



TEST REPORT

AS/NZS 4665.1

Performance of External Power Supplies

Part 1: Test Method And Energy Performance Mark

Report Reference No.: AOC250707018ER

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Lab Supervisor

Date of issue.....: 2025-07-31

Testing Laboratory.....: Shenzhen AOCE Electronic Technology Service Co., Ltd

Address.....: Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China

Testing location/address.....: Same as above

Applicant's name.....: ZOOMAX TECHNOLOGY CO., LIMITED

Address.....: 9F, Building D, Paradise Software Park, No.3 Xidoumen Road, Xihu District, Hangzhou, China 310012

Manufacturer name.....: Shenzhen Simsukian Electronics Technology Co., Ltd.

Address.....: The 5th plant, Jiayi Industrial Park, Daping Community, Guanlan Street, Longhua District, Shenzhen P.R.China

Factory name.....: Shenzhen Simsukian Electronics Technology Co., Ltd.

Address.....: The 5th plant, Jiayi Industrial Park, Daping Community, Guanlan Street, Longhua District, Shenzhen P.R.China

Test Object.....: AC-DC ADAPTER

Trade Mark.....: SIMSUKIAN

Model / Type reference.....: SK22G5-0500300S

Ratings.....: Input: 100-240V~, 50/60Hz, 0.5A Max
Output: 5.0V===3.0A 15.0W

Test specification:

Standard: AS/NZS 4665.1:2005 + Amdt 1: 2009;
AS/NZS 4665.2:2005 + Amdt 1: 2009

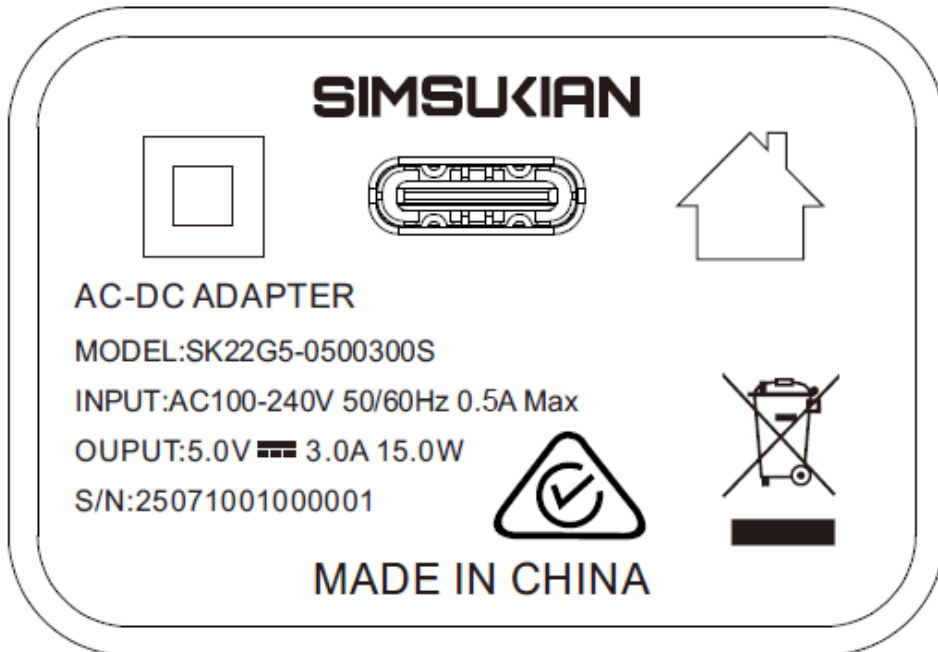
Test procedure.....: Test report

Non-standard test method.....: N/A

Test Report Form No.....: IECEE TRF No. AS/NZS 4665.1 & AS/NZS 4665.2

Test Report Form(s) Originator: AOCE

Master TRF.....: 2019-11-30

Summary of Testing:	
Tests performed (name of test and test clause):	Testing location:
The sample(s) tested complies with the requirements of AS/NZS 4665.1:2005 + Amdt 1: 2009; AS/NZS 4665.2:2005 + Amdt 1: 2009 When determining the test conclusion. The Measurement Uncertainty of test has be enconsidered.	Shenzhen AOCE Electronic Technology Service Co., Ltd Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Summary of Compliance with National Differences:	
N/A	
Copy of Marking Plate:	
	

