TEST REPORT
COMMISSION REGULATION (EU) 2019/1782 of October 2019

Report Reference No.....:	EED35N808485
Compiled by (name + signature).....:	Eagle Liu
Reviewed by (name + signature).....:	Jeff Chen
Approved by (name + signature).....:	Sunny Liu
Date of issue.....:	Sep. 29, 2021
Total number of pages.....:	24 pages
Testing Laboratory	
Name.....:	Centre Testing International Pinbiao(Shanghai) Co., Ltd.
Address.....:	No.1351, Wanfang Road,Minhang District, Shanghai, P.R.China
Testing location / address.....:	Same as above
Applicant's name.....:	Shenzhen Rewoda Electronics Co., Ltd.
Address.....:	Rm.908, Jia'anda Mansion, Dalang Huafan Road No.110, Longhua, Shenzhen, Guangdong, P.R. China
Test specification:	
Standard.....:	EN 50563:2011+A1:2013, EN 50564:2011
Test procedure.....:	COMMISSION REGULATION (EU) 2019/1782 of October 2019
Test conclusion.....:	From the results of the testing on the submitted samples(s), we are of the opeinion that the submitted sample(s) COMPLY WITH COMMISSION REGULATION (EU) 2019/1782 of 1 October 2019, laying down ecodesign requirements for external power supplies pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulation (EC) No 278/2009 and level VI requirements of International Effciency Marking Protocol.
Non-standard test method……..:	N/A
Test Report Form No.....:	EC278A
Test Report Form(s) Originator.....:	CTI
Master TRF.....:	Dated 2016-01
Test item description.....:	Adapter
Trade Mark.....:	/
Manufacturer.....:	Shenzhen Rewoda Electronics Co., Ltd.
Address.....:	Rm.908, Jia'anda Mansion, Dalang Huafan Road No.110, Longhua, Shenzhen, Guangdong, P.R. China
Model/Type reference.....:	RWD020C-EU2, AmpCharge PD20+(EU), AmpCharge PD20+(UK), L-QP204, L-QP203, RWD020C-EU1, RWD020C-EUR, RWD020C-UK2, RWD020C-UK1, RWD020C-UKR
Ratings.....:	Input: 100 – 240 V ~, 50-60 Hz, 0.6 A Max Output: USB-A : 5 V ⎓, 3 A / 9 V ⎓, 2.22 A / 12 V ⎓, 1.67 A USB-C : 5 V ⎓, 3 A / 9 V ⎓, 2.22 A / 12 V ⎓, 1.67 A USB-A+C : 5 V ⎓, 3 A Max

Check No.: 1245310821

Copy of marking plate:

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	Sep. 22, 2021
Date(s) of performance of tests	Sep. 22, 2021 to Sep. 24, 2021

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:

The output cord used during testing is supplied by manufacturer.
RWD020C-EU2, AmpCharge PD20+(EU), AmpCharge PD20+(UK), L-QP204, L-QP203, RWD020C-EU1, RWD020C-EUR, RWD020C-UK2, RWD020C-UK1, RWD020C-UKR, except for the following points, all models adopt the same circuit design, layout, components, internal wiring, housing material and shape:
Adapter model name, shell and color.

Tables

Clause	COMMISSION REGULATION (EU) 2019/1782 of 1October 2019	Result - Remark	Verdict
	For AC-AC external power supplies, except low voltage and multiple voltage output external power supplies. The no-load condition power consumption shall not exceed 0.210 W		N
	For AC-DC external power supplies, except low voltage and multiple voltage output external power supplies with Po ⩽ 49W. The no-load condition power consumption shall not exceed 0.100 W		N
	For AC-DC external power supplies, except low voltage and multiple voltage output external power supplies with Po＞49W. The no-load condition power consumption shall not exceed 0.210 W		N
	For Low voltage external power supplies with Po ⩽ 49W. The no-load condition power consumption shall not exceed 0.100 W		N
	For Low voltage external power supplies with Po＞ 49W. The no-load condition power consumption shall not exceed 0.210 W		N
	For Multiple voltage output external power supplies. The no-load condition power consumption shall not exceed 0.3 W	Measured: 0.09 W at 115 V 60 Hz 0.18 W at 230 V 50 Hz	P
	Minimum Four Point Average Efficiency in Active Mode of AC-AC and AC-DC external power supplies except low voltage external power supplies, the average active efficiency shall be not less than:		--
	0.5*Po + 0.16, for Po ⩽ 1.0 W		N
	0.071*ln(Po) − 0.0014*Po + 0.67, for 1.0 W < Po ⩽ 49 W		N
	0.880, for Po＞ 49W		N
	Energy-Efficiency Criteria for Active Mode for Low Voltage external power Supplies Minimum Four Point Average Efficiency in Active Mode shall be not less than:		--
	0.517*Po + 0.087, for Po ⩽ 1.0 W		N
	0.0834*ln(Po) − 0.0014*Po + 0.609, for 1.0 W < Po ⩽ 49 W		N
	0.870, for Po＞ 49W		N
	Energy-Efficiency Criteria for Multiple voltage output external power supplies Minimum Four Point Average Efficiency in Active Mode shall be not less than:		--
	0.497*Po + 0.067, for Po ⩽ 1.0 W		N
	0.075*ln(Po) + 0.561, for 1.0 W < Po ⩽ 49 W	See the tables below	P
	0.860, for Po＞ 49W		N

