



DOE TEST REPORT External power supplies	
Report Number.: JAT22060101010SR-1 Date of issue: June. 07, 2022 Total number of pages: 11 pages	
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Approved by (name + signature) : Tim You	
Testing Laboratory: Dongguan Junan Testing & Certification Co., Ltd. Address: Room 303, Building 1, No.316, Renzhou Road, Shatian Town, Dongguan City, Guangdong Province, China. Testing location / address: Same as above	
Applicant's name: Dongguan Baiyou Electronic Co. , Ltd. Address: No. 21, Jintan road, single house, Shijie Town, Dongguan City, Guangdong China.	
Test specification: Standard: ☒ e-CFR title 10 Subpart C of Part 430 — §430.32 Energy and water conservation standards and their compliance dates. (w) External power supplies. ☒ e-CFR title 10 Appendix Z to Subpart B of Part 430 — Uniform Test Method for Measuring the Energy Consumption of External Power Supplies ☒ External Power Supply International Efficiency Marking Protocol, February 10, 2016	
Non-standard test method: N/A	
Test item description: Furniture Power Distribution Units Trade Mark: BAYU Manufacturer: Dongguan Baiyou Electronic Co., Ltd. Address: No. 21, Jintan road, single house, Shijie Town, Dongguan City, Guangdong China. Model/Type reference: BY213-Q021 Ratings: Input: 125Vac, 50/60Hz, 12A, 1500W, USB output: 5Vdc, 2.1A	
General disclaimer: 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. The authenticity of this Test Report and its contents can be verified by contacting the Testing Laboratory, responsible for this Test Report.	

Copy of marking plate:

BAYU
Furniture Power Distribution Units
Model: BY213-Q021
Input: 125Vac, 60Hz, 12A 1500W
USB output: 5Vdc, 2.1A



Dongguan Baiyou Electronic Co. , Ltd

MADE IN CHINA

Remarks:

Height of WEEE symbol should not less than 7mm, height of other marks at least 5mm, height of letters and numerals at least 2mm.



Description:	
Rated output voltage (V).....:	5 Vdc
Rated output current (A)	2.1 A
Rated output power (VA)	10.5 VA
Output cord length (cm)	USB output
Integrated input power switch (Y/N)	N
POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
TESTING:	
Sample size received	3 pcs
Date of receipt of test item.....	June. 01, 2022
Date (s) of performance of tests.....	June. 01, 2022 to June. 07, 2022
GENERAL REMARKS:	
"(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.	
Test parameters:	
Ambient temperature:	23.5 °C
Test voltage(s) (V):	115 Vac
Test Frequency (ies) (Hz):.....	60 Hz
THD of the electricity supply system V(%):.....	0.475 % max.
Model Differences – N/A	
The sample has been tested in the following modes below:	
• No-load condition power consumption • Active efficiency	