Test item particulars:	
Product powered by the EUT if known.....:	N/A
AC input plug type.....:	AS/NZS 3112, Non-rewireable plug
EUT output cord length.....:	N/A
EUT output Connector type.....:	Type-C
Possible Test Case Verdicts:	
Test case does not apply to the test object.....:	N/A (Not Applicable)
Test object does meet the requirement.....:	P (Pass)
Test object does not meet the requirement.....:	F (Fail)
Testing:	
Ambient temperature of tested	25.0 °C
Test inputs.....:	115V~ 60Hz and 230V~ 50Hz
Sample size for tested	1
Date of receipt of test item.....:	2025-07-07
Date (s) of performance of tests.....:	2025-07-07 to 2025-07-29
General Remarks:	
Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or use in part without prior written consent from Shenzhen AOCE Electronic Technology Service Co., Ltd	
Note:	
N/A	

AS/NZS 4665.1			
Clause	Requirement + Test	Result – Remark	Verdict
2	General Conditions for Measurement		P
2.1	General	See below.	P
	Measuring Equipment	Power measurement was made with a suitably calibrated power analyzer.	P
	Measurements of active power of 0.5 W or greater shall be made with an uncertainty of $\leq 2\%$.	$< 2\%$	P
	Measurements of active power of less than 0.5 W shall be made with an uncertainty of ≤ 0.01 W.		P
	The power measurement instrument shall have a resolution of 0.01W or better for active power.	$< 2\%$	P
2.4	Test Room		P
	The tests shall be carried out in a room that has an air speed close to the EUT of ≤ 0.5 m/s.	< 0.5 m/s.	P
	Ambient temperature shall be maintained at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$.	See test data table	P
	There shall be no intentional cooling of the EUT by use of separately powered fans, air conditioners, or heat sinks.	No such devices are used.	N/A
	Products intended for outdoor use may be tested at additional temperatures	For indoor used.	N/A
2.5	Test Voltage		P
	An ac reference source shall be used to provide input voltage to the EUT.		P
	Input to the EUT shall be the specified voltage $\pm 1\%$ and the specified frequency $\pm 1\%$	See test data table	P
	The EUT shall be tested at two voltage and frequency combinations:	See test data table	P
	115 V at 60 Hz	See test data table	P
	230 V at 50 Hz	See test data table	P
	If testing at both conditions is not possible, the EUT shall be tested at one of the above voltage and frequency combinations that is closest to its nameplate input voltage and frequency.		N/A
	If voltage and/or frequency ranges are not specified by the manufacturer (or the nameplate value is unclear), the EUT shall not be tested.		N/A
2.6	AC reference source		P
	The input voltage source shall be capable of delivering at least 10 times the nameplate input power of the EUT		P

AS/NZS 4665.1			
Clause	Requirement + Test	Result – Remark	Verdict
	THD of the supply voltage when supplying the EUT in the specified mode shall not exceed 2%, up to and including the 13th harmonic		P
	The peak value of the test voltage shall be within 1.34 and 1.49 times its rms value		P
3.	Measurement Approach		P
3.1	Preparing EUT for Test		P
	Any built-in switch in the EUT controlling power flow to the ac input shall be in the “on” position for this measurement,		N/A
	Existence of such a switch shall be noted in the final test report.		N/A
	Power supplies that are packaged for consumer use to power a product must be tested with the output cord supplied by the manufacturer.	Type-C port output	N/A
	There are two options for connecting metering equipment to the output of this type of power supply:		P
	1. cut the cord immediately adjacent to the output connector, or		N/A
	2. Attach leads and measure the efficiency from the output connector itself.		P
	If the power supply is attached directly to the product that it is powering, cut the cord immediately adjacent to the powered product and connect output measurement probes at that point.		N/A
	If the product has more than two output wires, the tests should be conducted on the two output wires that supply the output power.		N/A
	Other output wires (sometimes used for battery monitoring) should be left electrically disconnected.	Type-C port output	P
3.2	Load Condition		P
	The EUT shall be tested at the following load conditions:		P
	Load condition 1: 100% $\pm$ 2%		P
	Load condition 2: 75% $\pm$ 2%		P
	Load condition 3: 50% $\pm$ 2%		P
	Load condition 4: 25% $\pm$ 2%		P
	Load condition 5: 0%		P
3.3	Test Load		P

