5	1.1400	2.2800	0.1325	0.1326	0.0
6	0.3000	0.6000	0.0009	0.0010	0.0
7	0.7700	1.5400	0.1236	0.1236	0.0
8	0.2300	0.4600	0.0009	0.0010	0.0
9	0.4000	0.8000	0.1124	0.1125	0.0
10	0.1840	0.3680	0.0009	0.0010	0.0
11	0.3300	0.6600	0.0998	0.0999	0.0
12	0.1533	0.3067	0.0009	0.0010	0.0
13	0.2100	0.4200	0.0865	0.0865	0.0
14	0.1314	0.2629	0.0010	0.0010	0.0
15	0.1500	0.3000	0.0731	0.0732	0.0
16	0.1150	0.2300	0.0010	0.0010	0.0
17	0.1324	0.2647	0.0607	0.0608	0.0
18	0.1022	0.2044	0.0010	0.0011	0.0
19	0.1184	0.2368	0.0500	0.0501	0.0
20	0.0920	0.1840	0.0011	0.0011	0.0
21	0.1071	0.2143	0.0415	0.0417	0.0
22	0.0836	0.1673	0.0011	0.0012	0.0
23	0.0978	0.1957	0.0357	0.0358	0.0
24	0.0767	0.1533	0.0011	0.0012	0.0
25	0.0900	0.1800	0.0322	0.0323	0.0
26	0.0708	0.1415	0.0011	0.0012	0.0
27	0.0833	0.1667	0.0302	0.0303	0.0
28	0.0657	0.1314	0.0011	0.0012	0.0
29	0.0776	0.1552	0.0287	0.0288	0.0
30	0.0613	0.1227	0.0010	0.0011	0.0
31	0.0726	0.1452	0.0269	0.0270	0.0
32	0.0575	0.1150	0.0010	0.0011	0.0
33	0.0682	0.1364	0.0247	0.0248	0.0
34	0.0541	0.1082	0.0009	0.0010	0.0
35	0.0643	0.1286	0.0219	0.0220	0.0
36	0.0511	0.1022	0.0008	0.0009	0.0
37	0.0608	0.1216	0.0187	0.0188	0.0
38	0.0484	0.0968	0.0008	0.0008	0.0
39	0.0577	0.1154	0.0155	0.0156	0.0
40	0.0460	0.0920	0.0007	0.0008	0.0

3. Operating Conditions of The EUT : Operation Mode, Output at Full Load

Model: PSAA30R-240 Test Date : May 10, 2022

Climatic Condition	Ambient Temperature: 23 ℃	Relative Humidity: 61 %RH
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	

Judgment	
Final Test Result	Pass
L1 Test Result	Pass
L2 Test Result	---- (1P2W)
L3 Test Result	---- (1P2W)

Test Data of Total Values	
Total Current (max)	0.3518 A
Total Power (max)	30.820 W
Total Power Factor (max)	0.4051
Total Apparent Power (max)	76.192 VA
Total Reactive Power (max)	-69.686 var

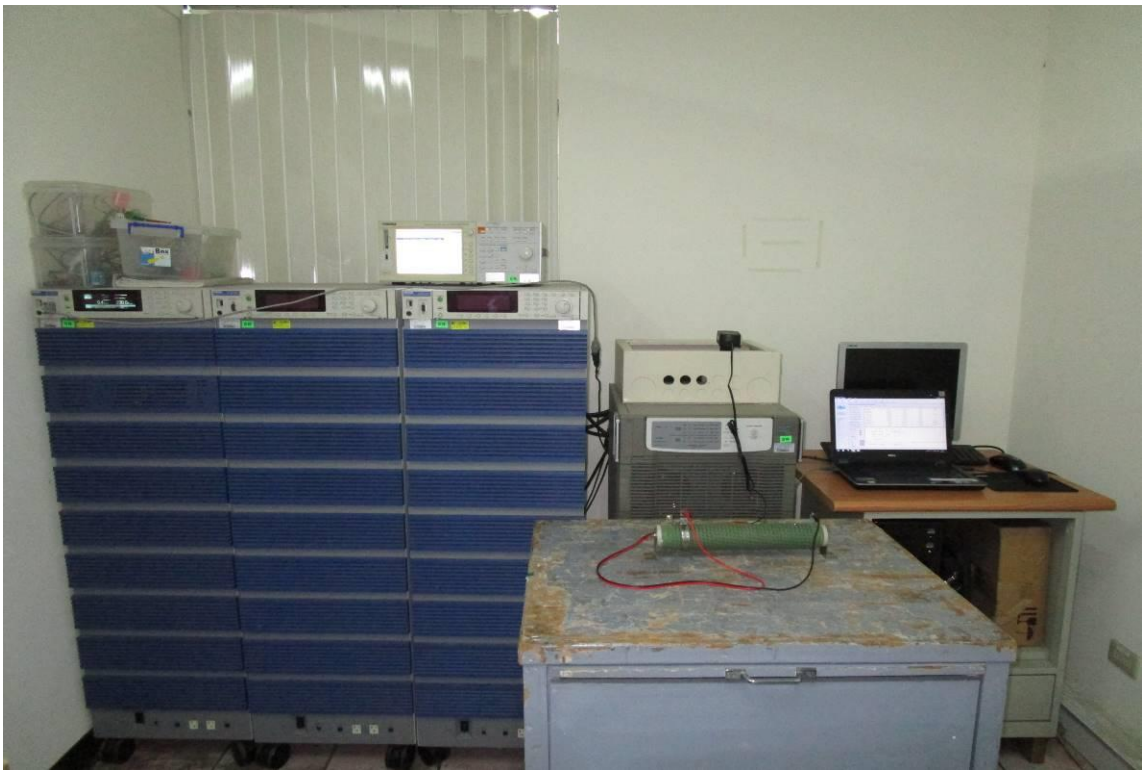
Test Data of L1 Harmonics Current

Voltage (max)	216.58 V	THC (max)	0.3173 A
Current (max)	0.3518 A	POHC (max) / Limit	0.0869 A / ----- *4
Power (max)	30.820 W	Apparent Power (max)	76.192 VA
Power Factor (max)	0.4051	Reactive Power (max)	-69.687 var
Fundamental Current (max)	0.1484 A	THD (max)	213.96 %

Order	Limit1[A rms]	Limit2[A rms]	Ave[A rms]	Max[A rms]	LimitOver[s]
1	-----	-----	0.1483	0.1484	-----
2	1.0800	2.1600	0.0007	0.0008	0.0
3	2.3000	4.6000	0.1395	0.1395	0.0
4	0.4300	0.8600	0.0007	0.0008	0.0
5	1.1400	2.2800	0.1330	0.1330	0.0
6	0.3000	0.6000	0.0007	0.0007	0.0
7	0.7700	1.5400	0.1237	0.1237	0.0
8	0.2300	0.4600	0.0007	0.0007	0.0
9	0.4000	0.8000	0.1122	0.1122	0.0
10	0.1840	0.3680	0.0007	0.0007	0.0
11	0.3300	0.6600	0.0992	0.0992	0.0
12	0.1533	0.3067	0.0007	0.0007	0.0
13	0.2100	0.4200	0.0854	0.0855	0.0
14	0.1314	0.2629	0.0007	0.0007	0.0
15	0.1500	0.3000	0.0717	0.0718	0.0
16	0.1150	0.2300	0.0007	0.0008	0.0
17	0.1324	0.2647	0.0590	0.0591	0.0
18	0.1022	0.2044	0.0008	0.0008	0.0
19	0.1184	0.2368	0.0481	0.0482	0.0
20	0.0920	0.1840	0.0008	0.0009	0.0
21	0.1071	0.2143	0.0396	0.0397	0.0
22	0.0836	0.1673	0.0008	0.0009	0.0
23	0.0978	0.1957	0.0339	0.0340	0.0
24	0.0767	0.1533	0.0009	0.0009	0.0
25	0.0900	0.1800	0.0307	0.0308	0.0
26	0.0708	0.1415	0.0009	0.0009	0.0
27	0.0833	0.1667	0.0290	0.0291	0.0
28	0.0657	0.1314	0.0009	0.0009	0.0
29	0.0776	0.1552	0.0277	0.0278	0.0
30	0.0613	0.1227	0.0008	0.0009	0.0
31	0.0726	0.1452	0.0261	0.0262	0.0
32	0.0575	0.1150	0.0008	0.0009	0.0
33	0.0682	0.1364	0.0239	0.0240	0.0
34	0.0541	0.1082	0.0008	0.0009	0.0
35	0.0643	0.1286	0.0211	0.0212	0.0
36	0.0511	0.1022	0.0007	0.0008	0.0
37	0.0608	0.1216	0.0180	0.0181	0.0
38	0.0484	0.0968	0.0007	0.0008	0.0
39	0.0577	0.1154	0.0149	0.0150	0.0
40	0.0460	0.0920	0.0006	0.0007	0.0

4.1.4.3 Harmonics Current Emissions Test Setup Photos

Model: PSAA30R-120



Model: PSAA30R-150

Model: PSAA30R-240

4.1.5 Voltage Fluctuations and Flicker Test

4.1.5.1 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
HARMONIC/FLICKER ANALYZER	KIKUSUI	KHA3000	13046506-001	2022/05/02	2023/05/01

4.1.5.2 Voltage Fluctuations and Flicker Test Data

1. Operating Conditions of The EUT : Operation Mode, Output at Full Load

Model: PSAA30R-120 Test Date : May 10, 2022

Climatic Condition	Ambient Temperature: 23 ℃ Relative Humidity: 61 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Judgment	
Final Test Result	Pass
L1 Test Result	Pass
L2 Test Result	---- (1P2W)
L3 Test Result	---- (1P2W)

Test Data of L1 Voltage Fluctuation and Flicker

Segment	Pst	dmax[%]	dc[%]	Tmax[ms]	Judge
Limit	1.000	4.000	3.300	500	
Seg. 1	0.131	0.414	0.196	0	Pass

Plt	Value	Judge
Limit	0.650	
Measurement	0.057	Pass

2. Operating Conditions of The EUT : Operation Mode, Output at Full Load

Model: PSAA30R-150 Test Date : May 10, 2022

Climatic Condition	Ambient Temperature: 23 ℃ Relative Humidity: 61 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Judgment	
Final Test Result	Pass
L1 Test Result	Pass
L2 Test Result	---- (1P2W)
L3 Test Result	---- (1P2W)

Test Data of L1 Voltage Fluctuation and Flicker

Segment	Pst	dmax[%]	dc[%]	Tmax[ms]	Judge
Limit	1.000	4.000	3.300	500	
Seg. 1	0.185	0.502	0.136	0	Pass

Plt	Value	Judge
Limit	0.650	
Measurement	0.081	Pass

3. Operating Conditions of The EUT : Operation Mode, Output at Full Load

Model: PSAA30R-240 Test Date : May 10, 2022

Climatic Condition	Ambient Temperature: 23 ℃ Relative Humidity: 61 %RH
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Judgment	
Final Test Result	Pass
L1 Test Result	Pass
L2 Test Result	---- (1P2W)
L3 Test Result	---- (1P2W)

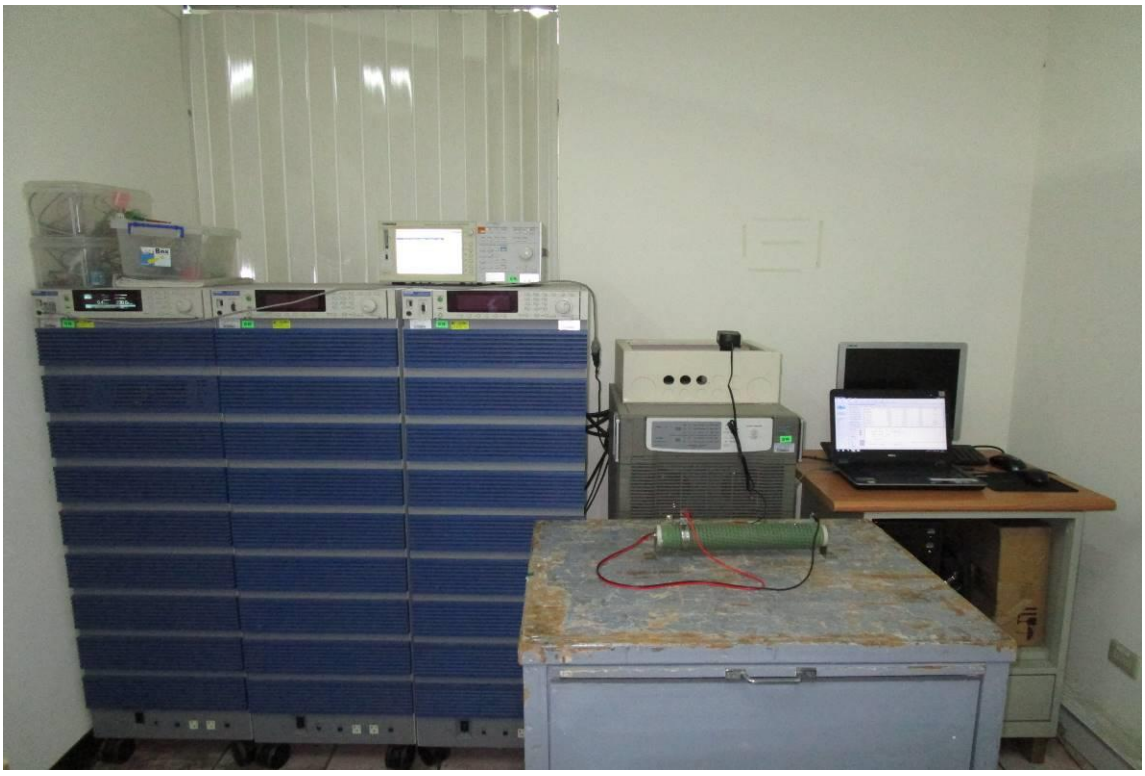
Test Data of L1 Voltage Fluctuation and Flicker

