Anex

SilverStone ST75F-PT

Lab ID#: 55
Receipt Date: -
Test Date: -

Report:
Report Date: Feb 28, 2018

DUT INFORMATION

Brand	SilverStone
Manufacturer (OEM)	Sirfa / High Power
Series	Strider Platinum
Model Number	ST75F-PT
Serial Number	1966391750PT11F02001293
DUT Notes	Retested on 6/23/17

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10
Rated Frequency (Hz)	50-60
Rated Power (W)	750
Type	ATX12V
Cooling	120mm Fluid Dynamic Bearing Fan (S1202512L)
Semi-Passive Operation	✓
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	22	22	62.5	3	0.3
	Watts	120		750	15	3.6
Total Max. Power (W)		750				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (550mm)	1	1	18-22AWG
4+4 pin EPS12V (750mm)	1	1	16AWG
6+2 pin PCIe (550mm+150mm)	2	4	16-18AWG
SATA (600mm+150mm+150mm+150mm)	2	8	18AWG
4 pin Molex (600mm+150mm+150mm) / FDD Adapter (+150mm)	2	6 / 2	18 / 22AWG

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Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	1x GBJ1506 (600V, 15A @ 100°C)
APFC MOSFETS	2x Infineon IPA50R140CP (550V, 15A @ 100°C, 0.14 Ohm)
APFC Boost Diode	1x CREE C3D08060A (600V, 8A @ 152°C)
Hold-up Cap(s)	1x Rubycon (400V, 560uF, 3000h @ 105°C, MXG)
Main Switchers	2x Infineon IPA50R140CP (550V, 15A @ 100°C, 0.14 Ohm)
APFC Controller	Infineon ICE3PCS01
Switching Controller	Infineon ICE2HS01G
Topology	Primary side:Half-Bridge & LLC Resonant Converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	4x Infineon IPP015N04N (40V, 120A @ 100°C, 1.5 mOhm)
5V & 3.3V	DC-DC Converters: 8x Infineon IPD060N03L (30V, 50A @ 100°C, 6 mOhm) PWM Controller: APW7159
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (105°C, KY, KZE) Polymers: Teapo, Nippon Chemi-Con
Supervisor IC	SITI PS223 (OVP, UVP, OCP, SCP, OTP)
Fan Model	Globe Fan S1202512L (120mm, 12V, 0.18A, Fluid Dynamic Bearing)
5VSB Circuit	
Rectifier	2x IPD060N03L
Standby PWM Controller	Sanken STR-A6069H
-12V Circuit	
PWM Controller	KIA7912PI