AS/NZS 4665.1			
Clause	Requirement + Test	Result – Remark	Verdict
	In order to load the power supply to produce all four active mode load conditions, a set of variable resistive or electronic loads shall be used.		P
	While these loads may have different characteristics than the electronic loads power supplies are intended to power, they provide standardized and readily repeatable references for testing and product comparison.		P
	For electronic loads, the desired output current should be adjusted in constant current (CC) mode rather than adjusting the required output power in constant power (CP) mode.		P
3.4	Testing Sequence		P
	The EUT shall be operated at 100% of nameplate current output for at least 30 minutes immediately prior to conducting efficiency measurements.		P
	After this warm-up period, the technician shall monitor ac input power for a period of 5 minutes to assess the stability of the EUT.		P
	If the power level does not drift by more than 5% from the maximum value observed, the EUT can be considered stable and the measurements can be recorded at the end of the 5 minute period.		P
	If ac input power is not stable over a 5 minute period, the technician shall follow the guidelines established by AS/NZS 4665.1:2005 for measuring average power or accumulated energy over time for both ac input and dc output.		N/A
	Efficiency measurements shall be conducted in sequence from Load Condition 1 to Load Condition 5 as indicated in Table 1		P
3.5	Efficiency Calculation		P
	Efficiency shall be calculated by dividing the EUT's measured active output power at a given load condition by the active ac input power measured at that load condition.		P
3.6	Power Consumption Calculation		P
	Power consumption of the EUT at each Load Condition 1 – 4 is the difference between the active output power (W) at that Load Condition and the ac active input power (W) at that Load Condition. The power consumption of Load Condition 5 (no load) is equal to the ac active input power (W) at that Load Condition.		P

Test Data Table

Model No			SK22G5-0500300S			
Temperature immediately surrounding the EUT (°C)			25.0°C			
Test voltage/ Frequency			230Vac / 50Hz			
Test Item	Measure at load condition					
	1	2	3	4	5	6
Percent of nameplate current	100%	75%	50%	25%	10%	0%
Output current (A)	3	2.25	1.5	0.75	0.3	--
Output voltage (V)	4.89	4.95	4.99	5.03	5.05	--
Output power (W)	14.67	11.13	7.48	3.77	1.51	--
a.c. input voltage (V)	230	230	230	230	230	230
a.c. input current (mA)	196.71	154.35	109.12	59.14	30.66	3.774
a.c. input power (W)	18.77	13.94	9.2	4.58	1.91	0.08
Total Harmonic Distortion (VTHD%)	0.821	0.829	0.832	0.834	0.841	--
Total Harmonic Distortion (ATHD%)	215.74	231.97	252.31	289.51	347.57	--
True power factor	0.415	0.394	0.368	0.339	0.273	0.101
Power consumed by EUT(W)	4.1	2.81	1.72	0.81	0.4	--
Active mode efficiency (%)	78.16%	79.84%	81.30%	82.31%	79.06%	--
Average active efficiency (%)	80.4%				--	
Standard (%)	76.41%				--	
Result	P				--	
Supplementary information: Type-C output port: 5Vdc 3A						
- Test load: Electronic load						
- Stability achieved: Yes						
- Above tables for output data may be extended if more than 2 outputs for multiple output external power supply.						
Average active mode efficiency: 80.4%, exceed level V limit value:						
☐ 0,497 × Po + 0,67; ☐ 0,480 × Po + 0,140; ☒ 0,075 × ln(Po) + 0,561; ☐ 0,0626 × ln(Po) + 0,622						
☐ ≥0.86; ☐ ≥0.87						
The no-load condition consumption shall not exceed 0.3W.						

