

## Anex

Seasonic SSR-850PX

Lab ID#: 226

Receipt Date: -

Test Date: -

Report:

Report Date: Nov 28, 2018

DUT INFORMATION	
Brand	Seasonic
Manufacturer (OEM)	Seasonic
Series	FOCUS Plus Platinum
Model Number	SSR-850PX
Serial Number	R1708AA174090120
DUT Notes	

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	12-6
Rated Frequency (Hz)	50-60
Rated Power (W)	850
Type	ATX12V
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225M12F-Z)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

POWER SPECIFICATIONS						
Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	70	3	0.3
	Watts	100		840	15	3.6
Total Max. Power (W)		850				

CABLES AND CONNECTORS				
Modular Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (610mm)	1	1	18-22AWG	Yes
4+4 pin EPS12V (660mm)	2	2	18AWG	Yes
6+2 pin PCIe (680mm+80mm)	3	6	18AWG	Yes
SATA (460mm+115mm+115mm+115mm)	2	8	18AWG	No
SATA (460mm+115mm)	1	2	18AWG	No
4 pin Molex (460mm+120mm+120mm)	1	3	18AWG	No
4 pin Molex (360mm+120mm)	1	2	18AWG	No
FDD Adapter (+105mm)	1	1	22AWG	No
AC Power Cord (1360mm) - C13 coupler	1	1	18AWG	No

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PAGE 1/8

RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	90.404
Efficiency With 10W ( $\leq 500W$ ) or 2% ( $> 500W$ ) Load -115V	0.000
Average Efficiency 5VSB	77.288
Standby Power Consumption (W) -115V	0.0491633
Standby Power Consumption (W) -230V	0.0851626
Average PF	0.984
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	27.27
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A-

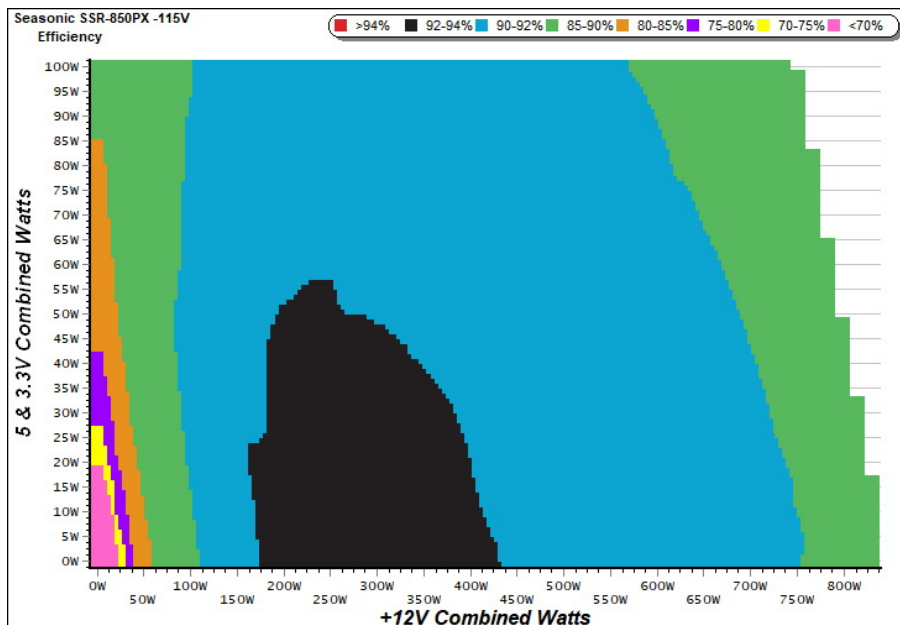
TEST EQUIPMENT		
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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PAGE 2/8