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	10% Average Efficiency in Active Mode of AC-AC and AC-DC external power supplies except low voltage external power supplies, the average active efficiency shall be not less than:		--
	External power supplies with a nameplate output power of 10 W or less shall be exempted from this requirement.		N
	In cases where multiple average active efficiencies are declared for multiple output voltages available at load condition 1, the value published shall be the value declared for the lowest output voltage.		N
Information requirements:			--
	the nameplate shall include the following information:		P
	Output power		P
	Output voltage		P
	Output current		P
	instruction manuals for end-users (where applicable), and free access websites of manufacturers, importers or authorised representatives shall include the following information, in the order as set out below:		P
	Manufacturer's name or trade mark, commercial registration number and address		P
	Model identifier		P
	Input voltage		P
	Input AC frequency		P
	Output voltage		P
	Output current		P
	Output power		P
	Average active efficiency		P
	Efficiency at low load (10 %)		P
	No-load power consumption		P

Clause	Single-Voltage External power supply, level VI requirements of International Efficiency Marking Protocol.	Result - Remark	Verdict
	For AC to DC External power supplies with Pno ≤ 49W. The no-load condition power consumption shall not exceed ≤0.100 W		N
	For AC to AC External power supplies with Pno ≤ 49W. The no-load condition power consumption shall not exceed ≤0.210 W		N

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	External power supplies with 49W < Pno ≤ 250W. The no-load condition power consumption shall not exceed 0.210 W		N
	External power supplies with 250W < Pno. The no-load condition power consumption shall not exceed 0.5 W		N
	For Multiple voltage output External power supplies The no-load condition power consumption shall not exceed 0.3 W	Minimum Measured value: 0.09 W at 115 V 60 Hz 0.18 W at 230 V 50 Hz	P
	Minimum Four Point Average Efficiency in Active Mode of AC-AC and AC-DC external power supplies except low voltage external power supplies, the average active efficiency shall be not less than:		--
	0.5*Pno + 0.16, for 0 < Po ≤ 1.0 W		N
	0.071*ln(Pno) − 0.0014*Pno + 0.67, for 1.0 W < Po ≤ 49 W		N
	0.880, for 49< Pno ≤250 W		N
	0.875, for 250 W < Pno		N
	Energy-Efficiency Criteria for Active Mode for Low Voltage external power Supplies Minimum Four Point Average Efficiency in Active Mode shall be not less than:		--
	0.517*Pno + 0.087, for 0 < Po ≤ 1.0 W		N
	0.0834*ln(Pno) − 0.0014*Pno + 0.609, for 1.0 W < Po ≤ 49 W		N
	0.870, for 49< Pno ≤250 W		N
	0.875, for 250 W < Pno		N
	Minimum Four Point Average Efficiency in Active Mode of Multiple voltage output external power supplies except low voltage external power supplies, the average active efficiency shall be not less than:		--
	0.497*Pno + 0.067, for 0 < Po ≤ 1.0 W		N
	0.075*ln(Pno) + 0.561, for 1.0 W < Po ≤ 49 W	See the tables below	P
	0.860, for 49< Pno		N

