EFFICIENCY AND NOISE LEVEL CERTIFICATIONS

Anex

Corsair AX1600i

Lab ID#: 251
Receipt Date: -
Test Date: -

Report:
Report Date: Dec 20, 2018

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Flextronics
Series	AXi
Model Number	AX1600i
Serial Number	17429560000049040035
DUT Notes	Balanced Profile

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	18-9
Rated Frequency (Hz)	50-60
Rated Power (W)	1600
Type	ATX12V
Cooling	140mm Fluid Dynamic Bearing Fan (NR140P)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	30	30	133.3	3.5	0.8
	Watts	180		1600	17.5	9.6
Total Max. Power (W)		1600				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	16-22AWG	Yes
4+4 pin EPS12V (650mm)	2	2	16AWG	Yes
6+2 pin PCIe (650mm)	6	6	16-18AWG	Yes
6+2 pin PCIe (680mm+100mm)	2	4	16-18AWG	Yes
SATA (450mm+110mm+110mm+110mm)	3	12	18AWG	No
SATA (550mm+110mm)	2	4	18AWG	No
4 pin Molex (450mm+100mm+100mm)	3	9	18AWG	No
FDD Adapter (+105mm)	2	2	20AWG	No
USB Mini to Motherboard Header Cable (+800mm)	1	1	24-28AWG	No
AC Power Cord (1400mm) - C19 coupler	1	1	14AWG	No

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	94.081
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	81.603
Standby Power Consumption (W) -115V	0.0467618
Standby Power Consumption (W) -230V	0.0709341
Average PF	0.990
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	23.25
Efficiency Rating (ETA)	TITANIUM
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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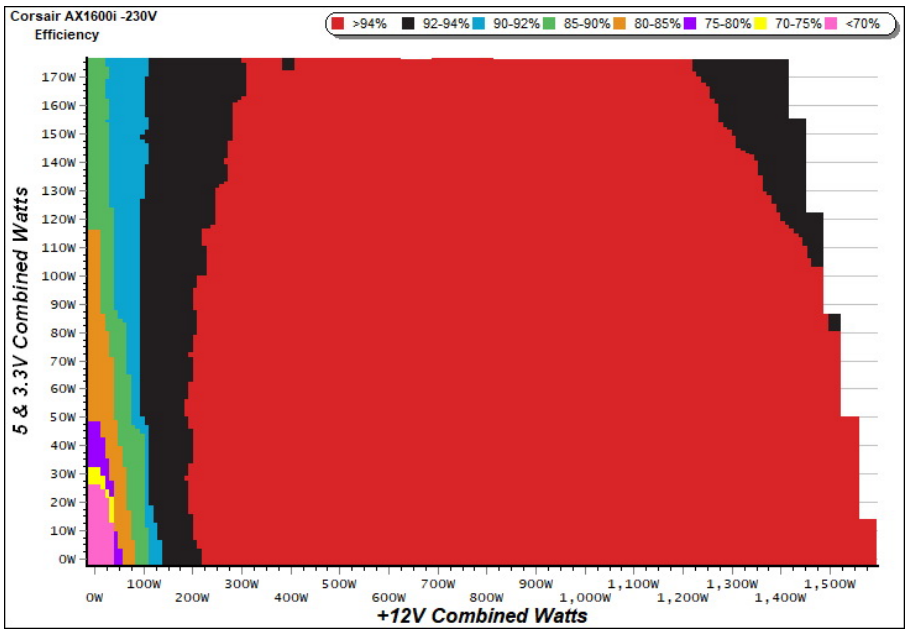
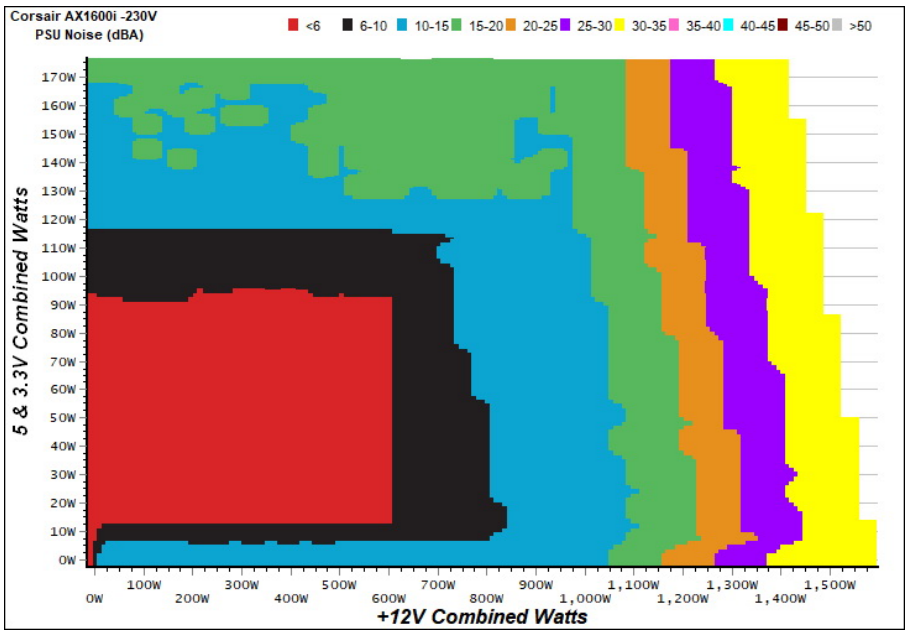
EFFICIENCY GRAPH



