Anex

Corsair AX1500i

Lab ID#: 102
Receipt Date: -
Test Date: -

Report:

Report Date: Feb 5, 2018

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Flextronics
Series	AXi
Model Number	AX1500i
Serial Number	16509500001009610055
DUT Notes	CP-9020057

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15-8
Rated Frequency (Hz)	50-60
Rated Power (W)	1500
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	125	3.5	0.8
	Watts	180		1500	17.5	9.6
Total Max. Power (W)		1500				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (700mm)	1	1	16-22AWG
4+4 pin EPS12V (800mm) / (650mm)	1 / 1	1 / 1	18AWG
6+2 pin PCIe (700mm+155mm) / (650mm) / (800mm)	2 / 4 / 2	4 / 4 / 2	18AWG
SATA (500mm+90mm+90mm+90mm)	3	12	18AWG
SATA (550mm+90mm+90mm+90mm)	2	8	18AWG
4 pin Molex (450mm+100mm+100mm+100mm)	3	12	18AWG
FDD Adapter (+105mm)	2	2	22AWG
C-Link USB Cable (800mm) / C-Link I2C Cable (800mm)	1 / 1	1 / 1	24-28 / 29AWG

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Primary Side	
Transient Filter	6x Y caps, 5x X caps, 3x CM chokes, 1x MOV, 2x TVS diodes
Inrush Protection	NTC Thermistor & Relay
Rectifiers	2x Toshiba TK62J60W (600V, 61.8A @ 150°C, 33 mOhm)
APFC MOSFETS	4x Infineon IPA60R099 (650V, 24A @ 100°C, 99 mOhm)
APFC Boost Diode	4x CREE C3D06060A (600V, 6A @ 154°C)
Hold-up Cap(s)	2x Nippon Chemi-Con (420V, 470uF & 680uF or 1150uF combined, 2000h @ 105°C, KMR)
Main Switchers	4x Infineon IPA60R099 (650V, 24A @ 100°C, 0.099 Ohm)
Topology	Primary side: Bridgeless Design, Two Phase Interleaved PFC, Full-Bridge & LLC Resonant Converter Secondary side: Synchronous Rectification & DC-DC converters
Digital Controllers	
Main Controller	Freescale MC56F8236
MCUs	Silicon Lab C8051F310 & C8051F380
Secondary Side	
+12V	16x fets
5V & 3.3V	2x DC-DC Converters
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (105°C, KY, KZE), Rubycon (105°C, ZLH) Polymers: Nippon Chemi-Con, CapXon
Fan Model	NR135P (12V, 0.22A, Fluid Dynamic Bearing)
-12V Circuit	
Rectifier	IPA60R950C6 (650V, 2.8A @ 100°C, 0.95 Ohm)

