

Anex

Seasonic SSR-1000PD

Lab ID#: 194

Receipt Date: -

Test Date: -

Report:

Report Date: Dec 10, 2018

DUT INFORMATION		DUT SPECIFICATIONS	
Brand	Seasonic	Rated Voltage (Vrms)	100-240
Manufacturer (OEM)	Seasonic	Rated Current (Arms)	13-6.5
Series	Prime Platinum	Rated Frequency (Hz)	50-60
Model Number	SSR-1000PD	Rated Power (W)	1000
Serial Number	R1701TA101440009	Type	ATX12V
DUT Notes		Cooling	135mm Fluid Dynamic Bearing Fan (HA13525H12F-Z)
		Semi-Passive Operation	✓ (selectable)
		Cable Design	Fully Modular

POWER SPECIFICATIONS						
Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	25	83	3	0.3
	Watts	125		996	15	3.6
Total Max. Power (W)		1000				

CABLES AND CONNECTORS			
Modular Cables			
Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (610mm)	1	1	18-22AWG
4+4 pin EPS12V (650mm)	2	2	18AWG
6+2 pin PCIe (680mm+80mm)	4	8	18AWG
SATA (450mm+110mm+110mm+110mm)	3	12	18AWG
4 pin Molex (450mm+120mm+120mm)	1	3	18AWG
4 pin Molex (350mm+120mm)	1	2	18AWG
FDD Adapter (+110mm)	1	1	22AWG

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	91.008
Efficiency With 10W ($\leq 500W$) or 2% ($> 500W$) Load -115V	0.000
Average Efficiency 5VSB	79.423
Standby Power Consumption (W) -115V	0.0542206
Standby Power Consumption (W) -230V	0.0865648
Average PF	0.991
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	39.72
Efficiency Rating (ETA)	TITANIUM
Noise Rating (LAMBDA)	Standard+

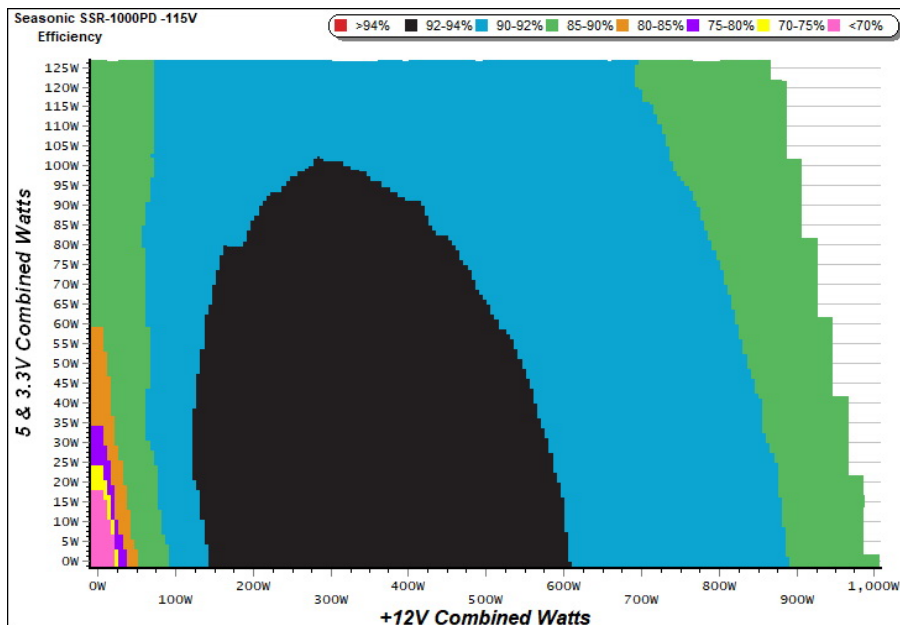
TEST EQUIPMENT		
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 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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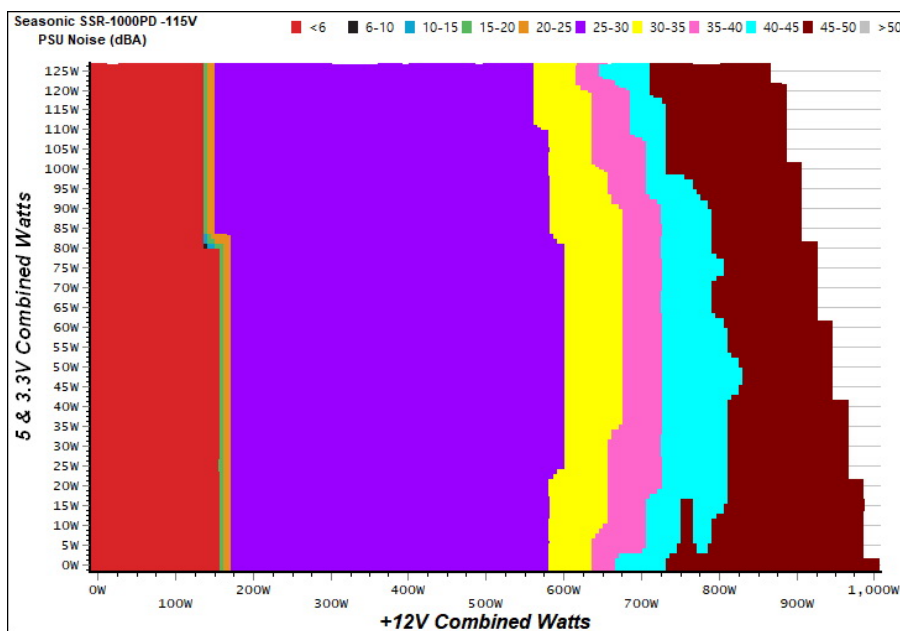
EFFICIENCY GRAPH



