EFFICIENCY AND NOISE LEVEL CERTIFICATIONS

Anex

SilverStone NJ520

Lab ID#: 53
Receipt Date: -
Test Date: -

Report:
Report Date: Feb 26, 2018

DUT INFORMATION

Brand	SilverStone
Manufacturer (OEM)	Sea Sonic Electronics
Series	Nightjar
Model Number	NJ520
Serial Number	R1602AA1C241119
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	7-4
Rated Frequency (Hz)	50-60
Rated Power (W)	520
Type	ATX12V
Cooling	Passive
Semi-Passive Operation	
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	43	2.5	0.5
	Watts	100		516	12.5	6
Total Max. Power (W)		520				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (600mm)	1	1	18-22AWG
4+4 pin EPS12V (650mm)	1	1	18AWG
6+2 pin PCIe (550mm+100mm)	2	4	18AWG
SATA (400mm+110mm+110mm+110mm)	1	4	18AWG
SATA (300mm+120mm)	1	2	18AWG
4 pin Molex (400mm+120mm+120mm)	1	3	18AWG
4 pin Molex (300mm+120mm)	1	2	18AWG
FDD Adapter (+105mm)	1	1	22AWG

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	90.772
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	79.716
Standby Power Consumption (W) -115V	0.1162740
Standby Power Consumption (W) -230V	0.1608470
Average PF	0.987
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	-
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 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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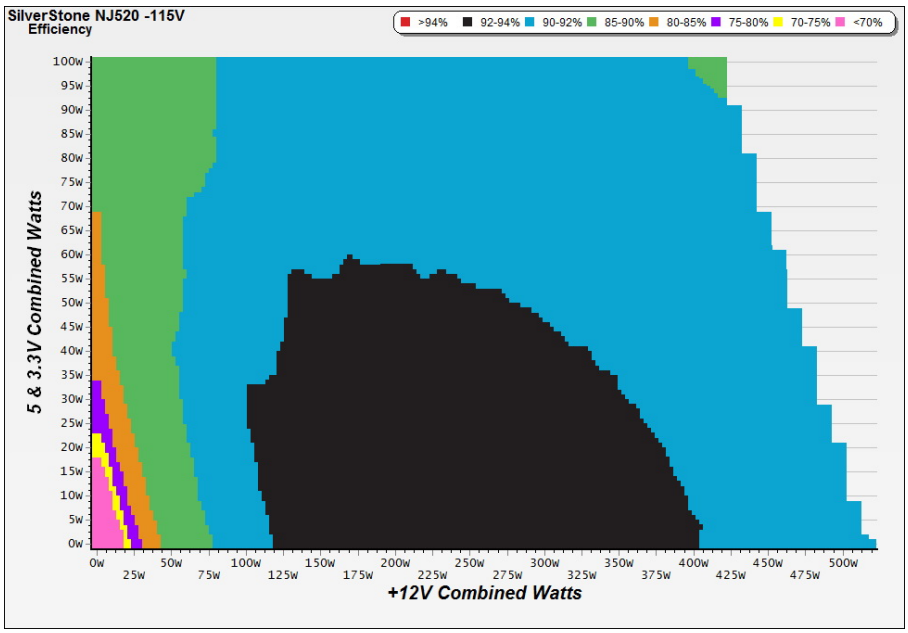
EFFICIENCY GRAPH



