



TEST REPORT	
California Energy Commission's Appliance Regulations (CEC - 400 - 2017 - 002:Section 1601-1608 of Title 20 of the California Code of Regulations) and International Efficiency Marking Protocol for External Power Supplies)	
Report Reference No	PTC18060415701S-CE01
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Date of issue	Jun 23, 2018
Total number of pages	10 pages
Testing Laboratory	
Name	Dongguan Precise Testing & Certification Corp., Ltd.
Address	Building D, Baoding Technology Park, Guangming Road 2, Guangming Community, Dongcheng District, Dongguan, Guangdong, China
Testing location / address	Same as above
Applicant name	Dongguan baiyou electronic co.,ltd
Address	2F A building wufeng industrial jintan road shijie town Dongguan Guangdong 523295 China
Test specification:	
Standard	California Energy Commission's Appliance Regulations (CEC - 400 - 2017 - 002: Section 1601-1608 of Title 20 of the California Code of Regulations) and International Efficiency Marking Protocol for External Power Supplies)
Test procedure	US EPA-Test Method for Calculating the Energy Efficiency of Single-Voltage External Ac-Dc Power Supplies, August 11, 2004
Non-standard test method	N/A
Test Category	Entrusted Test
Test item description	American two-bit socket with double USB
Trade Mark	/
Manufacturer	Dongguan baiyou electronic co.,ltd
Address	2F A building wufeng industrial jintan road shijie town Dongguan Guangdong 523295 China
Model/Type reference	BY213-Q021
Ratings	Input: 120V~,60Hz, 12A Output: 5Vdc, 2.1A 10.5 W

**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)

Testing

Date of receipt of test item: June 06, 2018

Date(s) of performance of tests: June 21, 2018

Conclusion:

The submitted samples comply with the above standard.

General remarks:

This test report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item tested.

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Scope:

Appliances covered by **COMMISSION REGULATION (EC) No 278/2009** "implementing Directive 2005/32/EC(recast: 2009/125/EC) of the European Parliament and of the Council with regard to ecodesign requirements for No-load condition electric power consumption and average active efficiency of External Power Supplies"

Definitions:

EUT – equipment under test

No-load condition – the condition in which the input of an external power supply is connected to the mains power source, but the output is not connected to any primary load;

Active mode – a condition in which the input of an external power supply is connected to the mains power source, and the output is connected to a load;

Active mode efficiency – the ratio of the power produced by an external power supply in active mode, to the input power required to produce it;

Average active efficiency – the average of the active mode efficiencies at 25%, 50%, 75% and 100% of the nameplate output power.

EUT preparation:

The EUT shall be operated at 100% of nameplate current output for at least 30 minutes immediately prior to conducting efficiency measurements.

**Test Procedure:**

Monitor ac input power for a period of 5 minutes to assess the stability of the EUT. 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. Subsequent load conditions (see below) can then be measured under the same 5 minute stability guidelines.

If ac input power is not stable over a 5 minute period, connect the EUT to the metering equipment and select the mode to be measured. Monitor the power. Average power is determined using either the average power or accumulated energy approaches outlined below.

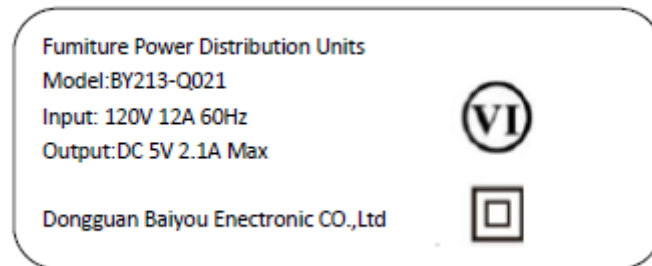
Average power approach: where the power meter can record a true average power over a user selected period, the period selected shall not be less than 5 min (except if there is an operating cycle – see below).

Accumulated energy approach: where the power meter can accumulate energy over a user selected period, the period selected shall not be less than 5 min (except if there is an operating cycle – see below). The integrating period shall be such that the total recorded value for energy and time is more than 200 times the resolution of the meter for energy and time. Determine the average power by dividing the accumulated energy by the time for the monitoring period.

If the power varies over a cycle (i.e. a regular sequence of power states that occur over several minutes or hours), the period selected to average power or accumulate energy shall be one or more complete cycles in order to get a representative average value.

Efficiency measurements shall be conducted in sequence from Load Condition 1 to Load Condition 5 as indicated in follow table:

Percentage of Nameplate Output Current	
Load Condition 1	100%±2%
Load Condition 2	75%±2%
Load Condition 3	50%±2%
Load Condition 4	25%±2%
Load Condition 5	0%

Copy of marking plate

The adapter under test comply with the requirements of the energy efficiency level  .