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	91.264
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	80.974
Standby Power Consumption (W) -115V	0.0564061
Standby Power Consumption (W) -230V	0.0955741
Average PF	0.993
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	27.55
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 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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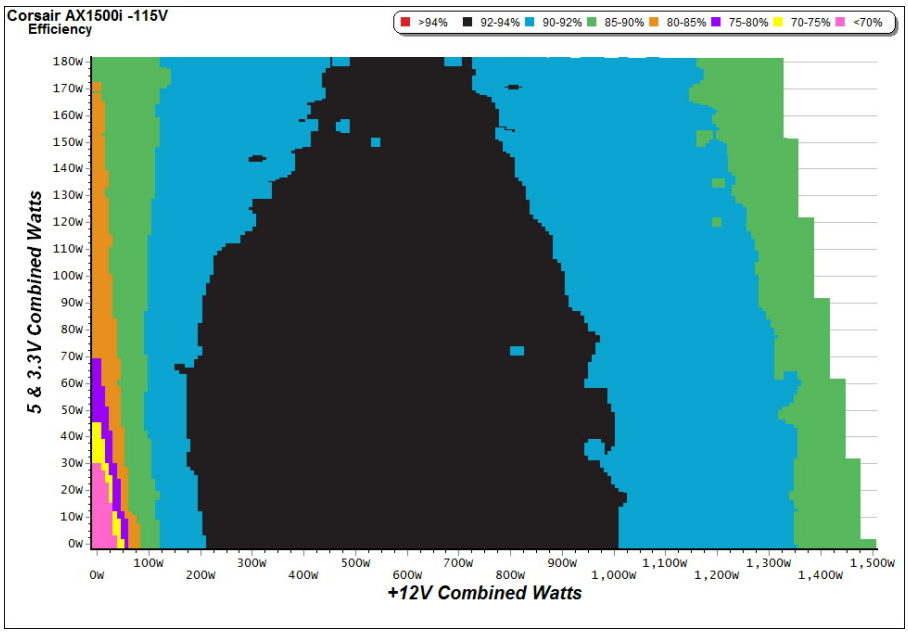
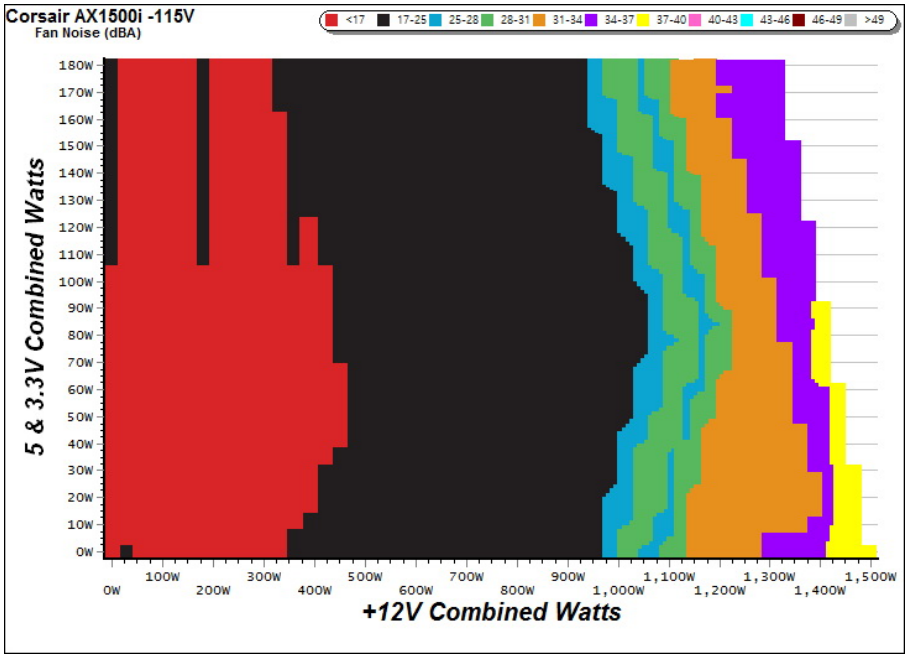
EFFICIENCY GRAPH



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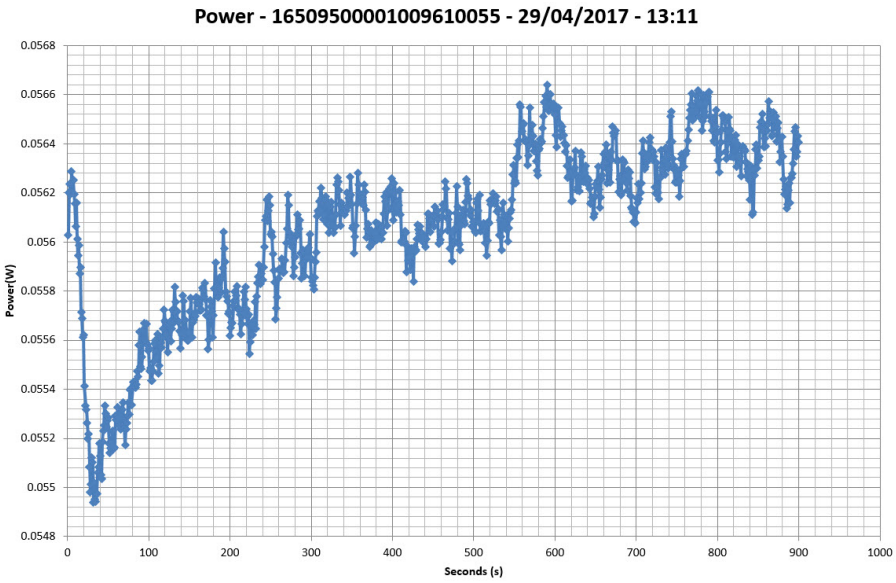
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.213	68.489%	0.016
	5.084V	0.311		115.12V
2	0.088A	0.445	76.199%	0.029
	5.083V	0.584		115.13V
3	0.532A	2.697	79.534%	0.158
	5.069V	3.391		115.12V
4	3.502A	17.415	80.150%	0.502
	4.973V	21.728		115.11V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.213	59.497%	0.005
	5.084V	0.358		230.31V
2	0.088A	0.445	69.749%	0.010
	5.083V	0.638		230.29V
3	0.532A	2.698	78.958%	0.051
	5.069V	3.417		230.29V
4	3.502A	17.417	81.548%	0.264
	4.973V	21.358		230.29V

