TEST REPORT

For

Class 2 Power Supply

Model: WEC-26WUAP-16800140AA

Prepared for:	Shenzhen WOTY energy Co.,Ltd Floor 4, Building C, Zhengchangda Digital Electronics Factory, Jian 'an Road, Tangwei Community, Fuhai Street, Bao 'an District, Shenzhen, China
Prepared by:	ShenZhen PromiseTest Technology Co., Ltd. 103, Building 1, Yibaolai Industrial City, Qiaotou Community, Fuhai Street, Baoan District, Shenzhen, Guangdong, China TEL: +86-755 23319501
Report Number:	PRMS2111029DR
Date of Test:	Nov. 17, 2021 to Nov.19, 2021
Date of Issue:	Nov.19, 2021

TEST REPORT
10 CFR Part 430

Report reference No.....:	PRMS2111029DR
Date of issue .....:	Nov.19, 2021
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Tested by (signature).....:	Glenn Wang Glenn wang
Approved by (signature).....:	Joky Wang jokywang
Testing Laboratory Name.....:	ShenZhen PromiseTest Technology Co., Ltd.
Address.....:	103, Building 1, Yibaolai Industrial City, Qiaotou Community, Fuhai Street, Baoan District, Shenzhen, Guangdong, China
Testing location.....:	As above
Applicant's Name.....:	Shenzhen WOTY energy Co.,Ltd
Address .....:	Floor 4, Building C, Zhengchangda Digital Electronics Factory, Jian 'an Road, Tangwei Community, Fuhai Street, Bao 'an District, Shenzhen, China
Test specification	
Standard.....:	10 CFR Appendix Z to Subpart B of Part 430
Test method .....:	Uniform Test Method For Measuring The Energy Consumption Of External Power Supplies 10 CFR Appendix Z to Subpart B of Part 430
Non-standard test method.....:	N/A
Test item description.....:	Class 2 Power Supply
Trademark.....:	沃泰能源 WOTY ENERGY
Manufacturer.....:	Shenzhen WOTY energy Co.,Ltd
Address.....:	Floor 4, Building C, Zhengchangda Digital Electronics Factory, Jian 'an Road, Tangwei Community, Fuhai Street, Bao 'an District, Shenzhen, China
Model and/or type reference.....:	WEC-26WUAP-16800140AA, WEC-26WZAP-16800140AA, WEC-26WCAD-16800140AA, XVE024-1680140 (All models are different only in appearance and model, and the internal structure is the same.)
Rating(s).....:	Input: 100-240V~, 50/60Hz, 0.7A Output: 16.8V⎓ 1.4A 23.52W
Integral Input power Switch .....:	/
Output Cord Length (cm) .....:	90cm
Ambient Temp.(℃) .....:	25.0

Possible test case verdicts:

- test case does not apply to the test object..... : N (N/A)
- test object does meet the requirement..... : P (Pass)
- test object does not meet the requirement..... : F (Fail)

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

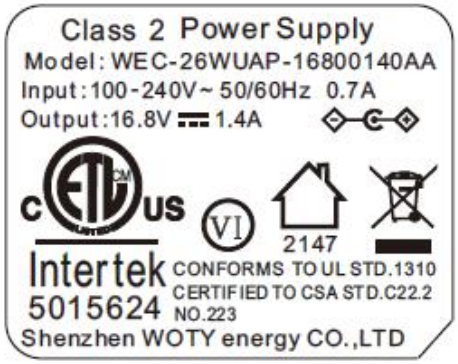
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

General product information:

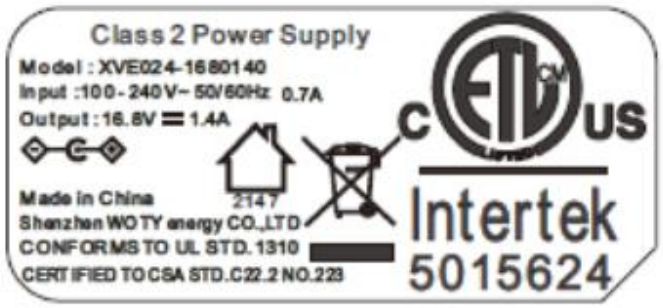
Existing Roman Numeral Marking, if marked (i.e. III, IV, V, VI)	VI		
External Power Supply Product Class ID	☒ B	Direct Operation, AC-DC, Basic-Voltage	
	☐ C	Direct Operation, AC-DC, Low-Voltage (except those with nameplate output voltage less than 3 volts and nameplate output current greater than or equal to 1,000 milliamps that charge the battery of a product that is fully or primarily motor operated)	
	☐ C-1	Direct Operation, AC–DC, Low-Voltage with nameplate output voltage less than 3 volts and nameplate output current greater than or equal to 1,000 milliamps and charges the battery of a product that is fully or primarily motor operated.	
	☐ D	Direct Operation, AC-AC, Basic-Voltage	
	☐ E	Direct Operation, AC-AC, Low-Voltage	
	☐ H	Direct Operation, High-Power	
	☐ N	Indirect Operation	
Output cord cross-sectional areas..	Min.20AWG		
Each sample was tested at:	☒ 115V, 60Hz	☒ 230V, 50Hz	☐ Both

