EFFICIENCY AND NOISE LEVEL CERTIFICATIONS

Anex

Seasonic SSR-1200PD

Lab ID#: 195
Receipt Date: -
Test Date: -

Report:
Report Date: Oct 13, 2018

DUT INFORMATION

Brand	Seasonic
Manufacturer (OEM)	Seasonic
Series	Prime Platinum
Model Number	SSR-1200PD
Serial Number	R1701TA101450009
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15-7.5
Rated Frequency (Hz)	50-60
Rated Power (W)	1200
Type	ATX12V
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	100	3	0.3
	Watts	125		1200	15	3.6
Total Max. Power (W)		1200				

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	90.304
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	79.237
Standby Power Consumption (W) -115V	0.0583183
Standby Power Consumption (W) -230V	0.0871736
Average PF	0.992
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	43.25
Efficiency Rating (ETA)	PLATINUM
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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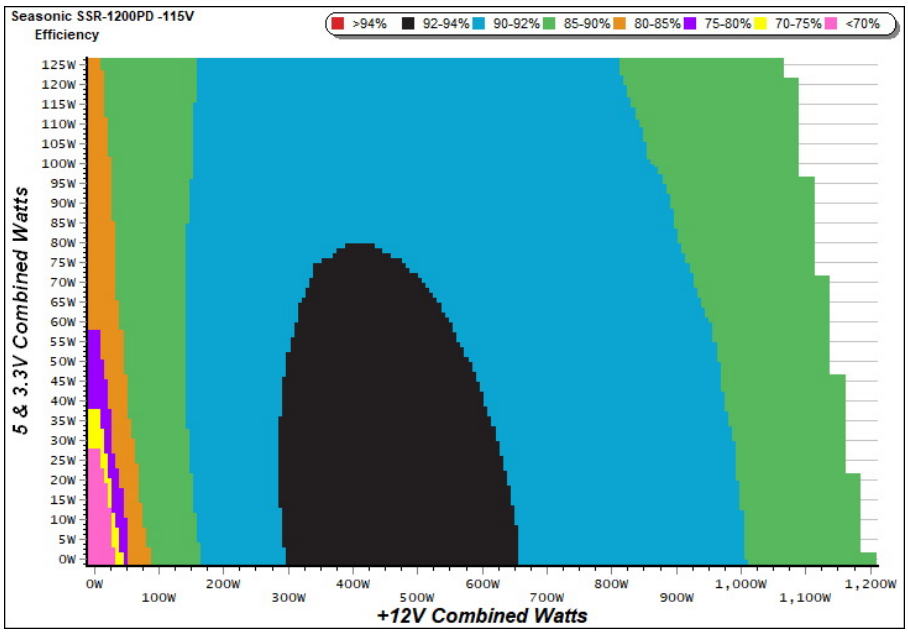
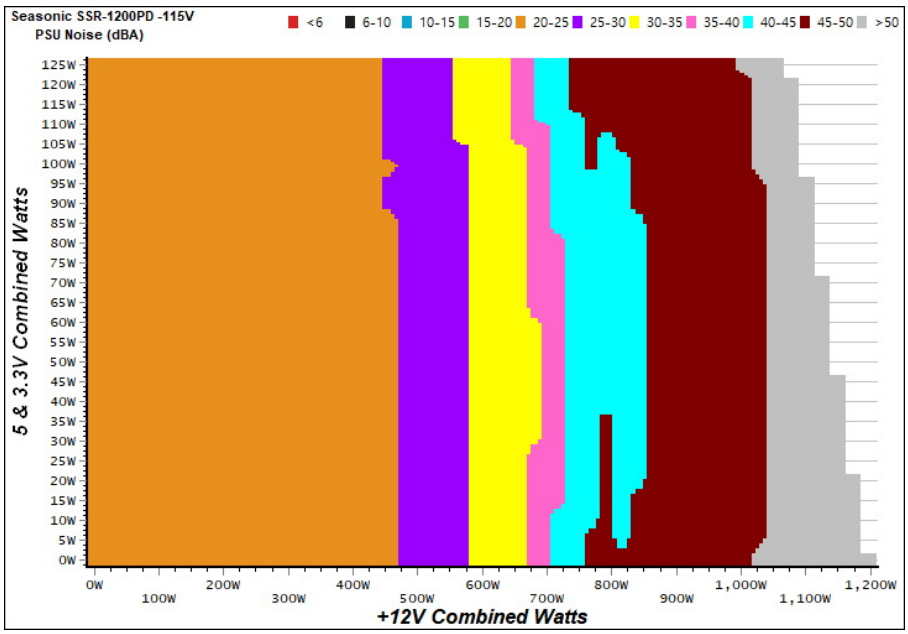
EFFICIENCY GRAPH



