Anex

Corsair RM850 (2019) (Sample #2)

Lab ID#: CR19850013
Receipt Date: Mar 21, 2019
Test Date: Mar 4, 2019

Report:
Report Date: Mar 4, 2019

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Channel Well Technology
Series	RM
Model Number	RM850 (2019) (Sample #2)
Serial Number	19027122000038940012
DUT Notes	CP-9020196

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	850
Type	ATX12V
Cooling	140mm Rifle Bearing Fan (HA1425M12F-Z)
Semi-Passive Operation	✓
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	70.8	3	0.3
	Watts	150		849.6	15	3.6
Total Max. Power (W)		850				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (610mm)	1	1	18-20AWG	No
4+4 pin EPS12V (650mm)	2	2	18AWG	No
6+2 pin PCIe (600mm+150mm)	3	6	16-18AWG	No
SATA (460mm+110mm+110mm+110mm)	3	12	18AWG	No
4 pin Molex (450mm+100mm+100mm+100mm)	1	4	18AWG	No
AC Power Cord (1420mm) - C13 coupler	1	1	16AWG	-

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	88.540
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	78.436
Average Efficiency 5VSB	77.252
Standby Power Consumption (W) -115V	0.0392914
Standby Power Consumption (W) -230V	0.0712672
Average PF	0.990
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	25.66
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A-

TEST EQUIPMENT		
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Chroma 61604, Keysight AC6804B	
Power Analyzers	N4L PPA1530 x2, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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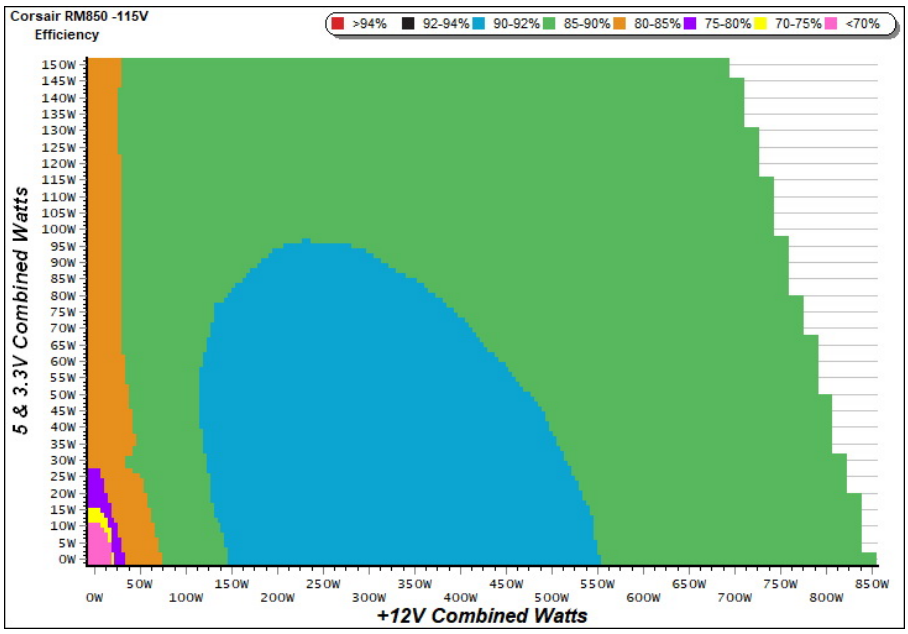
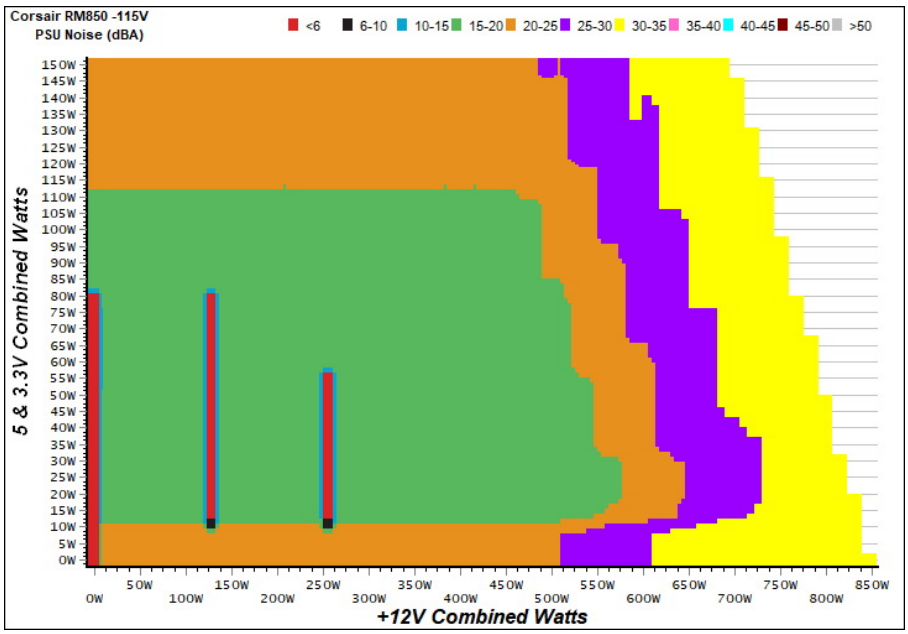
EFFICIENCY GRAPH