Nameplate Specifications	Input (AC)	Output (DC)
Voltage (V)	120V	5.0V
Current (A)	12A	2.1A
Power (W)	--	10.5W
Frequency (Hz)	60Hz	--

Performance requirements:

Mark	Performance requirements				
	Nameplate Output Power (P _{no}) ¹	No-Load Power ²	Nameplate Output Power (P _{no})	Average Active Efficiency ³	Power Factor
IV	0 to 250W	≤0.5	0 to <1W	≥0.5 x P _{no}	Not appliance
			1 to 51W	≥0.09 x Ln(P _{no})+0.5	
			>51 to 250W	≥0.85	
V	0 to <50W	≤0.5 for ac-ac ≤0.3 for ac-dc	0 to ≤1W	Standard: ≥0.480* P _{no} +0.140 Low Voltage ⁴ : ≥0.497* P _{no} +0.067	Power supplies with greater than or equal to 100W input power must have a true power factor of 0.9 or greater at 100% of rated load when tested at 115V@60Hz
	≥50 to ≤250W	≤0.5	>1 to ≤49W	Standard: ≥[0.0626*Ln(P _{no})]+0.622 Low Voltage: ≥[0.0750*Ln(P _{no})]+0.561	
			>49 to 250W	Standard: ≥0.870 Low Voltage: ≥0.860	
VI	0 to <49W	≤0.1 for ac-dc ≤0.21 for ac-ac	0 to ≤1W	Standard: ≥0.5* P _{no} +0.16 Low Voltage: ≥0.517* P _{no} +0.087	Not appliance
			>1 to ≤49W	Standard: ≥0.071*Ln P _{no} -0.0014* P _{no} +0.67 Low Voltage: ≥0.0834*Ln P _{no} -0.0014*Ln P _{no} +0.609	
	≥49 to ≤250W	≤0.21	>49 to ≤250W	Standard: ≥0.880 Low Voltage: ≥0.870	
	>250W	≤0.5	>250	≥0.875	

Note:

¹ P_{no} is the Nameplate Output Power of the unit under test.

² In Australia and New Zealand, AC-AC external power supplies are not required to meet the no load power requirements.

³ Ln refers to the natural logarithm.

⁴ 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.

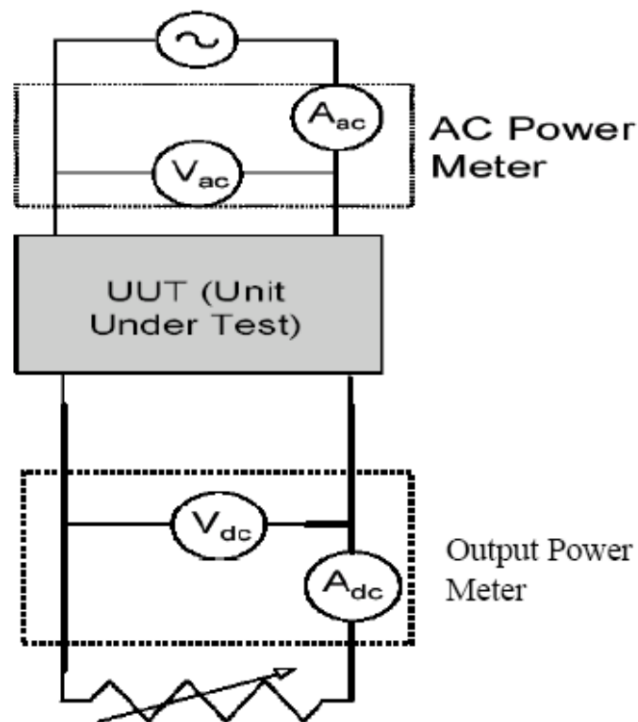
Remark: UUT means Unit Under Test

P – Pass

F – Fail

N – Not Applicable

Generic Test Set-up drawing:





No-load condition electric power consumption and average active efficiency

115V/60Hz	No load	Active power values				
Percent of nameplate current	0%	25%	50%	75%	100%	Average
Output Current (A)	0	0.525	1.05	1.575	2.1	--
Output Voltage (V)	0	4.94	5.03	5.14	5.15	--
Output Power (W)	0	2.6	5.3	8.1	10.8	--
Input Voltage (V)	115	115	115	115	115	--
Input current (mA)		0.598	0.1072	0.1554	0.2026	--
Input Power (W)	0.04	3.17	6.59	10.1	13.6	--
Total Harmonic Distortion (THD) of input current	49.4	146.76	121.97	96.789	82.481	--
True Power Factor (W/VA)		0.046	0.535	0.565	0.584	--
Input Frequency	60	60	60	60	60	--
Power Consumed by EUT (W)	0.040	0.570	1.290	2.000	2.800	--
Efficiency		82.02%	80.42%	80.20%	79.41%	80.51%
Title	No-load power consumption (W)			Average active efficiency		
Requirement	<0.5			73.37%		
Results	0.04			80.51%		
Compliance	P			P		

Conclusion:

The adapter under test comply with the requirements of the energy efficiency level.





Test Equipment List:

Equipment	Model/Type	Cal. Date	Valid Date	Uncertainty (%)
Digital Power Meter	WT210 (YOKOGAWA)	Sep. 26, 2017	Sep. 25, 2018	Voltage: 0.10% Current: 0.14% Power: 0.16%
DC Electronic Load	M9710 (Maynuo)	Sep. 26, 2017	Sep. 25, 2018	Voltage: 0-150V Current: 0-30A
Timer	TA228 (KTJ)	Sep. 26, 2017	Sep. 25, 2018	0.01s
Hygrothermograph	TH1109101529 UB (ZOGLAB)	Sep. 26, 2017	Sep. 25, 2018	Temp: U=0.4°C Humidity: 3%RH

Test Conditions:

Temperature: 25.0°C	Humidity: 55.1%RH
THD of Test Power System: 0.8%	



Product Photos



Photographs-1



Photographs-2



Product Photos



Photographs-3



Photographs-4

-----The End of Report-----