1. Requirement of External Power Supply

Mark	Nameplate Output Power (Pno)	No-Load Mode Power	Nameplate Output Power (Pno)	Average Efficiency in Active Mode
IV	$P_{no} \leq 250 \text{ W}$	$\leq 0.5 \text{ W}$	$P_{no} < 1 \text{ W}$	$\geq 0.5 * P_{no}$
			$1 \leq P_{no} \leq 51 \text{ W}$	$\geq 0.09 * \ln(P_{no}) + 0.5$
			$51 < P_{no} \leq 250 \text{ W}$	≥ 0.85
V	$P_{no} < 50 \text{ W}$	AC-DC: $\leq 0.3 \text{ W}$ AC-AC: $\leq 0.5 \text{ W}$	$P_{no} \leq 1 \text{ W}$	Basic Voltage: $\geq 0.480 * P_{no} + 0.140$ Low Voltage: $\geq 0.497 * P_{no} + 0.067$
	$50 \leq P_{no} \leq 250 \text{ W}$	$\leq 0.5 \text{ W}$	$1 < P_{no} \leq 49 \text{ W}$	Basic Voltage: $\geq 0.0626 * \ln(P_{no}) + 0.622$ Low Voltage: $\geq 0.0750 * \ln(P_{no}) + 0.561$
			$49 < P_{no} \leq 250 \text{ W}$	Basic Voltage: ≥ 0.870 Low Voltage: ≥ 0.860
	EPSs with ≥ 100 watts input power must have a true power factor ≥ 0.9 at 100% of rated load when tested at 115 V, 60Hz			
Single Voltage External AC-DC Power Supply, Basic Voltage				
VI	$P_{no} \leq 1 \text{ W}$	≤ 0.100	$P_{no} \leq 1 \text{ W}$	$\geq 0.5 * P_{no} + 0.16$
	$1 < P_{no} \leq 49 \text{ W}$	≤ 0.100	$1 < P_{no} \leq 49 \text{ W}$	$\geq 0.071 * \ln(P_{no}) - 0.0014 * P_{no} + 0.67$
	$49 < P_{no} \leq 250 \text{ W}$	≤ 0.210	$49 < P_{no} \leq 250 \text{ W}$	≥ 0.880
	$P_{no} > 250 \text{ W}$	≤ 0.500	$P_{no} > 250 \text{ W}$	≥ 0.875
Single Voltage External AC-DC Power Supply, Low Voltage				
VI	$P_{no} \leq 1 \text{ W}$	≤ 0.100	$P_{no} \leq 1 \text{ W}$	$\geq 0.517 * P_{no} + 0.087$
	$1 < P_{no} \leq 49 \text{ W}$	≤ 0.100	$1 < P_{no} \leq 49 \text{ W}$	$\geq 0.0834 * \ln(P_{no}) - 0.0014 * P_{no} + 0.609$
	$49 < P_{no} \leq 250 \text{ W}$	≤ 0.210	$49 < P_{no} \leq 250 \text{ W}$	≥ 0.870
	$P_{no} > 250 \text{ W}$	≤ 0.500	$P_{no} > 250 \text{ W}$	≥ 0.875
Single Voltage External AC-AC Power Supply, Basic Voltage				
VI	$P_{no} \leq 1 \text{ W}$	≤ 0.210	$P_{no} \leq 1 \text{ W}$	$\geq 0.5 * P_{no} + 0.16$
	$1 < P_{no} \leq 49 \text{ W}$	≤ 0.210	$1 < P_{no} \leq 49 \text{ W}$	$\geq 0.071 * \ln(P_{no}) - 0.0014 * P_{no} + 0.67$
	$49 < P_{no} \leq 250 \text{ W}$	≤ 0.210	$49 < P_{no} \leq 250 \text{ W}$	≥ 0.880
	$P_{no} > 250 \text{ W}$	≤ 0.500	$P_{no} > 250 \text{ W}$	≥ 0.875
Single Voltage External AC-AC Power Supply, Low Voltage				
VI	$P_{no} \leq 1 \text{ W}$	≤ 0.210	$P_{no} \leq 1 \text{ W}$	$\geq 0.517 * P_{no} + 0.087$
	$1 < P_{no} \leq 49 \text{ W}$	≤ 0.210	$1 < P_{no} \leq 49 \text{ W}$	$\geq 0.0834 * \ln(P_{no}) - 0.0014 * P_{no} + 0.609$
	$49 < P_{no} \leq 250 \text{ W}$	≤ 0.210	$49 < P_{no} \leq 250 \text{ W}$	≥ 0.870
	$P_{no} > 250 \text{ W}$	≤ 0.500	$P_{no} > 250 \text{ W}$	≥ 0.875
Multiple Voltage External Power Supply				
VI	$P_{no} \leq 1 \text{ W}$	≤ 0.300	$P_{no} \leq 1 \text{ W}$	$\geq 0.497 * P_{no} + 0.067$
	$1 < P_{no} \leq 49 \text{ W}$	≤ 0.300	$1 < P_{no} \leq 49 \text{ W}$	$\geq 0.075 * \ln(P_{no}) + 0.561$
	$P_{no} > 49 \text{ W}$	≤ 0.300	$P_{no} > 49 \text{ W}$	≥ 0.860



2. Test Result

Sample No. 1

Reported quantity	Load condition				
	100% ± 2%	75% ± 2%	50% ± 2%	25% ± 2%	0 %
RMS input voltage (V)	115	115	115	115	115
RMS output current (mA)	2.1	1.575	1.05	0.525	--
RMS output voltage (V)	5.11	5.09	4.98	4.88	--
Active output power (W)	10.73	8.02	5.23	2.56	--
RMS input power (W)	13.52	9.85	6.53	3.02	0.04
Total Harmonic Distortion (THD) V (%)	0.475	0.452	0.420	0.384	0.365
True power factor	0.613	0.578	0.549	0.538	--
Power consumed (W)	2.79	1.83	1.30	0.46	0.04
Efficiency (%)	79.36%	81.42%	80.09%	84.77%	--
Average efficiency (%)	81.41%				