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

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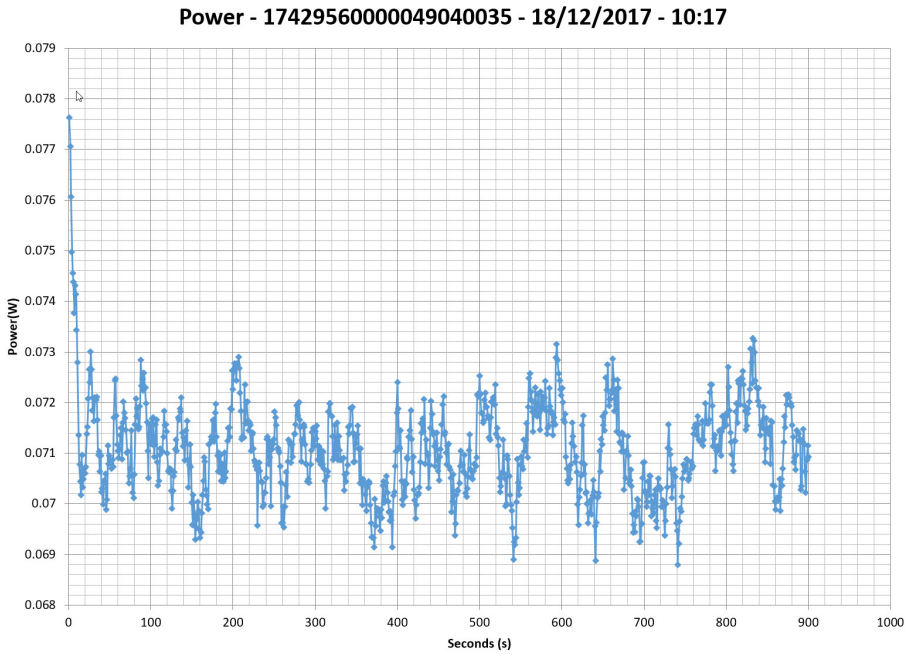
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.210	70.000%	0.018
	5.038V	0.300		115.12V
2	0.087A	0.440	76.789%	0.034
	5.038V	0.573		115.12V
3	0.542A	2.729	80.123%	0.185
	5.032V	3.406		115.16V
4	1.002A	5.036	83.075%	0.290
	5.025V	6.062		115.11V
5	1.502A	7.535	83.444%	0.371
	5.018V	9.030		115.14V
6	3.502A	17.476	81.897%	0.516
	4.991V	21.339		115.16V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.211	63.939%	0.006
	5.038V	0.330		230.09V
2	0.087A	0.440	73.211%	0.011
	5.037V	0.601		230.09V
3	0.542A	2.729	75.014%	0.065
	5.030V	3.638		230.09V
4	1.002A	5.036	80.191%	0.109
	5.024V	6.280		230.09V
5	1.502A	7.536	81.780%	0.155
	5.018V	9.215		230.10V
6	3.502A	17.475	82.765%	0.298
	4.990V	21.114		230.10V