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	89.583
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	79.605
Standby Power Consumption (W) -115V	0.0700067
Standby Power Consumption (W) -230V	0.1325620
Average PF	0.993
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	24.10
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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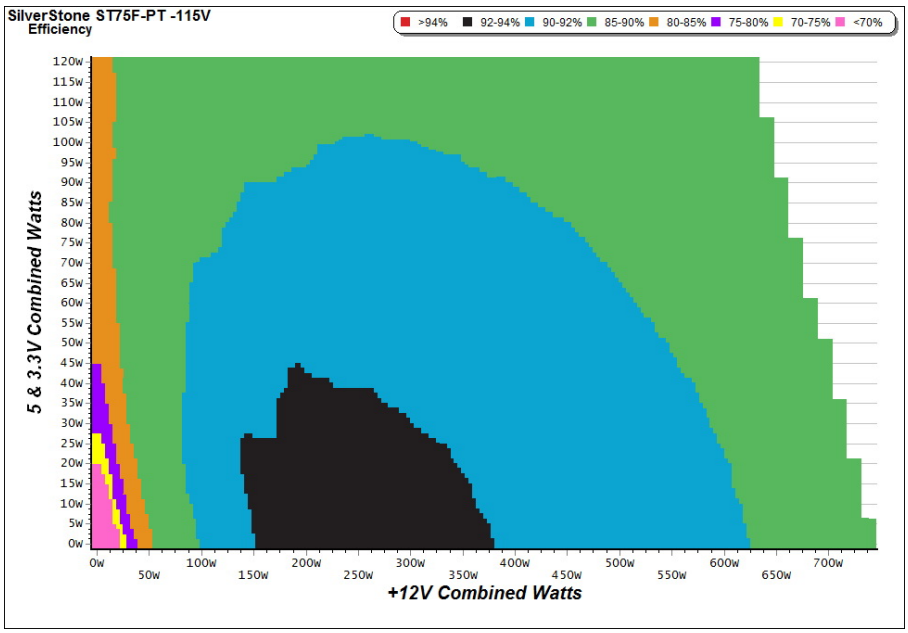
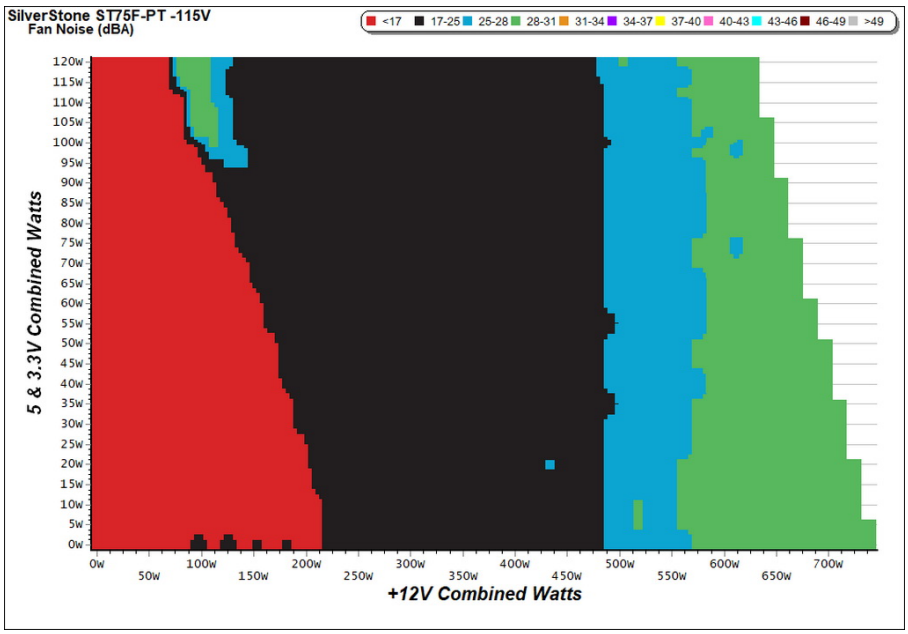
EFFICIENCY GRAPH



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

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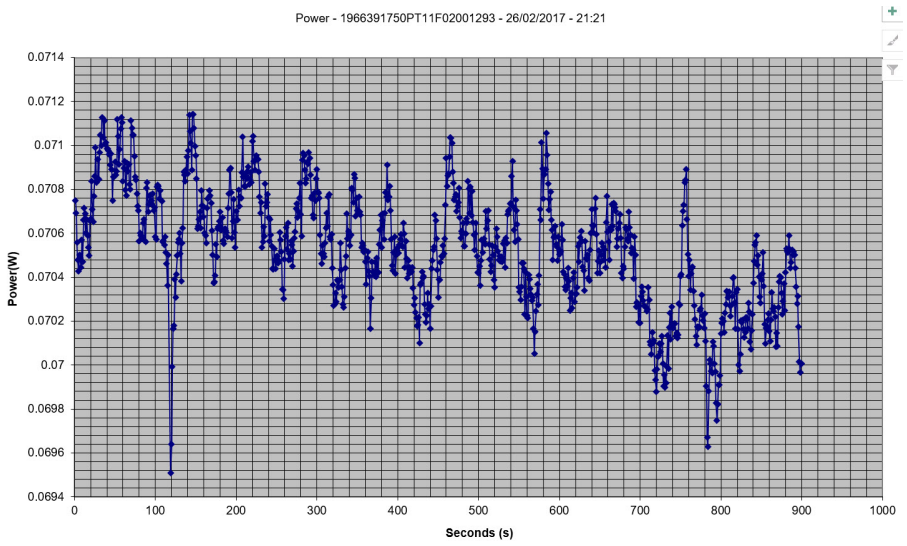
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.212	65.839%	0.045
	5.116V	0.322		115.09V
2	0.087A	0.443	72.862%	0.083
	5.114V	0.608		115.10V
3	0.532A	2.707	80.112%	0.265
	5.094V	3.379		115.10V
4	3.002A	14.951	78.677%	0.378
	4.981V	19.003		115.09V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.212	55.789%	0.016
	5.116V	0.380		230.25V
2	0.087A	0.443	65.051%	0.029
	5.113V	0.681		230.25V
3	0.532A	2.707	75.636%	0.135
	5.091V	3.579		230.26V
4	3.002A	14.973	78.603%	0.316
	4.989V	19.049		230.25V