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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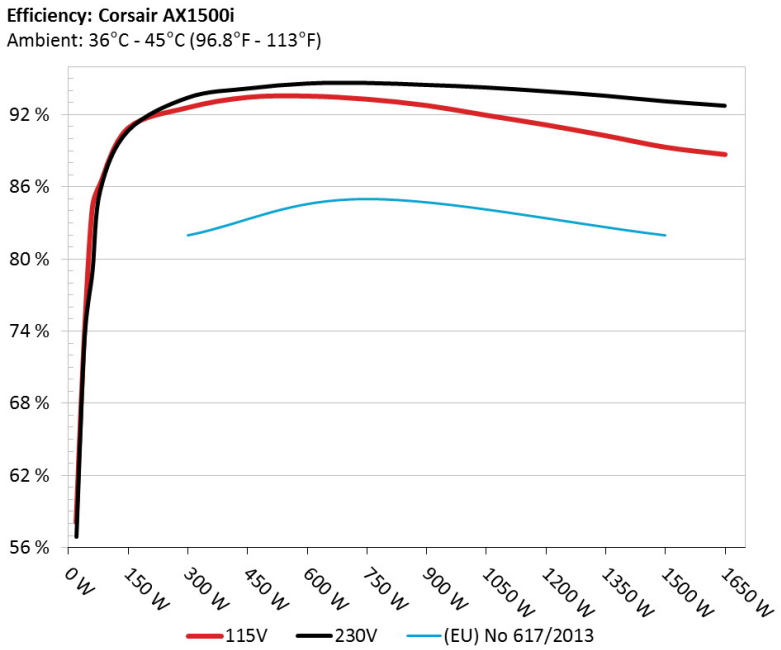
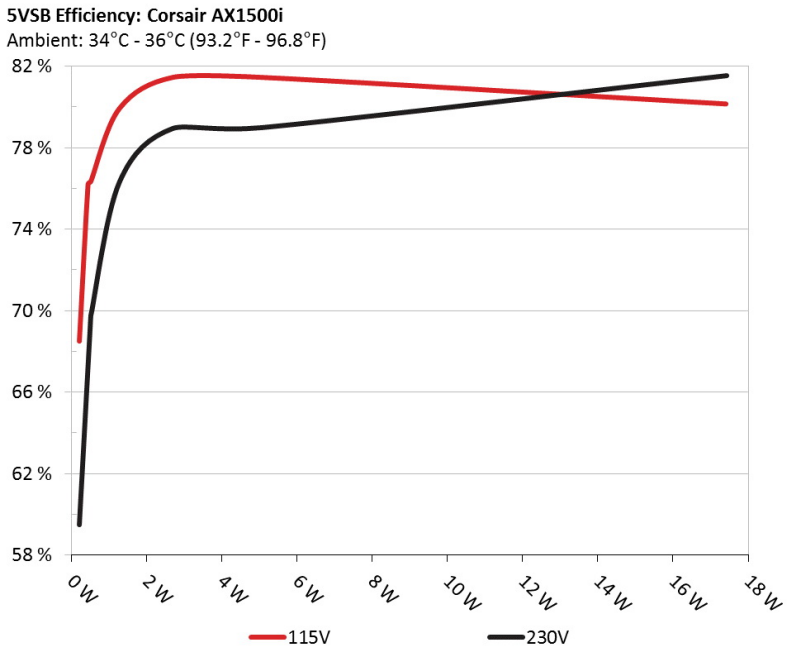
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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