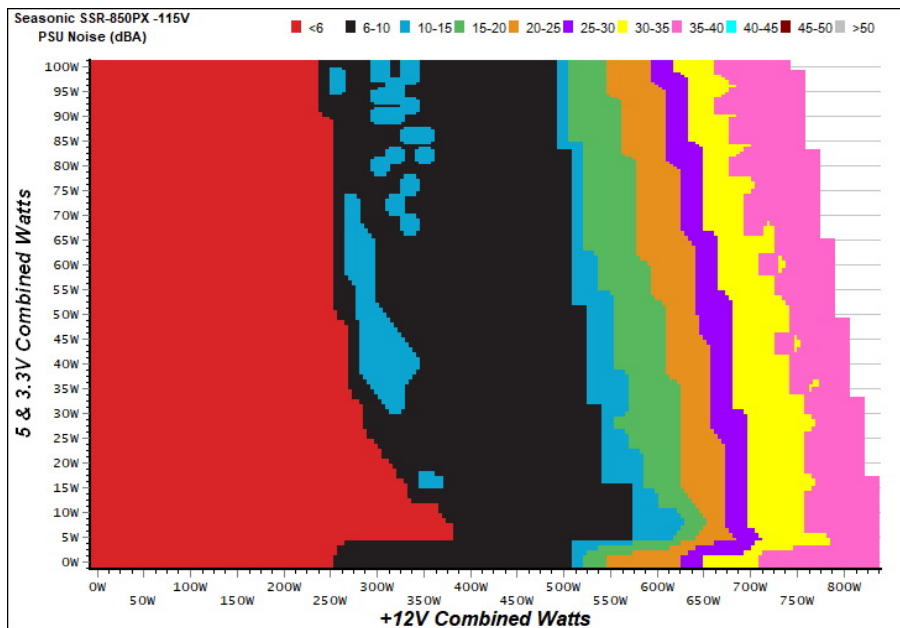
### EFFICIENCY GRAPH



#### 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)

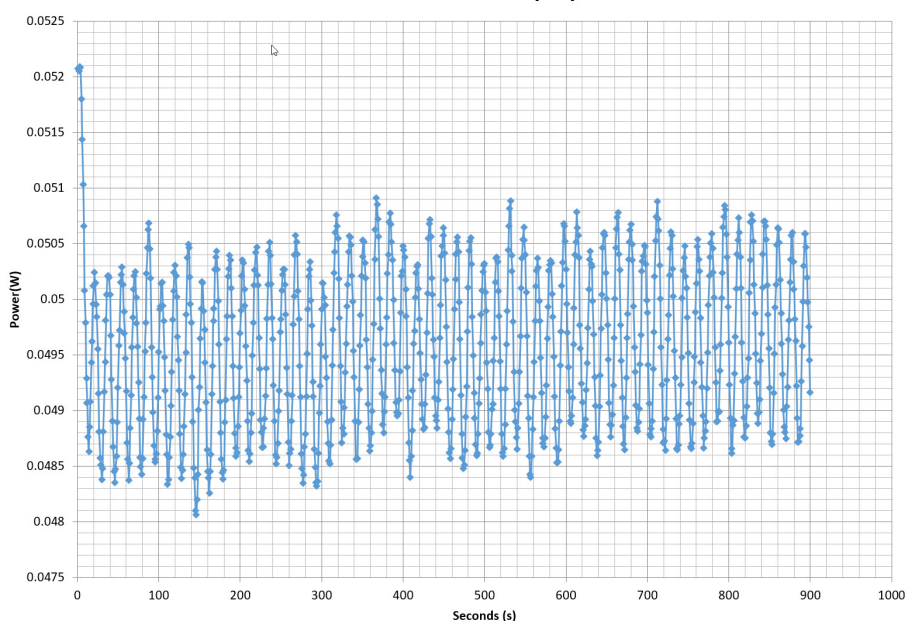
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	67.941%	0.032
	5.130V	0.340		115.26V
2	0.090A	0.461	72.943%	0.059
	5.129V	0.632		115.27V
3	0.550A	2.815	77.677%	0.265
	5.118V	3.624		115.26V
4	1.000A	5.108	77.547%	0.361
	5.108V	6.587		115.25V
5	1.500A	7.646	77.759%	0.412
	5.098V	9.833		115.25V
6	3.000A	15.157	76.331%	0.478
	5.053V	19.857		115.24V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	60.313%	0.013
	5.131V	0.383		230.72V
2	0.090A	0.462	67.643%	0.022
	5.129V	0.683		230.72V
3	0.550A	2.815	76.225%	0.113
	5.118V	3.693		230.71V
4	1.000A	5.108	76.997%	0.186
	5.108V	6.634		230.72V
5	1.500A	7.646	77.561%	0.246
	5.097V	9.858		230.71V
6	2.999A	15.189	77.475%	0.346
	5.064V	19.605		230.70V