INFO

This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

NOISE GRAPH



INFO

The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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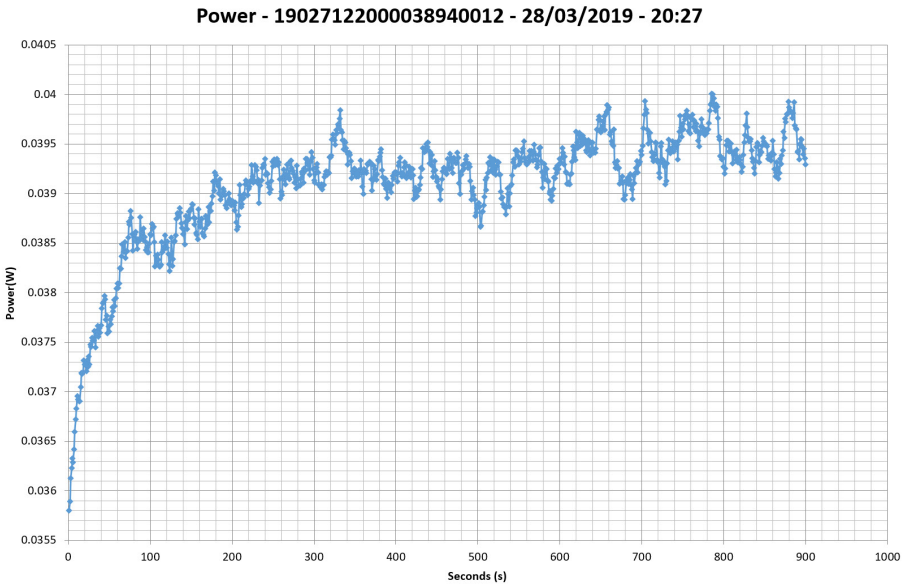
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227	69.846%	0.032
	5.042V	0.325		115.13V
2	0.090A	0.454	74.426%	0.060
	5.042V	0.610		115.13V
3	0.550A	2.767	78.341%	0.259
	5.030V	3.532		115.13V
4	1.000A	5.019	77.442%	0.348
	5.019V	6.481		115.13V
5	1.500A	7.509	77.333%	0.397
	5.006V	9.710		115.13V
6	3.000A	14.902	76.660%	0.459
	4.967V	19.439		115.13V

5VSB EFFICIENCY -230V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227	62.534%	0.011
	5.042V	0.363		230.27V
2	0.090A	0.454	69.525%	0.019
	5.041V	0.653		230.27V
3	0.550A	2.767	76.394%	0.101
	5.030V	3.622		230.27V
4	1.000A	5.018	77.129%	0.166
	5.018V	6.506		230.27V
5	1.500A	7.507	77.145%	0.222
	5.005V	9.731		230.27V
6	3.000A	14.895	77.072%	0.319
	4.965V	19.326		230.26V