VAMPIRE POWER -230V



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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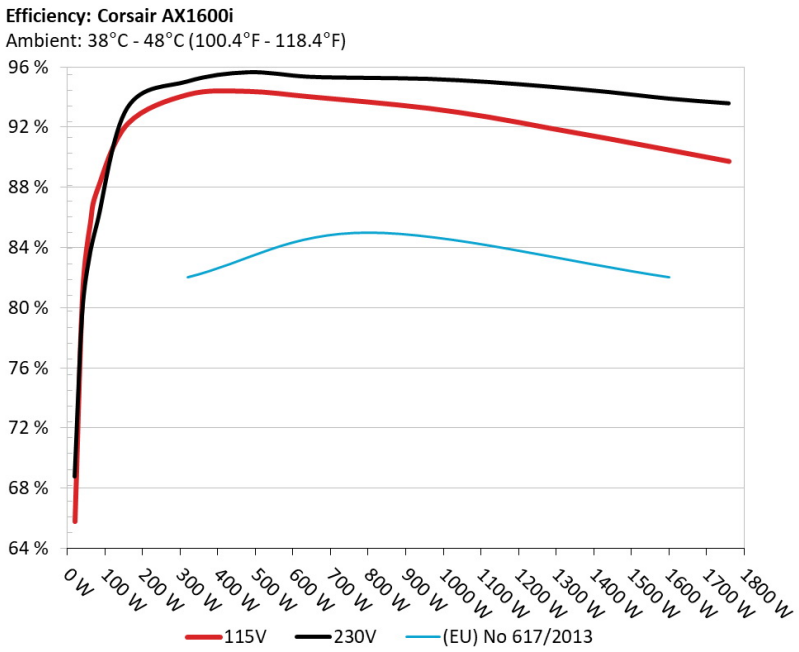
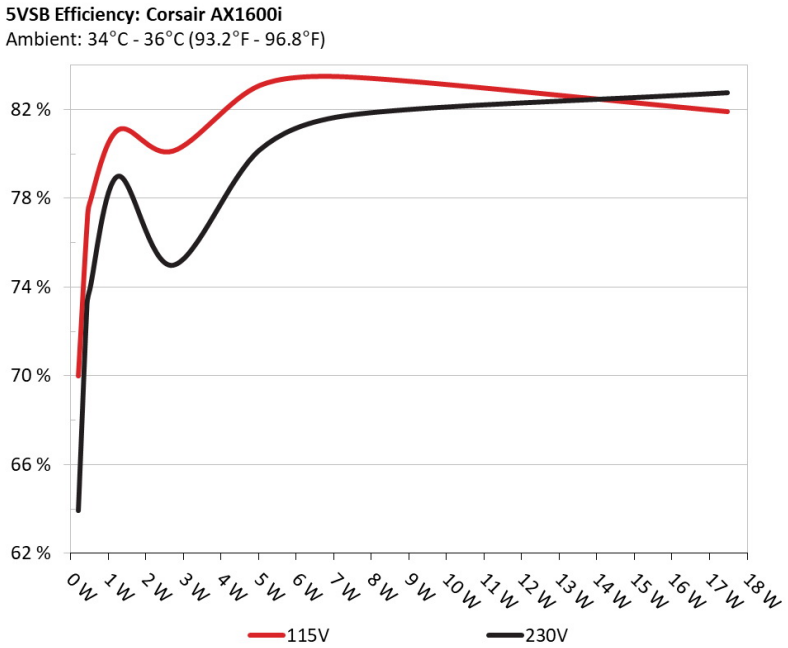
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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	11.494A	2.004A	1.995A	1.001A	159.867	93.313%	0	<6.0	46.06°C	0.961
	12.030V	4.996V	3.306V	4.983V	171.323				37.94°C	230.14V
2	24.020A	3.000A	2.994A	1.205A	319.806	95.062%	0	<6.0	46.84°C	0.987
	12.029V	4.993V	3.304V	4.978V	336.418				38.21°C	230.23V
3	36.892A	3.508A	3.511A	1.406A	479.828	95.673%	0	<6.0	47.42°C	0.995
	12.028V	4.990V	3.302V	4.974V	501.531				38.56°C	230.14V
4	49.759A	4.006A	3.996A	1.607A	639.608	95.375%	0	<6.0	48.48°C	0.994
	12.027V	4.989V	3.299V	4.970V	670.625				39.22°C	230.16V
5	62.289A	5.007A	5.000A	1.811A	799.485	95.297%	564	8.5	40.08°C	0.997
	12.025V	4.988V	3.298V	4.967V	838.943				49.69°C	230.15V
6	74.821A	6.017A	6.004A	2.015A	959.424	95.232%	644	13.3	40.43°C	0.998
	12.024V	4.984V	3.296V	4.962V	1007.455				50.35°C	230.14V
7	87.355A	7.019A	7.009A	2.215A	1119.315	95.025%	745	17.0	41.63°C	0.997
	12.023V	4.983V	3.294V	4.958V	1177.914				51.82°C	230.17V
8	99.892A	8.033A	8.018A	2.421A	1279.286	94.719%	866	21.5	42.81°C	0.998
	12.022V	4.980V	3.291V	4.954V	1350.611				53.34°C	230.16V
9	112.870A	8.540A	8.542A	2.421A	1439.386	94.359%	1469	37.0	44.13°C	0.998
	12.021V	4.977V	3.288V	4.951V	1525.439				54.83°C	230.17V
10	125.386A	9.053A	9.039A	3.546A	1599.237	93.921%	1802	42.5	45.19°C	0.999
	12.019V	4.974V	3.285V	4.935V	1702.743				56.15°C	230.17V
11	138.710A	9.056A	9.044A	3.546A	1759.223	93.604%	1943	45.4	46.60°C	0.999
	12.018V	4.972V	3.283V	4.932V	1879.433				57.79°C	230.19V
CL1	0.110A	22.030A	19.999A	0.005A	177.908	89.661%	816	19.2	44.56°C	0.966
	12.019V	5.007V	3.313V	5.031V	198.423				49.17°C	230.19V
CL2	133.269A	1.002A	1.003A	1.002A	1615.411	94.103%	1759	42.5	45.47°C	0.999
	12.022V	4.977V	3.281V	4.964V	1716.642				53.62°C	230.19V

