

Anex

Corsair RM850x White

Lab ID#: 211

Receipt Date: Aug 2, 2018

Test Date: Aug 8, 2018

Report:

Report Date: Aug 11, 2018

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Channel Well Technology
Series	RMx
Model Number	
Serial Number	17347169000032190062
DUT Notes	CP-9020156

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	12-6
Rated Frequency (Hz)	47-63
Rated Power (W)	850
Type	ATX12V
Cooling	135mm Rifle Bearing Fan (NR135L)
Semi-Passive Operation	✓
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	25	70.8	3	0.8
	Watts	150		850	15	9.6
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 (600mm)	1	1	16-20AWG	Yes
4+4 pin EPS12V (750mm)	2	2	18AWG	Yes
6+2 pin PCIe (2x650mm)	3	6	18AWG	Yes
SATA (400mm+110mm+110mm+110mm)	3	12	18AWG	No
4 pin Molex (450mm+100mm+100mm+100mm)	2	8	18AWG	No

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General Data	
Manufacturer (OEM)	CWT
Primary Side	
Transient Filter	6x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor
Bridge Rectifier(s)	2x GBJ1510 (700V, 15A @ 100°C)
APFC MOSFETS	2x Vishay SiHF22N60E (650V, 13A @ 100°C, 0.18 Ohm)
APFC Boost Diode	1x Power Intergrations QH08TZ600 (600V, 8A @ 150°C)
Hold-up Cap(s)	2x Nichicon (400V, 470uF eachor 940uF combined, 2000h @ 105°C, GG)
Main Switchers	2x Vishay SiHG20N50C (560V, 11A @ 100°C, 0.27Ohm)
APFC Controller	Infineon ICE3PCS01G - CM03X
Switching Controller	Infineon ICE2HS01G
Topology	Primary side: Half-Bridge & LLC Resonant Controller Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	6x Inte ational Rectifier IRFH7004TRPBF (40V, 164A @ 100°C, 1.4 mOhm)
5V & 3.3V	DC-DC Converters: 4x QM3004D (30V, 40A @ 100°C, 8.5 mOhm) 2x QM3006D (30V, 57A @ 100°C, 5.5 mOhm) PWM Controller: Anpec APW7159
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (1-5,000 @ 105°C, KZE), Nippon Chemi-Con (4-10,000 @ 105°C, KY), Nippon Chemi-Con (5-6,000 @ 105°C, KZH) Polymers: Fpcap
Supervisor IC	Weltrend WT7502 (OVP, UVP, SCP, PG), LM358
Fan Model	NR135L (12V, 0.22A, Rifle Bearing)
5VSB Circuit	
Rectifier	SD04N65A FET, QM3004D FET, MBRU2045CT SBR (45V, 20A @ 125°C)
Standby PWM Controller	On-Bright OB5269CP

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	88.660%
Efficiency With 10W (≤500W) or 2% (>500W)	0.000
Average Efficiency 5VSB	81.246%
Standby Power Consumption (W)	0.0475250
Average PF	0.992
Avg Noise Output	18.81 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A+

TEST EQUIPMENT

Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, 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	

HOLD-UP TIME & POWER OK SIGNAL (230V)

Hold-Up Time (ms)	30.0
AC Loss to PWR_OK Hold Up Time (ms)	21.1
PWR_OK Inactive to DC Loss Delay (ms)	8.9

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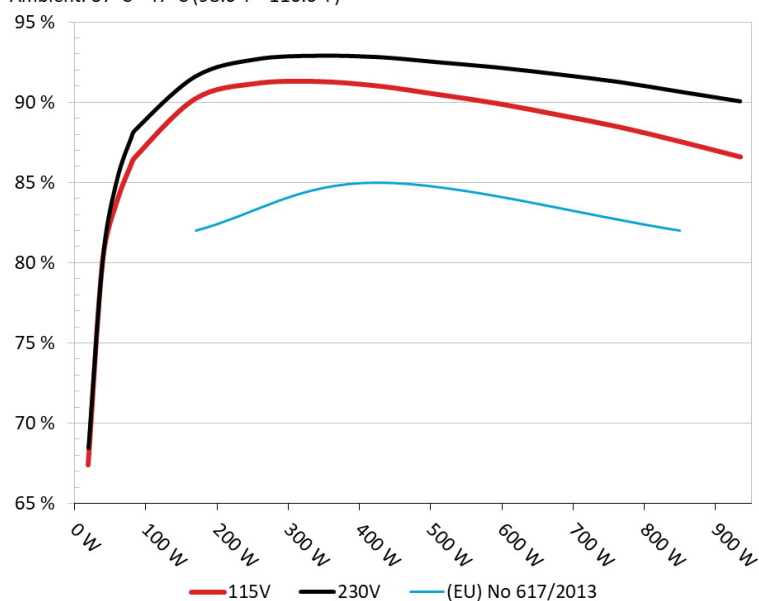
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Corsair RM850x