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

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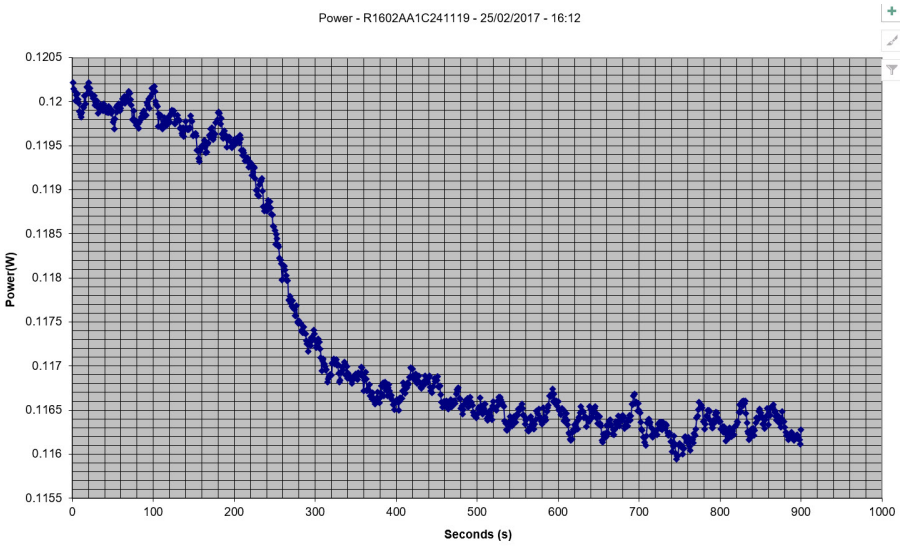
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.214	69.256%	0.049
	5.110V	0.309		115.11V
2	0.087A	0.446	74.582%	0.093
	5.109V	0.598		115.11V
3	0.532A	2.712	78.929%	0.330
	5.098V	3.436		115.11V
4	2.502A	12.638	80.272%	0.493
	5.052V	15.744		115.11V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.213	57.880%	0.017
	5.110V	0.368		230.31V
2	0.082A	0.420	66.773%	0.028
	5.109V	0.629		230.29V
3	0.532A	2.712	73.776%	0.148
	5.098V	3.676		230.29V
4	2.502A	12.638	80.425%	0.353
	5.052V	15.714		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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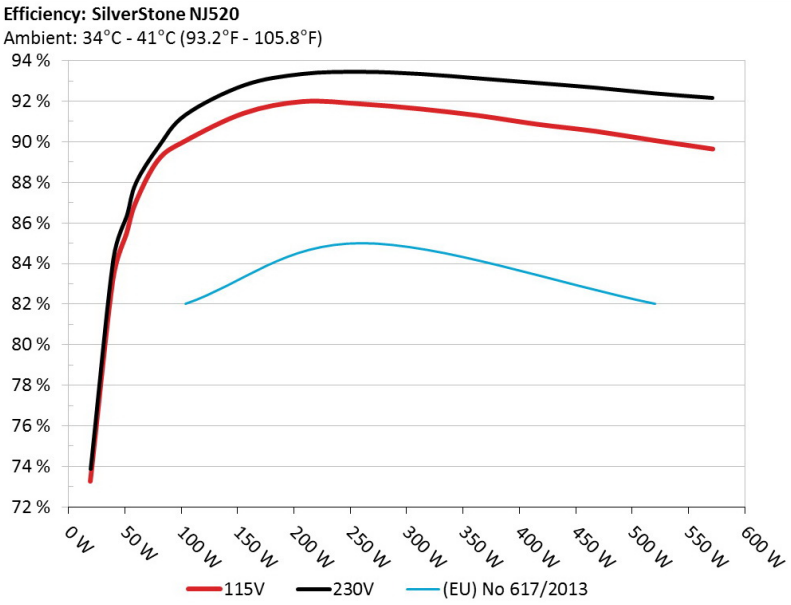
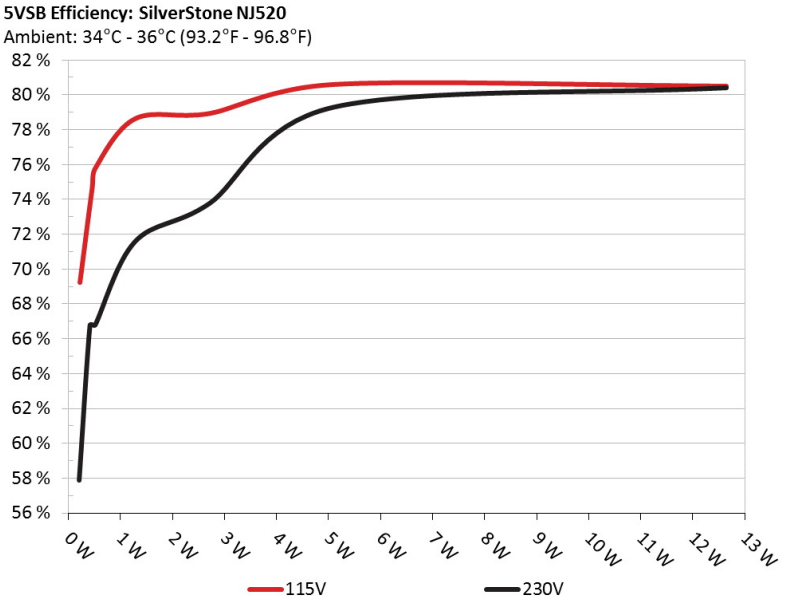
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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	2.497A	1.985A	1.965A	0.981A	51.771	85.477%	0000	<6.0	41.62°C	0.946
	12.100V	5.030V	3.355V	5.076V	60.567				36.11°C	115.13V
2	6.030A	2.981A	2.953A	1.181A	103.754	90.035%	0000	<6.0	42.51°C	0.976
	12.087V	5.028V	3.352V	5.065V	115.238				36.68°C	115.12V
3	9.921A	3.489A	3.462A	1.385A	155.909	91.408%	0000	<6.0	43.39°C	0.986
	12.074V	5.025V	3.348V	5.053V	170.563				36.83°C	115.12V
4	13.811A	3.986A	3.944A	1.585A	207.779	91.979%	0000	<6.0	44.10°C	0.995
	12.061V	5.023V	3.345V	5.041V	225.898				36.98°C	115.11V
5	17.367A	4.977A	4.932A	1.788A	259.690	91.863%	0000	<6.0	45.24°C	0.990
	12.047V	5.021V	3.343V	5.029V	282.693				37.71°C	115.11V
6	20.936A	5.975A	5.927A	1.992A	311.698	91.619%	0000	<6.0	48.77°C	0.990
	12.033V	5.020V	3.339V	5.015V	340.212				38.99°C	115.11V
7	24.513A	6.980A	6.921A	2.198A	363.729	91.288%	0000	<6.0	49.35°C	0.992
	12.019V	5.018V	3.336V	5.001V	398.443				39.30°C	115.11V
8	28.095A	7.976A	7.918A	2.404A	415.679	90.861%	0000	<6.0	50.36°C	0.994
	12.005V	5.016V	3.334V	4.988V	457.487				39.72°C	115.11V
9	32.115A	8.475A	8.436A	2.407A	467.680	90.515%	0000	<6.0	51.07°C	0.994
	11.991V	5.014V	3.332V	4.980V	516.686				39.89°C	115.11V
10	36.103A	8.983A	8.920A	2.513A	519.543	90.064%	0000	<6.0	52.60°C	0.995
	11.975V	5.012V	3.329V	4.971V	576.859				40.09°C	115.16V
11	40.495A	8.987A	8.924A	2.516A	571.526	89.639%	0000	<6.0	55.13°C	0.995
	11.960V	5.010V	3.327V	4.964V	637.586				40.87°C	115.11V
CL1	0.099A	12.012A	12.005A	0.005A	101.667	86.347%	0000	<6.0	53.96°C	0.978
	12.074V	5.025V	3.339V	5.073V	117.743				40.50°C	115.12V
CL2	42.962A	1.003A	1.003A	1.002A	527.935	90.857%	0000	<6.0	54.67°C	0.995
	11.976V	5.019V	3.346V	5.021V	581.061				41.26°C	115.11V