Segment	Pst	dmax[%]	dc[%]	Tmax[ms]	Judge
Limit	1.000	4.000	3.300	500	
Seg. 1	0.219	0.452	0.175	0	Pass

Plt	Value	Judge
Limit	0.650	
Measurement	0.095	Pass

4.1.5.3 Voltage Fluctuations and Flicker Test Setup Photos

Model: PSAA30R-120



Model: PSAA30R-150

Model: PSAA30R-240

4.2 Immunity

4.2.1 Electrostatic Discharge Immunity Test

4.2.1.1 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
ESD Tester	NoiseKen	ESS-2002	13033705-001	2021/09/09	2022/09/08

4.2.1.2 Electrostatic Discharge Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-120 Test Date : May 04, 2022

Climatic Condition	Ambient Temperature: 26 ℃	Relative Humidity: 47 %RH
	Atmospheric Pressure: 1012 mbar	
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	

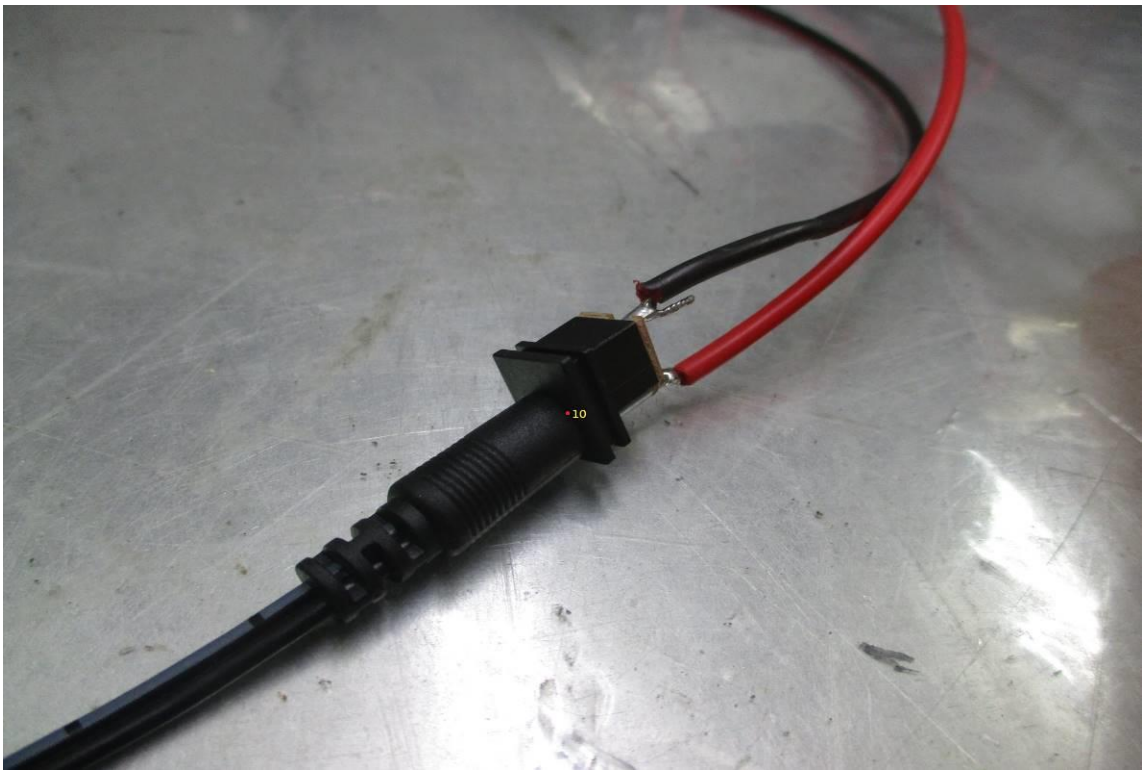
Energy-Storage Capacitor	: 150 Pf	Contact Discharge Times	: 25 times/each condition
Discharge Resistor	: 330 Ω	Air Discharge Times	: 10 times/each condition

\ Discharge Mode	**Contact Discharge**								**Air Discharge**							
\ESD Voltage	**2 Kv**		**4 Kv**		**___ Kv**		**___ Kv**		**2 Kv**		**4 Kv**		**8 Kv**		**___ Kv**	
\Points\Result\Polarity	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−
VCP	A	A	A	A	--	--	--	--	--	--	--	--	--	--	--	--
HCP	A	A	A	A	--	--	--	--	--	--	--	--	--	--	--	--
P1~P10	--	--	--	--	--	--	--	--	A	A	A	A	A	A	--	--

Note : " A " means the EUT's function was correct normal performance during the test.

TEST POINTS

TEST POINTS



2. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-150 Test Date : May 04, 2022

Climatic Condition	Ambient Temperature: 26 ℃	Relative Humidity: 47 %RH
	Atmospheric Pressure: 1012 mbar	
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	

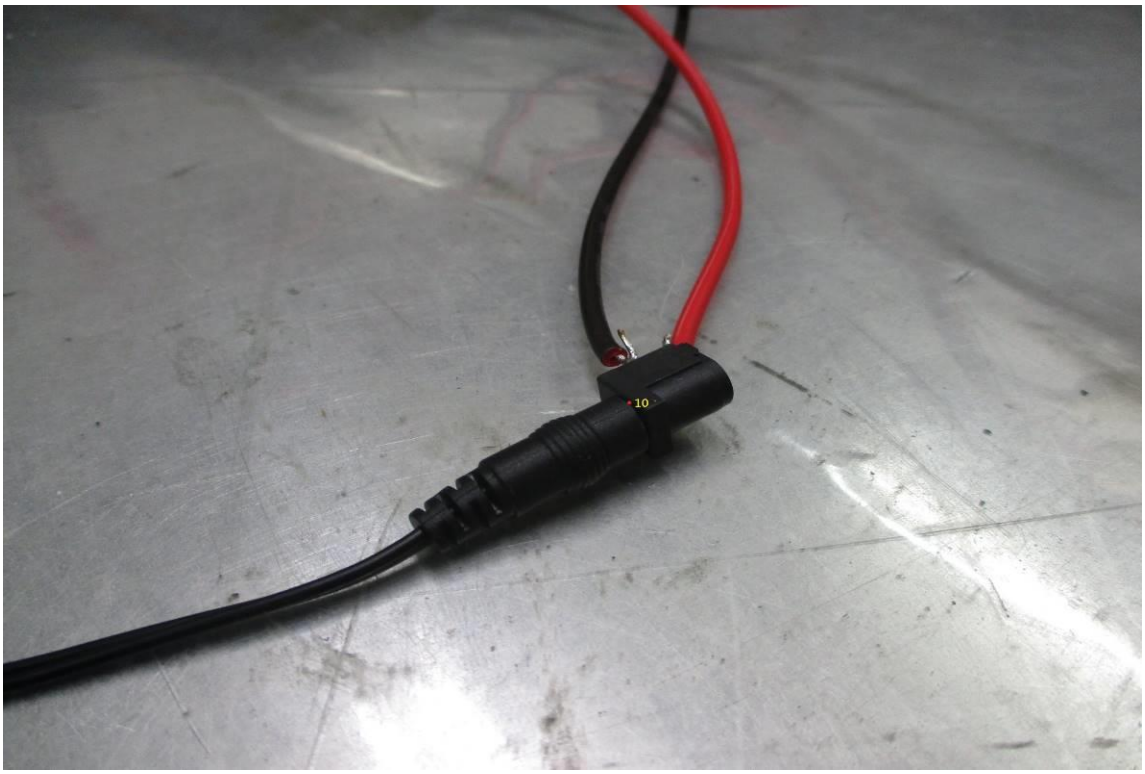
Energy-Storage Capacitor	: 150 Pf	Contact Discharge Times	: 25 times/each condition
Discharge Resistor	: 330 Ω	Air Discharge Times	: 10 times/each condition

\ Discharge Mode	Contact Discharge								Air Discharge							
\ESD Voltage	2 Kv		4 Kv		___ Kv		___ Kv		2 Kv		4 Kv		8 Kv		___ Kv	
\Points\Result\Polarity	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−
VCP	A	A	A	A	--	--	--	--	--	--	--	--	--	--	--	--
HCP	A	A	A	A	--	--	--	--	--	--	--	--	--	--	--	--
P1~P10	--	--	--	--	--	--	--	--	A	A	A	A	A	A	--	--

Note : " A " means the EUT's function was correct normal performance during the test.

TEST POINTS

TEST POINTS



3. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-240 Test Date : May 04, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 47 %RH
	Atmospheric Pressure: 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Energy-Storage Capacitor : 150 Pf Contact Discharge Times : 25 times/each condition
Discharge Resistor : 330 Ω Air Discharge Times : 10 times/each condition

\ Discharge Mode	Contact Discharge								Air Discharge							
\ESD Voltage	2 Kv		4 Kv		___ Kv		___ Kv		2 Kv		4 Kv		8 Kv		___ Kv	
\Points\Result\Polarity	+	−	+	−	+	−	+	−	+	−	+	−	+	−	+	−
VCP	A	A	A	A	--	--	--	--	--	--	--	--	--	--	--	--
HCP	A	A	A	A	--	--	--	--	--	--	--	--	--	--	--	--
P1~P10	--	--	--	--	--	--	--	--	A	A	A	A	A	A	--	--

Note : " A " means the EUT's function was correct normal performance during the test.

TEST POINTS

TEST POINTS

4.2.1.3 Electrostatic Discharge Immunity Test Setup Photos

Model: PSAA30R-120

Model: PSAA30R-150

Model: PSAA30R-240

4.2.2 RF Radiated Fields Immunity Test

4.2.2.1 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
Antenna	AR	AT5080	13057612-001	N/A	N/A
Signal Generator	Rohde & Schwarz	SMB 100A	13051717-004	2021/07/02	2022/07/01
Amplifier	AR	1000W1000E	13052920-001	N/A	N/A
Amplifier	AR	200S1G6M1	13052921-001	N/A	N/A
Power Meter	Boonton	4232A	13050619-001	2021/06/25	2022/06/24

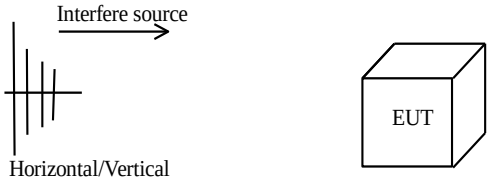
4.2.2.2 RF Radiated Fields Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-120 Test Date : Apr. 25, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 56 %RH
	Atmospheric Pressure: 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment



Frequency Range: 80 ~1000 MHz	Field Strength: 3 V/m	Modulation (AM 1KHz 80%)
Sweep Rate : ≤ 1.5×10^{-3} decades/s	Step Size : ≤ 1 % of preceding frequency value	Dwell time : 3.0 s

Frequency Range (MHz)	Antenna-Polarization	Direction of Device	Test Result
80~1000	Horizontal	front	A^1
		rear	A^1
		left	A^1
		right	A^1
80~1000	Vertical	front	A^1
		rear	A^1
		left	A^1
		right	A^1

Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.02VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

Frequency Range: 1800/2600/3500/5000 MHz		Field Strength: 3 V/m		Modulation (AM 1KHz 80%)	
Sweep Rate : ≤ 1.5×10^{-3} decades/s		Step Size : ≤ 1 % of preceding frequency value		Dwell time : 3.0 s	
Frequency Range (MHz)	Antenna-Polarization		Direction of Device		Test Result
1800/2600 3500/5000	Horizontal		front		A^2
			rear		A^2
			left		A^2
			right		A^2
1800/2600 3500/5000	Vertical		front		A^2
			rear		A^2
			left		A^2
			right		A^2

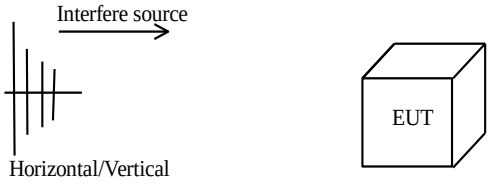
Note : " A " means the EUT's function was correct normal performance during the test.