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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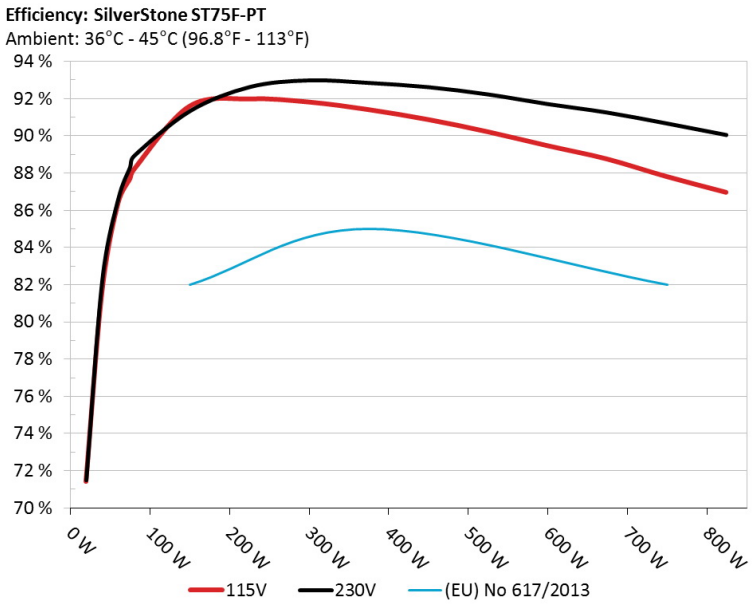
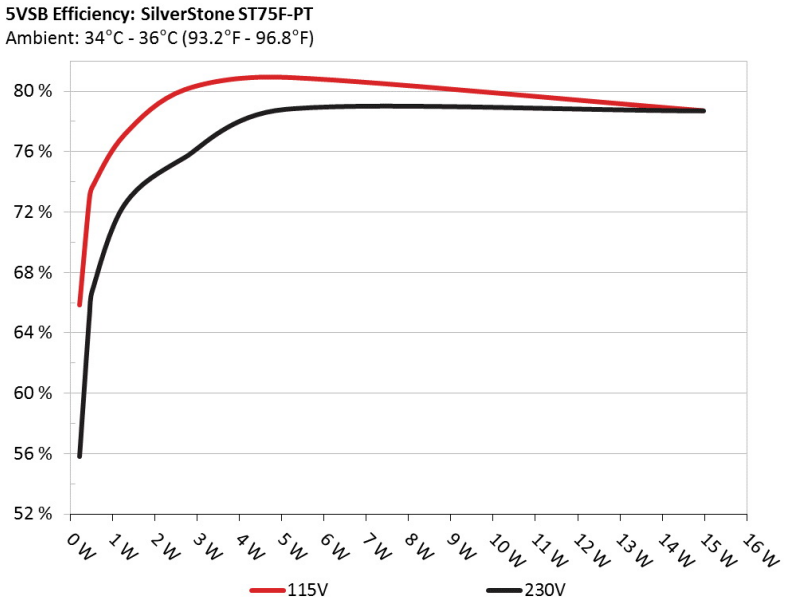
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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)	Fan Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.354A	1.963A	1.963A	0.986A	74.804	87.669%	0	LT 16.6	45.10°C	0.973
	12.225V	5.092V	3.356V	5.063V	85.325				38.83°C	115.10V
2	9.742A	2.949A	2.957A	1.187A	149.747	91.575%	0	LT 16.6	45.87°C	0.991
	12.205V	5.079V	3.341V	5.045V	163.523				39.18°C	115.10V
3	15.508A	3.456A	3.484A	1.392A	224.889	91.972%	1340	32.3	39.63°C	0.996
	12.175V	5.063V	3.326V	5.024V	244.519				41.04°C	115.10V
4	21.283A	3.960A	3.984A	1.596A	299.767	91.801%	1280	29.8	39.80°C	0.996
	12.150V	5.050V	3.312V	5.003V	326.540				41.50°C	115.08V
5	26.737A	4.969A	5.002A	1.805A	374.776	91.395%	1335	32.7	40.69°C	0.996
	12.128V	5.034V	3.298V	4.985V	410.060				42.75°C	115.08V
6	32.221A	5.975A	6.028A	2.011A	449.641	90.860%	1431	35.1	41.39°C	0.996
	12.100V	5.019V	3.283V	4.967V	494.871				43.80°C	115.08V
7	37.713A	6.999A	7.063A	2.221A	524.637	90.206%	1490	34.5	42.77°C	0.997
	12.079V	5.005V	3.268V	4.948V	581.597				45.48°C	115.08V
8	43.245A	8.021A	8.115A	2.432A	599.534	89.459%	1550	35.7	42.91°C	0.997
	12.051V	4.988V	3.252V	4.930V	670.176				45.95°C	115.08V
9	49.223A	8.545A	8.673A	2.441A	674.594	88.741%	1600	36.4	43.39°C	0.997
	12.027V	4.972V	3.240V	4.917V	760.183				46.94°C	115.08V
10	54.971A	9.075A	9.214A	3.073A	749.400	87.801%	1625	37.0	44.05°C	0.998
	12.001V	4.959V	3.223V	4.879V	853.522				48.20°C	115.08V
11	61.324A	9.099A	9.249A	3.081A	824.224	86.950%	1625	37.0	44.77°C	0.998
	11.978V	4.946V	3.210V	4.866V	947.933				49.53°C	115.08V
CL1	0.105A	14.024A	14.006A	0.005A	118.628	82.878%	1625	37.0	44.39°C	0.985
	12.202V	5.051V	3.319V	5.117V	143.136				49.03°C	115.11V
CL2	62.445A	1.003A	1.003A	1.003A	763.200	88.482%	1625	37.0	44.13°C	0.998
	12.010V	4.988V	3.253V	4.955V	862.549				48.87°C	115.08V