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



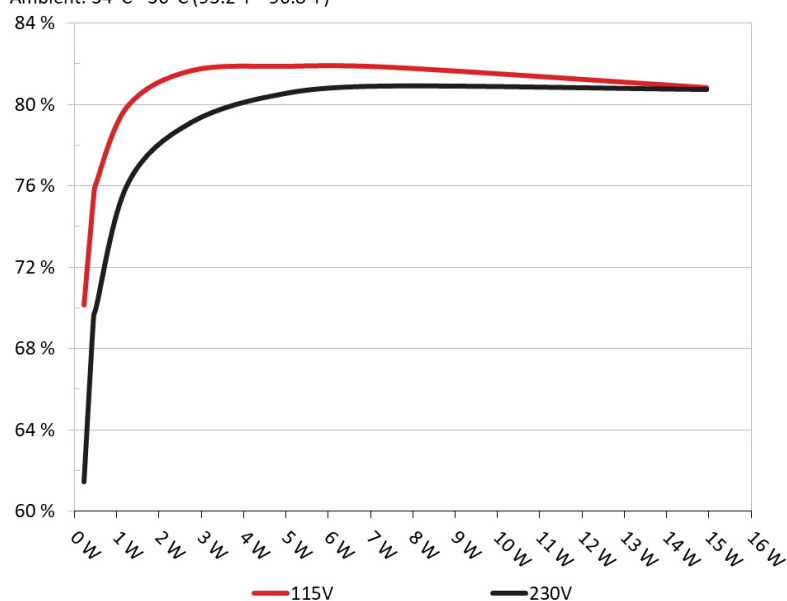
INFO

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

5VSB Efficiency: Corsair RM850x

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



INFO

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

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	70.154%	0.027
	5.053V	0.325		115.29V
2	0.090A	0.455	75.456%	0.050
	5.053V	0.603		115.28V
3	0.550A	2.774	81.684%	0.227
	5.043V	3.396		115.28V
4	1.000A	5.033	81.891%	0.320
	5.033V	6.146		115.27V
5	1.500A	7.531	81.841%	0.375
	5.021V	9.202		115.27V
6	3.000A	14.954	80.846%	0.449
	4.985V	18.497		115.26V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	61.456%	0.010
	5.052V	0.371		230.85V
2	0.090A	0.455	69.572%	0.017
	5.052V	0.654		230.85V
3	0.550A	2.774	79.144%	0.089
	5.043V	3.505		230.85V
4	1.000A	5.032	80.576%	0.149
	5.032V	6.245		230.84V
5	1.500A	7.530	80.924%	0.204
	5.020V	9.305		230.84V
6	3.000A	14.951	80.751%	0.308
	4.984V	18.515		230.67V

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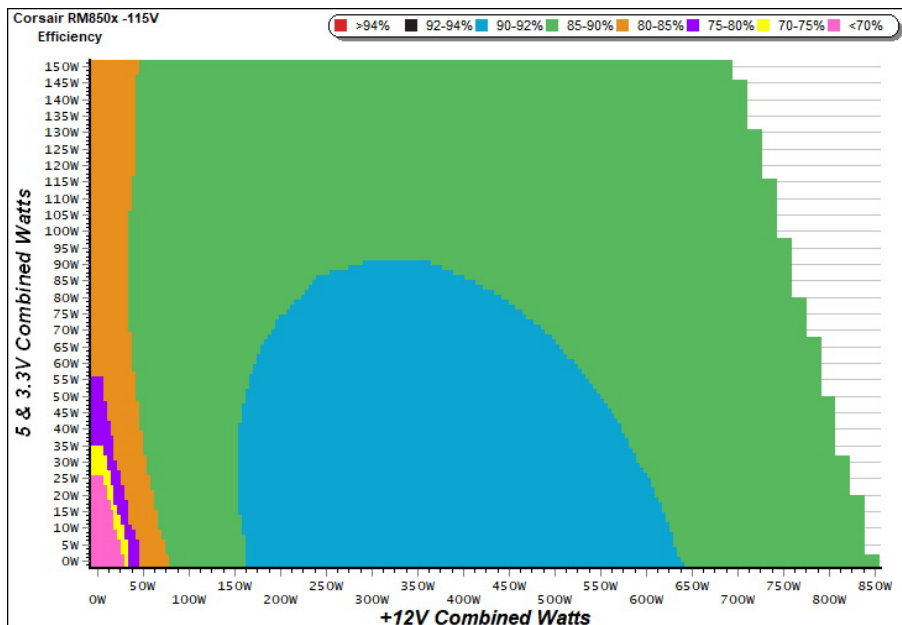
115V