" A^2 " means the observed output voltage was dropped 0.01VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

2. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-150 Test Date : Apr. 26, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 56 %RH
	Atmospheric Pressure: 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment



Frequency Range: 80 ~1000 MHz	Field Strength: 3 V/m	Modulation (AM 1KHz 80%)
Sweep Rate : ≤ 1.5×10^{-3} decades/s	Step Size : ≤ 1 % of preceding frequency value	Dwell time : 3.0 s

Frequency Range (MHz)	Antenna-Polarization	Direction of Device	Test Result
80~1000	Horizontal	front	A^1
		rear	A^1
		left	A^1
		right	A^1
80~1000	Vertical	front	A^1
		rear	A^1
		left	A^1
		right	A^1

Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.02VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

Frequency Range: 1800/2600/3500/5000 MHz		Field Strength: 3 V/m		Modulation (AM 1KHz 80%)	
Sweep Rate : ≤ 1.5×10^{-3} decades/s		Step Size : ≤ 1 % of preceding frequency value		Dwell time : 3.0 s	
Frequency Range (MHz)	Antenna-Polarization		Direction of Device		Test Result
1800/2600 3500/5000	Horizontal		front		A^2
			rear		A^2
			left		A^2
			right		A^2
1800/2600 3500/5000	Vertical		front		A^2
			rear		A^2
			left		A^2
			right		A^2

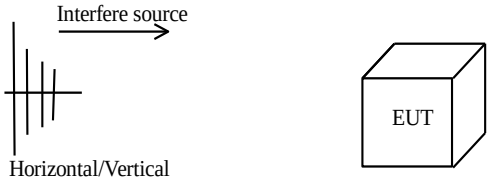
Note : " A " means the EUT's function was correct normal performance during the test.

" A^2 " means the observed output voltage was dropped 0.01VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

3. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-240 Test Date : Apr. 27, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 56 %RH
	Atmospheric Pressure: 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment



Frequency Range: 80 ~1000 MHz	Field Strength: 3 V/m	Modulation (AM 1KHz 80%)
Sweep Rate : ≤ 1.5×10^{-3} decades/s	Step Size : ≤ 1 % of preceding frequency value	Dwell time : 3.0 s

Frequency Range (MHz)	Antenna-Polarization	Direction of Device	Test Result
80~1000	Horizontal	front	A^1
		rear	A^1
		left	A^1
		right	A^1
80~1000	Vertical	front	A^1
		rear	A^1
		left	A^1
		right	A^1

Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.01VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

Frequency Range: 1800/2600/3500/5000 MHz		Field Strength: 3 V/m		Modulation (AM 1KHz 80%)	
Sweep Rate : ≤ 1.5×10^{-3} decades/s		Step Size : ≤ 1 % of preceding frequency value		Dwell time : 3.0 s	
Frequency Range (MHz)	Antenna-Polarization		Direction of Device		Test Result
1800/2600 3500/5000	Horizontal		front		A^2
			rear		A^2
			left		A^2
			right		A^2
1800/2600 3500/5000	Vertical		front		A^2
			rear		A^2
			left		A^2
			right		A^2

Note : " A " means the EUT's function was correct normal performance during the test.

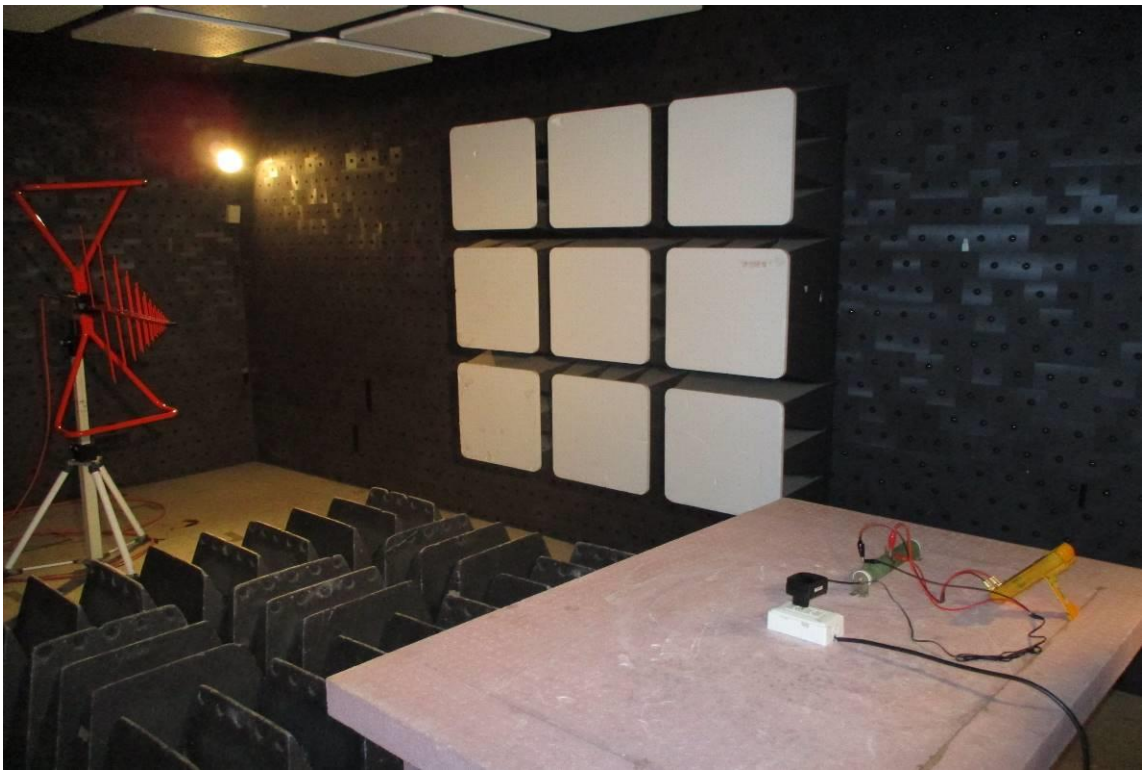
" A^2 " means the observed output voltage was dropped 0.01VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

4.2.2.3 RF Radiated Fields Immunity Test Setup Photos

Model: PSAA30R-120

Model: PSAA30R-150

Model: PSAA30R-240



4.2.3 EFT/Burst Immunity Test

4.2.3.1 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
EMC Immunity tester	EMC-PARTNER	TRANSIENT-2000	13046504-001	2021/07/01	2022/06/30

4.2.3.2 EFT/Burst Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-120 Test Date : Apr. 29, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Pulse : 5 /50ns Burst : 15ms /300ms	Repetition Rate : 5kHz	Test time : 1 min/each condition
\Voltage\Polarity\	1.0 kV	
\Test Point\Mode\Result\	+	-
L1 AC Input Power Port (M3)	A[1]	A[1]
N AC Input Power Port (M3)	A[1]	A[1]
PE AC Input Power Port (M3)	---	---
L1 – N AC Input Power Port (M3)	A[1]	A[1]
L1 – PE AC Input Power Port (M3)	---	---
N – PE AC Input Power Port (M3)	---	---
L1 – N – PE AC Input Power Port (M3)	---	---

Note : " A " means the EUT's function was correct normal performance during the test.

" A[1] " means the observed output voltage was dropped 0.04VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

2. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-150 Test Date : Apr. 29, 2022

Climatic Condition	Ambient Temperature: 26 ℃	Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar	
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	

Pulse : 5 /50ns Burst : 15ms /300ms	Repetition Rate : 5kHz	Test time : 1 min/each condition
\Voltage\Polarity\	1.0 kV	
\Test Point\Mode\Result\	+	-
L1 AC Input Power Port (M3)	A[1]	A[1]
N AC Input Power Port (M3)	A[1]	A[1]
PE AC Input Power Port (M3)	---	---
L1 – N AC Input Power Port (M3)	A[1]	A[1]
L1 – PE AC Input Power Port (M3)	---	---
N – PE AC Input Power Port (M3)	---	---
L1 – N – PE AC Input Power Port (M3)	---	---

Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.04VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

3. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-240 Test Date : Apr. 29, 2022

Climatic Condition	Ambient Temperature: 26 ℃	Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar	
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	

Pulse : 5 /50ns Burst : 15ms /300ms	Repetition Rate : 5kHz	Test time : 1 min/each condition
\Voltage\Polarity\	1.0 kV	
\Test Point\Mode\Result\	+	-
L1 AC Input Power Port (M3)	A[1]	A[1]
N AC Input Power Port (M3)	A[1]	A[1]
PE AC Input Power Port (M3)	---	---
L1 – N AC Input Power Port (M3)	A[1]	A[1]
L1 – PE AC Input Power Port (M3)	---	---
N – PE AC Input Power Port (M3)	---	---
L1 – N – PE AC Input Power Port (M3)	---	---

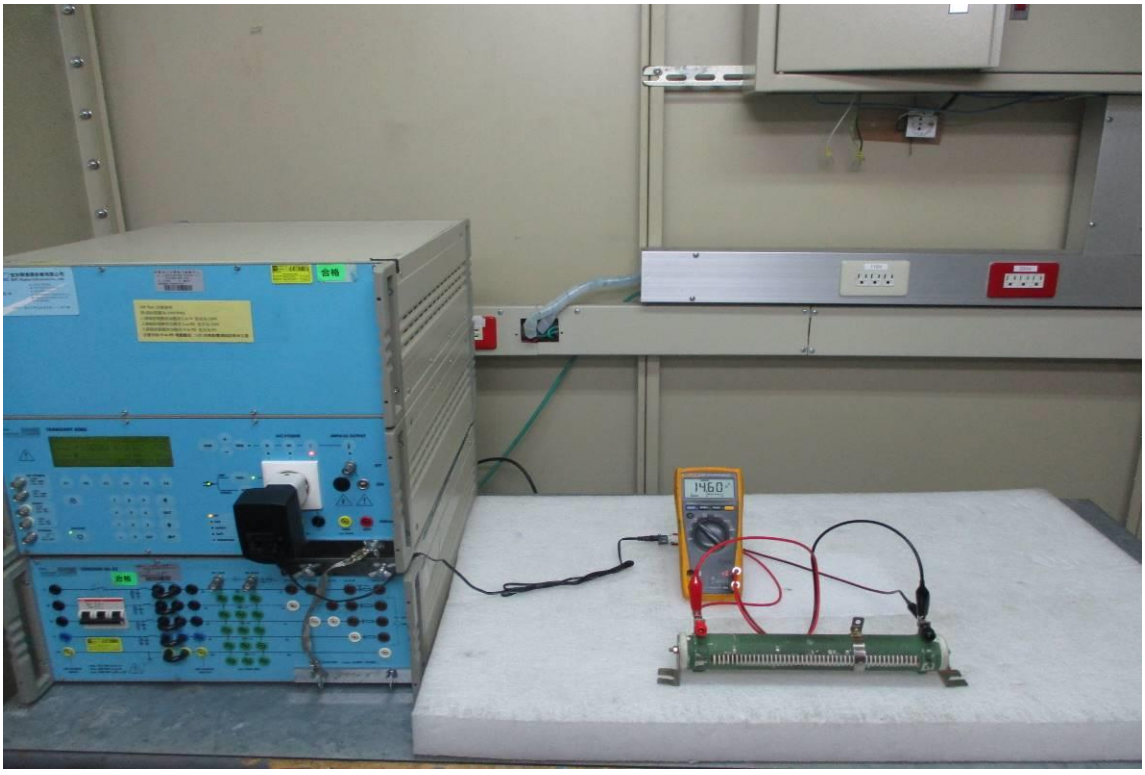
Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.05VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

4.2.3.3 EFT/Burst Immunity Test Setup Photos

Model: PSAA30R-120

Model: PSAA30R-150



Model: PSAA30R-240

4.2.4 Surge Immunity Test

4.2.4.1 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
EMC Immunity tester	EMC-PARTNER	TRANSIENT-2000	13046504-001	2021/07/01	2022/06/30

4.2.4.2 Surge Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-120 Test Date : Apr. 29, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Waveform : 1.2/50μs(8/20μs)		Repetition rate : 60 sec	Times : 5 time/each condition			
	\Phase \Voltage \Mode \Polarity \Result		0°	90°	180°	270°
0.5、1.0 kV	L 1– N AC Input Power Port (M3)	+	---	A[1]	---	---
0.5、1.0 kV	L 1– N AC Input Power Port (M3)	–	---	---	---	A[1]
0.5、1.0、2.0KV	L1 – PE AC Input Power Port (M3)	+	---	---	---	---
0.5、1.0、2.0KV	L1 – PE AC Input Power Port (M3)	–	---	---	---	---
0.5、1.0、2.0KV	N – PE AC Input Power Port (M3)	+	---	---	---	---
0.5、1.0、2.0KV	N – PE AC Input Power Port (M3)	–	---	---	---	---

Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.02VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

2. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-150 Test Date : Apr. 29, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Waveform : 1.2/50μs(8/20μs)		Repetition rate : 60 sec	Times : 5 time/each condition			
	\Phase \Voltage \Mode \Polarity \Result		0°	90°	180°	270°
0.5、1.0 kV	L 1– N AC Input Power Port (M3)	+	---	A[1]	---	---
0.5、1.0 kV	L 1– N AC Input Power Port (M3)	–	---	---	---	A[1]
0.5、1.0、2.0KV	L1 – PE AC Input Power Port (M3)	+	---	---	---	---
0.5、1.0、2.0KV	L1 – PE AC Input Power Port (M3)	–	---	---	---	---
0.5、1.0、2.0KV	N – PE AC Input Power Port (M3)	+	---	---	---	---
0.5、1.0、2.0KV	N – PE AC Input Power Port (M3)	–	---	---	---	---

Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.05VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

3. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-240 Test Date : Apr. 29, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Waveform : 1.2/50μs(8/20μs)		Repetition rate : 60 sec	Times : 5 time/each condition			
	\Phase \Voltage \Mode \Polarity \Result		0°	90°	180°	270°
0.5、1.0 kV	L 1– N AC Input Power Port (M3)	+	---	A[1]	---	---
0.5、1.0 kV	L 1– N AC Input Power Port (M3)	–	---	---	---	A[1]
0.5、1.0、2.0KV	L1 – PE AC Input Power Port (M3)	+	---	---	---	---
0.5、1.0、2.0KV	L1 – PE AC Input Power Port (M3)	–	---	---	---	---
0.5、1.0、2.0KV	N – PE AC Input Power Port (M3)	+	---	---	---	---
0.5、1.0、2.0KV	N – PE AC Input Power Port (M3)	–	---	---	---	---

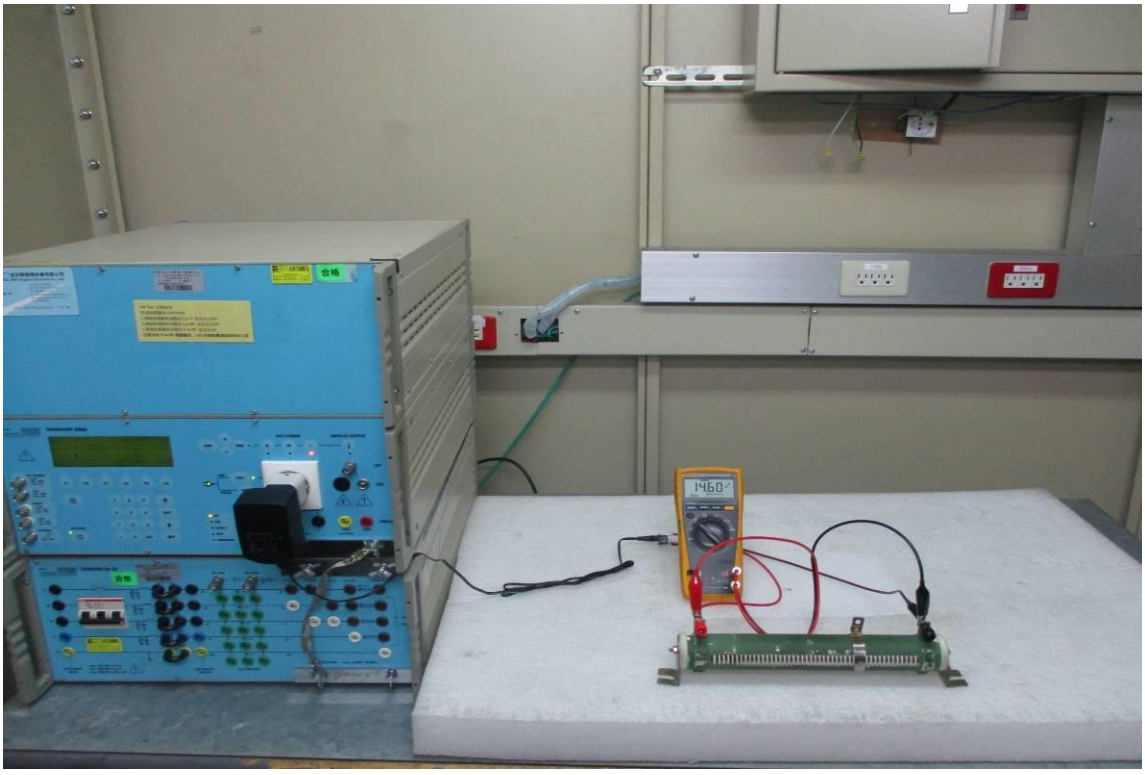
Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.04VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

4.2.4.3 Surge Immunity Test Setup Photos

Model: PSAA30R-120

Model: PSAA30R-150



Model: PSAA30R-240

4.2.5 RF Common Mode Immunity Test

4.2.5.1 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
CS-Clamp	SCHAFFUER	KEMZ 801	18369.1,18369.2, 19205	2022/03/10	2023/03/09
EMC Immunity tester System	TESEQ	NSG 4070-75	13547603-001 (37508)	2022/03/03	2023/03/02
CDN	EMTEST	CDN M3-50A	13057742-001 (P15061-48504)	2022/03/10	2023/03/09

4.2.5.2 RF Common Mode Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-120 Test Date : Apr. 28, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Frequency Range：0.15 MHz ~ 80 MHz		Modulation (AM 1kHz 80%)	
Sweep Rate：≤ 1.5×10^{-3} decades/s	Step Size：≤ 1 % of preceding frequency value		Dwell Time：3.0 s
Frequency Range (MHz)	Test Level (V)	Tested Line	Test Result
0.15 ~ 10	3	L1 & N AC Input Power Port (M2)	A^1
10 ~ 30	3~1	L1 & N AC Input Power Port (M2)	A^1
30 ~ 80	1	L1 & N AC Input Power Port (M2)	A^1

Note ：" A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.02VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

2. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-150 Test Date : Apr. 28, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Frequency Range：0.15 MHz ~ 80 MHz		Modulation (AM 1kHz 80%)	
Sweep Rate：≤ 1.5×10^{-3} decades/s	Step Size：≤ 1 % of preceding frequency value		Dwell Time：3.0 s
Frequency Range (MHz)	Test Level (V)	Tested Line	Test Result
0.15 ~ 10	3	L1 & N AC Input Power Port (M2)	A^1
10 ~ 30	3~1	L1 & N AC Input Power Port (M2)	A^1
30 ~ 80	1	L1 & N AC Input Power Port (M2)	A^1

Note ：" A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.05VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

3. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-240 Test Date : Apr. 28, 2022

Climatic Condition	Ambient Temperature: 26 ℃	Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar	
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	

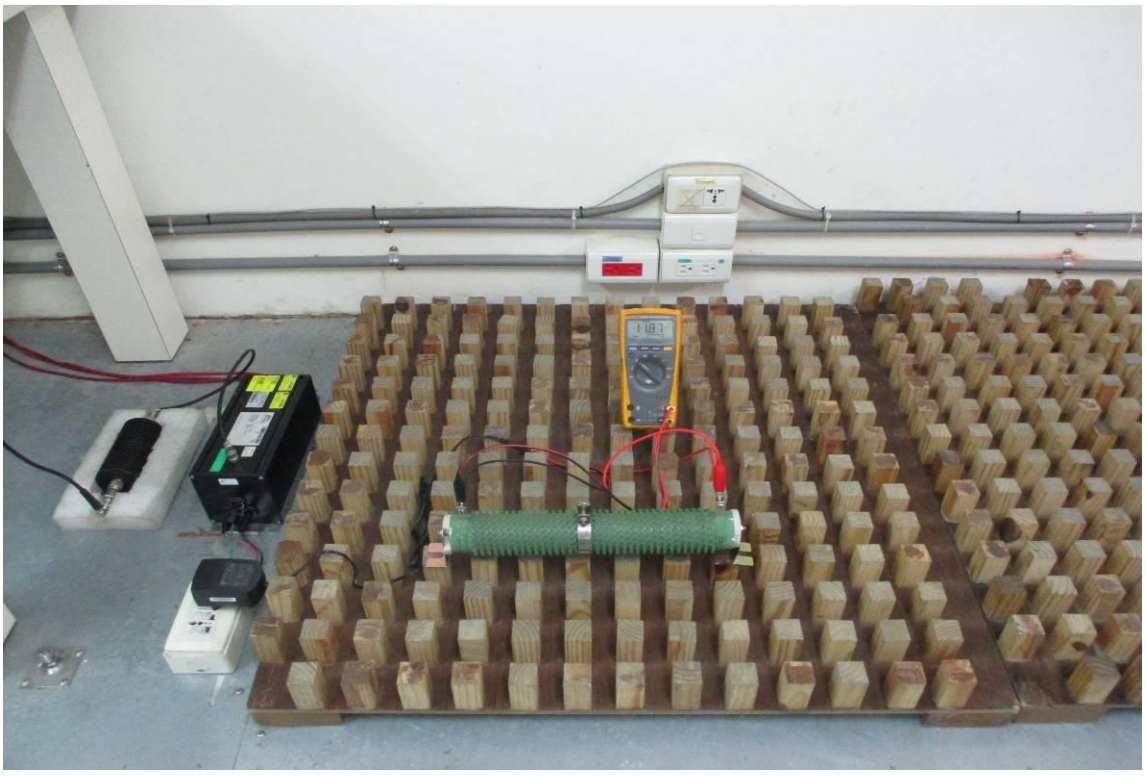
Frequency Range：0.15 MHz ~ 80 MHz		Modulation (AM 1kHz 80%)	
Sweep Rate：≤ 1.5×10^{-3} decades/s	Step Size：≤ 1 % of preceding frequency value		Dwell Time：3.0 s
Frequency Range (MHz)	Test Level (V)	Tested Line	Test Result
0.15 ~ 10	3	L1 & N AC Input Power Port (M2)	A^1
10 ~ 30	3~1	L1 & N AC Input Power Port (M2)	A^1
30 ~ 80	1	L1 & N AC Input Power Port (M2)	A^1

Note ：" A " means the EUT's function was correct normal performance during the test.

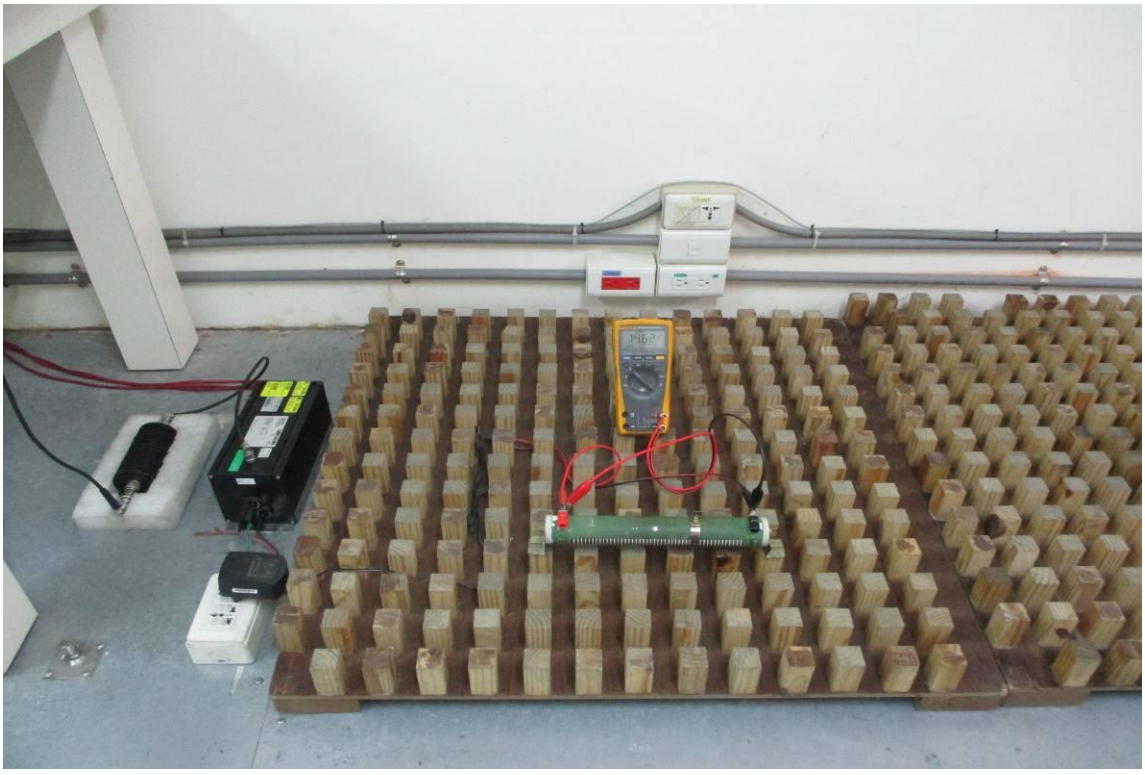
" A^1 " means the observed output voltage was dropped 0.08VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

4.2.5.3 RF Common Mode Immunity Test Setup Photos

Model: PSAA30R-120



Model: PSAA30R-150



Model: PSAA30R-240

4.2.6 Power Frequency Magnetic Field Immunity Test

4.2.6.1 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
Magnetic field coil	TESEQ	INA 703	13034948-001 (3003)	2021/08/02	2022/08/01
Induction Coil Interface	TESEQ	INA 2141	13059506-001 (1446)	2021/08/02	2022/08/01
AC Source	TESEQ	NSG 1007-5	1634A01491	N/A	N/A

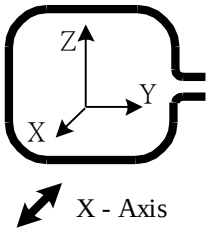
4.2.6.2 Power Frequency Magnetic Field Immunity Test Data

Test data see the next pages.

