Anex

Corsair RM750x (2018)

Lab ID#: 271
Receipt Date: -
Test Date: -

Report: 20PS271A
Report Date: Nov 1, 2000

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Channel Well Technology
Series	RMx
Model Number	RM750x (2018)
Serial Number	17477137000034440118
DUT Notes	CP-9020179

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)	2	2	18AWG	Yes
6+2 pin PCIe (600mm+150mm)	2	4	18AWG	Yes
SATA (520mm+110mm+110mm)	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 (1430mm) - C13 coupler	1	1	16AWG	-

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Anex

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General Data	
Manufacturer (OEM)	CWT
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	2x GBU1506 (600V, 15A @ 100°C)
APFC MOSFETS	2x Vishay SiHF22N60E (650V, 13A @ 100°C, 0.18Ohm) 1x SPN5003 FET (for reduced no load consumption)
APFC Boost Diode	1x Power Integrations QH08TZ600 (600V, 8A @ 150°C)
Hold-up Cap(s)	2x Nichicon (400V, 1x 470uF, 1x 390uF, 2000h @ 105°C, GG)
Main Switchers	2x Infineon IPA60R190P6 (650V, 12.7A @ 100°C, 0.190 Ohm)
APFC Controller	Champion CM6500UNX
Switching Controller	Champion CM6901X
Fan Controller	PIC16F1503
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: 6x 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) Polymers: FPCAP
Supervisor IC	Weltrend WT7502 (OVP, UVP, SCP, PG) & LM393G
Fan Model	NR135L (12V, 0.22A, Rifle Bearing)
5VSB Circuit	
Rectifier	ISD04N65A, QM3004D, LS64 10L45 SBR
Step-Down Converter	AME5268
Standby PWM Controller	On-Bright OB5269CP

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Anex

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	88.001
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	77.707
Standby Power Consumption (W) -115V	0.0320703
Standby Power Consumption (W) -230V	0.0474498
Average PF	0.990
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	15.77
Efficiency Rating (ETA)	PLATINUM
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	

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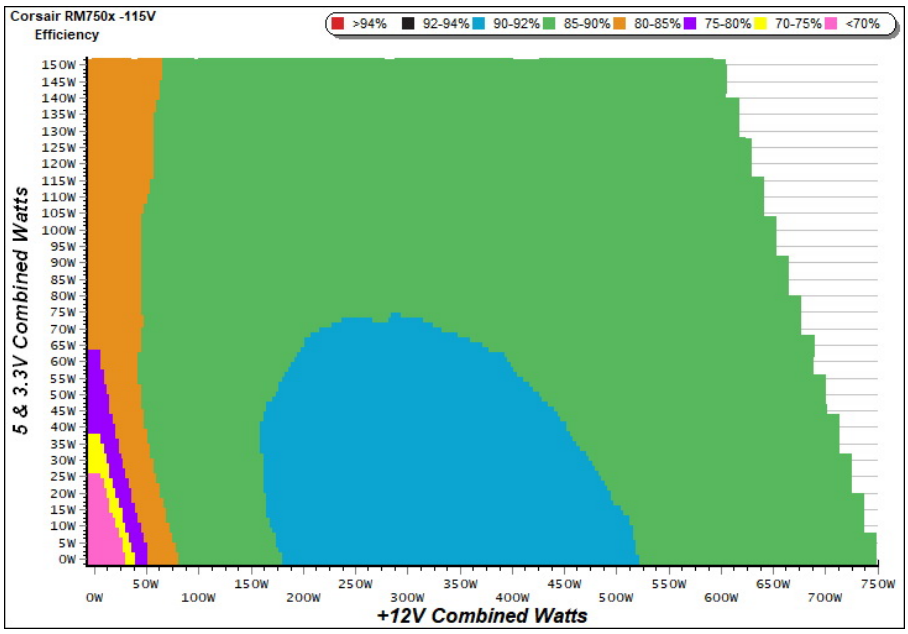
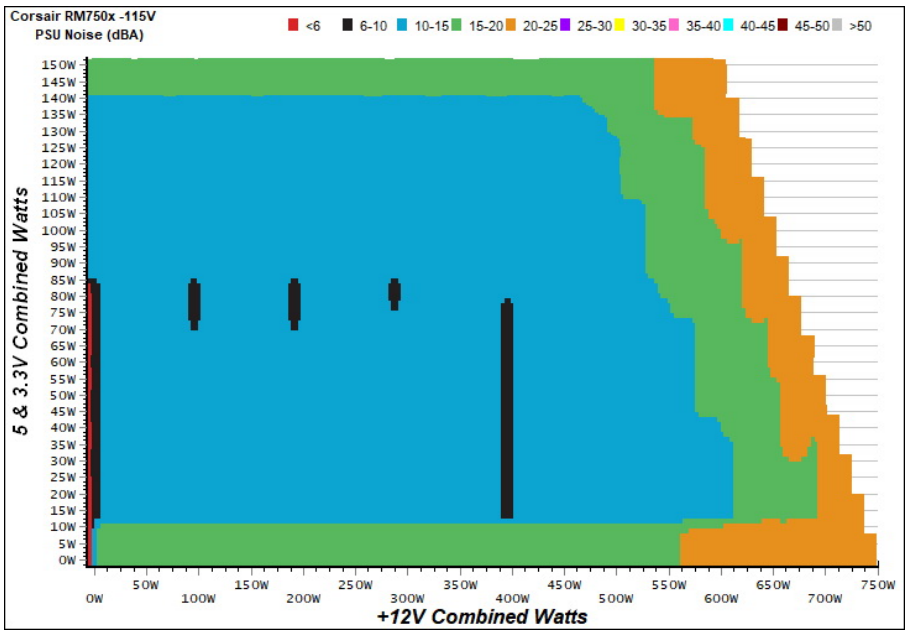
EFFICIENCY GRAPH



