

Anex

Seasonic SSR-750TR Ultra

Lab ID#: 231

Receipt Date: -

Test Date: -

Report:

Report Date: Apr 12, 2018

DUT INFORMATION	
Brand	Seasonic
Manufacturer (OEM)	Seasonic
Series	Prime Titanium Ultra
Model Number	SSR-750TR Ultra
Serial Number	R1709AA183710034
DUT Notes	

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	9.5-4.5
Rated Frequency (Hz)	50-60
Rated Power (W)	750
Type	ATX12V
Cooling	135mm Fluid Dynamic Bearing Fan (HA13525L12F-Z)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

POWER SPECIFICATIONS						
Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62	3	0.3
	Watts	100		744	15	3.6
Total Max. Power (W)		750				

CABLES AND CONNECTORS				
Modular Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	18-22AWG	No
4+4 pin EPS12V (660mm)	2	2	18AWG	No
6+2 pin PCIe (760mm)	4	4	18AWG	No
SATA (350mm+150mm+150mm+150mm)	1	4	18AWG	No
SATA (410mm+110mm+110mm+110mm)	1	4	18AWG	No
SATA (300mm+150mm)	1	2	18AWG	No
4 pin Molex (450mm+120mm+120mm)	1	3	18AWG	No
4 pin Molex (350mm+120mm)	1	2	18AWG	No
4-pin Molex Adapter / SATA (150mm+150mm)	1	2	18AWG	No
FDD Adapter (+100mm)	1	1	22AWG	No
AC Power Cord (1370mm) - C13 coupler	1	1	18AWG	-

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	91.787
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	79.896
Standby Power Consumption (W) -115V	0.0577771
Standby Power Consumption (W) -230V	0.0827285
Average PF	0.988
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	11.73
Efficiency Rating (ETA)	TITANIUM
Noise Rating (LAMBDA)	A++

TEST EQUIPMENT

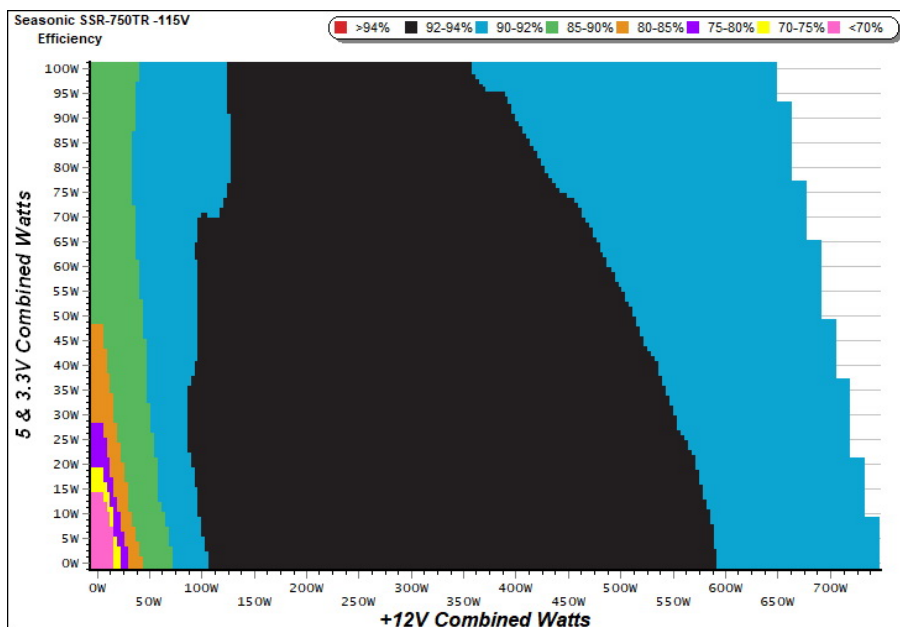
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5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