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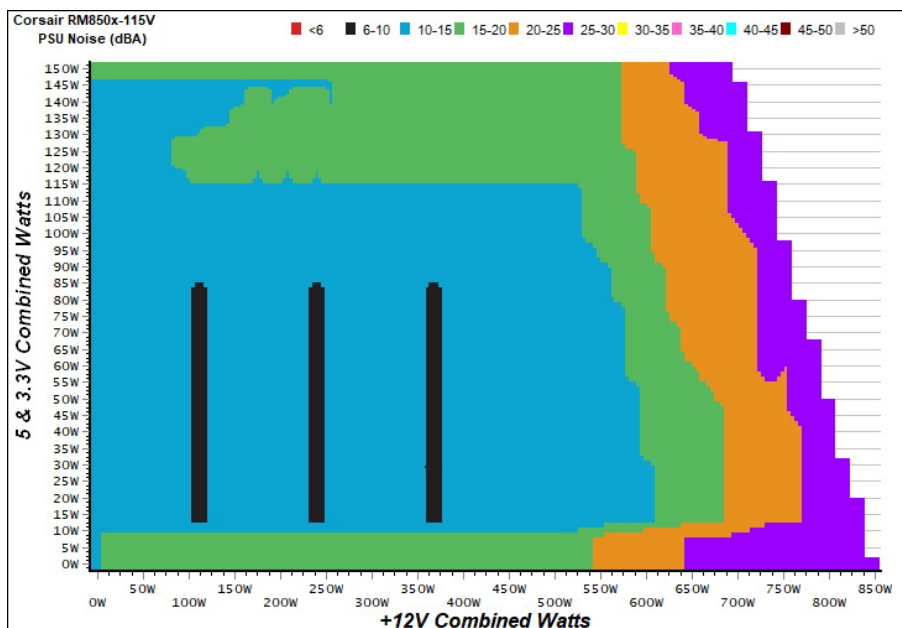
EFFICIENCY GRAPH 115V



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 115V



INFO

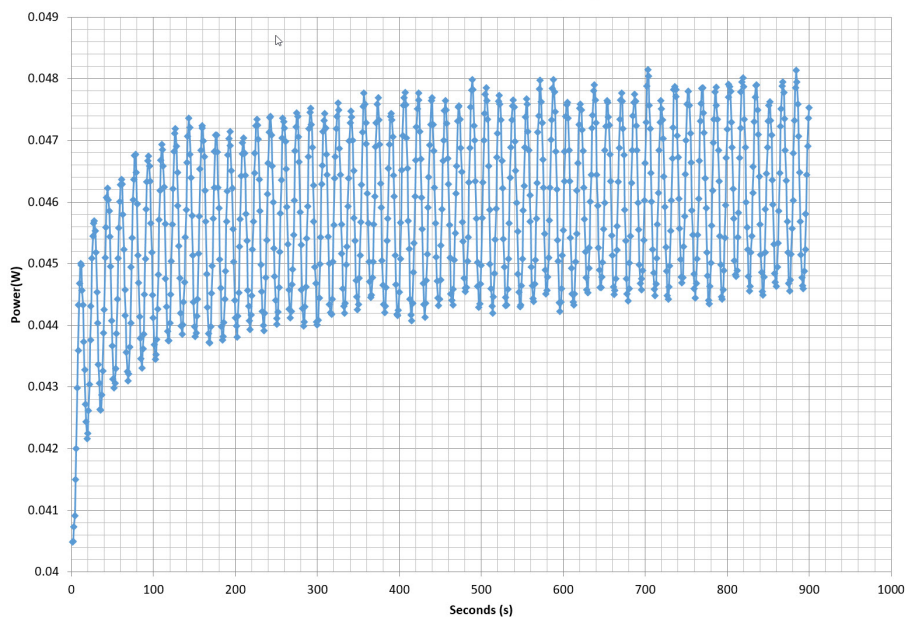
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - 17347169000032190062 - 06/11/2017 - 15:08