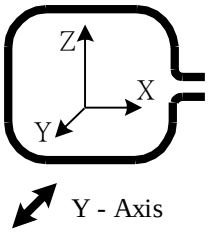
1. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-120 Test Date : Apr. 28, 2022

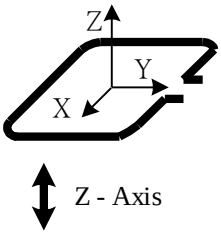
Climatic Condition	Ambient Temperature: 26 ℃	Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar	
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	



X - Axis



Y - Axis



Z - Axis

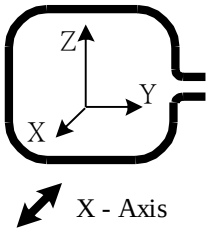
Magnetic field frequency : 50/60 Hz	Continuous magnetic field strength : 1 A/m
Magnetic field direction	Testing result
X - Axis	A
Y - Axis	A
Z - Axis	A

Note : " A " means the EUT's function was correct normal performance during the test.

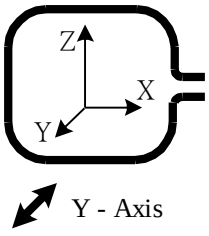
2. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-150 Test Date : Apr. 28, 2022

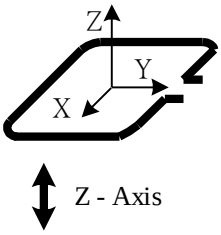
Climatic Condition	Ambient Temperature: 26 ℃	Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar	
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	



X - Axis



Y - Axis



Z - Axis

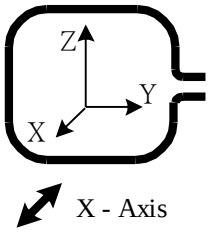
Magnetic field frequency : 50/60 Hz	Continuous magnetic field strength : 1 A/m
Magnetic field direction	Testing result
X - Axis	A
Y - Axis	A
Z - Axis	A

Note : " A " means the EUT's function was correct normal performance during the test.

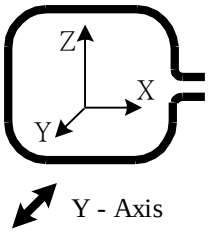
3. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-240 Test Date : Apr. 28, 2022

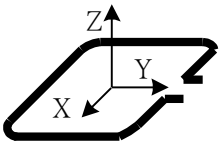
Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 55 %RH
	Atmospheric Pressure : 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment



X - Axis



Y - Axis



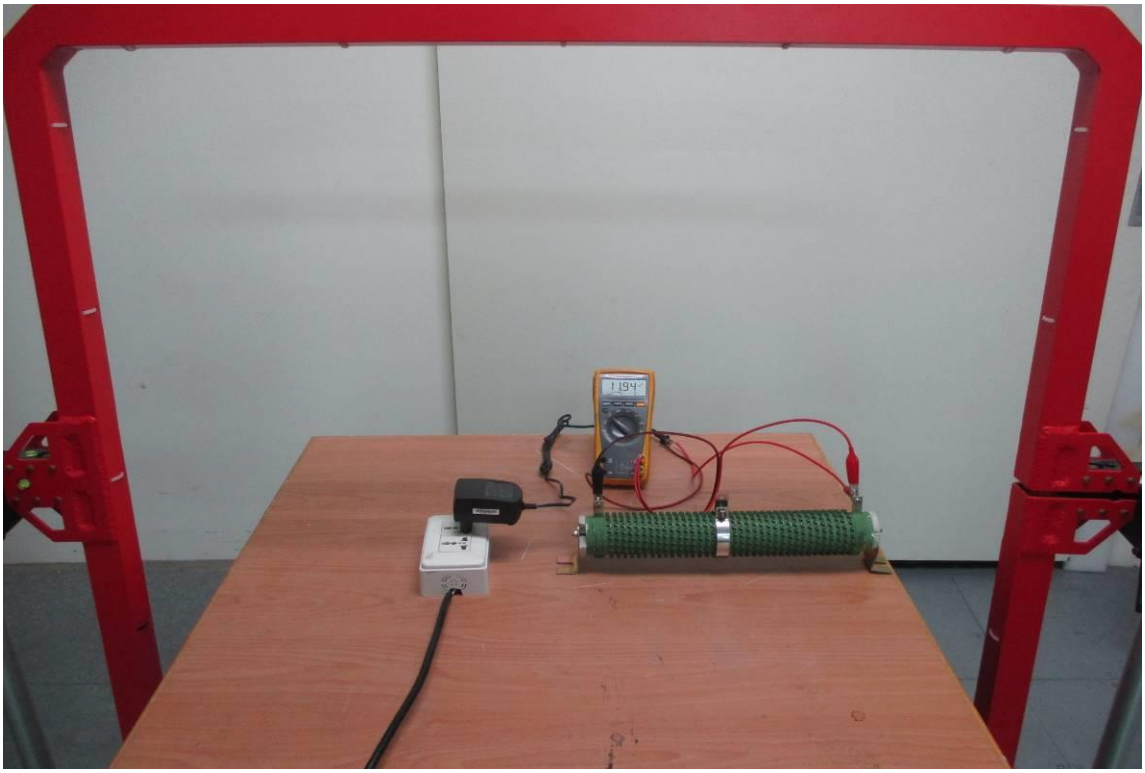
Z - Axis

Magnetic field frequency : 50/60 Hz	Continuous magnetic field strength : 1 A/m
Magnetic field direction	Testing result
X - Axis	A
Y - Axis	A
Z - Axis	A

Note : " A " means the EUT's function was correct normal performance during the test.

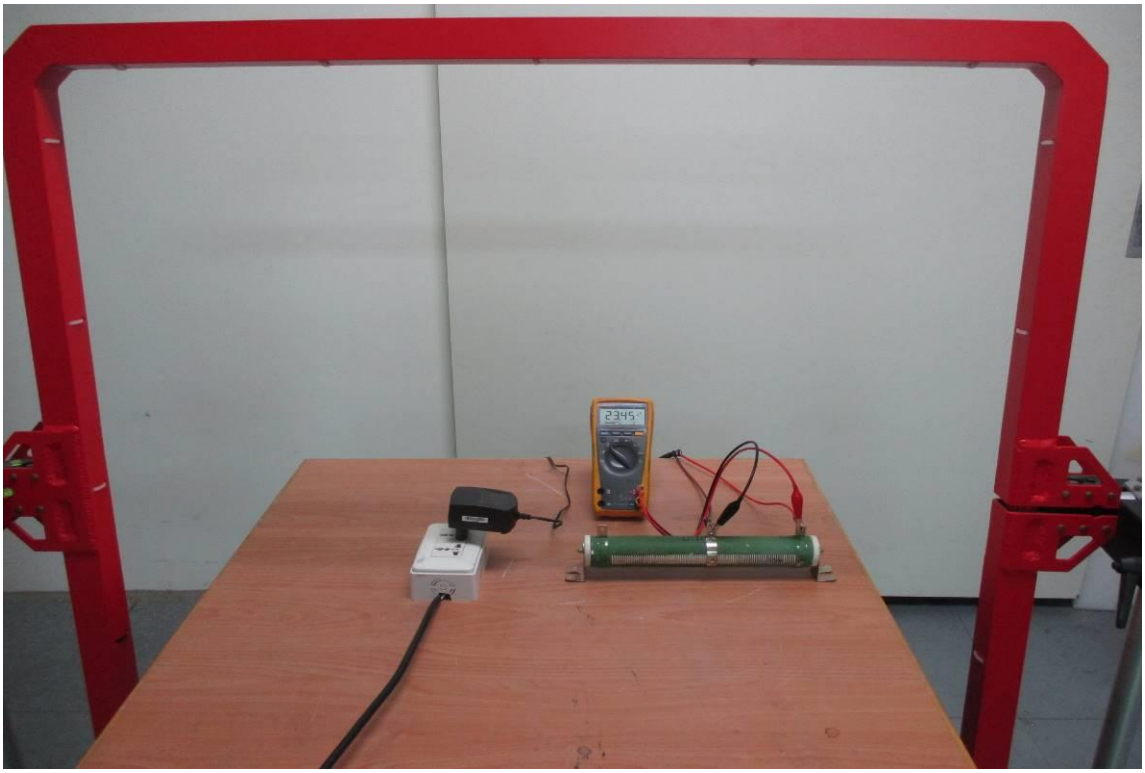
4.2.6.3 Power Frequency Magnetic Field Immunity Test Setup Photos

Model: PSAA30R-120



Model: PSAA30R-150

Model: PSAA30R-240



4.2.7 Voltage Interruptions and Voltage Dips Immunity Test

4.2.7.1 Test Instruments

Equipment	Manufacturer	Model No.	Assets No.	Calibration Date	Next Cal. Date
EMC Immunity tester	EMC-PARTNER	TRANSIENT-2000	13046504-001	2021/07/01	2022/06/30

4.2.7.2 Voltage Interruptions and Voltage Dips Immunity Test Data

Test data see the next pages.

1. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-120 Test Date : Apr. 29, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 55 %RH
	Atmospheric Pressure: 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test mode	Voltage dips	Durations (periods)	Interval(s)	Times	Phase	Result
Voltage interruptions	>95%	250	10	3	0°/180°	B
Voltage dips in $\%U_T$	>95%	0.5	10	3	0°/180°	A
	30%	25	10	3	0°/180°	A^1

Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.04VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

" B " means the observed output voltage dropped from 11.90VDC to 0.00VDC during the test, the voltage recovered up to 11.90VDC immediately after test.

2. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-150 Test Date : Apr. 29, 2022

Climatic Condition	Ambient Temperature: 26 ℃ Relative Humidity: 55 %RH
	Atmospheric Pressure: 1012 mbar
Power Supply System	AC Power : 230 Vac 50 Hz
Test Set-up	Table-top Equipment

Test mode	Voltage dips	Durations (periods)	Interval(s)	Times	Phase	Result
Voltage interruptions	>95%	250	10	3	0°/180°	B
Voltage dips in $\%U_T$	>95%	0.5	10	3	0°/180°	A
	30%	25	10	3	0°/180°	A^1

Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.03VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

" B " means the observed output voltage dropped from 14.66VDC to 0.00VDC during the test, the voltage recovered up to 14.66VDC immediately after test.