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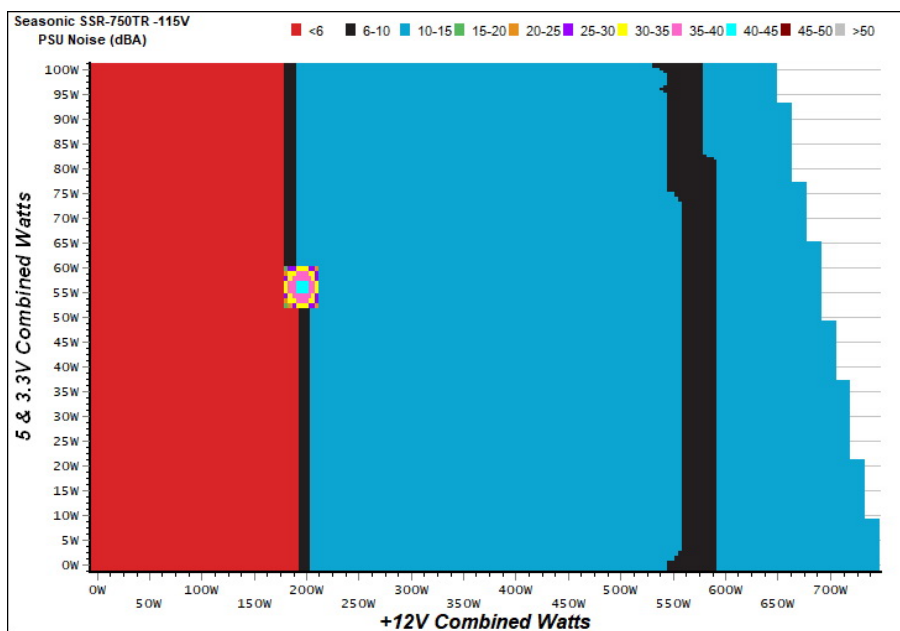
EFFICIENCY GRAPH



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)

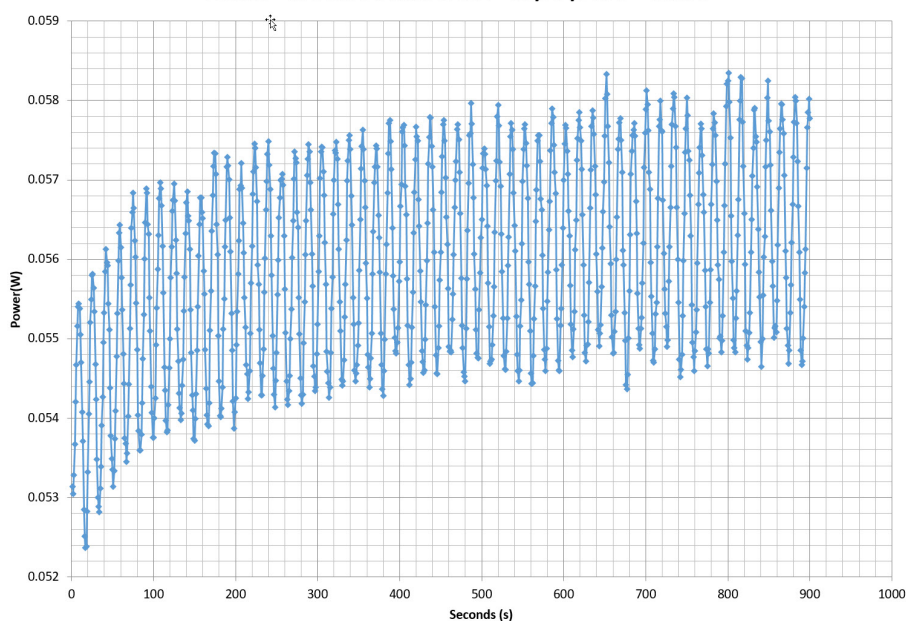
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.223	66.567%	0.029
	4.960V	0.335		115.27V
2	0.090A	0.446	72.876%	0.052
	4.958V	0.612		115.27V
3	0.550A	2.717	80.290%	0.238
	4.941V	3.384		115.26V
4	1.000A	4.924	80.458%	0.342
	4.924V	6.120		115.26V
5	1.500A	7.359	80.225%	0.405
	4.906V	9.173		115.26V
6	3.000A	14.558	79.236%	0.484
	4.853V	18.373		115.24V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.223	59.626%	0.010
	4.960V	0.374		230.83V
2	0.090A	0.446	68.092%	0.018
	4.958V	0.655		230.84V
3	0.550A	2.717	78.526%	0.092
	4.940V	3.460		230.83V
4	1.000A	4.923	80.205%	0.154
	4.923V	6.138		230.83V
5	1.500A	7.355	79.746%	0.213
	4.903V	9.223		230.82V
6	3.000A	14.536	79.497%	0.325
	4.845V	18.285		230.82V