Test Data Table

Model No		SK22G5-0500300S				
Temperature immediately surrounding the EUT (°C)		25.0°C				
Test voltage/ Frequency		115Vac / 60Hz				
Test Item	Measure at load condition					
	1	2	3	4	5	6
Percent of nameplate current	100%	75%	50%	25%	10%	0%
Output current (A)	3	2.25	1.5	0.75	0.3	--
Output voltage (V)	4.88	5	5.01	5.05	5.07	--
Output power (W)	14.64	11.25	7.51	3.78	1.52	--
a.c. input voltage (V)	115	115	115	115	115	115
a.c. input current (mA)	310.51	246.75	174.43	95.82	44.38	2.514
a.c. input power (W)	18.81	14.12	9.18	4.51	1.85	0.06
Total Harmonic Distortion (VTHD%)	0.818	0.719	0.575	0.392	0.314	--
Total Harmonic Distortion (ATHD%)	148.74	164.76	187.59	221.97	256.91	--
True power factor	0.526	0.497	0.457	0.408	0.361	0.197
Power consumed by EUT(W)	4.17	2.87	1.67	0.73	0.33	--
Active mode efficiency (%)	77.83%	79.67%	81.81%	83.81%	82.16%	--
Average active efficiency (%)	80.78%				--	
Standard (%)	76.41%				--	
Result	P				--	
Supplementary information: Type-C output port: 5Vdc 3A						
- Test load: Electronic load						
- Stability achieved: Yes						
- Above tables for output data may be extended if more than 2 outputs for multiple output external power supply.						
Average active mode efficiency: 80.78%, exceed level V limit value:						
☐ 0,497 × Po + 0,67; ☐ 0,480 × Po + 0,140; ☒ 0,075 × ln(Po) + 0,561; ☐ 0,0626 × ln(Po) + 0,622						
☐ ≥0.86; ☐ ≥0.87						
The no-load condition consumption shall not exceed 0.3W.						

(EU) 2019/2015			
Clause	Requirement + Test	Result – Remark	Verdict

TABLE A1

ENERGY PERFORMANCE REQUIREMENTS FOR EACH NUMERAL

Mark	No load power consumption requirements			Active mode efficiency requirements		
	Nameplate output power	No load power		Nameplate output power		Average active mode efficiency
	(P_{no}) W	W		(P_{no}) W	Output specification	
I	Used if it does not meet any of the following criteria					
II	0 to <10	≤ 0.75		0 to <1	All	$\geq 0.39 \times P_{no}$
	10 to ≤ 250	≤ 1.0		1 to <49	All	$\geq 0.107 \times L_n(P_{no}) + 0.39$
III	0 to <10	≤ 0.5		0 to 1	All	$\geq 0.490 \times P_{no}$
	10 to ≤ 250	≤ 0.75		>1 to 49	All	$\geq 0.090 \times L_n(P_{no}) + 0.490$ to a maximum of 0.840
				>49 to 250	All	≥ 0.840
IV	0 to <10	≤ 0.5		0 to 1	All	$\geq 0.500 \times P_{no}$
	10 to ≤ 250	≤ 0.5		>1 to 51	All	$\geq 0.090 \times L_n(P_{no}) + 0.500$ to a maximum of 0.850
				>51 to 250	All	≥ 0.850
V		AC-AC	AC-DC			
	0 to <50	≤ 0.5	≤ 0.3	0 to 1	Output voltage <6 V and output current ≥ 0.550 A	$\geq 0.497 \times P_{no} + 0.067$
					Other models	$\geq 0.480 \times P_{no} + 0.140$
				>1 to 49	Output voltage <6 V and output current ≥ 0.550 A	$\geq 0.0750 \times L_n(P_{no}) + 0.561$
					Other models	$\geq 0.0626 \times L_n(P_{no}) + 0.622$
	50 to ≤ 250	≤ 0.5	≤ 0.5	>49 to 250	Output voltage <6 V and output current ≥ 0.550 A	≥ 0.860
					Other models	≥ 0.870
VI – X	Reserved for future use					