Copy of marking plate:


Class 2 Power Supply
Model: WEC-26WUAP-16800140AA
Input: 100-240V~ 50/60Hz 0.7A
Output: 16.8V 1.4A
c US
2147
Intertek
5015624
CONFORMS TO UL STD.1310
CERTIFIED TO CSA STD.C22.2 NO.223
Shenzhen WOTY energy CO.,LTD


ATTENTION
RISQUE DE CHOC ÉLECTRIQUE VOIR LE MANUEL AVANT UTILISATION
POUR UTILISATION AL'INTERIEUR SEULEMENT.


CAUTION
DRY LOCATION USE ONLY. RISK OF ELECTRIC SHOCK.
SEE INSTRUCTION MANUAL FOR USE IN COUNTRIES OTHER THAN THE U.S.A.


Class 2 Power Supply
Model: XVE024-1680140
Input: 100-240V~ 50/60Hz 0.7A
Output: 16.8V 1.4A
Made in China
Shenzhen WOTY energy CO.,LTD
CONFORMS TO UL STD. 1310
CERTIFIED TO CSA STD.C22.2 NO.223
2147
c US
Intertek
5015624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GMA-510923-EA

10 CFR Part 430			
Clause	Requirement – Test	Result – Remark	Verdict
§430.3 Materials incorporated by reference.			
	(p) U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. Resource Room of the Building Technologies Program, 950 L'Enfant Plaza SW., 6th Floor, Washington, DC 20024, 202–586–2945, (Energy Star materials are also found at http://www.energystar.gov.		P
	(3) International Efficiency Marking Protocol for External Power Supplies, Version 3.0, September 2013, IBR approved for §430.32.		P
§430.32Energy and water conservation standards and their compliance dates.			
(w)	External power supplies.		P
(1)(i)	Except as provided in paragraphs (w)(2) and (5) of this section, all Class A external power supplies manufactured on or after July 1, 2008, shall meet the following standards:		
	Active Mode Nameplate Output: Required efficiency (decimal equivalent of a percentage) Less than 1 watt……..…: 0.5 times the Nameplate output. From 1 watt to not more than 51 watts……..….: The sum of 0.09 times the Natural Logarithm of the Nameplate Output and 0.5. Greater than 51 watts.....: 0.85. No-Load Mode Nameplate Output: Maximum consumption Not more than 250 watts...: 0.5 watts.		N
(ii)	Except as provided in paragraphs (w)(5), (w)(6), and (w)(7) of this section, all direct operation external power supplies manufactured on or after February 10, 2016, shall meet the following standards:		P
(2)	A Class A external power supply shall not be subject to the standards in paragraph (w)(1)(i) of this section if the Class A external power supply is—		N
(i)	Manufactured during the period beginning on July 1, 2008, and ending on June 30, 2015, and		N
(ii)	Made available by the manufacturer as a service part or a spare part for an end-use product—		N
(A)	That constitutes the primary load; and		N
(B)	Was manufactured before July 1, 2008.		N
(3)	The standards described in paragraph (w)(1) of this section shall not constitute an energy conservation standard for the separate end-use product to which the external power supply is connected.		P
(4)	Any external power supply subject to the standards in paragraph (w)(1) of this section shall be clearly and permanently marked in accordance with the International Efficiency Marking Protocol for External Power Supplies (incorporated by reference; see §430.3), published by the U.S. Department of Energy.	Roman numeral VI	P
(5)	Non-application of no-load mode requirements. The no-load mode energy efficiency standards established in paragraph (w)(1) of this		N