Anex

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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	1.206A	0.492A	0.474A	0.196A	19.670	73.259%	0000	<6.0	0.851
	12.109V	5.031V	3.358V	5.100V	26.850				115.12V
2	2.436A	0.991A	0.980A	0.392A	39.759	83.225%	0000	<6.0	0.923
	12.104V	5.033V	3.356V	5.093V	47.773				115.12V
3	3.671A	1.488A	1.488A	0.586A	59.874	87.011%	0000	<6.0	0.949
	12.099V	5.031V	3.355V	5.085V	68.812				115.12V
4	4.893A	1.986A	1.965A	0.786A	79.745	89.094%	0000	<6.0	0.969
	12.094V	5.029V	3.354V	5.078V	89.507				115.12V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.6 mV	10.6 mV	6.1 mV	4.8 mV	Pass
20% Load	14.3 mV	11.8 mV	6.2 mV	5.1 mV	Pass
30% Load	19.0 mV	11.4 mV	6.8 mV	5.0 mV	Pass
40% Load	20.5 mV	11.7 mV	7.0 mV	5.4 mV	Pass
50% Load	22.6 mV	12.0 mV	8.8 mV	5.5 mV	Pass
60% Load	23.4 mV	12.8 mV	8.5 mV	6.0 mV	Pass
70% Load	25.1 mV	13.0 mV	9.4 mV	6.3 mV	Pass
80% Load	25.9 mV	13.5 mV	9.5 mV	6.9 mV	Pass
90% Load	27.8 mV	14.5 mV	10.2 mV	7.1 mV	Pass
100% Load	28.7 mV	16.5 mV	11.6 mV	7.4 mV	Pass
110% Load	30.2 mV	16.7 mV	12.9 mV	7.7 mV	Pass
Crossload 1	15.1 mV	13.5 mV	8.3 mV	19.5 mV	Pass
Crossload 2	27.8 mV	14.6 mV	11.4 mV	7.1 mV	Pass

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HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	19.84
AC Loss to PWR_OK Hold Up Time (ms)	16.60
PWR_OK Inactive to DC Loss Delay (ms)	3.24

Top side

Power specifications label

CERTIFICATIONS

CYBENETICS PLATINUM

CYBENETICS A++