LEGEND:

 P_{no} = nameplate output power of the EUT L_n = the natural logarithm (base e)

International Efficiency Marking Protocol Performance Requirements for Power Supplies

Single-Voltage	
Nameplate Output	Minimum Efficiency in Active Mode
≤ 1 Watt	Standard: $\geq 0.50 * P_{no} + 0.16$
	Low Voltage ¹ : $\geq 0.517 * P_{no} + 0.087$
> 1 and ≤ 49 Watts	Standard: $\geq 0.071 * \ln(P_{no}) - 0.0014 * P_{no} + 0.67$
	Low Voltage: $\geq 0.0834 * \ln(P_{no}) - 0.0014 * P_{no} + 0.609$
> 49 and ≤ 250 Watts	Standard: ≥ 0.880
	Low Voltage: ≥ 0.870
> 250 Watts	Standard: ≥ 0.875
	Low Voltage: ≥ 0.875

Nameplate Output	Maximum Energy Consumption in No-Load Mode
< 50 Watt	≤ 0.210 Watts for AC-AC, ≤ 0.1 Watts for AC-DC.
≥ 50 to ≤ 250 watts	≤ 0.21 Watts
> 250 Watts	≤ 0.5 Watts

Multiple-Voltage	
Nameplate Output	Minimum Efficiency in Active Mode
≤ 1 Watt	$\geq 0.497 * P_{no} + 0.067$
> 1 and ≤ 49 Watts	$\geq 0.075 * \ln(P_{no}) + 0.561$
> 49 Watts	≥ 0.86

Nameplate Output	Maximum Energy Consumption in No-Load Mode
Any	≤ 0.3 Watts

Where $\ln$ (Nameplate Output) = Natural Logarithm of the nameplate output expressed in Watts.

Note: International Efficiency Marking Protocol for External Power Supplies Marking "VI".

1: A low voltage model is an EPS with a nameplate output voltage of less than 6 volts and a nameplate output current greater than or equal to 550 milliamps.

Test Equipment List

Equipment Name	Manufacturer	Model No.	Reference No.	Calibration Due Date
Frequency Converter	OYHS	OYHS-98850-50KVA	AOC-S-001	2026-04-13
Voltage Stabilizer	OYHS	OYHS-8200	AOC-S-002	2026-04-13
Voltage Regulator	DELIXI	TDGC2-10K	AOC-S-003	2026-04-13
Digital Power Meter	YOKOGAWA	WT310E	AOC-S-012	2026-04-13
Digital temperature hygrometer	Shenzhen Ritors Instrumentation	RTS-8	AOC-S-068	2026-04-13
Digital multimeter	FLUKE	F15B	AOC-S-039	2026-04-13
DC electronic Load	ITECH ELECTRONIC	IT8512	AOC-S-060	2026-04-13