Sample No. 2

Reported quantity	Load condition				
	100% ± 2%	75% ± 2%	50% ± 2%	25% ± 2%	0 %
RMS input voltage (V)	115	115	115	115	115
RMS output current (mA)	2.1	1.575	1.05	0.525	--
RMS output voltage (V)	5.12	5.11	4.98	4.85	--
Active output power (W)	10.75	8.05	5.23	2.55	--
RMS input power (W)	13.48	9.66	6.54	3.08	0.03
Total Harmonic Distortion (THD) V (%)	0.475	0.452	0.420	0.384	0.365
True power factor	0.623	0.587	0.563	0.542	--
Power consumed (W)	2.73	1.61	1.31	0.53	0.03
Efficiency (%)	79.74%	83.33%	79.97%	82.79%	--
Average efficiency (%)	81.46%				

**Sample No. 3**

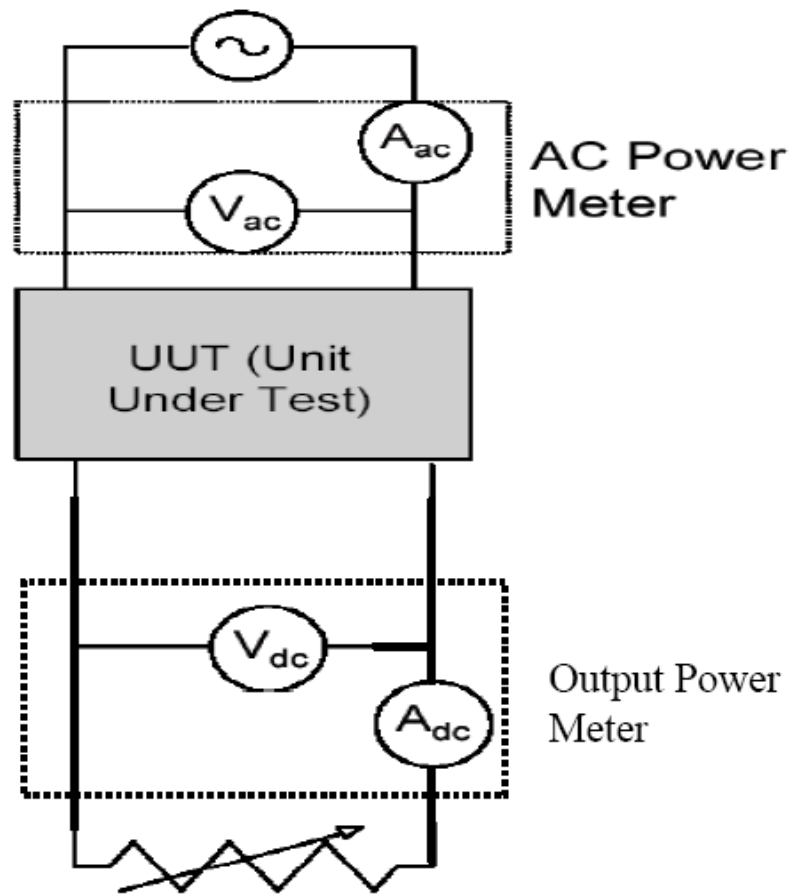
Reported quantity	Load condition				
	100% ± 2%	75% ± 2%	50% ± 2%	25% ± 2%	0 %
RMS input voltage (V)	115	115	115	115	115
RMS output current (mA)	2.1	1.575	1.05	0.525	--
RMS output voltage (V)	5.14	5.10	4.96	4.86	--
Active output power (W)	10.79	8.03	5.21	2.55	--
RMS input power (W)	13.53	9.75	6.45	3.06	0.03
Total Harmonic Distortion (THD) V (%)	0.456	0.452	0.413	0.373	0.358
True power factor	0.623	0.587	0.563	0.542	--
Power consumed (W)	2.74	1.72	1.24	0.51	0.03
Efficiency (%)	79.74%	82.36%	80.78%	83.33%	--
Average efficiency (%)	81.55%				