3. Operating Conditions of The EUT : Operating, Output at Full Load

Model: PSAA30R-240 Test Date : Apr. 29, 2022

Climatic Condition	Ambient Temperature: 26 ℃	Relative Humidity: 55 %RH
	Atmospheric Pressure: 1012 mbar	
Power Supply System	AC Power : 230 Vac 50 Hz	
Test Set-up	Table-top Equipment	

Test mode	Voltage dips	Durations (periods)	Interval(s)	Times	Phase	Result
Voltage interruptions	>95%	250	10	3	0°/180°	B
Voltage dips in %U_T	>95%	0.5	10	3	0°/180°	A
	30%	25	10	3	0°/180°	A^1

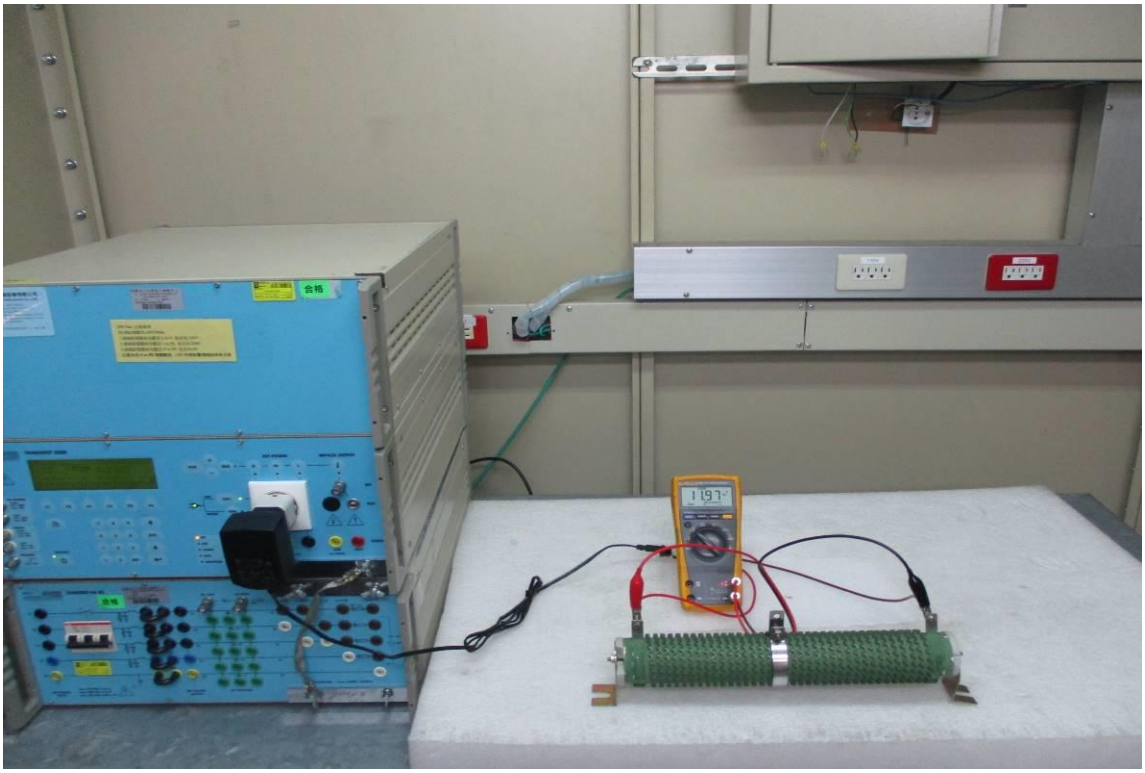
Note : " A " means the EUT's function was correct normal performance during the test.

" A^1 " means the observed output voltage was dropped 0.04VDC during the test and was recovered immediately after test. The observed output voltage ripple was risen during the test and was recovered immediately after test. According to the specifications declared by the manufacturer this is allowed.

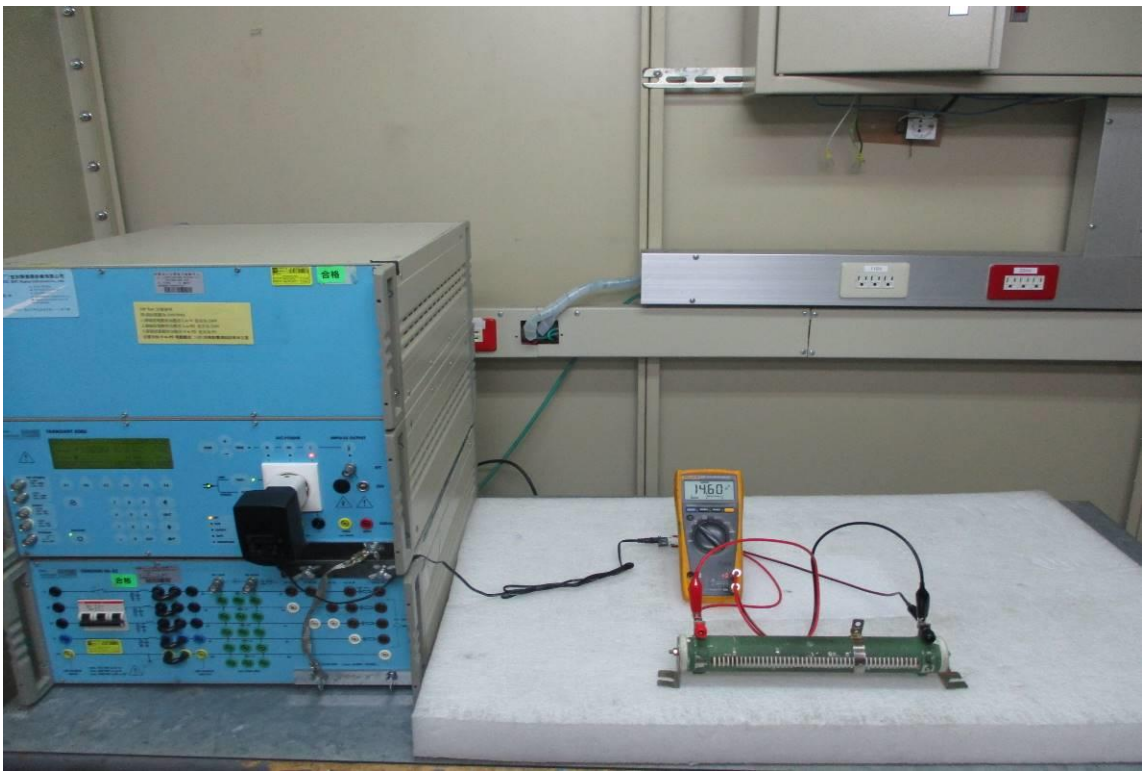
" B " means the observed output voltage dropped from 23.79VDC to 0.00VDC during the test, the voltage recovered up to 23.79VDC immediately after test.