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

Anex

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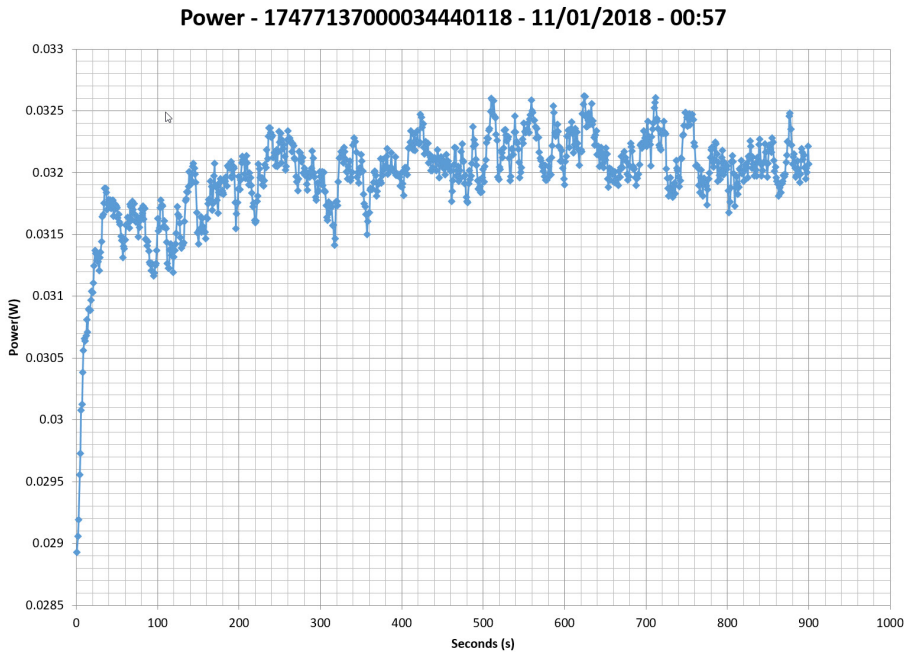
5VSB EFFICIENCY (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.211	71.769%	0.030
	5.058V	0.294		115.06V
2	0.087A	0.441	76.430%	0.058
	5.057V	0.577		115.06V
3	0.542A	2.735	79.413%	0.251
	5.044V	3.444		115.06V
4	1.002A	5.040	78.322%	0.337
	5.030V	6.435		115.05V
5	1.502A	7.534	77.895%	0.384
	5.017V	9.672		115.05V
6	3.001A	14.929	76.461%	0.447
	4.974V	19.525		115.05V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.043A	0.217	71.148%	0.021
	5.057V	0.305		230.21V
2	0.087A	0.439	73.289%	0.018
	5.055V	0.599		230.22V
3	0.542A	2.731	78.319%	0.100
	5.042V	3.487		230.21V
4	1.002A	5.035	78.586%	0.166
	5.027V	6.407		230.21V
5	1.501A	7.527	78.178%	0.221
	5.013V	9.628		230.21V
6	3.002A	14.909	77.313%	0.313
	4.967V	19.284		230.21V