Table: Energy-Efficiency data and the no-load power consumption for usb-a and usb-c												**P**
Model	RWD020C-EU2											
Sample No.	35N8485-01											
Ambient Temperature (℃)	24.5											
Relative Humidity (%)	46											
Date	2021-09-22											
Test voltage/ Frequency	115 V ac / 60 Hz											
Test Item	Measure at load condition											
	1 (100%)		2 (75%)		3 (50%)		4 (25%)		5 (10%)		6 (0%)	
Rms output current (A)	1.501	1.500	1.125	1.125	0.750	0.750	0.375	0.375	0.150	0.150	0	0
Rms output voltage (V)	4.665	4.950	4.720	4.983	4.875	5.015	4.981	5.045	5.056	5.063	5.073	5.075
Active output power (W)	7.00	7.42	5.31	5.61	3.66	3.76	1.87	1.89	0.76	0.76	0	0
Rms input voltage (V)	114.95		114.95		114.96		114.95		114.96		114.96	
Input Frequency (Hz)	60		60		60		60		60		60	
Rms input current (A)	0.2586		0.1981		0.1359		0.0707		0.0305		0.0024	
Power Factor	0.5947		0.5769		0.5579		0.5395		0.5211		0.4812	
Total harmonic distortion (THD) (%)	0.329		0.328		0.321		0.330		0.337		0.354	
Input accumulated power (Wh)	1.4738		1.0950		0.7263		0.3649		0.1521		0.0114	
Input Avg. Power (W)	17.69		13.14		8.72		4.38		1.83		0.14	
Input Wh interval [min]	5		5		5		5		5		5	
Minimum Warm- up time [minutes]	60		0		0		0		0		0	
Efficiency (%)	81.55%		83.11%		85.09%		85.82%		83.19%		--	
Average efficiency*	83.89%											
No-load power consumption (W)	0.09											
Efficiency Requirements	76.41%											
No-Load Power Consumption Requirement	0.3 W											
Result	PASS											

*) Arithmetic average of efficiency at load conditions 1-4.

Tables

Table: Energy-Efficiency data and the no-load power consumption for usb-a and usb-c												**P**
Model	RWD020C-EU2											
Sample No.	35N8485-01											
Ambient Temperature (℃)	24.5											
Relative Humidity (%)	46											
Date	2021-09-22											
Test voltage/ Frequency	230 V ac / 50 Hz											
Test Item	Measure at load condition											
	1 (100%)		2 (75%)		3 (50%)		4 (25%)		5 (10%)		6 (0%)	
Rms output current (A)	1.501	1.500	1.124	1.125	0.750	0.750	0.375	0.375	0.150	0.150	0	0
Rms output voltage (V)	4.697	4.950	4.719	4.985	4.883	5.016	4.996	5.046	5.058	5.063	5.073	5.075
Active output power (W)	7.05	7.42	5.30	5.61	3.66	3.76	1.87	1.89	0.76	0.76	0	0
Rms input voltage (V)	229.98		229.99		230.00		229.99		230.00		230.00	
Input Frequency (Hz)	50		50		50		50		50		50	
Rms input current (A)	0.1534		0.1160		0.0796		0.0417		0.0188		0.0018	
Power Factor	0.5044		0.4949		0.4853		0.4696		0.4459		0.3516	
Total harmonic distortion (THD) (%)	0.356		0.360		0.363		0.371		0.370		0.371	
Input accumulated power (Wh)	1.4823		1.1000		0.7404		0.3757		0.1612		0.0120	
Input Avg. Power (W)	17.79		13.20		8.88		4.51		1.93		0.14	
Input Wh interval [min]	5		5		5		5		5		5	
Minimum Warm- up time [minutes]	60		0		0		0		0		0	
Efficiency (%)	81.35%		82.68%		83.54%		83.48%		78.51%		--	
Average efficiency*	82.76%											
No-load power consumption (W)	0.18											
Efficiency Requirements	76.41%											
No-Load Power Consumption Requirement	0.3 W											
Result	PASS											

*) Arithmetic average of efficiency at load conditions 1-4.

Tables

Table: Energy-Efficiency data and the no-load power consumption for usb-c						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	25.2					
Relative Humidity (%)	48					
Date	2021-09-22					
Test voltage/ Frequency	115 V ac / 60 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	3.000	2.250	1.500	0.750	0.300	0
Rms output voltage (V)	4.842	4.904	4.964	5.020	5.053	5.075
Active output power (W)	14.52	11.03	7.44	3.77	1.51	0
Rms input voltage (V)	114.95	114.95	114.96	114.96	114.96	114.96
Input Frequency (Hz)	60	60	60	60	60	60
Rms input current (A)	0.2630	0.2004	0.1370	0.0709	0.0304	0.0024
Power Factor	0.5942	0.5766	0.5568	0.5397	0.5210	0.4797
Total harmonic distortion (THD) (%)	0.336	0.330	0.326	0.332	0.341	0.345
Input accumulated power (Wh)	1.4971	1.1070	0.7303	0.3665	0.1517	0.0113
Input Avg. Power (W)	17.97	13.28	8.76	4.40	1.82	0.14
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	80.82%	83.03%	84.90%	85.72%	82.95%	--
Average efficiency*	83.62%					
No-load power consumption (W)	0.09					
Efficiency Requirements	76.41%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Tables