Product Photo

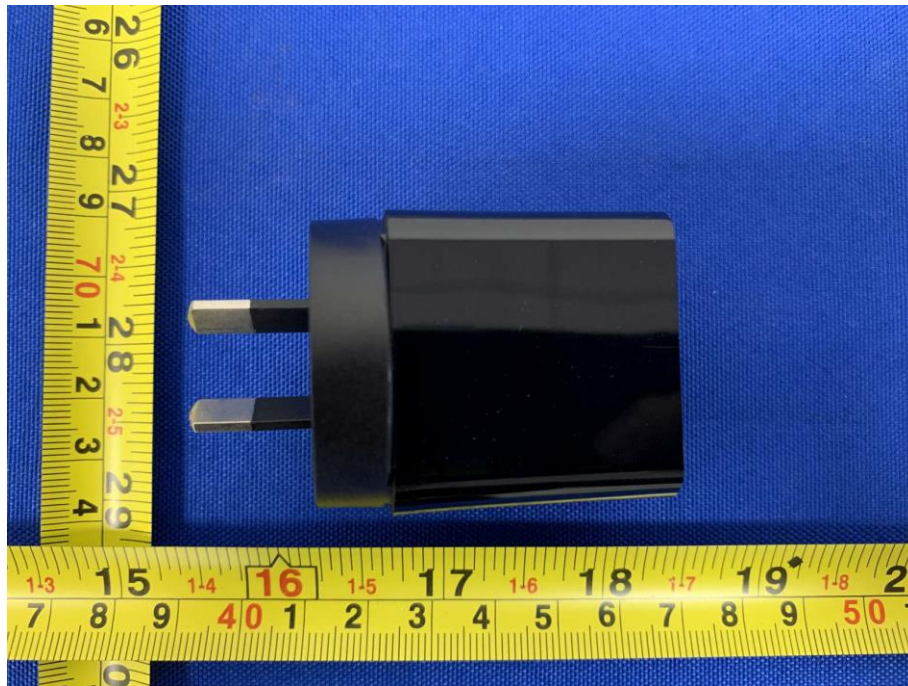


Fig. 1

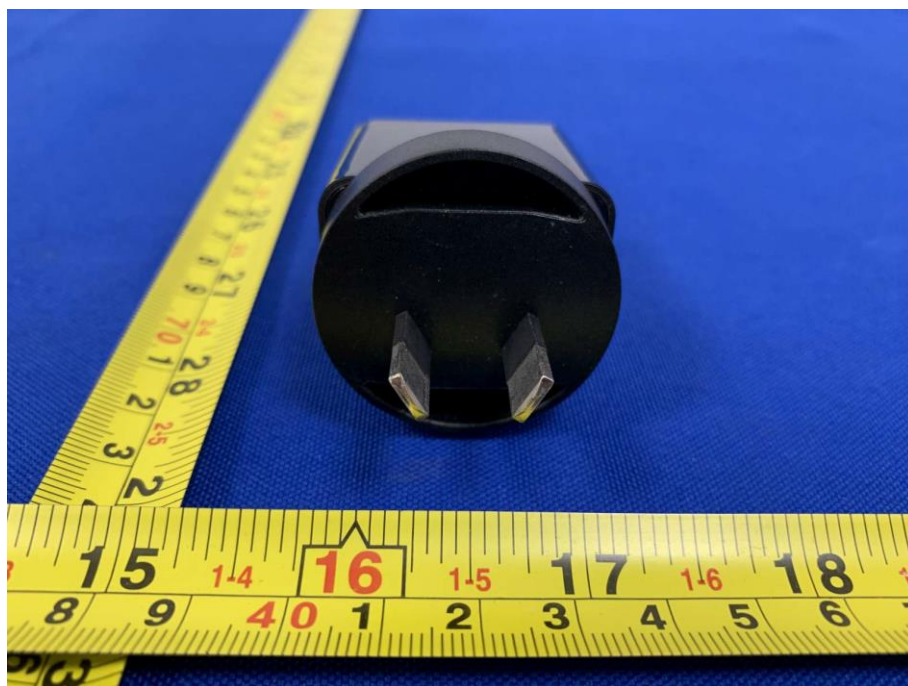


Fig. 2



Fig. 3



Fig. 4



Fig. 5