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

Anex

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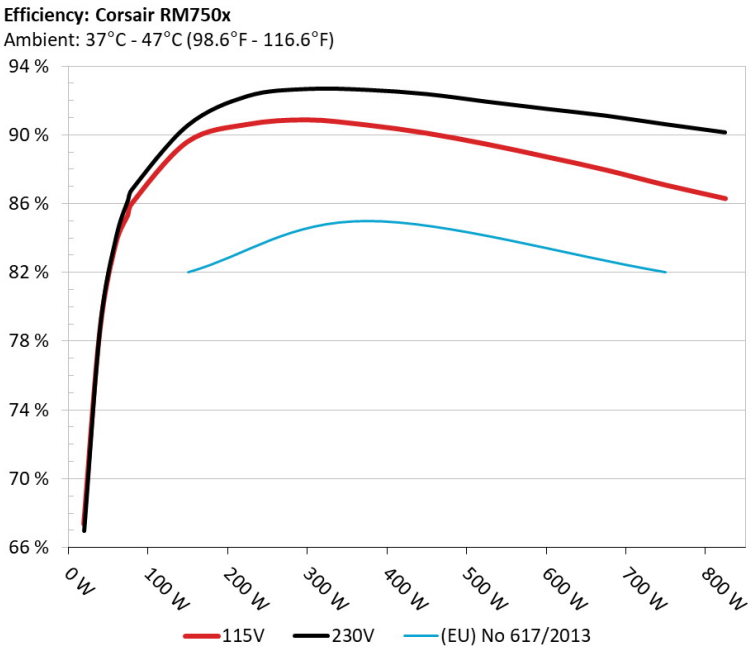
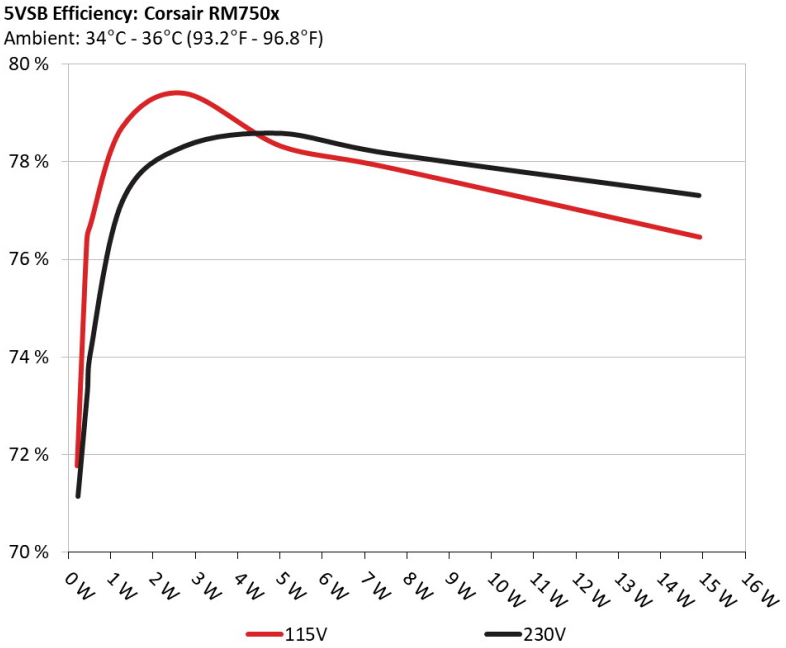
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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	4.400A	1.983A	1.984A	0.996A	74.799	85.348%	0	<6.0	46.86°C	0.975
	12.095V	5.039V	3.323V	5.017V	87.640				39.61°C	115.03V
2	9.839A	2.968A	2.978A	1.196A	149.770	89.622%	0	<6.0	47.70°C	0.990
	12.089V	5.036V	3.320V	5.011V	167.113				39.85°C	115.03V
3	15.628A	3.476A	3.495A	1.396A	224.906	90.633%	610	10.2	41.40°C	0.993
	12.083V	5.034V	3.316V	5.004V	248.151				49.52°C	115.04V
4	21.406A	3.972A	3.979A	1.600A	299.808	90.896%	610	10.2	41.73°C	0.992
	12.082V	5.033V	3.315V	4.999V	329.835				49.99°C	115.03V
5	26.881A	4.970A	4.977A	1.801A	374.782	90.597%	610	10.2	41.93°C	0.990
	12.065V	5.028V	3.312V	4.992V	413.681				50.43°C	115.02V
6	32.338A	5.968A	5.979A	2.003A	449.703	90.121%	610	10.2	42.14°C	0.991
	12.058V	5.026V	3.309V	4.988V	498.998				51.24°C	115.02V
7	37.807A	6.969A	6.984A	2.205A	524.708	89.483%	610	10.2	42.52°C	0.993
	12.051V	5.024V	3.307V	4.983V	586.378				52.13°C	115.02V
8	43.284A	7.963A	7.989A	2.410A	599.687	88.749%	714	16.5	44.07°C	0.994
	12.044V	5.021V	3.304V	4.978V	675.715				53.81°C	115.01V
9	49.192A	8.470A	8.509A	2.411A	674.788	87.977%	995	26.3	45.29°C	0.995
	12.038V	5.020V	3.302V	4.977V	767.003				55.22°C	115.03V
10	54.853A	8.970A	9.002A	3.021A	749.629	87.097%	1227	33.0	45.81°C	0.995
	12.031V	5.018V	3.299V	4.960V	860.680				55.96°C	115.02V
11	61.108A	8.975A	9.006A	3.022A	824.536	86.313%	1415	36.7	46.55°C	0.996
	12.025V	5.017V	3.298V	4.958V	955.286				57.25°C	115.02V
CL1	0.102A	18.024A	18.002A	0.004A	151.606	81.708%	843	20.4	44.89°C	0.991
	12.066V	5.031V	3.315V	5.075V	185.547				50.56°C	115.04V
CL2	62.453A	1.001A	1.001A	1.002A	765.342	87.600%	1119	30.0	45.24°C	0.995
	12.041V	5.022V	3.306V	4.999V	873.676				54.39°C	115.01V