Table: Energy-Efficiency data and the no-load power consumption for usb-c						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	25.2					
Relative Humidity (%)	48					
Date	2021-09-22					
Test voltage/ Frequency	230 V ac / 50 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	3.000	2.250	1.500	0.750	0.150	0
Rms output voltage (V)	4.821	4.891	4.958	5.016	5.063	5.075
Active output power (W)	14.46	11.00	7.44	3.76	0.76	0
Rms input voltage (V)	229.97	229.98	229.97	229.97	229.98	229.98
Input Frequency (Hz)	50	50	50	50	50	50
Rms input current (A)	0.1559	0.1174	0.0800	0.0418	0.0113	0.0018
Power Factor	0.5036	0.4950	0.4867	0.4712	0.4286	0.3526
Total harmonic distortion (THD) (%)	0.358	0.363	0.362	0.366	0.366	0.371
Input accumulated power (Wh)	1.5046	1.1139	0.7459	0.3771	0.0923	0.0120
Input Avg. Power (W)	18.06	13.37	8.95	4.53	1.11	0.14
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	80.09%	82.29%	83.12%	83.09%	68.62%	--
Average efficiency*	82.15%					
No-load power consumption (W)	0.18					
Efficiency Requirements	76.41%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Table: Energy-Efficiency data and the no-load power consumption for usb-c						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	24.8					
Relative Humidity (%)	45					
Date	2021-09-23					
Test voltage/ Frequency	115 V ac / 60 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	2.220	1.665	1.110	0.555	0.222	0
Rms output voltage (V)	8.941	8.982	9.020	9.057	9.076	9.088
Active output power (W)	19.67	14.82	9.92	4.98	2.00	0
Rms input voltage (V)	115.03	115.03	115.03	115.03	115.04	115.04
Input Frequency (Hz)	60	60	60	60	60	60
Rms input current (A)	0.3282	0.2520	0.1742	0.0932	0.0413	0.0062
Power Factor	0.6075	0.5900	0.5680	0.5426	0.5248	0.4933
Total harmonic distortion (THD) (%)	0.344	0.330	0.321	0.322	0.335	0.344
Input accumulated power (Wh)	1.9113	1.4252	0.9485	0.4849	0.2079	0.0295
Input Avg. Power (W)	22.94	17.10	11.38	5.82	2.49	0.35
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	85.76%	86.65%	87.16%	85.58%	80.17%	--
Average efficiency*	86.29%					
No-load power consumption (W)	0.09					
Efficiency Requirements	78.56%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Tables

Table: Energy-Efficiency data and the no-load power consumption for usb-c						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	24.8					
Relative Humidity (%)	45					
Date	2021-09-23					
Test voltage/ Frequency	230 V ac / 50 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	2.220	1.665	1.110	0.555	0.222	0
Rms output voltage (V)	8.940	8.985	9.022	9.058	9.077	9.085
Active output power (W)	19.85	14.83	9.92	4.98	2.00	0
Rms input voltage (V)	229.96	229.98	229.98	229.97	229.98	229.98
Input Frequency (Hz)	50	50	50	50	50	50
Rms input current (A)	0.1949	0.1481	0.1022	0.0541	0.0245	0.0036
Power Factor	0.5147	0.5017	0.4919	0.4755	0.4552	0.3801
Total harmonic distortion (THD) (%)	0.355	0.358	0.360	0.364	0.368	0.366
Input accumulated power (Wh)	1.9227	1.4244	0.9635	0.4929	0.2143	0.0265
Input Avg. Power (W)	23.07	17.09	11.56	5.91	2.57	0.32
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	86.03%	86.76%	85.80%	84.20%	77.77%	--
Average efficiency*	85.70%					
No-load power consumption (W)	0.18					
Efficiency Requirements	78.56%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Tables

