

Anex

Corsair RM750x (Sample #2)

Lab ID#: 225
Receipt Date: Nov 20, 2018
Test Date: Nov 24, 2018

Report:

Report Date: Nov 27, 2018

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Channel Well Technology
Series	RMx
Model Number	
Serial Number	16517135000018370928
DUT Notes	CP-9020092

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	750
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	62.5	3	0.8
	Watts	150		750	15	9.6
Total Max. Power (W)		750				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	18-20AWG	Yes
4+4 pin EPS12V (650mm)	1	1	18AWG	Yes
6+2 pin PCIe (600mm+150mm)	2	4	18AWG	Yes
SATA (520mm+115mm+115mm)	3	9	18AWG	No
4 pin Molex (450mm+100mm+100mm+100mm)	2	8	18AWG	No
FDD Adapter (+100mm)	1	1	20AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	No

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Primary Side	
Transient Filter	6x Y caps, 3x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor
Bridge Rectifier(s)	1x GBJ25L06 (600V, 25A @ 113°C)
APFC MOSFETS	2x Vishay SiHF22N60E (650V, 13A @ 100°C, 0.18Ω)
APFC Boost Diode	1x Vishay 8S2TH061 (600V, 8A @ 120°C)
Hold-up Cap(s)	2x Nippon Chemi-Con (400V, 390uF & 470uF or 860uF combined, 2000h @ 105°C, KMW - KMR)
Main Switchers	2x Vishay SiHG20N50C (560V, 11A @ 100°C, 0.27Ω)
APFC Controller	Infineon ICE3PCS01G - CM03X
Switching Controller	Infineon ICE2HS01G
Topology	Primary side: Half-Bridge & LLC Resonant Converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	6x Sinopower SM4021NAKP (40V, 100A @ 100°C, 2.7mΩ) @ VGS=6V)
5V & 3.3V	DC-DC Converters: 4x M3006D & 2x M3004D fets PWM Controller: APW7159
Filtering Capacitors	Electrolytics: Chemi-Con (105°C, KZE series) Polymers: Nippon Chemi-Con
Supervisor IC	Weltrend WT7502 & Weltrend WT7518
Fan Model	NR135L (12 V, 0.22 A, Rifle Bearing)
5VSB Circuit	
Rectifier	PFR20V45CT (45V, 20A, VF: 0.42V max @ 125°C)

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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	88.337%
Efficiency With 10W (≤500W) or 2% (>500W)	0.000
Average Efficiency 5VSB	81.060%
Standby Power Consumption (W)	0.0424724
Average PF	0.993
Avg Noise Output	18.53 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)	29.56
AC Loss to PWR_OK Hold Up Time (ms)	21.62
PWR_OK Inactive to DC Loss Delay (ms)	7.94

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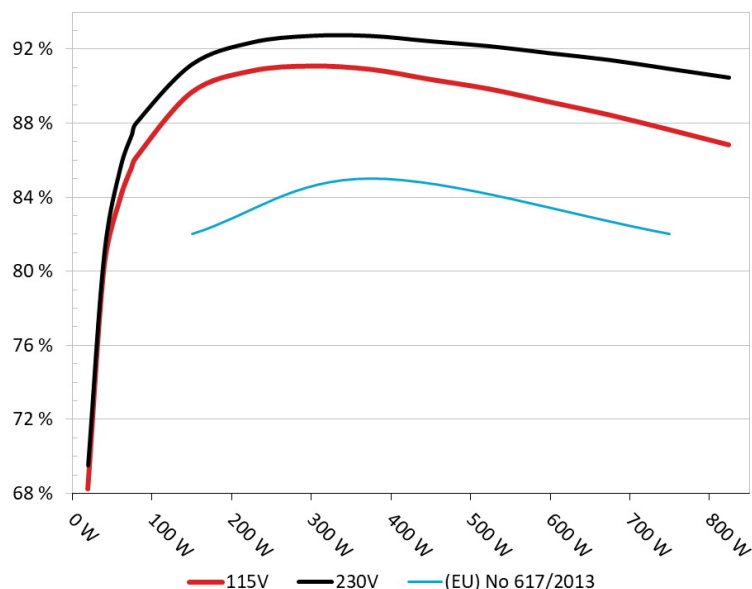
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Corsair RM750x

Ambient: 37°C - 48°C (98.6°F - 118.4°F)