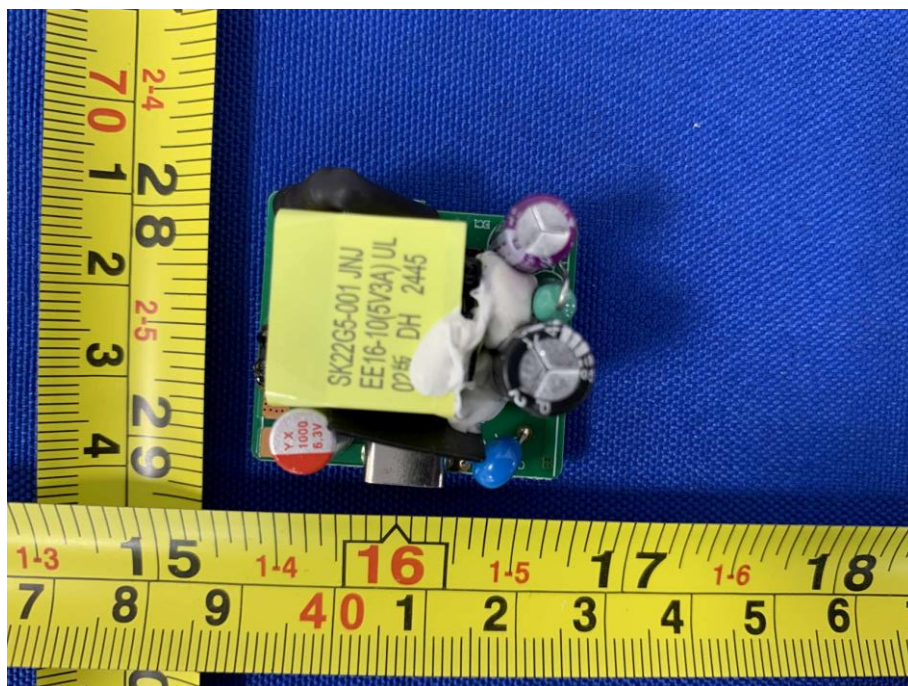


Fig. 6

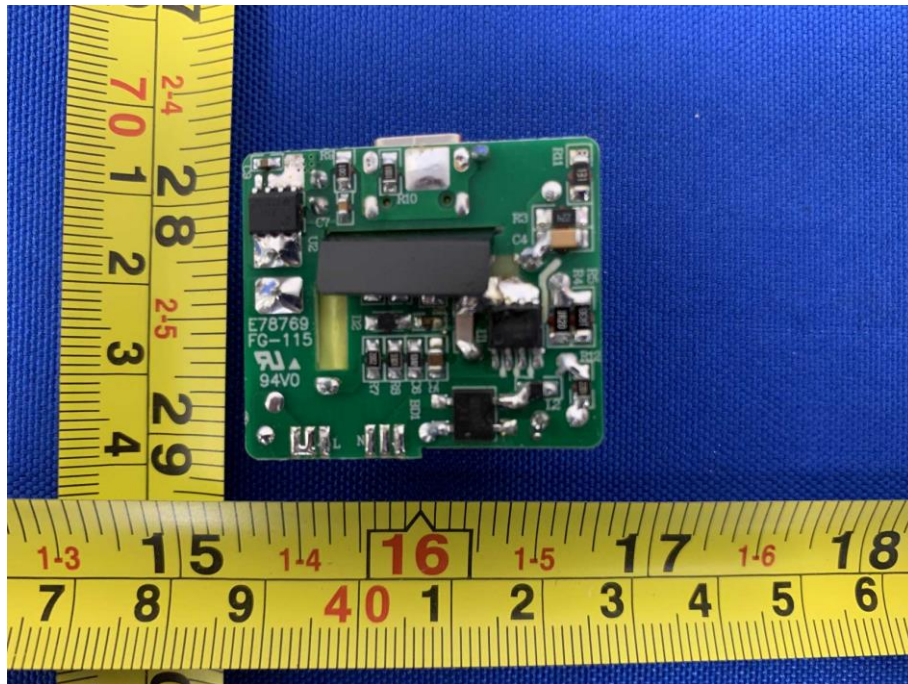


Fig. 7

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