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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10-110% LOAD TESTS 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	5.196A	1.982A	1.982A	0.996A	84.561	86.551%	0	<6.0	46.18°C	0.968
	12.122V	5.039V	3.325V	5.019V	97.701				38.31°C	115.16V
2	11.404A	2.975A	2.977A	1.196A	169.035	90.208%	0	<6.0	46.81°C	0.988
	12.115V	5.037V	3.323V	5.015V	187.383				38.43°C	115.15V
3	18.022A	3.473A	3.460A	1.397A	254.172	91.172%	0	<6.0	47.26°C	0.993
	12.107V	5.036V	3.321V	5.009V	278.782				38.69°C	115.03V
4	24.648A	3.971A	3.975A	1.599A	339.404	91.300%	0	<6.0	48.35°C	0.995
	12.099V	5.035V	3.319V	5.004V	371.745				38.99°C	114.92V
5	30.951A	4.966A	4.971A	1.800A	424.710	91.024%	0	<6.0	49.07°C	0.995
	12.091V	5.033V	3.317V	4.999V	466.592				39.06°C	114.89V
6	37.202A	5.961A	5.970A	2.002A	509.256	90.493%	610	10.2	41.99°C	0.996
	12.082V	5.032V	3.314V	4.995V	562.759				57.90°C	114.77V
7	43.522A	6.957A	6.970A	2.204A	594.564	89.918%	655	11.2	42.50°C	0.997
	12.074V	5.030V	3.312V	4.991V	661.228				60.01°C	114.74V
8	49.858A	7.953A	7.973A	2.407A	679.926	89.206%	785	18.1	43.01°C	0.997
	12.065V	5.029V	3.310V	4.987V	762.198				61.87°C	114.61V
9	56.596A	8.457A	8.462A	2.407A	764.885	88.453%	943	24.5	44.22°C	0.997
	12.057V	5.027V	3.308V	4.986V	864.733				64.15°C	114.47V
10	63.080A	8.955A	8.984A	3.019A	849.693	87.554%	1154	31.0	45.81°C	0.997
	12.048V	5.025V	3.306V	4.970V	970.482				65.96°C	114.44V
11	70.165A	8.957A	8.989A	3.020A	934.490	86.591%	1415	36.7	47.43°C	0.997
	12.040V	5.024V	3.304V	4.968V	1079.195				69.43°C	114.29V
CL1	0.729A	18.002A	17.999A	0.000A	159.016	83.428%	785	18.1	44.25°C	0.989
	12.095V	5.029V	3.315V	5.068V	190.603				61.86°C	115.13V
CL2	70.830A	1.000A	0.997A	1.000A	867.185	87.882%	1119	30.0	45.60°C	0.997
	12.055V	5.028V	3.308V	5.004V	986.758				66.48°C	114.42V

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20-80W LOAD TESTS 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.166A	0.492A	0.477A	0.199A	19.214	67.377%	0	<6.0	0.824
	12.131V	5.040V	3.327V	5.036V	28.517				115.24V
2	2.418A	0.988A	0.989A	0.397A	39.592	80.151%	0	<6.0	0.930
	12.128V	5.040V	3.326V	5.032V	49.397				115.22V
3	3.608A	1.485A	1.470A	0.597A	59.123	83.758%	0	<6.0	0.954
	12.126V	5.040V	3.325V	5.028V	70.588				115.19V
4	4.863A	1.980A	1.982A	0.796A	79.521	86.122%	0	<6.0	0.965
	12.123V	5.039V	3.325V	5.024V	92.335				115.17V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	3.3 mV	3.8 mV	4.4 mV	3.3 mV	Pass
20% Load	3.9 mV	5.3 mV	5.6 mV	5.0 mV	Pass
30% Load	5.0 mV	5.2 mV	5.5 mV	4.9 mV	Pass
40% Load	5.7 mV	5.3 mV	6.2 mV	6.1 mV	Pass
50% Load	6.5 mV	5.7 mV	7.0 mV	7.2 mV	Pass
60% Load	7.0 mV	7.4 mV	8.1 mV	9.0 mV	Pass
70% Load	7.9 mV	7.9 mV	9.8 mV	9.9 mV	Pass
80% Load	8.7 mV	8.6 mV	10.9 mV	12.3 mV	Pass
90% Load	10.3 mV	8.9 mV	10.9 mV	12.8 mV	Pass
100% Load	11.9 mV	12.2 mV	11.9 mV	16.8 mV	Pass
110% Load	14.8 mV	10.5 mV	12.5 mV	15.6 mV	Pass
Crossload 1	5.5 mV	11.6 mV	11.2 mV	8.0 mV	Pass
Crossload 2	11.8 mV	7.5 mV	9.1 mV	14.2 mV	Pass

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Anex

Corsair RM850x White



Top side

MODEL / 型号 / 型號 / 모델 : RPS0017					
POWER SUPPLY / 전원 공급 장치					
PART NUMBER: CP-9020156					
交流 電源 輸入	AC INPUT AC 입력	100V - 240V • 12A - 6A • 47Hz - 63Hz			
直流 輸出	DC OUTPUT DC 출력	+3.3V	+5V	+12V	-12V +5Vsb
最大 電流	MAX LOAD 최대 부하	25A	25A	70.8A	0.8A 3A
最大 瓦特 數	MAXIMUM COMBINED WATTAGE 최대 결합 와트	150W		850W	9.6W 15W
		總功率 總功率 총 전력			
		TOTAL POWER: 850W			
FC  UL  UL  SSE 					
 S/N : 17347169000032190062					
Q.C. PASSED					

Power specifications label

CERTIFICATIONS 115V



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