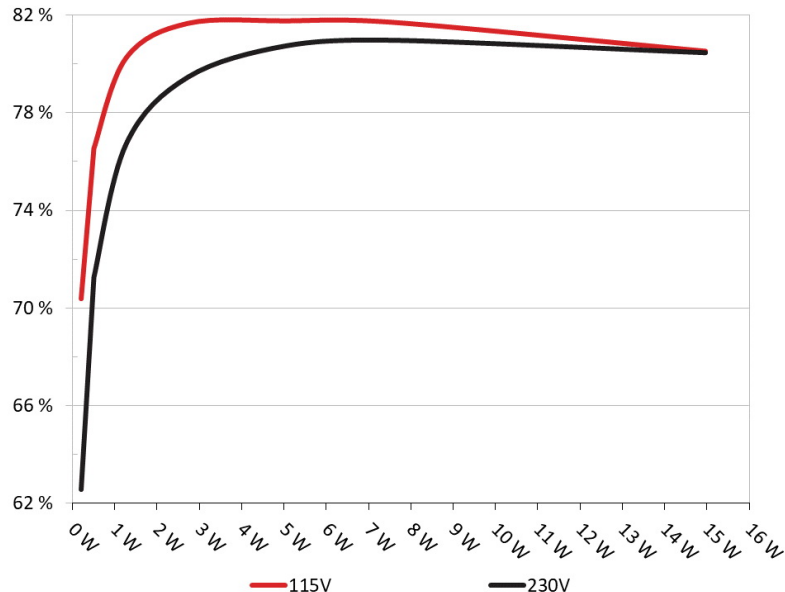
INFO

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 RM750x

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	0.042A	0.214	70.395%	0.030
	5.059V	0.304		115.02V
2	0.088A	0.444	76.552%	0.057
	5.059V	0.580		115.04V
3	0.543A	2.740	81.669%	0.248
	5.049V	3.355		115.02V
4	1.003A	5.050	81.768%	0.337
	5.037V	6.176		115.02V
5	1.502A	7.547	81.713%	0.386
	5.025V	9.236		115.03V
6	3.001A	14.967	80.528%	0.449
	4.987V	18.586		115.02V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.214	62.757%	0.010
	5.059V	0.341		230.15V
2	0.088A	0.444	71.268%	0.019
	5.058V	0.623		230.18V
3	0.543A	2.739	79.460%	0.097
	5.048V	3.447		230.15V
4	1.003A	5.050	80.735%	0.161
	5.037V	6.255		230.16V
5	1.502A	7.546	80.966%	0.216
	5.024V	9.320		230.16V
6	3.001A	14.964	80.456%	0.314
	4.986V	18.599		230.16V

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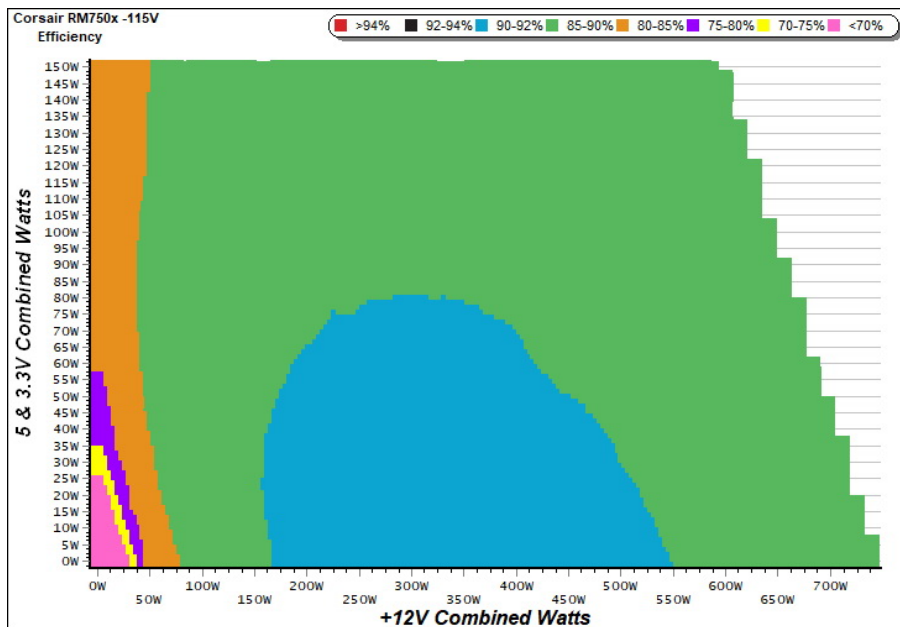
115V