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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	1.210A	0.488A	0.481A	0.196A	19.685	67.361%	0	<6.0	0.865
	12.098V	5.042V	3.325V	5.036V	29.223				115.05V
2	2.444A	0.988A	0.992A	0.396A	39.831	78.627%	0	<6.0	0.943
	12.096V	5.040V	3.323V	5.031V	50.658				115.05V
3	3.675A	1.475A	1.502A	0.596A	59.870	83.706%	0	<6.0	0.970
	12.095V	5.040V	3.323V	5.028V	71.524				115.05V
4	4.898A	1.983A	1.984A	0.796A	79.819	86.022%	0	<6.0	0.976
	12.094V	5.039V	3.323V	5.023V	92.789				115.04V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	3.1 mV	3.3 mV	6.8 mV	3.3 mV	Pass
20% Load	3.7 mV	3.2 mV	7.6 mV	3.3 mV	Pass
30% Load	6.8 mV	3.7 mV	7.4 mV	4.0 mV	Pass
40% Load	7.7 mV	4.3 mV	7.3 mV	5.0 mV	Pass
50% Load	7.6 mV	15.7 mV	9.9 mV	15.4 mV	Pass
60% Load	7.7 mV	4.8 mV	7.5 mV	4.9 mV	Pass
70% Load	6.8 mV	5.1 mV	8.3 mV	4.9 mV	Pass
80% Load	6.8 mV	6.4 mV	9.2 mV	6.7 mV	Pass
90% Load	6.8 mV	6.6 mV	8.7 mV	6.2 mV	Pass
100% Load	7.5 mV	8.3 mV	11.3 mV	9.7 mV	Pass
110% Load	7.6 mV	7.2 mV	10.1 mV	7.8 mV	Pass
Crossload 1	8.5 mV	6.7 mV	8.4 mV	6.1 mV	Pass
Crossload 2	6.8 mV	5.8 mV	9.8 mV	5.7 mV	Pass

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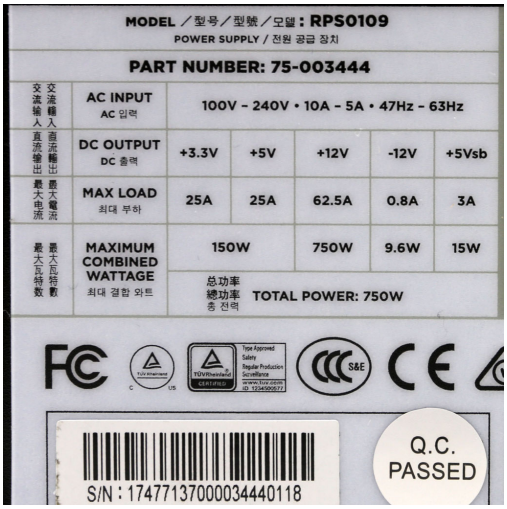
HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	23.30
AC Loss to PWR_OK Hold Up Time (ms)	20.40
PWR_OK Inactive to DC Loss Delay (ms)	2.90

Top side



Power specifications table

CERTIFICATIONS

CYBENETICS PLATINUM

CYBENETICS A+