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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	1.216A	0.499A	0.480A	0.201A	19.714	68.764%	0	<6.0	0.550
	12.031V	4.996V	3.307V	4.991V	28.669				230.14V
2	2.457A	0.999A	0.994A	0.401A	39.839	79.651%	0	<6.0	0.750
	12.031V	4.996V	3.306V	4.989V	50.017				230.14V
3	3.696A	1.495A	1.510A	0.601A	59.928	83.507%	0	<6.0	0.853
	12.031V	4.996V	3.307V	4.988V	71.764				230.15V
4	4.927A	2.003A	1.993A	0.801A	79.863	85.685%	0	<6.0	0.903
	12.030V	4.996V	3.307V	4.985V	93.205				230.15V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.6 mV	3.2 mV	6.8 mV	2.7 mV	Pass
20% Load	7.0 mV	3.5 mV	6.9 mV	2.8 mV	Pass
30% Load	7.3 mV	3.4 mV	6.5 mV	2.9 mV	Pass
40% Load	8.0 mV	3.6 mV	6.3 mV	3.0 mV	Pass
50% Load	8.4 mV	4.0 mV	6.5 mV	2.9 mV	Pass
60% Load	8.1 mV	3.7 mV	6.7 mV	2.9 mV	Pass
70% Load	8.3 mV	4.3 mV	6.9 mV	3.1 mV	Pass
80% Load	8.3 mV	4.7 mV	7.3 mV	3.3 mV	Pass
90% Load	8.9 mV	5.4 mV	7.5 mV	3.6 mV	Pass
100% Load	10.2 mV	5.7 mV	8.4 mV	4.0 mV	Pass
110% Load	11.5 mV	4.7 mV	7.6 mV	3.3 mV	Pass
Crossload 1	5.4 mV	5.8 mV	6.8 mV	2.8 mV	Pass
Crossload 2	10.6 mV	4.2 mV	7.4 mV	3.3 mV	Pass

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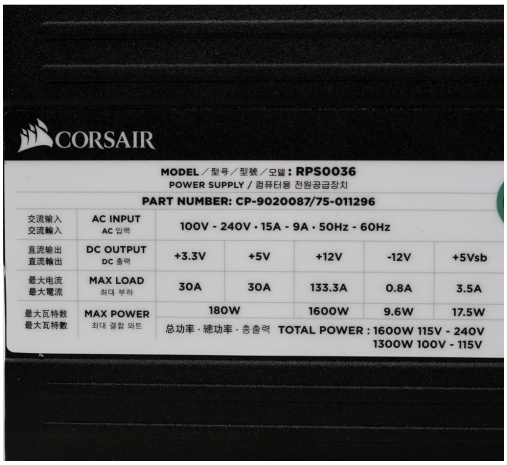
HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	26.70
AC Loss to PWR_OK Hold Up Time (ms)	24.50
PWR_OK Inactive to DC Loss Delay (ms)	2.20

Top side



Power specifications label

CERTIFICATIONS

Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

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