VAMPIRE POWER -115V

Power - R1709AA183710034 - 01/12/2017 - 09:34



INFO

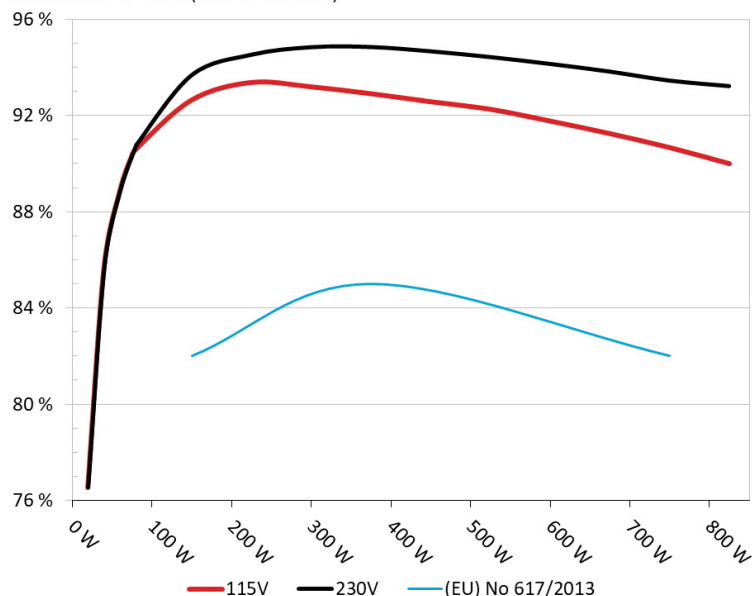
This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Seasonic Ultra SSR-750TR
Ambient: 37°C - 47°C (98.6°F - 116.6°F)

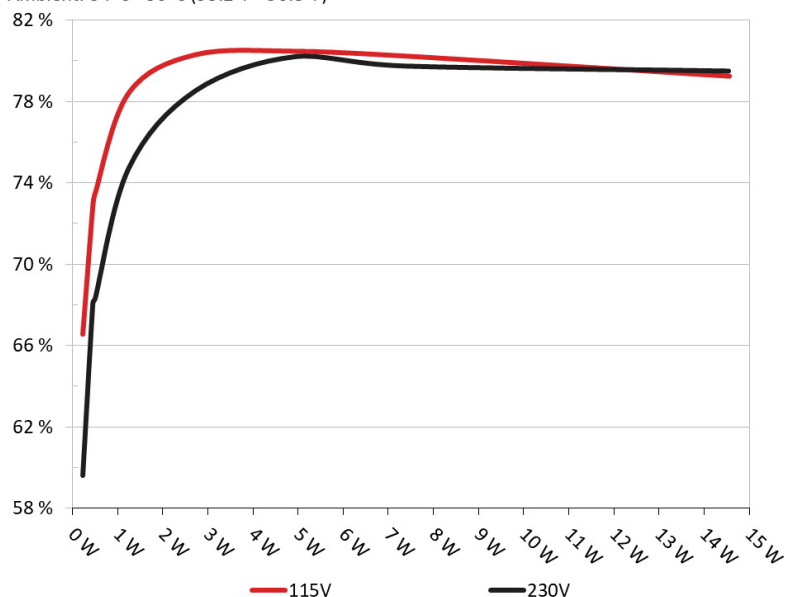


INFO

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 Ultra SSR-750TR
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	4.349A	1.985A	1.984A	0.997A	74.359	90.309%	380	9.6	38.09°C	0.959
	12.133V	5.035V	3.325V	5.015V	82.338				43.03°C	115.28V
2	9.749A	2.980A	2.978A	1.198A	149.282	92.638%	380	9.6	38.38°C	0.987
	12.143V	5.034V	3.323V	5.011V	161.146				43.38°C	115.18V
3	15.551A	3.478A	3.460A	1.398A	224.804	93.378%	380	9.6	38.74°C	0.993
	12.141V	5.033V	3.322V	5.007V	240.745				44.79°C	115.07V
4	21.283A	3.974A	3.973A	1.599A	299.588	93.197%	395	10.5	38.99°C	0.992
	12.141V	5.032V	3.321V	5.003V	321.458				45.85°C	115.07V
5	26.692A	4.970A	4.968A	1.800A	374.544	92.913%	435	10.7	39.89°C	0.991
	12.140V	5.032V	3.320V	5.000V	403.112				46.96°C	114.98V
6	32.095A	5.963A	5.965A	2.002A	449.442	92.580%	485	12.8	40.56°C	0.992
	12.140V	5.032V	3.319V	4.997V	485.461				47.86°C	114.88V
7	37.534A	6.957A	6.959A	2.203A	524.761	92.264%	370	10.4	41.09°C	0.993
	12.140V	5.031V	3.319V	4.994V	568.758				48.69°C	114.86V
8	42.966A	7.951A	7.957A	2.405A	600.065	91.773%	460	11.9	42.50°C	0.994
	12.141V	5.032V	3.318V	4.991V	653.860				50.25°C	114.75V
9	48.773A	8.449A	8.440A	2.404A	674.607	91.256%	540	15.8	43.61°C	0.995
	12.140V	5.031V	3.317V	4.992V	739.246				51.74°C	114.64V
10	54.376A	8.946A	8.954A	3.014A	749.837	90.675%	635	19.6	45.07°C	0.996
	12.140V	5.031V	3.317V	4.978V	826.954				53.50°C	114.63V
11	60.582A	8.948A	8.957A	3.014A	825.067	90.005%	1020	32.2	46.78°C	0.996
	12.138V	5.031V	3.316V	4.978V	916.691				55.69°C	114.51V
CL1	0.735A	12.003A	12.000A	0.000A	109.269	89.256%	440	11.6	43.62°C	0.980
	12.139V	5.036V	3.325V	5.063V	122.422				50.82°C	115.22V
CL2	62.011A	1.003A	0.999A	1.000A	765.999	90.858%	635	19.6	44.93°C	0.996
	12.137V	5.033V	3.317V	5.010V	843.072				53.14°C	114.61V