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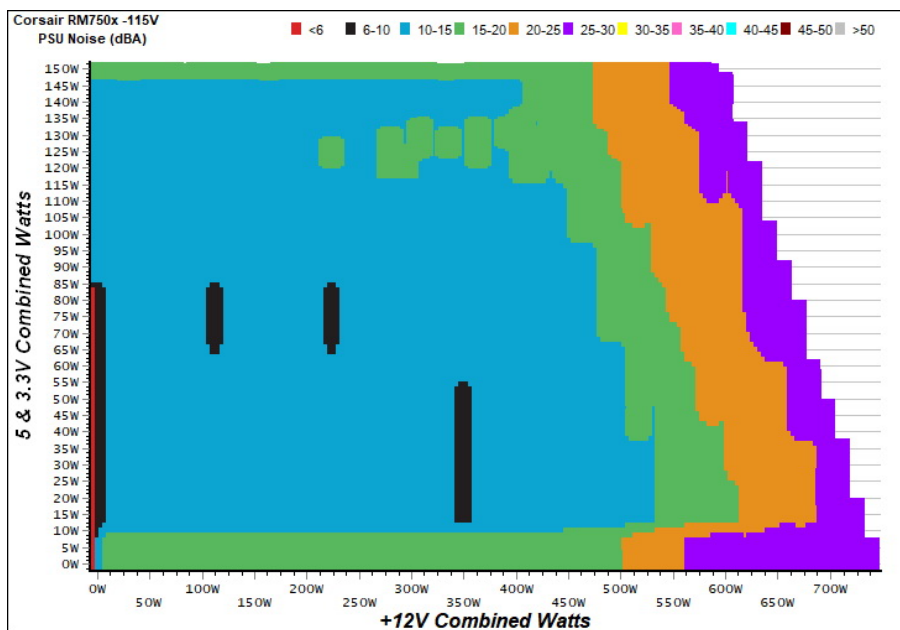
EFFICIENCY GRAPH 115V



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

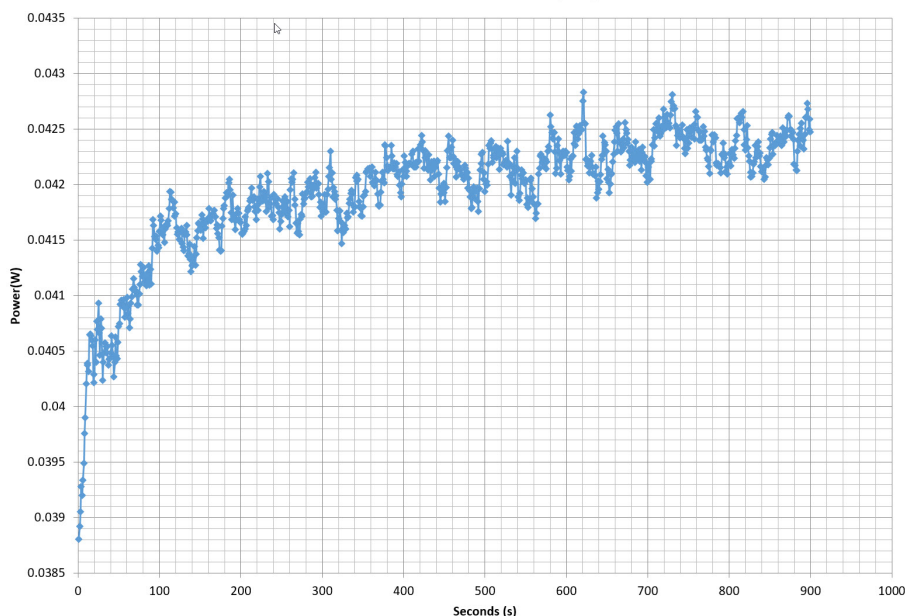
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - 16517135000018370928 - 24/11/2017 - 10:46