VAMPIRE POWER -115V



INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

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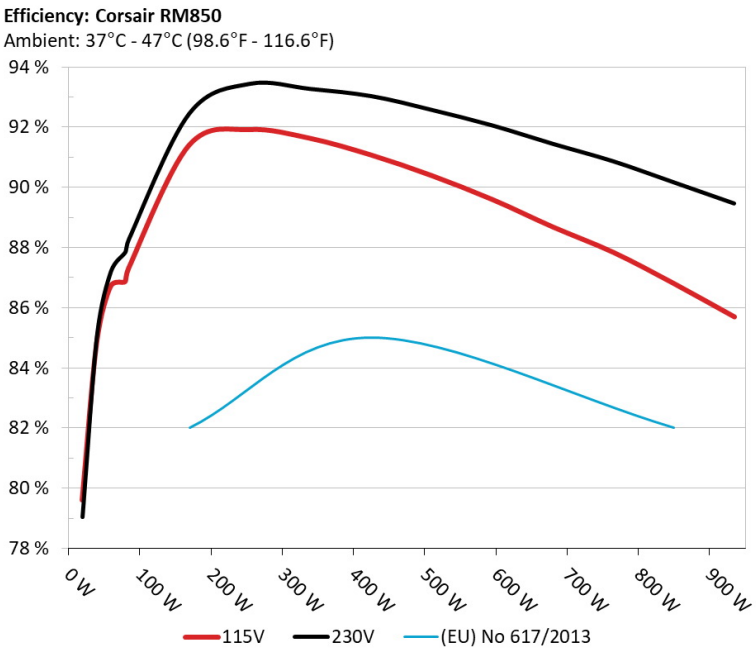
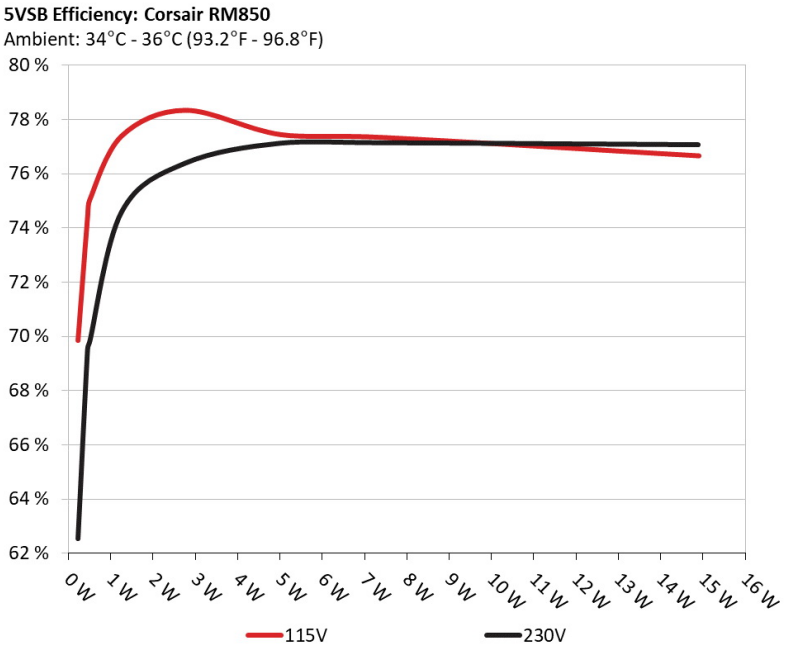
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



INFO

The PSU`s efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5VSB EFFICIENCY



INFO

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

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10-110% LOAD TESTS

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	5.199A	1.981A	1.993A	0.995A	84.732	87.329%	0	<6.0	43.47°C	0.975
	12.144V	5.046V	3.311V	5.025V	97.026				40.10°C	115.09V
2	11.421A	2.974A	2.991A	1.196A	169.248	91.405%	0	<6.0	45.42°C	0.989
	12.114V	5.043V	3.308V	5.019V	185.162				41.03°C	115.09V
3	18.048A	3.471A	3.480A	1.397A	254.367	91.930%	0	<6.0	46.31°C	0.993
	12.099V	5.041V	3.306V	5.012V	276.696				41.17°C	115.09V
4	24.696A	3.969A	3.995A	1.598A	339.604	91.636%	783	16.1	41.83°C	0.991
	12.083V	5.040V	3.304V	5.006V	370.603				47.81°C	115.09V
5	31.027A	4.963A	4.997A	1.800A	424.897	91.083%	784	16.1	42.13°C	0.990
	12.067V	5.037V	3.301V	5.000V	466.492				48.50°C	115.09V
6	37.302A	5.959A	5.998A	2.003A	509.438	90.402%	786	16.2	42.80°C	0.992
	12.054V	5.035V	3.300V	4.994V	563.526				49.88°C	115.09V
7	43.650A	6.957A	7.005A	2.206A	594.746	89.606%	901	20.5	43.28°C	0.993
	12.042V	5.032V	3.298V	4.988V	663.736				51.29°C	115.09V
8	50.001A	7.957A	8.009A	2.410A	680.122	88.688%	1206	30.3	43.72°C	0.994
	12.034V	5.028V	3.296V	4.981V	766.868				52.48°C	115.09V
9	56.761A	8.459A	8.496A	2.410A	765.062	87.843%	1525	37.2	44.41°C	0.995
	12.025V	5.026V	3.295V	4.980V	870.944				54.23°C	115.09V
10	63.260A	8.960A	9.017A	3.024A	849.905	86.806%	1749	40.8	45.80°C	0.995
	12.017V	5.024V	3.293V	4.961V	979.085				56.47°C	115.09V
11	70.361A	8.964A	9.026A	3.026A	934.691	85.699%	1750	40.8	46.84°C	0.996
	12.009V	5.022V	3.291V	4.958V	1090.669				58.39°C	115.09V
CL1	0.141A	18.007A	18.000A	0.000A	151.557	83.544%	1041	25.5	42.22°C	0.989
	12.112V	5.023V	3.300V	5.077V	181.410				48.64°C	115.12V
CL2	70.838A	1.002A	1.000A	1.000A	864.879	87.238%	1729	40.5	45.40°C	0.995
	12.021V	5.031V	3.293V	5.001V	991.403				56.44°C	115.10V