Table: Energy-Efficiency data and the no-load power consumption for usb-c						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	25.1					
Relative Humidity (%)	49					
Date	2021-09-23					
Test voltage/ Frequency	115 V ac / 60 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	1.670	1.252	0.835	0.417	0.167	0
Rms output voltage (V)	11.923	11.977	12.031	12.074	12.097	12.112
Active output power (W)	19.91	15.00	10.05	5.04	2.02	0
Rms input voltage (V)	115.02	115.03	115.03	115.03	115.04	115.04
Input Frequency (Hz)	60	60	60	60	60	60
Rms input current (A)	0.3286	0.2540	0.1178	0.0965	0.0447	0.0092
Power Factor	0.6063	0.5896	0.5684	0.5433	0.5276	0.4994
Total harmonic distortion (THD) (%)	0.348	0.333	0.326	0.330	0.337	0.344
Input accumulated power (Wh)	1.9096	1.4358	0.9689	0.5032	0.2261	0.0442
Input Avg. Power (W)	22.92	17.23	11.63	6.04	2.71	0.53
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	86.89%	87.06%	86.44%	83.47%	74.45%	--
Average efficiency*	85.96%					
No-load power consumption (W)	0.09					
Efficiency Requirements	78.58%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Tables

Table: Energy-Efficiency data and the no-load power consumption for usb-c						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	25.1					
Relative Humidity (%)	49					
Date	2021-09-23					
Test voltage/ Frequency	230 V ac / 50 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	1.670	1.252	0.835	0.417	0.167	0
Rms output voltage (V)	11.920	11.974	12.025	12.073	12.100	12.113
Active output power (W)	19.91	14.99	10.04	5.04	2.02	0
Rms input voltage (V)	230.03	230.04	229.97	229.98	229.97	229.97
Input Frequency (Hz)	50	50	50	50	50	50
Rms input current (A)	0.1927	0.1477	0.1026	0.0557	0.0263	0.0064
Power Factor	0.5152	0.5042	0.4924	0.4770	0.4575	0.4026
Total harmonic distortion (THD) (%)	0.360	0.359	0.365	0.365	0.365	0.365
Input accumulated power (Wh)	1.9039	1.4279	0.9684	0.5091	0.2303	0.0497
Input Avg. Power (W)	22.85	17.13	11.62	6.11	2.76	0.60
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	87.15%	87.48%	86.40%	82.50%	73.09%	--
Average efficiency*	85.88%					
No-load power consumption (W)	0.18					
Efficiency Requirements	78.58%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Table: Energy-Efficiency data and the no-load power consumption for usb-a						P
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	25.1					
Relative Humidity (%)	43					
Date	2021-09-24					
Test voltage/ Frequency	115 V ac / 60 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	3.000	2.250	1.500	0.750	0.300	0
Rms output voltage (V)	4.618	4.737	4.846	4.955	5.028	5.074
Active output power (W)	13.85	10.66	7.27	3.72	1.51	0
Rms input voltage (V)	115.03	115.03	115.03	115.04	115.04	115.04
Input Frequency (Hz)	60	60	60	60	60	60
Rms input current (A)	0.2666	0.2025	0.1383	0.0716	0.0311	0.0037
Power Factor	0.5936	0.5760	0.5557	0.5399	0.5211	0.4850
Total harmonic distortion (THD) (%)	0.331	0.329	0.322	0.337	0.343	0.353
Input accumulated power (Wh)	1.5168	1.1182	0.7366	0.3694	0.1553	0.0172
Input Avg. Power (W)	18.20	13.42	8.84	4.43	1.86	0.21
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	76.09%	79.44%	82.25%	83.92%	81.03%	--
Average efficiency*	80.43%					
No-load power consumption (W)	0.09					
Efficiency Requirements	76.41%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Tables