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)

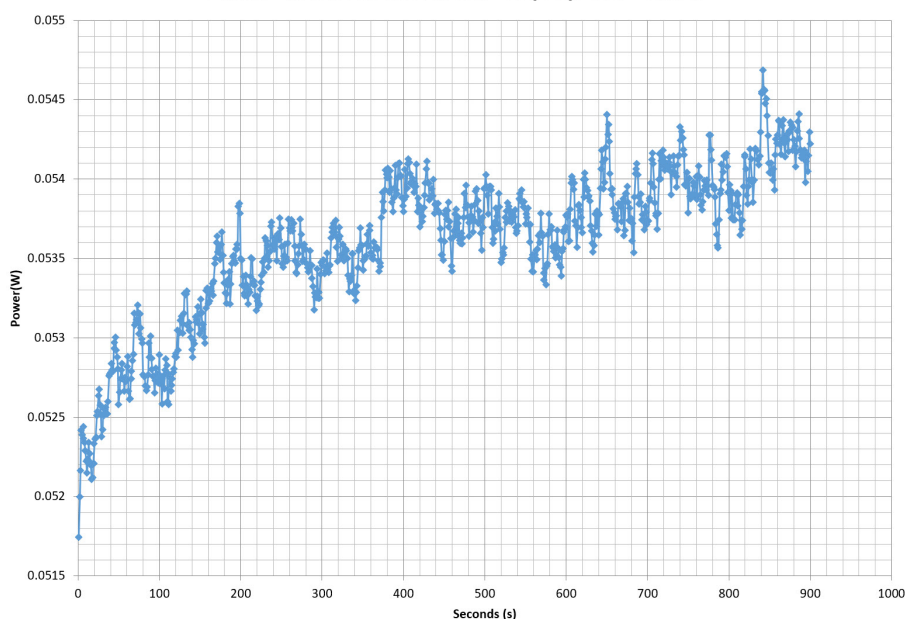
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.209	65.723%	0.035
	5.003V	0.318		115.10V
2	0.087A	0.437	73.077%	0.065
	5.001V	0.598		115.11V
3	0.542A	2.701	80.172%	0.274
	4.982V	3.369		115.10V
4	1.002A	4.971	79.984%	0.368
	4.961V	6.215		115.10V
5	1.502A	7.419	80.249%	0.418
	4.940V	9.245		115.10V
6	3.001A	14.643	78.972%	0.484
	4.879V	18.542		115.10V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.209	58.873%	0.012
	5.003V	0.355		230.28V
2	0.087A	0.436	68.019%	0.021
	5.001V	0.641		230.28V
3	0.542A	2.701	77.304%	0.109
	4.980V	3.494		230.27V
4	1.002A	4.970	78.977%	0.180
	4.960V	6.293		230.27V
5	1.502A	7.412	78.977%	0.239
	4.936V	9.385		230.28V
6	3.002A	14.603	78.502%	0.341
	4.865V	18.602		230.28V