4.2.7.3 Voltage Interruptions and Voltage Dips Immunity Test Setup Photos

Model: PSAA30R-120



Model: PSAA30R-150



Model: PSAA30R-240

5 ANNEX A: CONSTRUCTED PHOTOS of EUT

(A) Model: PSAA30R-120

1. Outside view of EUT

2. Outside view of EUT

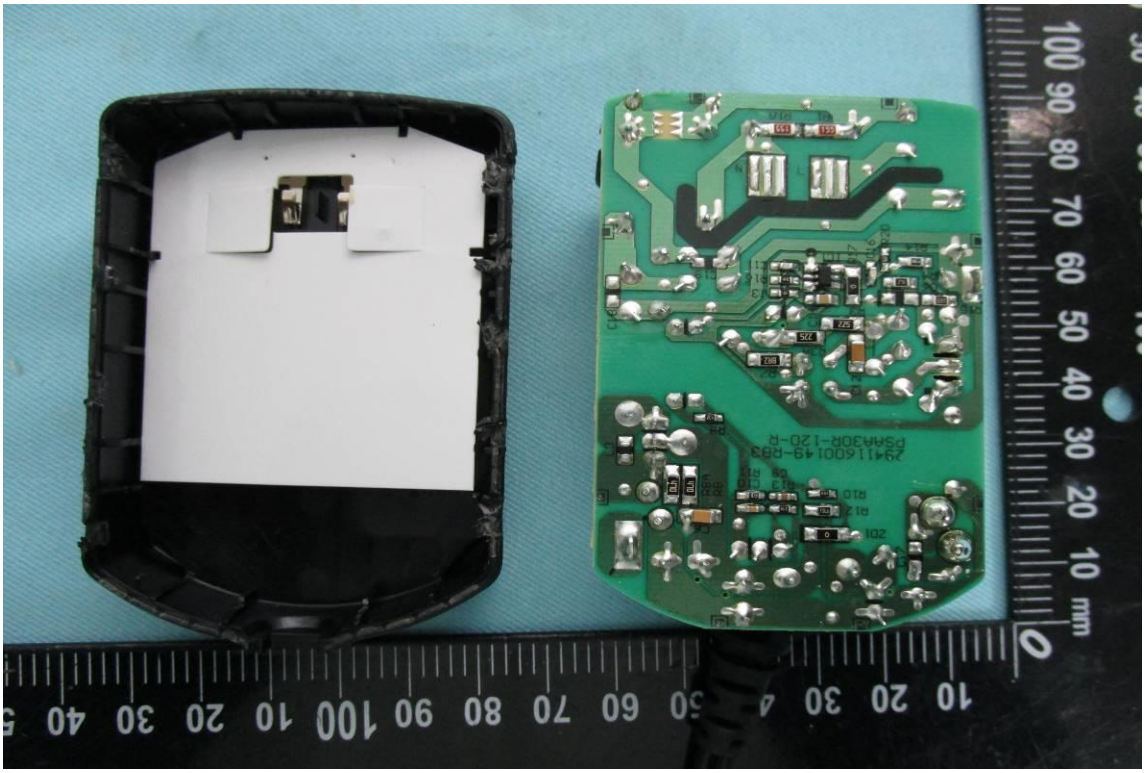
3. Outside view of EUT

4. Outside view of EUT

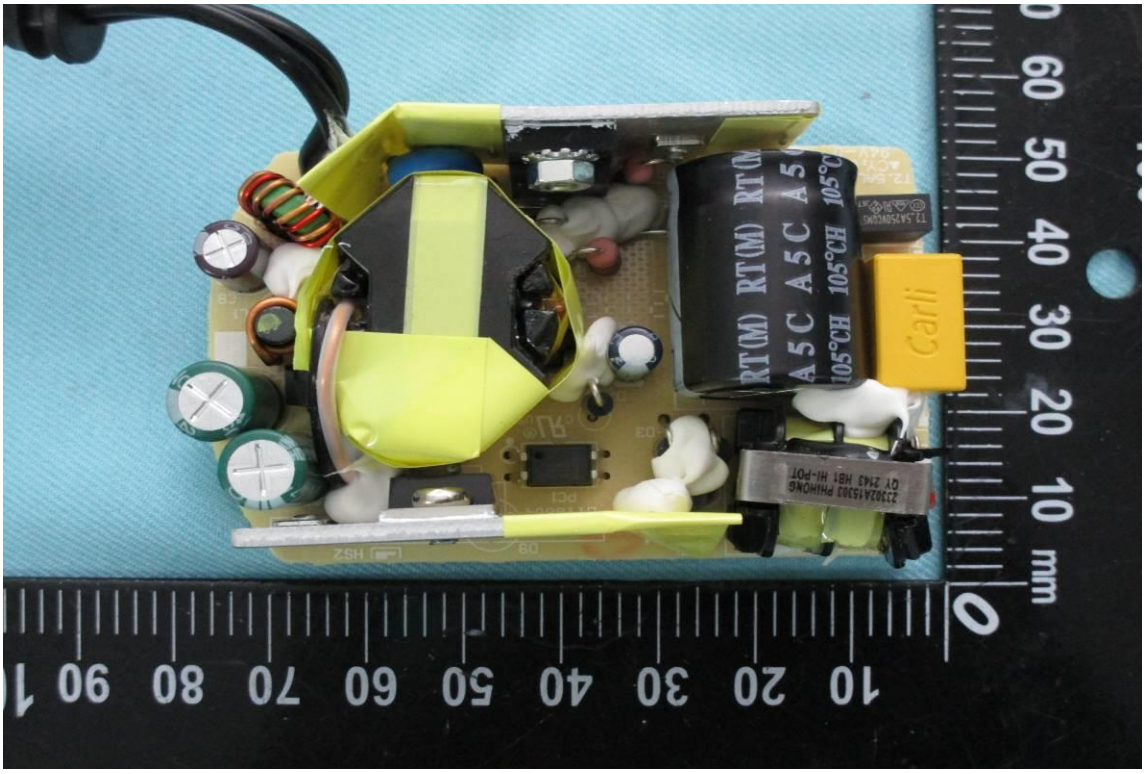
5. Outside view of EUT

6. Internal view of EUT

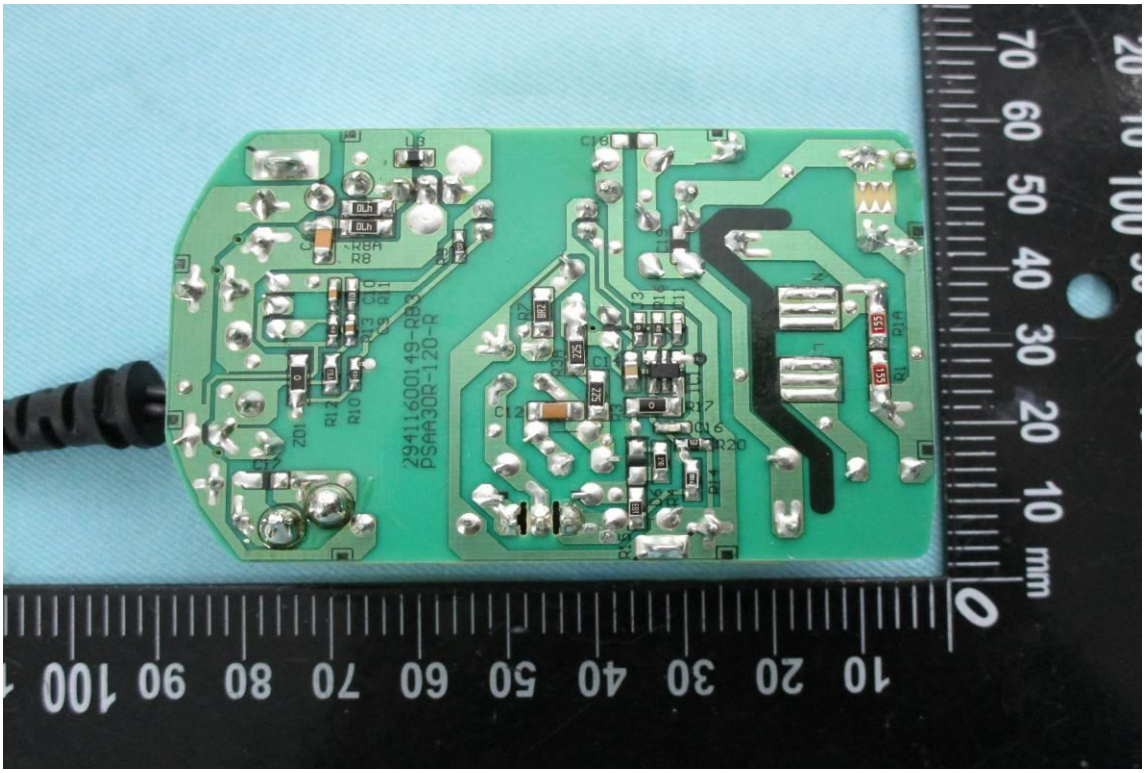
7. Internal view of EUT



8. Front view of PCB



9. Rear view of PCB



(B) Model: PSAA30R-150

1. **Outside view of EUT**

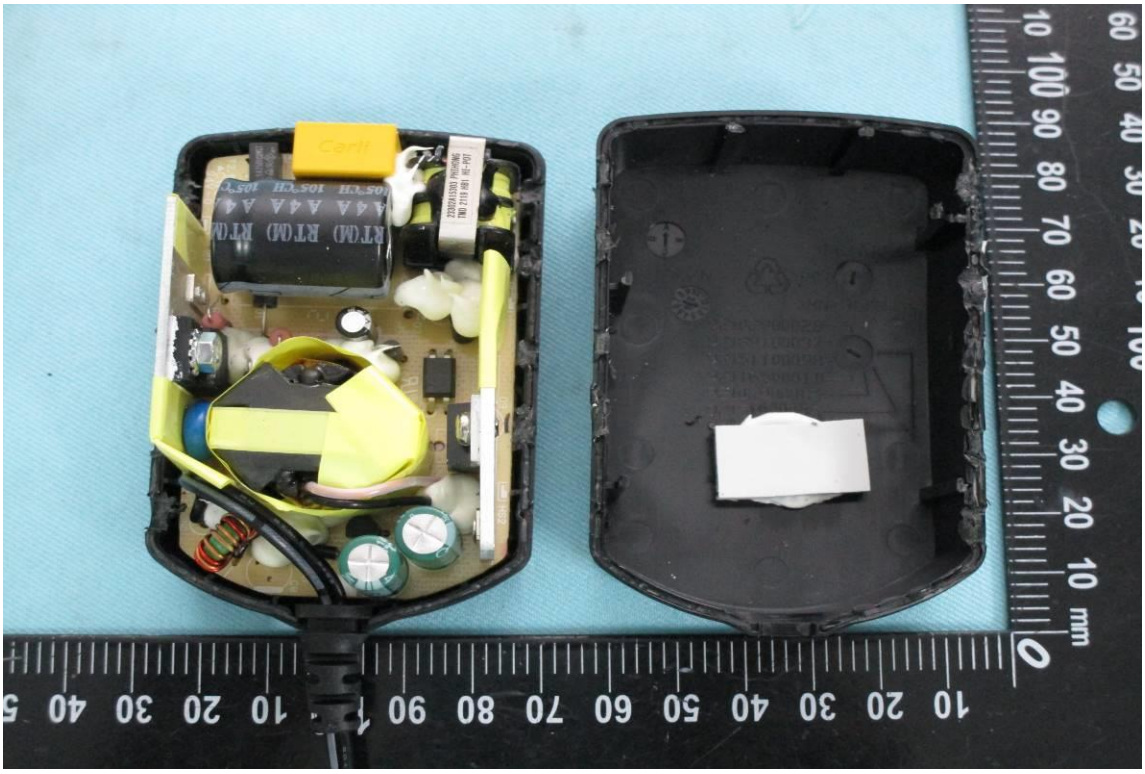
2. **Outside view of EUT**

3. Outside view of EUT

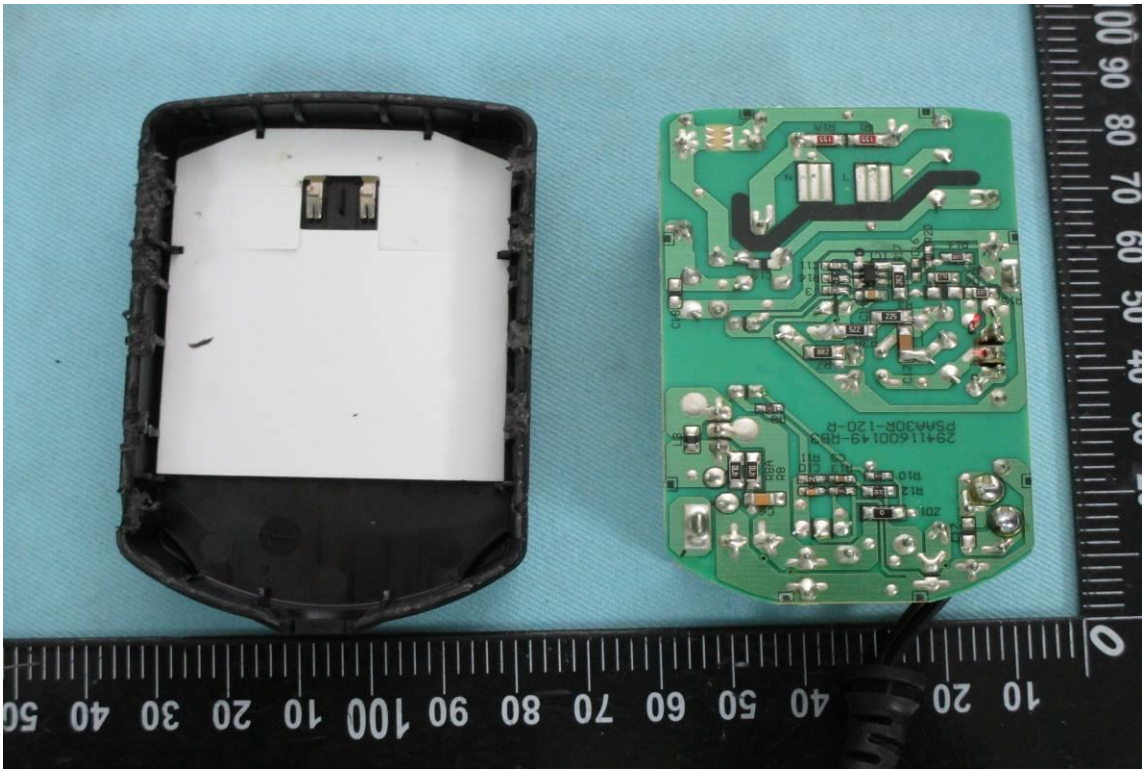
4. Outside view of EUT

5. Outside view of EUT

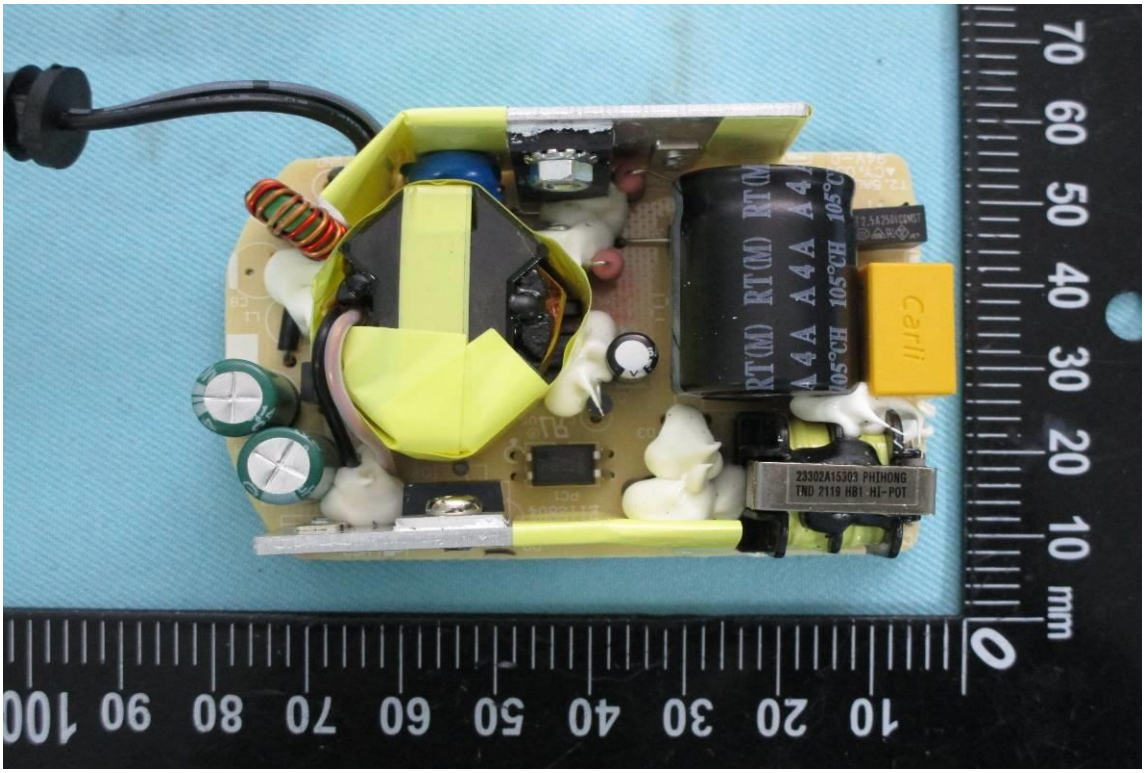
6. Internal view of EUT



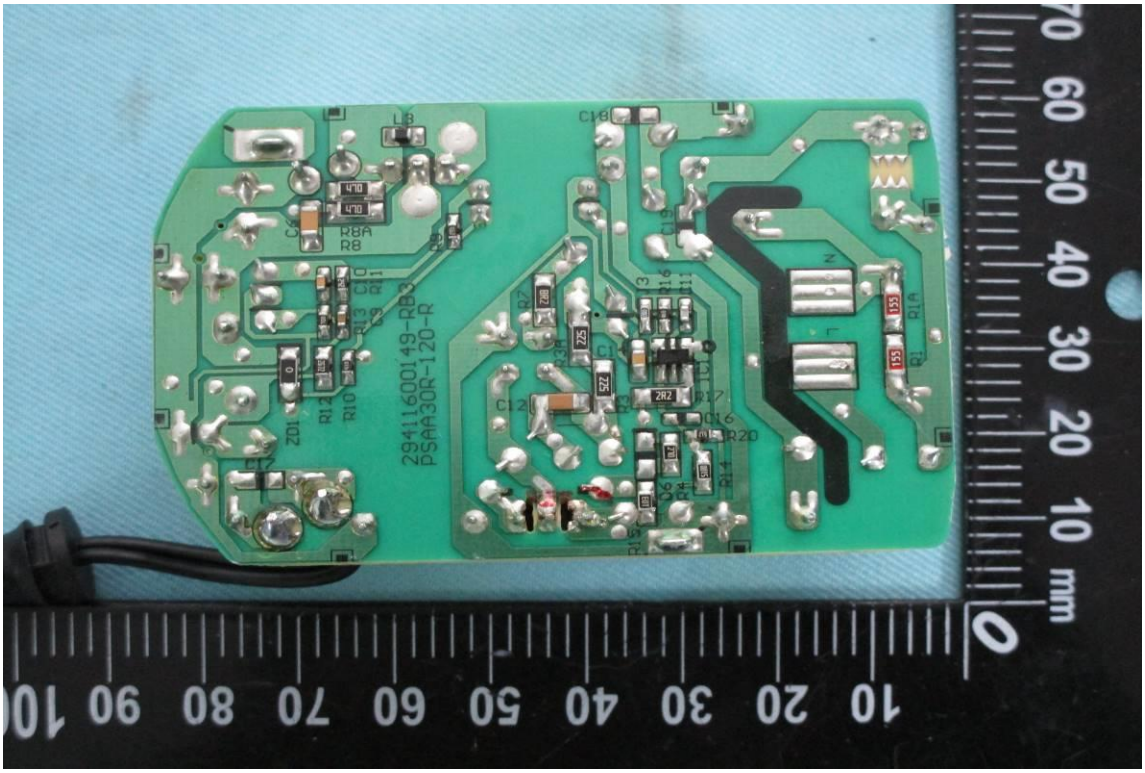
7. Internal view of EUT



8. Front view of PCB



9. Rear view of PCB



(C) Model: PSAA30R-240

1. **Outside view of EUT**

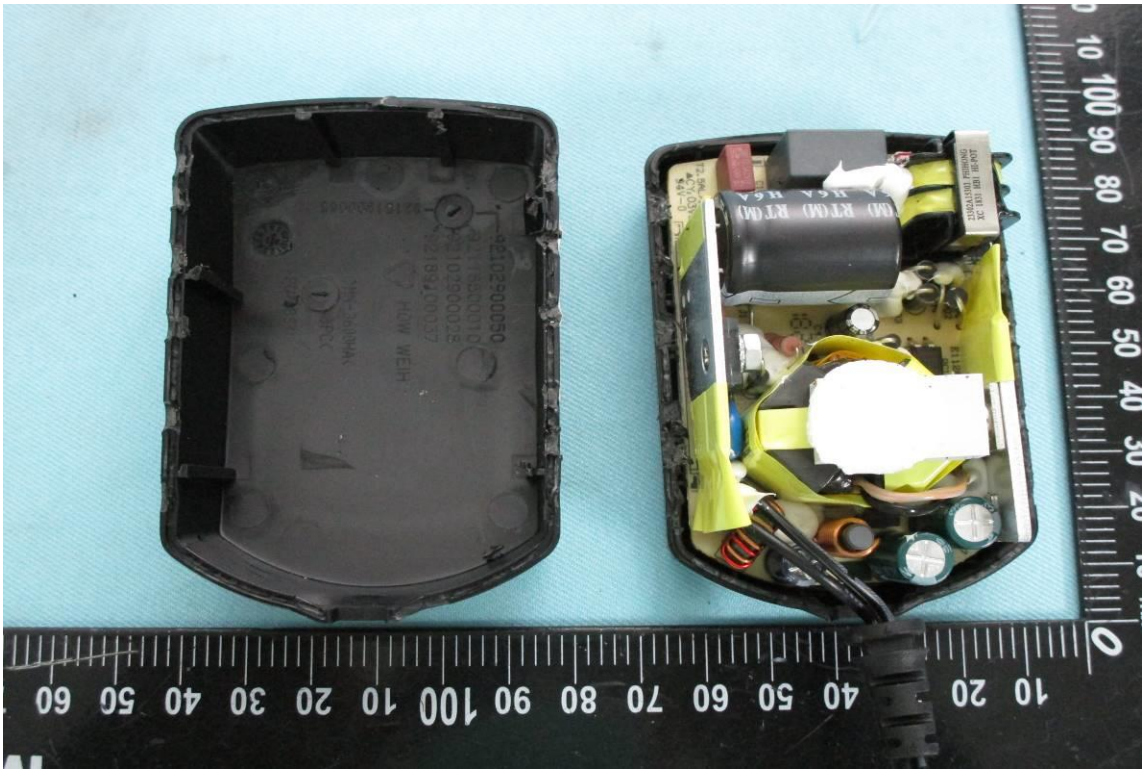
2. **Outside view of EUT**

3. Outside view of EUT

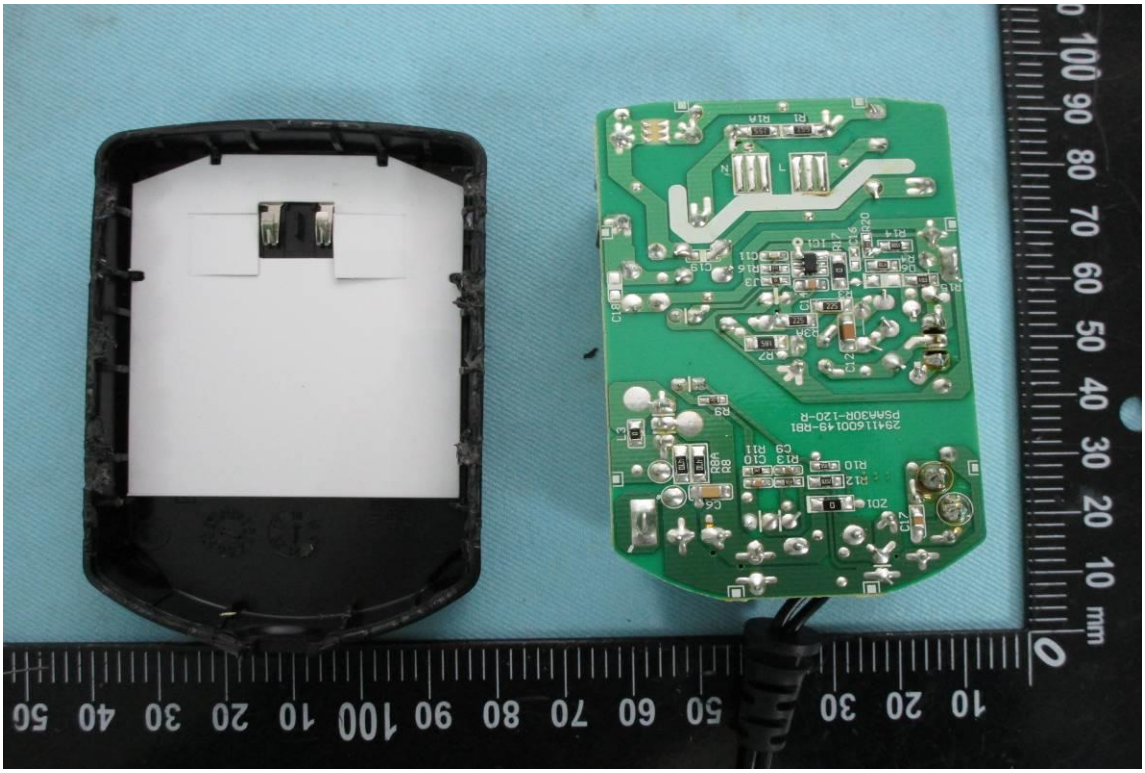
4. Outside view of EUT

5. Outside view of EUT

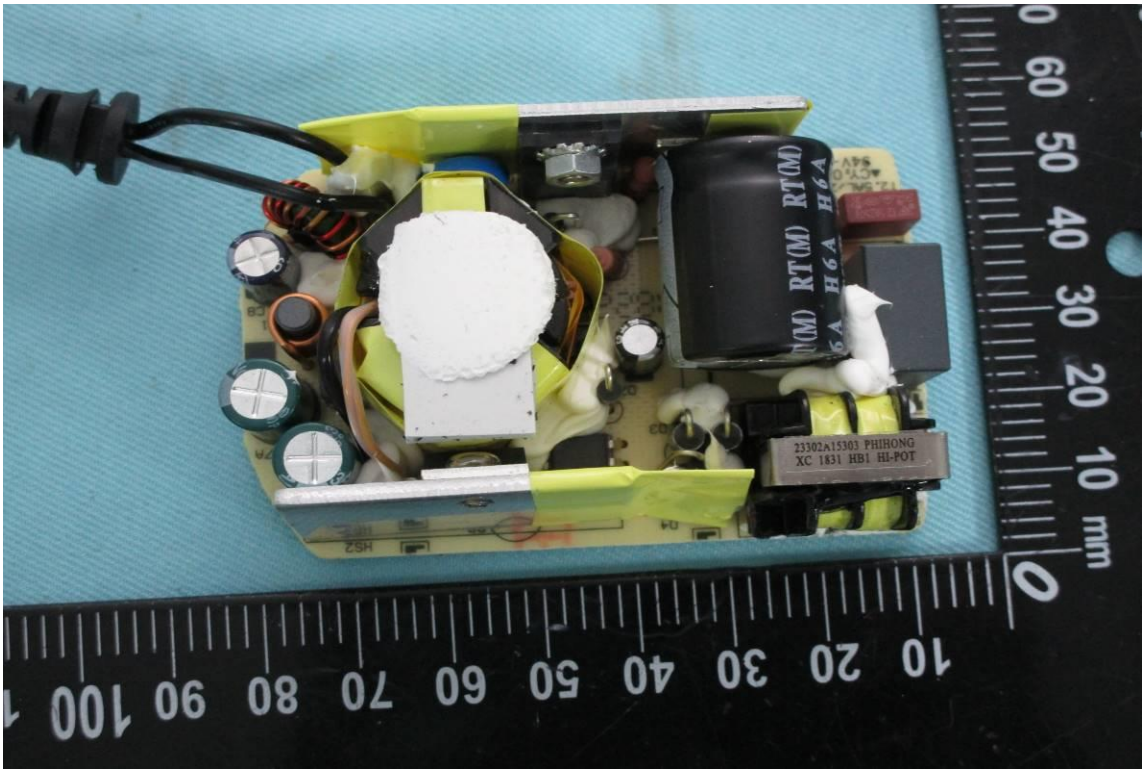
6. Internal view of EUT