Table: Energy-Efficiency data and the no-load power consumption for usb-a						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	25.1					
Relative Humidity (%)	43					
Date	2021-09-24					
Test voltage/ Frequency	230 V ac / 50 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	3.000	2.250	1.500	0.750	0.300	0
Rms output voltage (V)	4.630	4.750	4.857	4.962	5.035	5.075
Active output power (W)	13.89	10.69	7.28	3.72	1.51	0
Rms input voltage (V)	229.99	229.99	230.00	230.00	230.00	230.00
Input Frequency (Hz)	50	50	50	50	50	50
Rms input current (A)	0.1577	0.1185	0.0809	0.4237	0.0193	0.0024
Power Factor	0.5043	0.4958	0.4847	0.4690	0.4424	0.3567
Total harmonic distortion (THD) (%)	0.358	0.358	0.364	0.369	0.368	0.372
Input accumulated power (Wh)	1.5240	1.1258	0.7512	0.3808	0.1641	0.0168
Input Avg. Power (W)	18.29	13.51	9.01	4.57	1.97	0.20
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	75.95%	79.13%	80.76%	81.41%	76.68%	--
Average efficiency*	79.31%					
No-load power consumption (W)	0.18					
Efficiency Requirements	76.41%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Table: Energy-Efficiency data and the no-load power consumption for usb-a						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	25.1					
Relative Humidity (%)	43					
Date	2021-09-24					
Test voltage/ Frequency	115 V ac / 60 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	2.220	1.665	1.110	0.555	0.222	0
Rms output voltage (V)	8.771	8.844	8.933	9.004	9.050	9.091
Active output power (W)	19.47	14.73	9.91	5.00	2.01	0
Rms input voltage (V)	115.02	115.03	115.03	115.03	115.04	115.04
Input Frequency (Hz)	60	60	60	60	60	60
Rms input current (A)	0.3328	0.2550	0.1766	0.0948	0.0423	0.0069
Power Factor	0.6085	0.5910	0.5687	0.5430	0.5248	0.4947
Total harmonic distortion (THD) (%)	0.350	0.338	0.328	0.328	0.339	0.346
Input accumulated power (Wh)	1.9412	1.4448	0.9627	0.4937	0.2129	0.0322
Input Avg. Power (W)	23.29	17.34	11.55	5.92	2.55	0.39
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	83.58%	84.96%	85.78%	84.40%	78.68%	--
Average efficiency*	84.68%					
No-load power consumption (W)	0.09					
Efficiency Requirements	78.56%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Tables

Table: Energy-Efficiency data and the no-load power consumption for usb-a						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	25.1					
Relative Humidity (%)	43					
Date	2021-09-24					
Test voltage/ Frequency	230 V ac / 50 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	2.220	1.665	1.110	0.555	0.222	0
Rms output voltage (V)	8.770	8.846	8.934	9.000	9.046	9.089
Active output power (W)	19.47	14.73	9.91	5.00	2.01	0
Rms input voltage (V)	230.04	230.04	229.98	229.98	229.99	229.99
Input Frequency (Hz)	50	50	50	50	50	50
Rms input current (A)	0.1957	0.1495	0.1033	0.0549	0.0250	0.0043
Power Factor	0.5154	0.5035	0.4928	0.4763	0.4566	0.3880
Total harmonic distortion (THD) (%)	0.361	0.358	0.367	0.367	0.370	0.374
Input accumulated power (Wh)	1.9339	1.4427	0.9758	0.5014	0.2191	0.0321
Input Avg. Power (W)	23.21	17.31	11.71	6.02	2.63	0.39
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	83.90%	85.08%	84.63%	83.10%	76.45%	--
Average efficiency*	84.18%					
No-load power consumption (W)	0.18					
Efficiency Requirements	78.56%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Tables

Table: Energy-Efficiency data and the no-load power consumption for usb-a						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	25.1					
Relative Humidity (%)	43					
Date	2021-09-24					
Test voltage/ Frequency	115 V ac / 60 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	1.670	1.252	0.835	0.417	0.167	0
Rms output voltage (V)	11.858	11.941	11.598	12.052	12.090	12.110
Active output power (W)	19.80	14.95	10.02	5.03	2.02	0
Rms input voltage (V)	115.03	115.03	115.03	115.03	115.04	115.04
Input Frequency (Hz)	60	60	60	60	60	60
Rms input current (A)	0.3309	0.2557	0.1788	0.0969	0.0449	0.0095
Power Factor	0.6085	0.5913	0.5695	0.5436	0.5276	0.4992
Total harmonic distortion (THD) (%)	0.349	0.327	0.328	0.328	0.336	0.344
Input accumulated power (Wh)	1.9339	1.4496	0.9759	0.5052	0.2275	0.0453
Input Avg. Power (W)	23.21	17.40	11.71	6.06	2.73	0.54
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	85.32%	85.94%	85.56%	82.97%	73.99%	--
Average efficiency*	84.95%					
No-load power consumption (W)	0.09					
Efficiency Requirements	78.58%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