VAMPIRE POWER -115V

Power - R1701TA101440009 - 11/10/2017 - 16:17



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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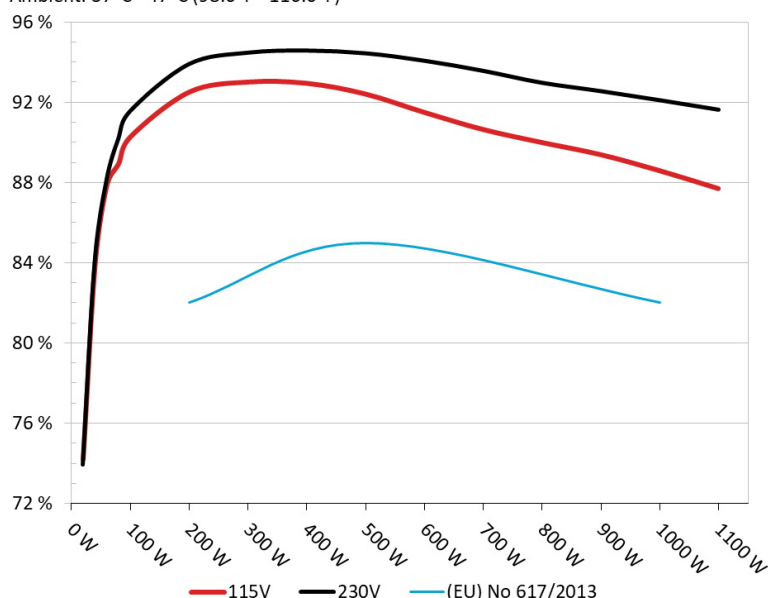
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Seasonic SSR-1000PD