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	4.424A	1.984A	1.991A	0.996A	74.790	85.625%	0	<6.0	42.34°C	0.967
	12.033V	5.030V	3.310V	5.006V	87.346				38.17°C	115.10V
2	9.891A	2.981A	2.988A	1.196A	149.794	89.656%	0	<6.0	42.85°C	0.988
	12.025V	5.028V	3.308V	5.002V	167.076				38.47°C	115.09V
3	15.712A	3.486A	3.504A	1.401A	224.947	90.812%	0	<6.0	43.54°C	0.993
	12.019V	5.026V	3.306V	4.996V	247.707				38.81°C	115.09V
4	21.528A	3.981A	3.993A	1.601A	299.778	91.080%	0	<6.0	43.97°C	0.995
	12.012V	5.024V	3.304V	4.991V	329.137				39.09°C	115.09V
5	27.013A	4.972A	4.995A	1.801A	374.747	90.902%	0	<6.0	44.86°C	0.996
	12.005V	5.024V	3.302V	4.988V	412.253				39.79°C	115.08V
6	32.499A	5.974A	5.999A	2.006A	449.717	90.360%	633	10.9	41.02°C	0.997
	11.998V	5.022V	3.300V	4.983V	497.695				49.12°C	115.08V
7	38.000A	6.979A	7.004A	2.207A	524.701	89.836%	655	11.2	41.67°C	0.997
	11.989V	5.020V	3.298V	4.977V	584.064				50.39°C	115.07V
8	43.510A	7.972A	8.010A	2.411A	599.636	89.143%	785	18.1	42.63°C	0.997
	11.980V	5.018V	3.295V	4.973V	672.669				51.75°C	115.07V
9	49.448A	8.474A	8.528A	2.411A	674.736	88.446%	888	22.7	44.02°C	0.997
	11.975V	5.017V	3.294V	4.973V	762.878				53.51°C	115.07V
10	55.135A	8.981A	9.019A	3.025A	749.587	87.651%	1049	27.0	45.51°C	0.997
	11.968V	5.016V	3.292V	4.956V	855.194				55.78°C	115.05V
11	61.425A	8.980A	9.022A	3.026A	824.476	86.831%	1119	30.0	47.57°C	0.997
	11.962V	5.014V	3.291V	4.955V	949.513				58.67°C	115.08V
CL1	0.097A	18.028A	18.001A	0.005A	151.437	82.673%	769	17.3	44.64°C	0.990
	12.010V	5.031V	3.308V	5.074V	183.175				53.22°C	115.10V
CL2	62.462A	1.003A	1.003A	1.002A	761.452	88.083%	1049	27.0	45.61°C	0.997
	11.977V	5.018V	3.297V	4.994V	864.467				55.93°C	115.07V

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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	1.212A	0.492A	0.479A	0.196A	19.635	68.260%	0	<6.0	0.841
	12.038V	5.030V	3.311V	5.025V	28.765				115.10V
2	2.454A	0.989A	0.996A	0.396A	39.795	80.127%	0	<6.0	0.933
	12.036V	5.030V	3.310V	5.020V	49.665				115.10V
3	3.692A	1.487A	1.509A	0.596A	59.893	83.873%	0	<6.0	0.956
	12.034V	5.030V	3.310V	5.016V	71.409				115.10V
4	4.921A	1.985A	1.991A	0.796A	79.768	86.119%	0	<6.0	0.970
	12.032V	5.029V	3.309V	5.010V	92.625				115.10V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	4.0 mV	9.2 mV	4.4 mV	3.9 mV	Pass
20% Load	4.6 mV	9.6 mV	4.9 mV	4.6 mV	Pass
30% Load	5.4 mV	11.3 mV	5.2 mV	6.5 mV	Pass
40% Load	6.0 mV	12.7 mV	5.9 mV	9.9 mV	Pass
50% Load	6.1 mV	10.4 mV	5.5 mV	7.4 mV	Pass
60% Load	6.2 mV	11.1 mV	6.5 mV	9.3 mV	Pass
70% Load	6.8 mV	11.9 mV	7.3 mV	10.5 mV	Pass
80% Load	6.8 mV	12.1 mV	7.8 mV	11.7 mV	Pass
90% Load	7.3 mV	12.9 mV	8.9 mV	13.1 mV	Pass
100% Load	8.2 mV	13.7 mV	9.0 mV	14.6 mV	Pass
110% Load	9.6 mV	14.6 mV	9.7 mV	16.0 mV	Pass
Crossload 1	5.9 mV	11.0 mV	6.2 mV	7.1 mV	Pass
Crossload 2	8.2 mV	13.4 mV	9.0 mV	13.5 mV	Pass

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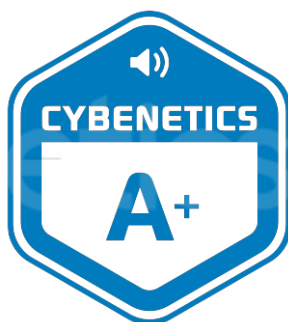


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Power specifications table

CERTIFICATIONS 115V



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