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20-80W LOAD TESTS

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.183A	0.495A	0.482A	0.198A	19.370	79.607%	0	<6.0	0.815
	12.071V	5.045V	3.308V	5.041V	24.332				115.08V
2	2.442A	0.990A	0.997A	0.397A	39.793	84.850%	0	<6.0	0.930
	12.078V	5.047V	3.312V	5.039V	46.898				115.08V
3	3.634A	1.486A	1.477A	0.596A	59.280	86.717%	0	<6.0	0.957
	12.077V	5.047V	3.312V	5.035V	68.360				115.08V
4	4.872A	1.980A	1.991A	0.795A	79.743	86.872%	0	<6.0	0.974
	12.142V	5.047V	3.312V	5.031V	91.794				115.09V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	4.9 mV	6.4 mV	9.1 mV	7.2 mV	Pass
20% Load	10.6 mV	7.2 mV	11.2 mV	8.2 mV	Pass
30% Load	7.6 mV	8.1 mV	11.3 mV	8.3 mV	Pass
40% Load	9.3 mV	9.4 mV	11.6 mV	8.4 mV	Pass
50% Load	9.1 mV	9.3 mV	11.6 mV	8.0 mV	Pass
60% Load	9.6 mV	10.4 mV	13.2 mV	8.4 mV	Pass
70% Load	10.6 mV	11.2 mV	13.9 mV	8.5 mV	Pass
80% Load	11.7 mV	11.6 mV	15.1 mV	9.3 mV	Pass
90% Load	12.5 mV	12.5 mV	16.6 mV	8.7 mV	Pass
100% Load	16.8 mV	14.8 mV	16.6 mV	11.0 mV	Pass
110% Load	17.8 mV	14.5 mV	18.6 mV	11.0 mV	Pass
Crossload 1	18.8 mV	10.7 mV	16.6 mV	8.9 mV	Pass
Crossload 2	17.8 mV	11.4 mV	15.5 mV	10.2 mV	Pass

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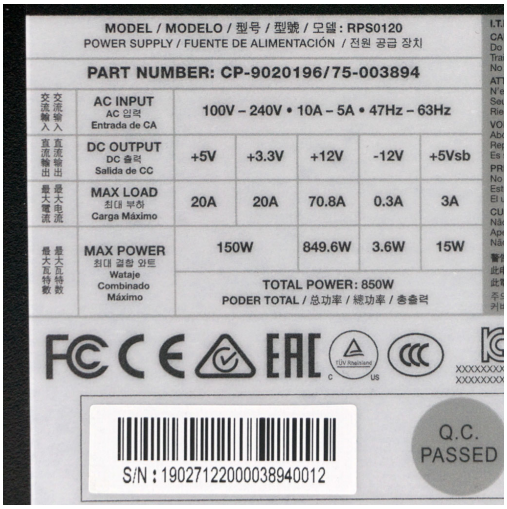
HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	20.5
AC Loss to PWR_OK Hold Up Time (ms)	18.0
PWR_OK Inactive to DC Loss Delay (ms)	2.5

Top side



Power specifications label

CERTIFICATIONS