3. Summary of Test Result

Sample No.	Test voltage (V)	Level	Requirement		Measured		Verdict
			Average active efficiency (%) (Min.)	No load power consumption (W) (Max.)	Average active efficiency (%) (Min.)	No load power consumption (W) (Max.)	
1	115	IV	--	--	--	--	N/A
1	115	V	--	--	--	--	N/A
1	115	VI	≥ 79.04	≤ 0.100	81.41%	0.04	P
1	230	IV	--	--	--	--	N/A
1	230	V	--	--	--	--	N/A
1	230	VI	--	--	--	--	N/A
2	115	IV	--	--	--	--	N/A
2	115	V	--	--	--	--	N/A
2	115	VI	≥ 79.04	≤ 0.100	81.46%	0.03	P
2	230	IV	--	--	--	--	N/A
2	230	V	--	--	--	--	N/A
2	230	VI	--	--	--	--	N/A
3	115	IV	--	--	--	--	N/A
3	115	V	--	--	--	--	N/A
3	115	VI	≥ 79.04	≤ 0.100	81.55%	0.03	P
3	230	IV	--	--	--	--	N/A
3	230	V	--	--	--	--	N/A
3	230	VI	--	--	--	--	N/A

4. Testing circuits

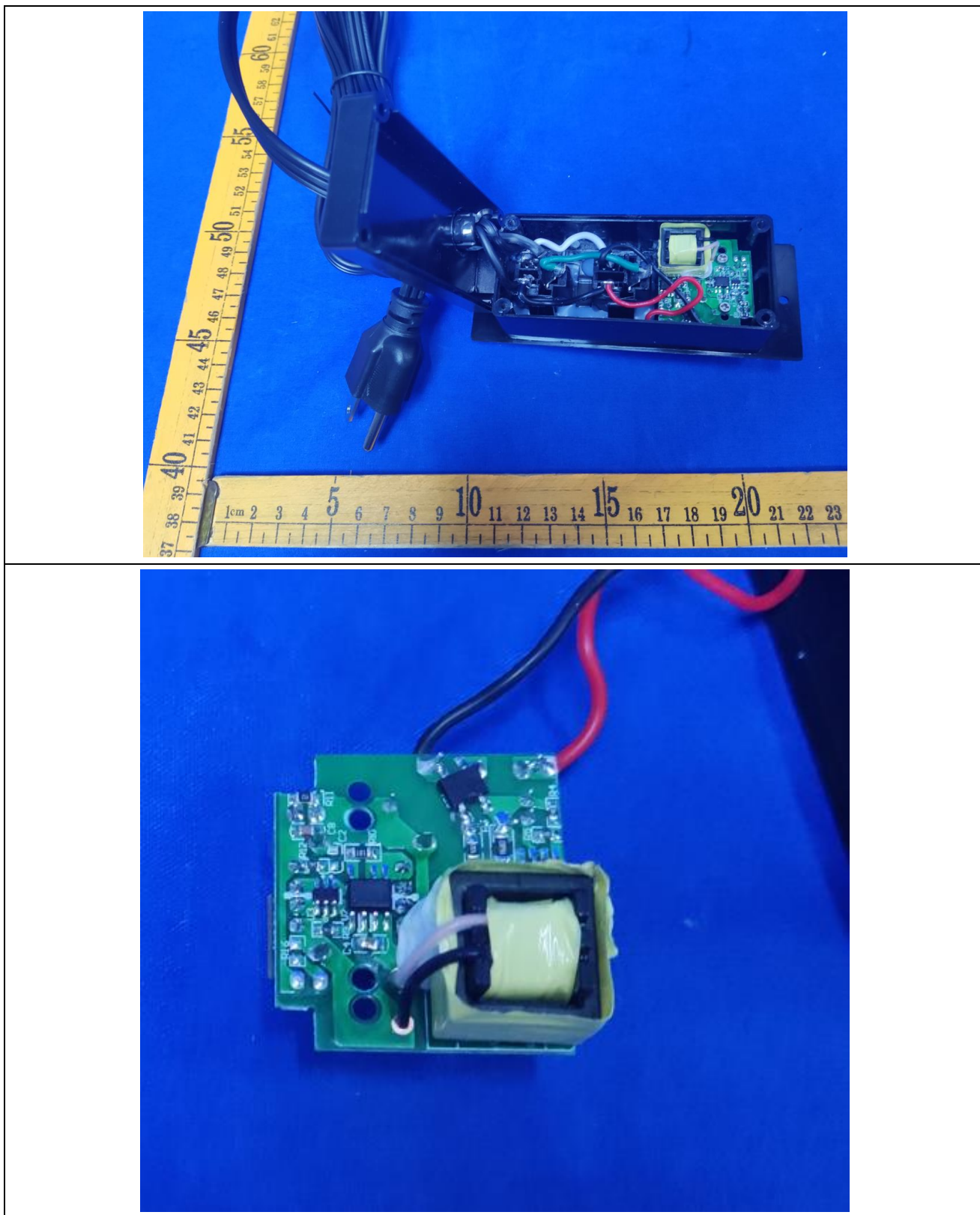


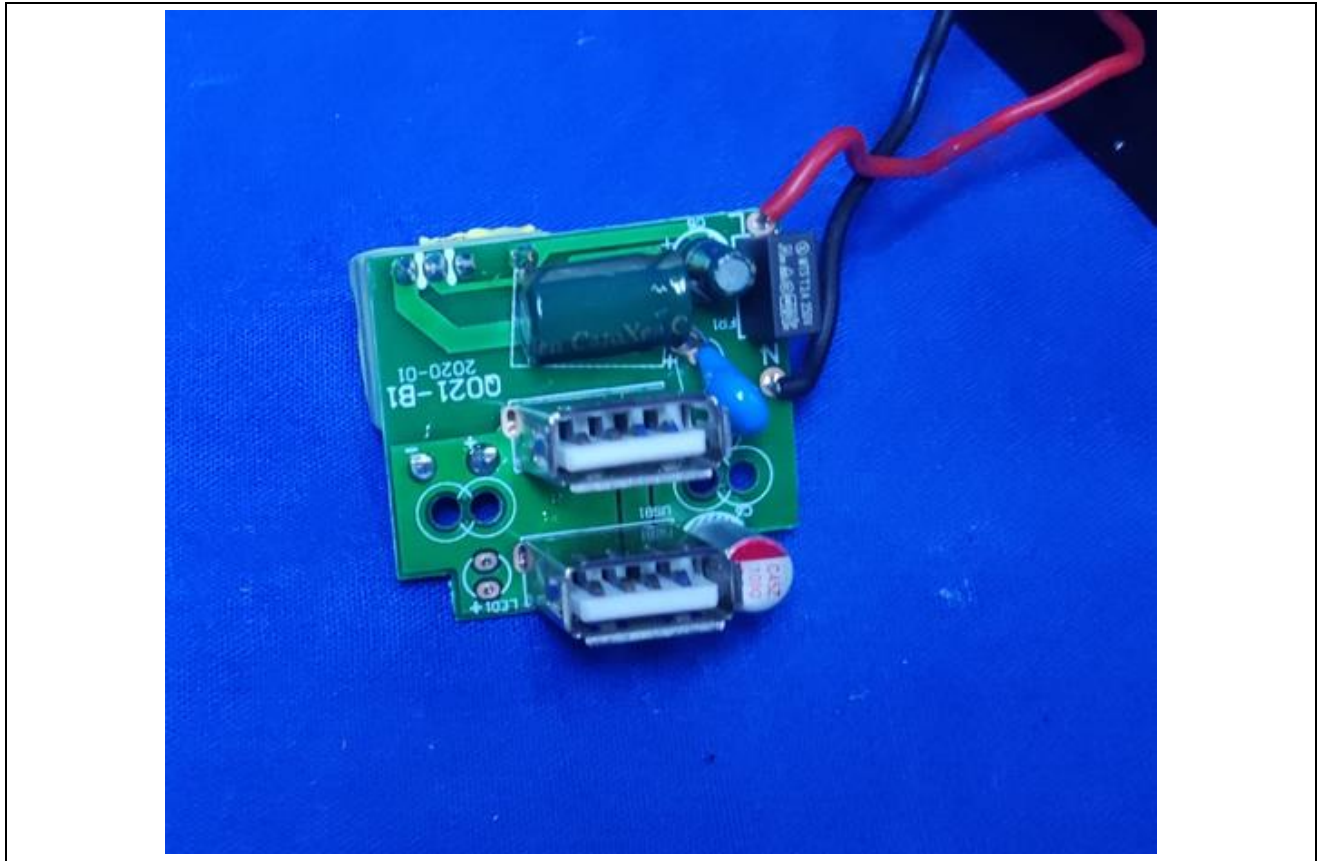
5. Equipment used for measurements

Equipment	Manufacturer	Type
Power meter	Yokogawa	WT210
Stop watch	SMTWTFS	PC396
Metal ruler	Weinuo	1000 mm
Electric load	Applent Instruments Ltd	AT8612

Photo







***** End of Report *****