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



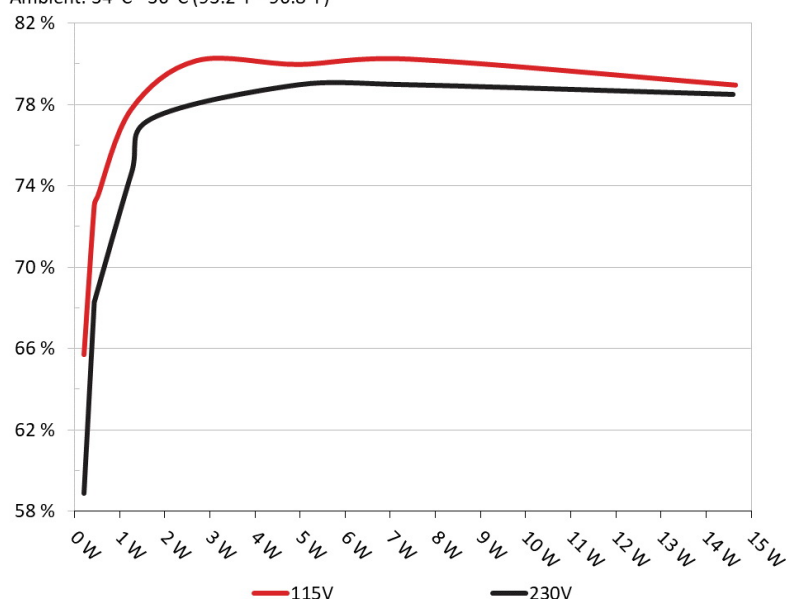
INFO

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: Seasonic SSR-1000PD

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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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	6.377A	1.986A	1.983A	0.996A	99.827	90.279%	685	25.4	38.13°C	0.980
	12.274V	5.026V	3.323V	5.004V	110.576				43.76°C	115.08V
2	13.758A	2.980A	2.979A	1.200A	199.715	92.514%	685	25.4	38.39°C	0.986
	12.273V	5.024V	3.321V	4.999V	215.876				44.25°C	115.07V
3	21.496A	3.487A	3.490A	1.401A	299.893	93.017%	685	25.4	38.67°C	0.987
	12.272V	5.023V	3.319V	4.993V	322.407				44.89°C	115.06V
4	29.219A	3.985A	3.976A	1.601A	399.735	92.954%	726	26.0	38.88°C	0.991
	12.271V	5.021V	3.318V	4.989V	430.036				45.72°C	115.06V
5	36.609A	4.978A	4.974A	1.806A	499.670	92.420%	1057	32.2	39.47°C	0.994
	12.270V	5.019V	3.316V	4.983V	540.650				46.50°C	115.06V
6	44.002A	5.979A	5.973A	2.006A	599.636	91.504%	1650	46.1	40.67°C	0.996
	12.269V	5.017V	3.314V	4.977V	655.308				47.91°C	115.07V
7	51.390A	6.981A	6.971A	2.211A	699.596	90.653%	2043	48.8	41.42°C	0.997
	12.269V	5.015V	3.312V	4.972V	771.727				49.20°C	115.07V
8	58.771A	7.978A	7.971A	2.415A	799.511	90.004%	2132	51.7	42.70°C	0.997
	12.270V	5.014V	3.311V	4.968V	888.306				50.96°C	115.08V
9	66.566A	8.480A	8.487A	2.415A	899.481	89.397%	2132	51.7	43.81°C	0.998
	12.272V	5.012V	3.309V	4.968V	1006.166				52.51°C	115.08V
10	74.112A	8.987A	8.976A	3.028A	999.295	88.601%	2132	51.7	45.15°C	0.998
	12.273V	5.011V	3.308V	4.951V	1127.855				54.27°C	115.09V
11	82.232A	8.988A	8.979A	3.029A	1099.197	87.708%	2140	52.5	46.59°C	0.998
	12.276V	5.010V	3.307V	4.950V	1253.253				56.44°C	115.07V
CL1	0.100A	15.018A	15.004A	0.005A	126.413	84.919%	2123	51.2	43.62°C	0.988
	12.292V	5.020V	3.317V	5.044V	148.863				49.62°C	115.09V
CL2	82.940A	1.002A	1.004A	1.002A	1030.862	88.641%	2132	51.7	44.53°C	0.998
	12.268V	5.016V	3.312V	4.993V	1162.961				52.05°C	115.10V

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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	1.191A	0.489A	0.480A	0.196A	19.655	74.215%	0	<6.0	0.819
	12.270V	5.031V	3.327V	5.027V	26.484				115.08V
2	2.409A	0.989A	0.991A	0.396A	39.818	83.875%	0	<6.0	0.917
	12.273V	5.027V	3.323V	5.018V	47.473				115.08V
3	3.620A	1.486A	1.502A	0.596A	59.889	87.872%	0	<6.0	0.953
	12.276V	5.028V	3.323V	5.013V	68.155				115.08V
4	4.827A	1.985A	1.985A	0.796A	79.808	88.937%	685	25.4	0.970
	12.274V	5.027V	3.323V	5.009V	89.735				115.08V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	8.0 mV	3.3 mV	4.2 mV	5.5 mV	Pass
20% Load	9.0 mV	4.2 mV	4.9 mV	6.8 mV	Pass
30% Load	11.3 mV	4.5 mV	5.8 mV	7.5 mV	Pass
40% Load	12.0 mV	5.1 mV	6.5 mV	8.0 mV	Pass
50% Load	13.4 mV	5.6 mV	6.8 mV	9.5 mV	Pass
60% Load	13.8 mV	6.2 mV	7.6 mV	10.7 mV	Pass
70% Load	14.1 mV	6.7 mV	7.8 mV	11.4 mV	Pass
80% Load	15.7 mV	6.9 mV	8.2 mV	13.4 mV	Pass
90% Load	18.2 mV	7.2 mV	8.7 mV	14.6 mV	Pass
100% Load	19.5 mV	7.9 mV	9.8 mV	16.2 mV	Pass
110% Load	20.1 mV	8.3 mV	10.5 mV	18.0 mV	Pass
Crossload 1	12.4 mV	4.7 mV	8.3 mV	6.5 mV	Pass
Crossload 2	21.2 mV	5.9 mV	10.2 mV	14.2 mV	Pass

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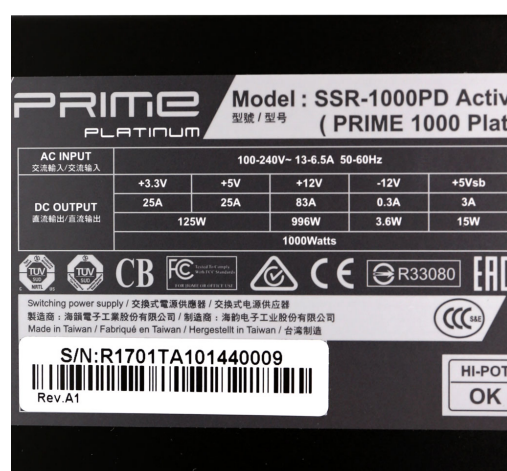
Seasonic SSR-1000PD

HOLD-UP TIME & POWER OK SIGNAL (230V)

Hold-Up Time (ms)	25.32
AC Loss to PWR_OK Hold Up Time (ms)	23.82
PWR_OK Inactive to DC Loss Delay (ms)	1.50



Top side



Power specifications label

CERTIFICATIONS



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