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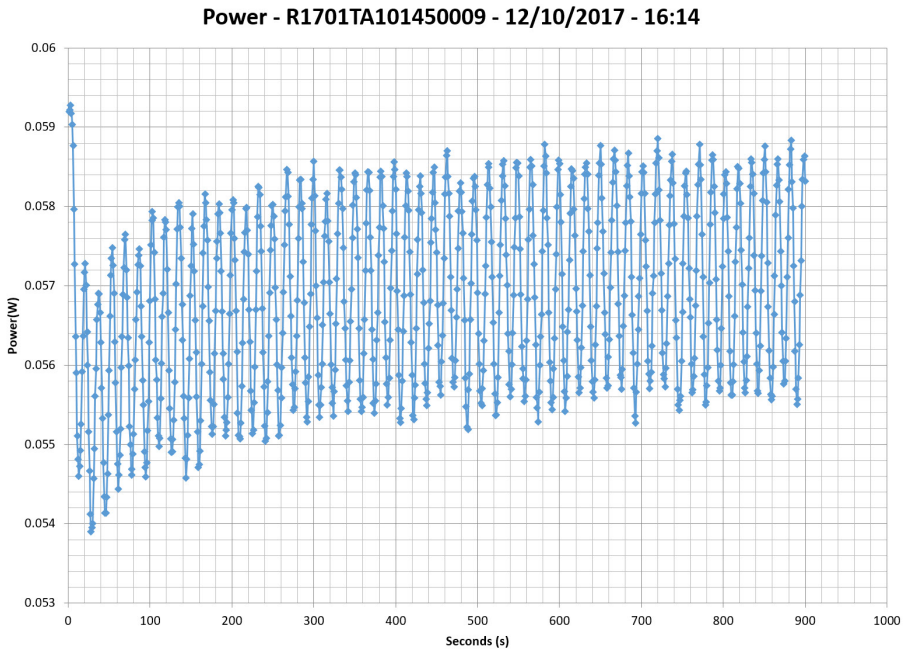
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.226	66.471%	0.028
	5.008V	0.340		115.39V
2	0.090A	0.451	72.625%	0.051
	5.006V	0.621		115.39V
3	0.550A	2.740	80.000%	0.233
	4.981V	3.425		115.39V
4	1.000A	4.957	80.471%	0.334
	4.957V	6.160		115.39V
5	1.500A	7.396	80.182%	0.397
	4.930V	9.224		115.38V
6	3.000A	14.570	78.872%	0.477
	4.857V	18.473		115.37V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.226	59.947%	0.010
	5.008V	0.377		230.85V
2	0.090A	0.451	67.922%	0.018
	5.005V	0.664		230.85V
3	0.550A	2.739	77.395%	0.092
	4.979V	3.539		230.86V
4	1.000A	4.951	79.102%	0.153
	4.951V	6.259		230.86V
5	1.500A	7.382	79.849%	0.209
	4.921V	9.245		230.86V
6	3.000A	14.497	79.353%	0.318
	4.832V	18.269		230.85V