	section shall not apply to an external power supply manufactured before July 1, 2017, that—		
(i)	Is an AC-to-AC external power supply;		N
(ii)	Has a nameplate output of 20 watts or more;		N
(iii)	Is certified to the Secretary as being designed to be connected to a security or life safety alarm or surveillance system component; and		N
(iv)	On establishment within the External Power Supply International Efficiency Marking Protocol, as referenced in the ‘‘Energy Star Program Requirements for Single Voltage External Ac-Dc and Ac-Ac Power Supplies’’ (incorporated by reference, see §430.3), published by the Environmental Protection Agency, of a distinguishing mark for products described in this clause, is permanently marked with the distinguishing mark.		N
(6)	An external power supply shall not be subject to the standards in paragraph (w)(1) of this section if it is a device that requires Federal Food and Drug Administration (FDA) listing and approval as a medical device in accordance with section 513 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 360(c)).		N
(7)	A direct operation, AC–DC external power supply with nameplate output voltage less than 3 volts and nameplate output current greater than or equal to 1,000 milliamps that charges the battery of a product that is fully or primarily motor operated shall not be subject to the standards in paragraph (w)(1)(ii) of this section.		N

Table U-2
Standards for Direct Operation External Power Supplies

Power Supply Type	*Nameplate Output Power (P_{out})*	*Minimum Average Efficiency in Active Mode*[*]	*Maximum Power in No Load Mode [W]*
Single Voltage External AC-DC Power Supply, Basic Voltage	$P_{out} \leq 1$ W	$\geq 0.5 \times P_{out} + 0.16$	≤ 0.100
	1 W ≤ P_{out} ≤ 49 W	$\geq 0.071 \times \ln(P_{out}) - 0.0014 \times P_{out} + 0.67$	≤ 0.100
	49 W ≤ P_{out} ≤ 250 W	≥ 0.880	≤ 0.210
	$P_{out} > 250$ W	≥ 0.875	≤ 0.500
Single Voltage External AC-DC Power Supply, Low Voltage	$P_{out} \leq 1$ W	$\geq 0.517 \times P_{out} + 0.087$	≤ 0.100
	1 W ≤ P_{out} ≤ 49 W	$\geq 0.0834 \times \ln(P_{out}) - 0.0014 \times P_{out} + 0.609$	≤ 0.100
	49 W ≤ P_{out} ≤ 250 W	≥ 0.870	≤ 0.210
	$P_{out} > 250$ W	≥ 0.875	≤ 0.500
Single Voltage External AC-AC Power Supply, Basic Voltage	$P_{out} \leq 1$ W	$\geq 0.5 \times P_{out} + 0.16$	≤ 0.210
	1 W ≤ P_{out} ≤ 49 W	$\geq 0.071 \times \ln(P_{out}) - 0.0014 \times P_{out} + 0.67$	≤ 0.210
	49 W ≤ P_{out} ≤ 250 W	≥ 0.880	≤ 0.210
	$P_{out} > 250$ W	≥ 0.875	≤ 0.500
Single Voltage External AC-AC Power Supply, Low Voltage	$P_{out} \leq 1$ W	$\geq 0.517 \times P_{out} + 0.087$	≤ 0.210
	1 W ≤ P_{out} ≤ 49 W	$\geq 0.0834 \times \ln(P_{out}) - 0.0014 \times P_{out} + 0.609$	≤ 0.210
	49 W ≤ P_{out} ≤ 250 W	≥ 0.870	≤ 0.210
	$P_{out} > 250$ W	≥ 0.875	≤ 0.500
Multiple Voltage External Power Supply	$P_{out} \leq 1$ W	$\geq 0.497 \times P_{out} + 0.067$	≤ 0.300
	1 W ≤ P_{out} ≤ 49 W	$\geq 0.075 \times \ln(P_{out}) + 0.561$	≤ 0.300
	$P_{out} > 49$ W	≥ 0.860	≤ 0.300

[*] Expressed as a decimal.