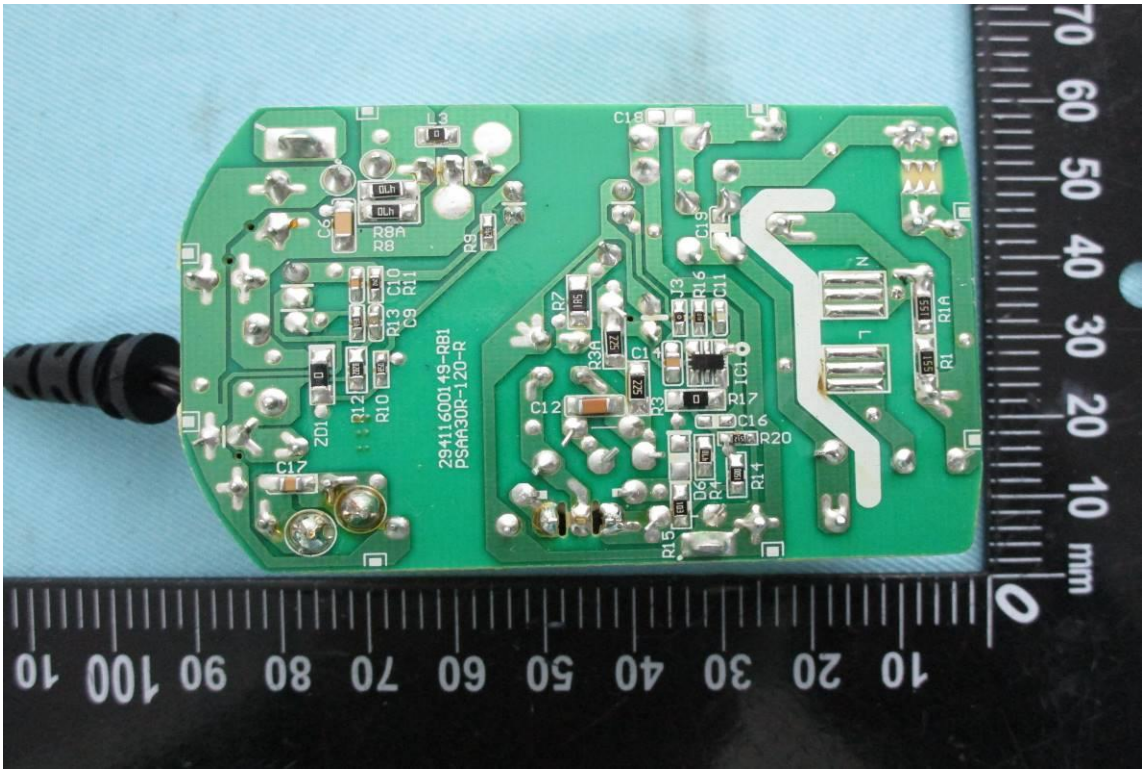
7. Internal view of EUT



8. Front view of PCB



9. Rear view of PCB



6 ANNEX B: DIFFERENCE INFORMATIONS OF SERIES MODEL

1. Test Model: PSAA30R-120, PSAA30R-150, PSAA30R-240
2. The Model without test (Series Model): PSAA30R-120ST

The Difference Information:

Model No. / Difference Item	Main Model:	Series Model:	Series Model:	Series Model:
	PSAA30R-120	PSAA30R-120ST	PSAA30R-150	PSAA30R-240
PCB Layout and The Circuit Diagram	O	O	O	O
Components	O	O	O	O
Material	O	O	O	O
Function	O	O	O	O
Shape & Color	O	O	O	O
Transformer(T1)	2680030007, A976	2680030007, A976	2680030008, A977	2680030009, A978
Output Voltage	12Vdc, 2.5A	12Vdc, 2.0A	15Vdc, 2A	24Vdc, 1.25A
Notes: (1) " O " means the item is same with Main model. (2) " X "means the item is different with main model. And please explain it.				

Remark: 1. The multiple listing recognized without test basis is according to information supplied by manufacturer.

2. The manufacturer or supplier's quality system shall ensure that the tested model or apparatus is representative of the series-produced apparatus concerned.

Manufacturer / Supplier

Company Name : PHIHONG TECHNOLOGY CO., LTD.

Signature : Dana Lin

Name/Title : Specialist Date : 2022/5/5