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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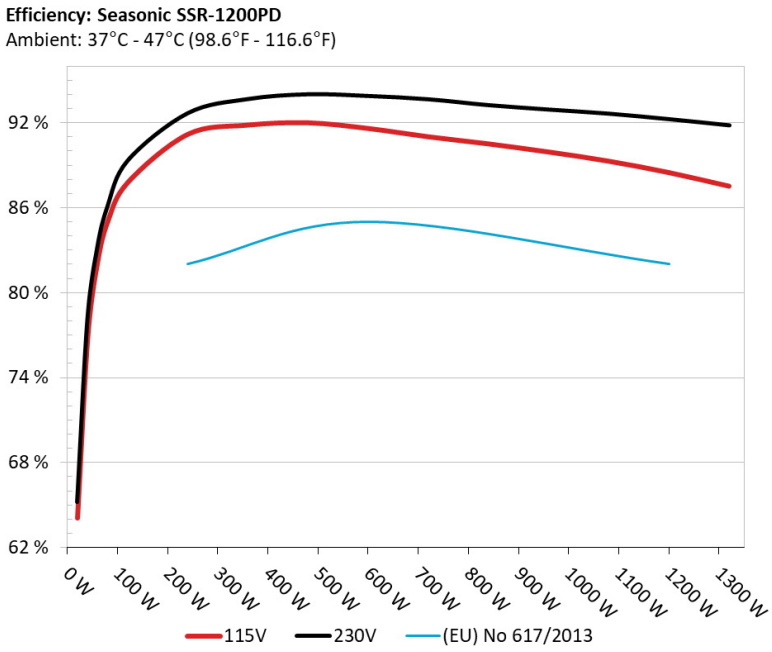
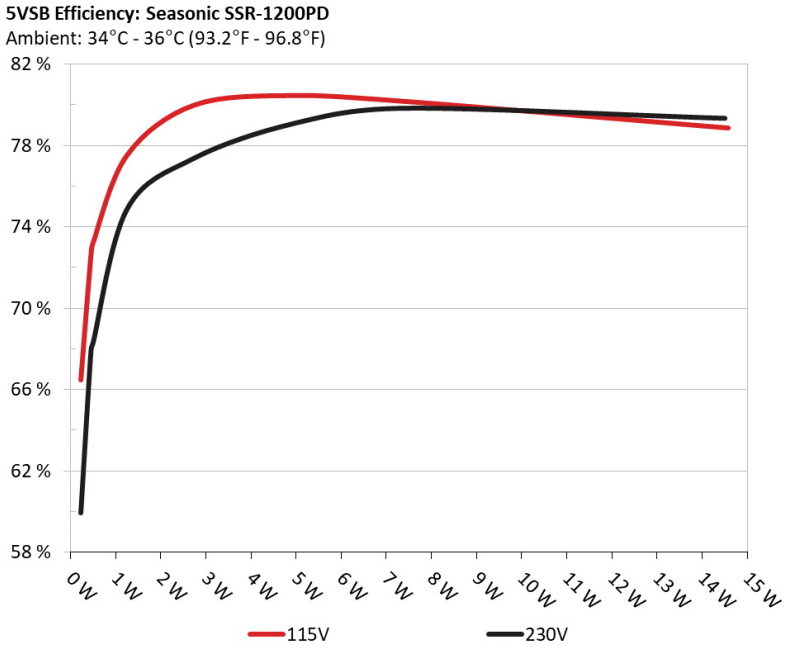
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	8.092A	1.988A	1.982A	1.000A	119.998	87.803%	812	26.7	38.36°C	0.980
	12.161V	5.024V	3.330V	5.003V	136.667				43.62°C	115.22V
2	17.171A	2.985A	2.974A	1.201A	239.694	91.203%	910	28.4	38.47°C	0.984
	12.160V	5.023V	3.328V	4.999V	262.813				45.56°C	115.06V
3	26.582A	3.485A	3.458A	1.402A	359.218	91.852%	1084	35.6	39.31°C	0.989
	12.159V	5.022V	3.327V	4.994V	391.084				47.48°C	115.00V
4	36.063A	3.984A	3.972A	1.604A	479.666	92.013%	1300	38.8	39.60°C	0.993
	12.158V	5.021V	3.325V	4.989V	521.304				48.59°C	114.93V
5	45.180A	4.982A	4.963A	1.806A	599.807	91.614%	1727	44.6	40.07°C	0.995
	12.158V	5.020V	3.324V	4.984V	654.710				49.40°C	114.77V
6	54.301A	5.979A	5.960A	2.009A	719.949	91.026%	2015	48.3	40.72°C	0.997
	12.157V	5.019V	3.322V	4.980V	790.923				50.64°C	114.64V
7	63.390A	6.978A	6.958A	2.211A	839.694	90.523%	2123	51.2	41.57°C	0.997
	12.156V	5.018V	3.321V	4.976V	927.600				52.66°C	114.51V
8	72.538A	7.973A	7.953A	2.414A	960.179	89.946%	2123	51.2	42.88°C	0.997
	12.156V	5.017V	3.320V	4.972V	1067.504				55.74°C	114.43V
9	82.024A	8.474A	8.439A	2.414A	1079.519	89.302%	2123	51.2	44.42°C	0.998
	12.155V	5.017V	3.318V	4.972V	1208.846				59.32°C	114.25V
10	91.339A	8.975A	8.954A	3.027A	1199.949	88.493%	2123	51.2	46.02°C	0.998
	12.155V	5.016V	3.317V	4.957V	1355.984				62.82°C	114.14V
11	101.213A	8.975A	8.956A	3.027A	1319.962	87.534%	2132	51.7	46.85°C	0.998
	12.155V	5.016V	3.316V	4.956V	1507.946				65.54°C	113.93V
CL1	0.742A	15.004A	15.001A	0.000A	134.342	83.538%	2115	50.7	43.49°C	0.990
	12.161V	5.022V	3.331V	5.052V	160.816				49.53°C	115.17V
CL2	100.012A	1.001A	1.001A	1.000A	1228.983	88.555%	2123	51.2	46.96°C	0.998
	12.155V	5.018V	3.317V	4.994V	1387.826				63.79°C	114.11V