Load Regulation & Efficiency Tests
Nidus 500 PG-5001-BR -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	10.693A	2.006A	1.999A	1.006A	149.780	90.853%	0000	<6.0	46.44°C	0.986
	11.992V	4.984V	3.296V	4.961V	164.859				38.49°C	115.11V
2	22.435A	3.012A	3.004A	1.211A	299.751	92.568%	0000	<6.0	47.01°C	0.986
	11.986V	4.977V	3.293V	4.951V	323.817				38.94°C	115.12V
3	34.491A	3.515A	3.521A	1.415A	449.757	93.426%	0000	<6.0	47.12°C	0.992
	11.995V	4.973V	3.291V	4.944V	481.402				39.64°C	115.13V
4	46.544A	4.027A	4.011A	1.618A	599.596	93.529%	0000	<6.0	40.40°C	0.994
	11.999V	4.971V	3.289V	4.938V	641.079				44.38°C	115.12V
5	58.260A	5.014A	5.010A	1.818A	749.457	93.271%	0000	<6.0	40.74°C	0.995
	11.999V	4.981V	3.292V	4.945V	803.526				44.58°C	115.13V
6	70.003A	6.030A	6.023A	2.023A	899.392	92.747%	0000	<6.0	41.47°C	0.996
	11.994V	4.977V	3.287V	4.938V	969.727				45.16°C	115.12V
7	81.775A	7.040A	7.031A	2.230A	1049.260	91.937%	0000	<6.0	42.62°C	0.997
	11.987V	4.971V	3.284V	4.930V	1141.285				46.36°C	115.12V
8	93.533A	8.034A	8.023A	2.431A	1199.262	91.136%	0000	<6.0	43.65°C	0.998
	11.984V	4.981V	3.289V	4.936V	1315.910				47.33°C	115.12V
9	105.692A	8.545A	8.547A	2.431A	1349.343	90.239%	0000	<6.0	45.02°C	0.998
	11.987V	4.976V	3.287V	4.933V	1495.303				48.81°C	115.13V
10	117.413A	9.055A	9.042A	3.569A	1499.188	89.278%	0000	<6.0	46.02°C	0.998
	11.984V	4.975V	3.285V	4.901V	1679.245				49.61°C	115.12V
11	129.906A	9.056A	9.043A	3.569A	1649.181	88.672%	0000	<6.0	45.07°C	0.998
	11.985V	4.973V	3.284V	4.901V	1859.873				49.57°C	115.12V
CL1	0.099A	22.030A	19.998A	0.004A	176.532	84.649%	0000	<6.0	44.42°C	0.982
	11.991V	4.971V	3.290V	5.010V	208.547				48.05°C	115.13V
CL2	124.927A	1.003A	1.003A	1.002A	1508.590	89.275%	0000	<6.0	46.28°C	0.998
	11.970V	4.984V	3.295V	4.965V	1689.825				49.69°C	115.13V

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20-80W LOAD TESTS

Efficiency at Low Loads
Nidus 500 PG-5001-BR -115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.217A	0.502A	0.483A	0.202A	19.709	58.103%	0000	<6.0	0.896
	12.003V	4.988V	3.294V	4.982V	33.921				115.12V
2	2.460A	1.001A	1.000A	0.400A	39.791	73.101%	0000	<6.0	0.953
	11.999V	4.984V	3.294V	4.974V	54.433				115.12V
3	3.702A	1.497A	1.514A	4.967A	59.840	84.034%	0000	<6.0	0.967
	11.996V	4.980V	3.293V	4.967V	71.209				115.12V
4	4.940A	2.009A	2.003A	0.805A	79.835	86.211%	0000	<6.0	0.978
	11.994V	4.977V	3.291V	4.960V	92.604				115.11V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.6 mV	5.6 mV	4.0 mV	3.1 mV	Pass
20% Load	8.3 mV	8.2 mV	4.6 mV	7.6 mV	Pass
30% Load	9.3 mV	5.0 mV	4.2 mV	3.8 mV	Pass
40% Load	9.7 mV	4.6 mV	4.3 mV	4.2 mV	Pass
50% Load	10.0 mV	4.9 mV	4.2 mV	4.8 mV	Pass
60% Load	9.4 mV	12.4 mV	5.8 mV	12.1 mV	Pass
70% Load	9.7 mV	8.8 mV	4.7 mV	8.0 mV	Pass
80% Load	9.8 mV	6.2 mV	4.6 mV	5.3 mV	Pass
90% Load	10.9 mV	6.9 mV	5.1 mV	6.7 mV	Pass
100% Load	12.7 mV	7.1 mV	5.8 mV	7.1 mV	Pass
110% Load	13.3 mV	7.2 mV	6.2 mV	7.4 mV	Pass
Crossload 1	19.5 mV	10.9 mV	7.4 mV	6.2 mV	Pass
Crossload 2	12.5 mV	5.3 mV	5.1 mV	7.6 mV	Pass

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HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	24.0
AC Loss to PWR_OK Hold Up Time (ms)	21.3
PWR_OK Inactive to DC Loss Delay (ms)	2.7

Top side

Power specifications label

CERTIFICATIONS

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