### VAMPIRE POWER -115V

Power - R1708AA174090120 - 27/11/2017 - 09:32



#### 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

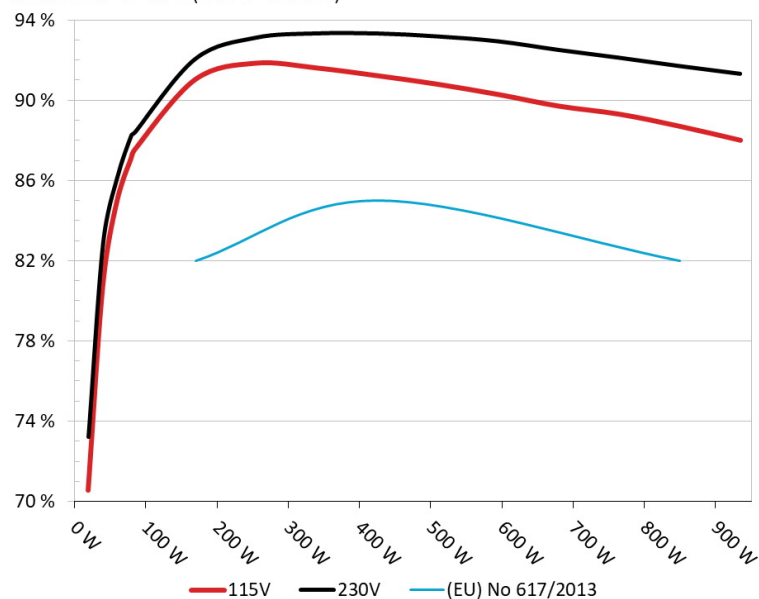
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### EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

#### Efficiency: Seasonic SSR-850PX

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



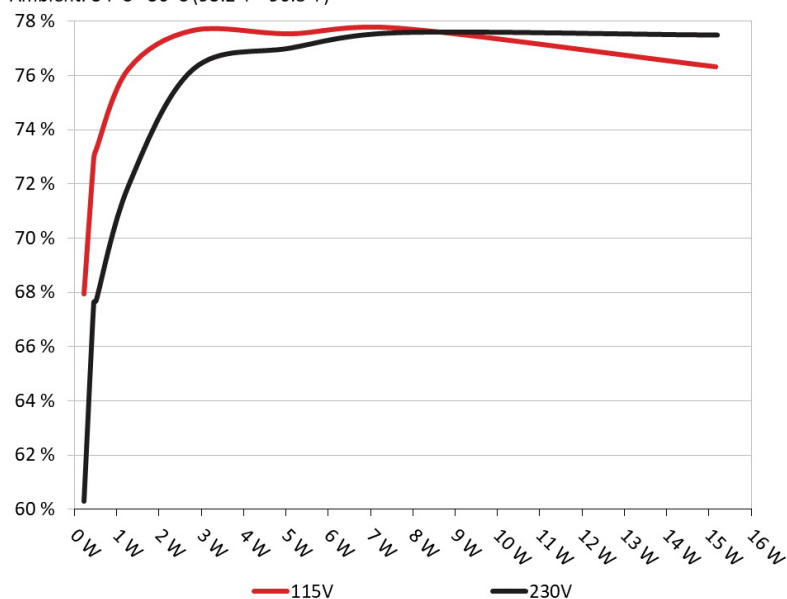
#### INFO

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-850PX

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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## Anex

Seasonic SSR-850PX

### 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	5.177A	1.991A	1.984A	0.980A	84.619	87.552%	0	<6.0	44.91°C	0.945
	12.178V	5.013V	3.321V	5.105V	96.650				38.02°C	115.17V
2	11.350A	2.990A	2.977A	1.177A	169.116	91.040%	0	<6.0	45.88°C	0.985
	12.180V	5.013V	3.321V	5.096V	185.761				38.37°C	115.16V
3	17.917A	3.489A	3.462A	1.376A	254.233	91.863%	0	<6.0	46.79°C	0.994
	12.181V	5.014V	3.320V	5.087V	276.752				38.84°C	115.04V
4	24.479A	3.987A	3.975A	1.576A	339.437	91.626%	550	10.8	39.22°C	0.992
	12.184V	5.013V	3.320V	5.077V	370.458				47.59°C	114.92V
5	30.714A	4.988A	4.971A	1.776A	424.776	91.241%	445	9.5	39.73°C	0.992
	12.186V	5.012V	3.318V	5.068V	465.552				48.55°C	114.91V
6	36.880A	5.987A	5.969A	1.977A	509.289	90.814%	465	9.8	40.48°C	0.993
	12.188V	5.011V	3.316V	5.059V	560.807				49.51°C	114.79V
7	43.116A	6.984A	6.966A	2.179A	594.625	90.300%	900	21.8	41.73°C	0.993
	12.189V	5.010V	3.315V	5.049V	658.498				51.29°C	114.66V
8	49.358A	7.988A	7.966A	2.382A	679.973	89.719%	1495	32.0	42.92°C	0.994
	12.188V	5.008V	3.313V	5.039V	757.893				52.87°C	114.64V
9	55.989A	8.489A	8.453A	2.384A	764.896	89.316%	2025	41.2	44.70°C	0.994
	12.188V	5.007V	3.312V	5.034V	856.396				55.04°C	114.50V
10	62.359A	8.989A	8.971A	2.991A	849.734	88.711%	2035	41.3	45.66°C	0.995
	12.188V	5.006V	3.311V	5.015V	957.872				57.09°C	114.47V
11	69.302A	8.990A	8.971A	2.994A	934.493	88.015%	2055	41.4	47.13°C	0.995
	12.190V	5.006V	3.310V	5.011V	1061.741				59.62°C	114.33V
CL1	0.731A	12.000A	11.999A	0.000A	108.949	86.494%	465	9.8	43.68°C	0.968
	12.185V	5.013V	3.324V	5.118V	125.961				52.87°C	115.22V
CL2	69.995A	1.001A	0.997A	1.000A	866.620	89.045%	2035	41.3	45.50°C	0.995
	12.190V	5.009V	3.311V	5.066V	973.236				56.68°C	114.45V