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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	1.178A	0.494A	0.480A	0.199A	19.377	76.550%	0	<6.0	0.779
	12.130V	5.037V	3.327V	5.033V	25.313				115.35V
2	2.432A	0.991A	0.991A	0.398A	39.787	85.707%	0	<6.0	0.899
	12.131V	5.034V	3.325V	5.027V	46.422				115.32V
3	3.623A	1.487A	1.473A	0.597A	59.334	88.834%	0	<6.0	0.945
	12.131V	5.035V	3.325V	5.023V	66.792				115.30V
4	4.875A	1.985A	1.983A	0.797A	79.733	90.603%	0	<6.0	0.961
	12.132V	5.035V	3.325V	5.020V	88.003				115.29V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	4.4 mV	2.5 mV	3.6 mV	2.6 mV	Pass
20% Load	21.2 mV	3.2 mV	4.7 mV	3.1 mV	Pass
30% Load	10.2 mV	3.2 mV	4.8 mV	2.9 mV	Pass
40% Load	10.2 mV	3.6 mV	4.7 mV	3.4 mV	Pass
50% Load	11.6 mV	4.1 mV	5.3 mV	3.8 mV	Pass
60% Load	12.2 mV	4.7 mV	5.9 mV	4.5 mV	Pass
70% Load	13.8 mV	4.8 mV	6.4 mV	5.0 mV	Pass
80% Load	14.9 mV	4.6 mV	7.1 mV	5.1 mV	Pass
90% Load	14.8 mV	4.5 mV	7.0 mV	5.0 mV	Pass
100% Load	16.2 mV	5.5 mV	7.6 mV	6.0 mV	Pass
110% Load	17.4 mV	5.7 mV	8.3 mV	6.6 mV	Pass
Crossload 1	21.0 mV	5.2 mV	7.1 mV	3.1 mV	Pass
Crossload 2	16.7 mV	3.3 mV	5.0 mV	5.1 mV	Pass

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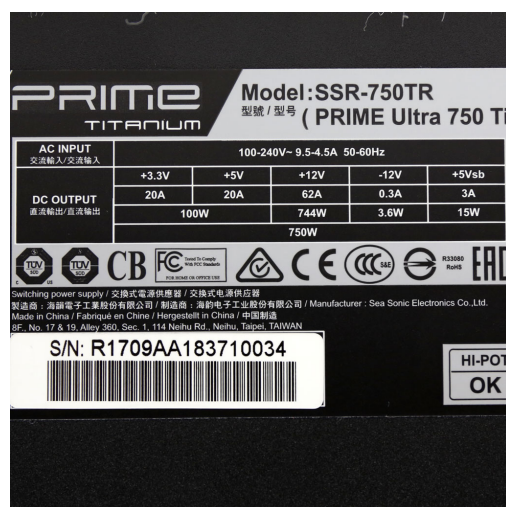
Seasonic SSR-750TR Ultra

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

Hold-Up Time (ms)	28.10
AC Loss to PWR_OK Hold Up Time (ms)	23.40
PWR_OK Inactive to DC Loss Delay (ms)	4.70

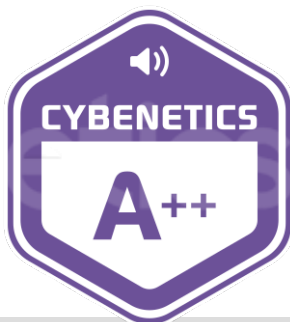


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Power specifications label

CERTIFICATIONS



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