Tested model:	WEC-26WUAP-16800140AA			Nameplate Output:		16.8V ⎓ 1.4A
Test specimen 1	**at 115V/60Hz**					
Percent of Nameplate Current	**0%**	**25%**	**50%**	**75%**	**100%**	**Remark**
RMS Input Voltage (V)	115	115	115	115	115	--
Input Frequency (Hz)	60	60	60	60	60	--
RMS Input Power (W)	0.05	6.67	13.31	20.14	27.06	Input Power (Pin)
Total Harmonic Distortion (THDv, %)	0.34	0.36	0.38	0.41	0.43	--
True Power Factor	/	0.479	0.508	0.524	0.541	--
Output Voltage (Vdc)	16.81	16.72	16.64	16.55	16.46	--
Output Current (A)	0	0.35	0.7	1.05	1.4	--
Active Output Power (W)	/	5.85	11.66	17.40	23.08	Output Power (Pout)
Input Wh interval [min]	5	5	5	5	5	--
Power Consumed by UUT (W)	0.05	0.82	1.65	2.74	3.98	<0.1Wat no load *)
Efficiency (%)	/	87.71	87.60	86.40	85.29	(Pout/Pin)*100%
Average Efficiency (%)		**86.75%**				>86.13%at active mode *)
Test specimen 1	**at 230V/50Hz**					
Percent of Nameplate Current	**0%**	**25%**	**50%**	**75%**	**100%**	**Remark**
RMS Input Voltage (V)	230	230	230	230	230	--
Input Frequency (Hz)	50	50	50	50	50	--
RMS Input Power (W)	0.07	6.78	13.29	19.95	26.69	Input Power (Pin)
Total Harmonic Distortion (THDv, %)	0.36	0.38	0.41	0.43	0.45	--
True Power Factor	/	0.376	0.419	0.443	0.461	--
Output Voltage (Vdc)	16.81	16.72	16.63	16.54	16.45	--
Output Current (A)	0	0.35	0.7	1.05	1.4	--
Active Output Power (W)	/	5.85	11.66	17.40	23.07	Output Power (Pout)
Input Wh interval [min]	5	5	5	5	5	--
Power Consumed by UUT (W)	0.07	0.93	1.63	2.55	3.62	<0.1Wat no load *)
Efficiency (%)	/	86.28	87.74	87.22	86.44	(Pout/Pin)*100%
Average Efficiency (%)		**86.92%**				>86.13% at active mode *)
Note: *)						

Tested model:	WEC-26WUAP-16800140AA			Nameplate Output:		16.8V ⎓ 1.4A
Test specimen 2	**at 115V/60Hz**					
Percent of Nameplate Current	**0%**	**25%**	**50%**	**75%**	**100%**	**Remark**
RMS Input Voltage (V)	115	115	115	115	115	--
Input Frequency (Hz)	60	60	60	60	60	--
RMS Input Power (W)	0.05	6.68	13.47	20.26	27.25	Input Power (Pin)
Total Harmonic Distortion (THDv, %)	0.29	0.32	0.35	0.39	0.43	--
True Power Factor	/	0.497	0.519	0.528	0.541	--
Output Voltage (Vdc)	16.98	16.87	16.76	16.67	16.59	--
Output Current (A)	0	0.35	0.7	1.05	1.4	--
Active Output Power (W)	/	5.91	11.74	17.53	23.27	Output Power (Pout)
Input Wh interval [min]	5	5	5	5	5	--
Power Consumed by UUT (W)	0.05	0.77	1.73	2.73	3.98	<0.1Wat no load *)
Efficiency (%)	/	88.47	87.16	86.53	85.39	(Pout/Pin)*100%
Average Efficiency (%)		**86.89%**				>86.13% at active mode *)
Test specimen 2	**at 230V/50Hz**					
Percent of Nameplate Current	**0%**	**25%**	**50%**	**75%**	**100%**	**Remark**
RMS Input Voltage (V)	230	230	230	230	230	--
Input Frequency (Hz)	50	50	50	50	50	--
RMS Input Power (W)	0.07	6.78	13.37	20.18	26.86	Input Power (Pin)
Total Harmonic Distortion (THDv, %)	0.32	0.36	0.39	0.42	0.45	--
True Power Factor	/	0.376	0.435	0.453	0.477	--
Output Voltage (Vdc)	16.99	16.89	16.79	17.00	16.59	--
Output Current (A)	0	0.35	0.7	1.05	1.4	--
Active Output Power (W)	/	5.91	11.77	17.55	23.26	Output Power (Pout)
Input Wh interval [min]	5	5	5	5	5	--
Power Consumed by UUT (W)	0.07	0.87	1.6	2.63	3.6	<0.1Wat no load *)
Efficiency (%)	/	87.17	88.03	86.97	86.60	(Pout/Pin)*100%
Average Efficiency (%)		**87.19%**				>86.13% at active mode *)
Note: *)						

Test Equipment List:

Equipment	Model	Manufacturer	Parameter	Uncertainty	Cal. Date	Valid Date
Digital Power Meter	WT210E	YOKOGAWA	0-600Vac, 0-20A, 0-10000W, 45-65Hz, PF:-1~+1	Vol: Urel=0.8%(k=2); Cur: Urel=0.9%(k=2); Pow: Urel=0.1%(k=2); Fre: Urel=0.2%(k=2); Ene: Urel=0.2%(k=2); V(Thd): Urel=0.1%(k=2); I(Thd): Urel=0.1%(k=2); PF: U=0.002(k=2)	2021.07.23	2022.07.22
DC Electronic Load	IT8512+	ITECH	120Vdc, 30A, 300W	Vol: Urel=0.05%(k=2); Cur: Urel=0.1%(k=2)	2021.07.23	2022.07.22
Temperature and Humidity Recorder	TM181	Shenzhen Youkong	-10°C~60°C; 10%-99%RH	Tem: U=0.6°C(k=2); Hum: U=3%RH(k=2)	2021.07.23	2022.07.22

Photos of EUT

Figure 1. Overall view

Figure 2. Overall view

Figure 3. Overall view

Figure 4. Overall view

Figure 5. Overall view

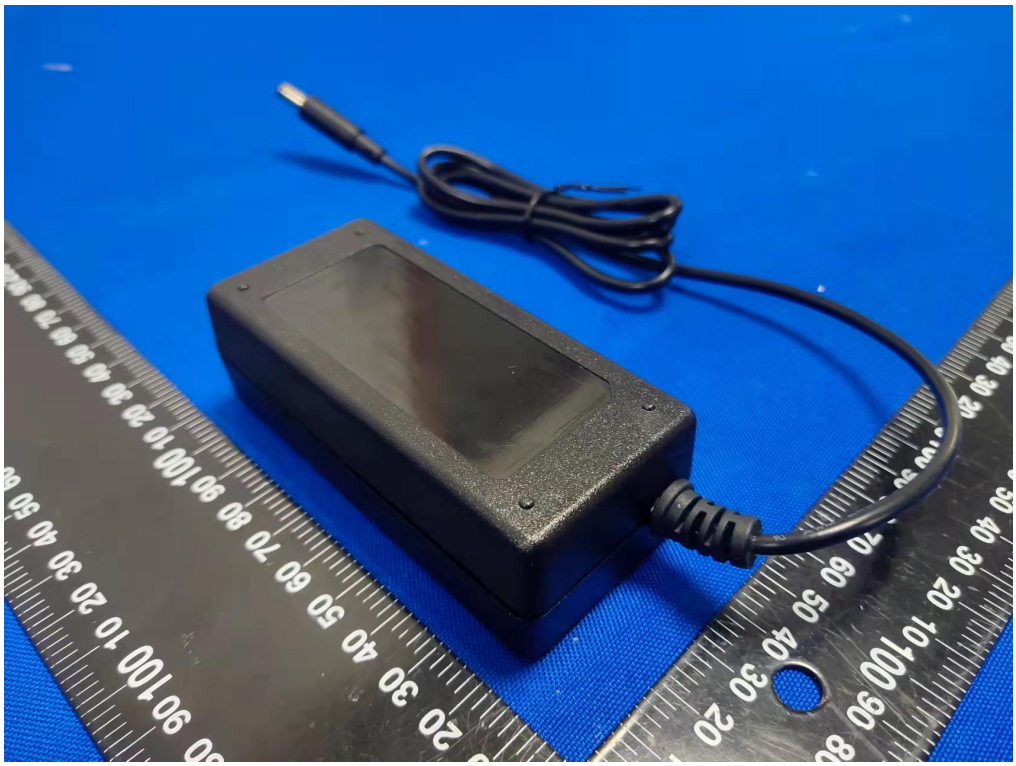

Figure 6. Overall view

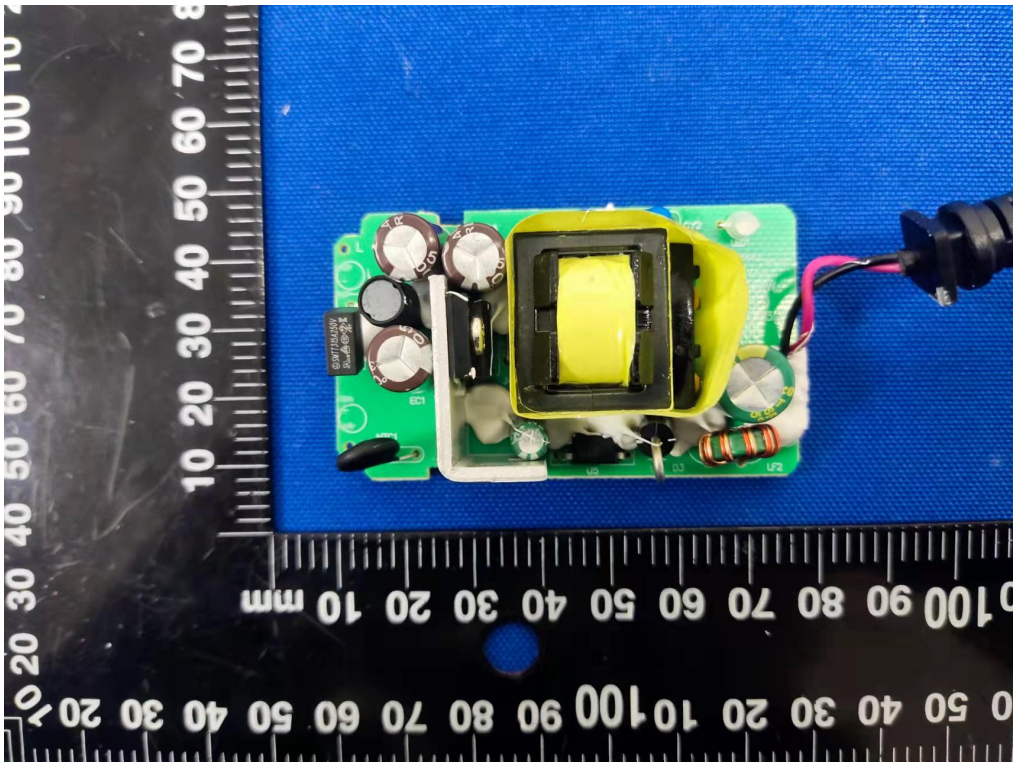

Figure 7. PCB view

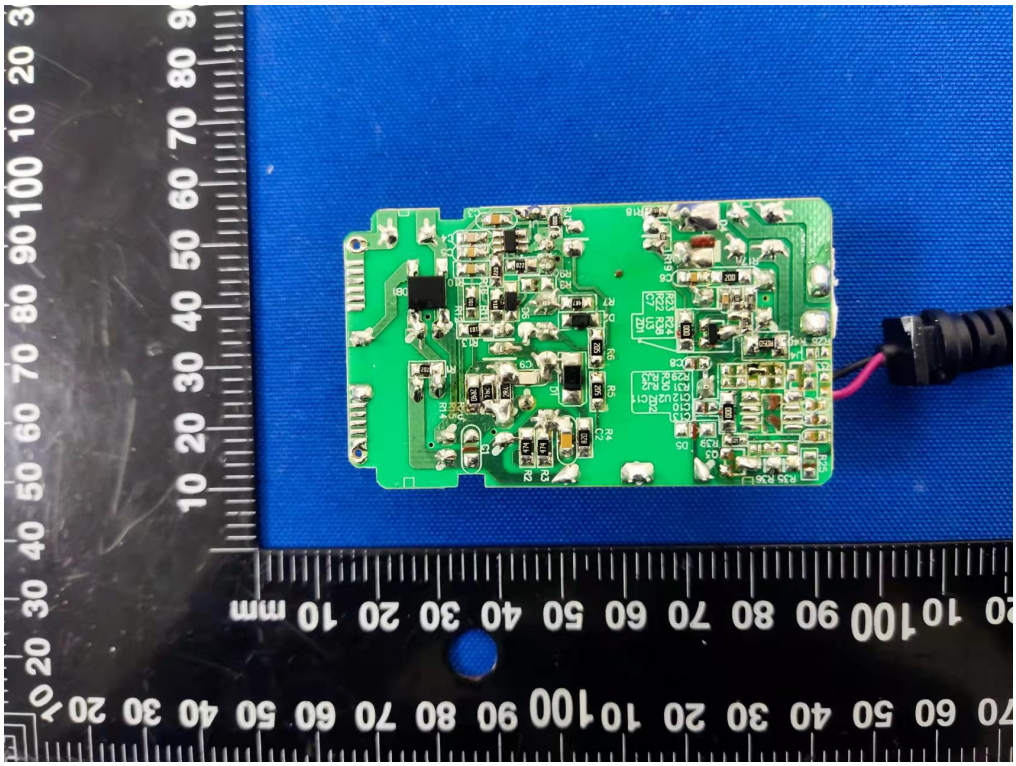

Figure 8. PCB view

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