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PAGE 6/8

Anex

Seasonic SSR-850PX

## 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	1.160A	0.497A	0.479A	0.195A	19.208	70.545%	0	<6.0	0.596
	12.175V	5.017V	3.324V	5.125V	27.228				115.25V
2	2.411A	0.995A	0.991A	0.391A	39.632	80.697%	0	<6.0	0.821
	12.175V	5.011V	3.320V	5.120V	49.112				115.23V
3	3.594A	1.493A	1.473A	0.587A	59.138	84.900%	0	<6.0	0.895
	12.176V	5.012V	3.321V	5.115V	69.656				115.20V
4	4.843A	1.993A	1.984A	0.783A	79.557	87.132%	0	<6.0	0.936
	12.178V	5.013V	3.321V	5.109V	91.306				115.17V

## RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.3 mV	5.8 mV	5.5 mV	4.2 mV	Pass
20% Load	9.4 mV	6.8 mV	6.2 mV	4.5 mV	Pass
30% Load	11.5 mV	7.3 mV	6.8 mV	5.0 mV	Pass
40% Load	13.8 mV	8.0 mV	7.5 mV	5.8 mV	Pass
50% Load	15.2 mV	8.3 mV	8.3 mV	5.4 mV	Pass
60% Load	13.6 mV	9.3 mV	8.6 mV	6.1 mV	Pass
70% Load	13.4 mV	9.9 mV	9.4 mV	6.5 mV	Pass
80% Load	14.0 mV	10.2 mV	10.2 mV	6.7 mV	Pass
90% Load	16.0 mV	11.1 mV	10.6 mV	6.9 mV	Pass
100% Load	17.3 mV	11.8 mV	12.0 mV	7.8 mV	Pass
110% Load	19.5 mV	12.1 mV	12.1 mV	9.8 mV	Pass
Crossload 1	7.5 mV	11.5 mV	11.0 mV	3.9 mV	Pass
Crossload 2	18.0 mV	7.4 mV	7.2 mV	7.3 mV	Pass

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PAGE 7/8



Anex

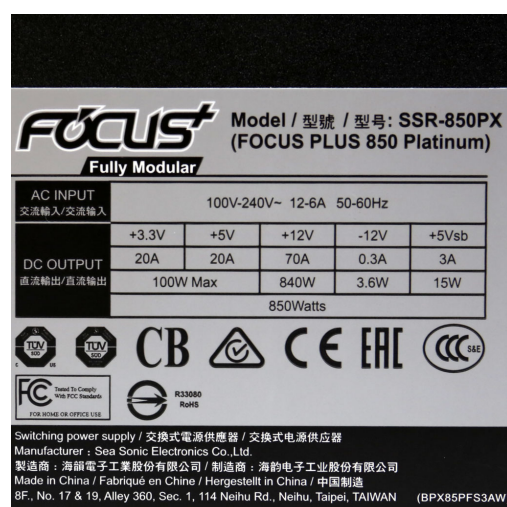
Seasonic SSR-850PX

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

Hold-Up Time (ms)	23.6
AC Loss to PWR_OK Hold Up Time (ms)	19.0
PWR_OK Inactive to DC Loss Delay (ms)	4.6



Top side



Power specifications label

## CERTIFICATIONS



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PAGE 8/8