Tables

Table: Energy-Efficiency data and the no-load power consumption for usb-a						**P**
Model	RWD020C-EU2					
Sample No.	35N8485-01					
Ambient Temperature (℃)	25.1					
Relative Humidity (%)	43					
Date	2021-09-24					
Test voltage/ Frequency	230 V ac / 50 Hz					
Test Item	Measure at load condition					
	1 (100%)	2 (75%)	3 (50%)	4 (25%)	5 (10%)	6 (0%)
Rms output current (A)	1.670	1.252	0.835	0.417	0.167	0
Rms output voltage (V)	11.859	11.941	11.999	12.047	12.090	12.114
Active output power (W)	19.81	14.95	10.02	5.02	2.02	0
Rms input voltage (V)	229.97	229.97	229.98	229.99	229.99	229.99
Input Frequency (Hz)	50	50	50	50	50	50
Rms input current (A)	0.1948	0.1492	0.1032	0.0559	0.0264	0.0067
Power Factor	0.5156	0.5037	0.4926	0.4776	0.4574	0.4047
Total harmonic distortion (THD) (%)	0.357	0.358	0.360	0.367	0.369	0.370
Input accumulated power (Wh)	1.9243	1.4406	0.9744	0.5111	0.2316	0.0518
Input Avg. Power (W)	23.09	17.29	11.69	6.13	2.78	0.62
Input Wh interval [min]	5	5	5	5	5	5
Minimum Warm- up time [minutes]	60	0	0	0	0	0
Efficiency (%)	85.79%	86.48%	85.69%	81.85%	72.68%	--
Average efficiency*	84.95%					
No-load power consumption (W)	0.18					
Efficiency Requirements	78.58%					
No-Load Power Consumption Requirement	0.3 W					
Result	PASS					

*) Arithmetic average of efficiency at load conditions 1-4.

List of test equipment

Internal Code	Instrument Number	Instrument Type	Range Used	Model	Calibration DUE Date
2	EED36JL15002	Temperature & Humidity Recorder	0-40℃, 35-95%RH	TA218D	2022-08-02
5	TTE20150087	Stop watch	10s-24h	TF807	2022-09-21
33	TTF20140092	AC Power source	300V~, 10kVA	AN97010H	2022-05-07
36	TTE20160272	Digital Power Meter	1000V, 20A	PW3335	2022-08-02
38	TTE20170188	Digital Power Meter	10-600V~, 1mA-20A, 50Hz-60Hz, 0.1W-5KW, PF:0-1.0	WT310E	2022-08-02
50	TTE20142490	Ruler	5m	L19-50	2022-09-20
51	ATTEELSH00032	DC electronic load	120V, 30A, 150W	3311D	2022-08-02
71	EED36JL16007	Air velocity meter	0-45m/s	SMART, AR826+	2022-08-02

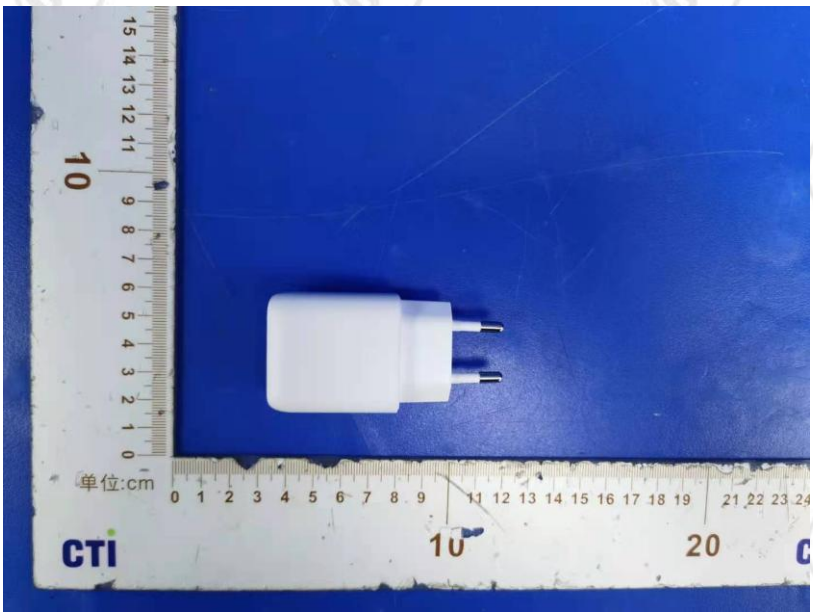

Fig. 1 Overview (RWD020C-EU2)