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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	1.179A	0.497A	0.477A	0.199A	19.416	64.062%	660	23.8	0.835
	12.152V	5.028V	3.333V	5.024V	30.308				115.36V
2	2.434A	0.995A	0.990A	0.399A	39.874	76.852%	660	23.8	0.920
	12.152V	5.023V	3.330V	5.015V	51.884				115.33V
3	3.618A	1.492A	1.470A	0.599A	59.359	82.127%	660	23.8	0.950
	12.152V	5.024V	3.330V	5.011V	72.277				115.31V
4	4.867A	1.989A	1.980A	0.799A	79.771	85.025%	685	25.4	0.970
	12.160V	5.024V	3.330V	5.008V	93.821				115.28V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	16.2 mV	3.3 mV	3.9 mV	5.9 mV	Pass
20% Load	17.0 mV	3.5 mV	4.8 mV	6.9 mV	Pass
30% Load	12.2 mV	3.7 mV	5.2 mV	7.1 mV	Pass
40% Load	12.1 mV	3.9 mV	5.7 mV	8.8 mV	Pass
50% Load	13.4 mV	4.2 mV	6.5 mV	9.2 mV	Pass
60% Load	15.2 mV	4.5 mV	7.2 mV	10.9 mV	Pass
70% Load	16.4 mV	5.1 mV	7.7 mV	11.1 mV	Pass
80% Load	17.2 mV	6.3 mV	8.6 mV	12.9 mV	Pass
90% Load	18.5 mV	7.2 mV	9.2 mV	14.2 mV	Pass
100% Load	19.2 mV	7.5 mV	10.7 mV	15.4 mV	Pass
110% Load	21.4 mV	8.6 mV	11.8 mV	17.6 mV	Pass
Crossload 1	12.6 mV	4.8 mV	6.3 mV	6.1 mV	Pass
Crossload 2	21.5 mV	6.4 mV	9.0 mV	14.8 mV	Pass

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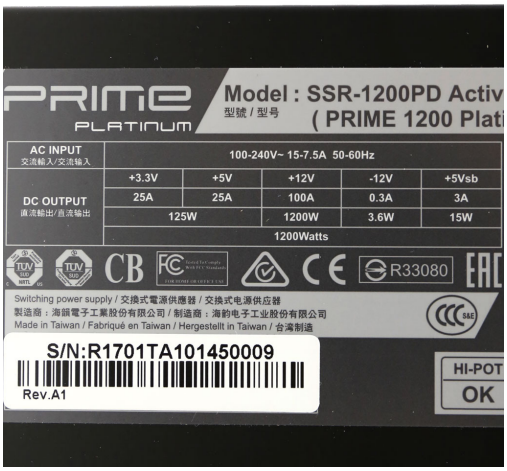
HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	22.7
AC Loss to PWR_OK Hold Up Time (ms)	18.7
PWR_OK Inactive to DC Loss Delay (ms)	4.0

Top side



Power specifications label

CERTIFICATIONS

CYBENETICS PLATINUM

CYBENETICS STANDARD