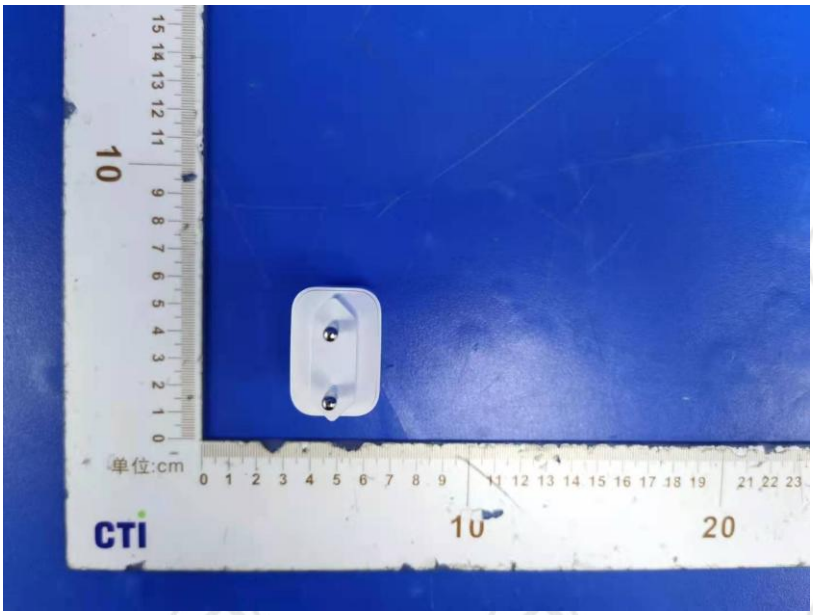

Fig. 2 Overview (RWD020C-EU2)

Fig. 3 Partial view (RWD020C-EU2)

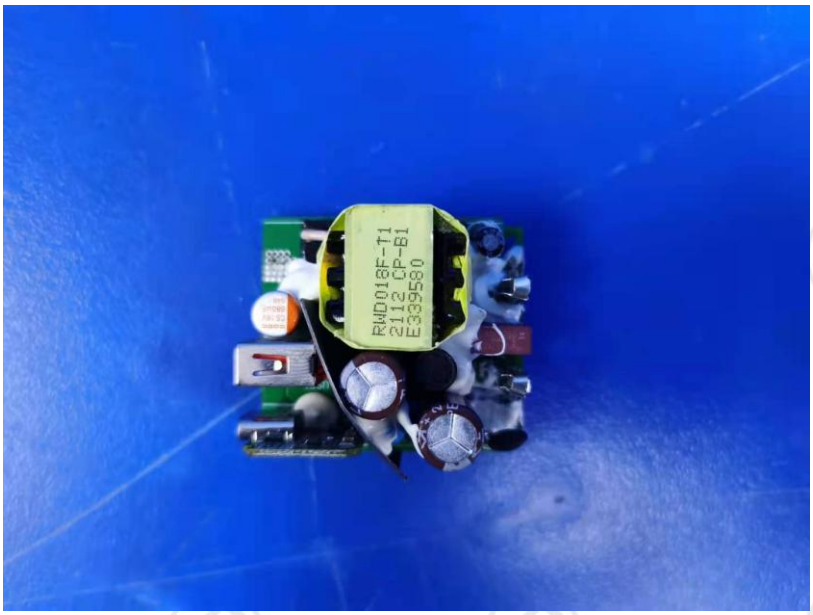

Fig. 4 Internal view (RWD020C-EU2)

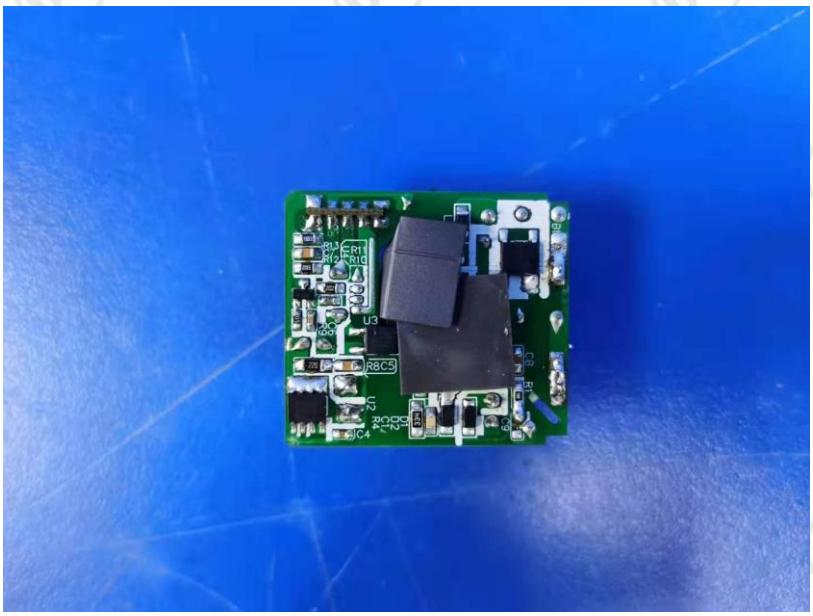

Fig. 5 Internal view (RWD020C-EU2)