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20-80W LOAD TESTS

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	Fan Noise (dB[A])	PF/AC Volts
1	1.195A	0.481A	0.472A	0.197A	19.662	71.412%	0	LT 16.6	0.898
	12.228V	5.105V	3.368V	5.097V	27.533				115.09V
2	2.411A	0.979A	0.981A	0.391A	39.763	81.604%	0	LT 16.6	0.952
	12.227V	5.100V	3.364V	5.089V	48.727				115.09V
3	3.634A	1.466A	1.489A	0.589A	59.897	86.368%	0	LT 16.6	0.967
	12.226V	5.097V	3.360V	5.079V	69.351				115.10V
4	4.844A	1.964A	1.964A	0.786A	79.783	88.174%	0	LT 16.6	0.975
	12.222V	5.093V	3.356V	5.070V	90.484				115.10V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	8.7 mV	5.5 mV	4.8 mV	5.0 mV	Pass
20% Load	7.4 mV	6.1 mV	4.6 mV	4.8 mV	Pass
30% Load	9.2 mV	7.8 mV	6.0 mV	5.9 mV	Pass
40% Load	10.9 mV	10.4 mV	7.7 mV	8.5 mV	Pass
50% Load	12.6 mV	12.8 mV	8.9 mV	11.6 mV	Pass
60% Load	13.7 mV	11.1 mV	11.8 mV	10.0 mV	Pass
70% Load	16.6 mV	12.4 mV	11.3 mV	10.6 mV	Pass
80% Load	20.7 mV	12.2 mV	12.3 mV	10.4 mV	Pass
90% Load	27.3 mV	13.3 mV	15.1 mV	10.8 mV	Pass
100% Load	33.9 mV	16.0 mV	17.0 mV	11.9 mV	Pass
110% Load	40.4 mV	18.4 mV	19.4 mV	12.6 mV	Pass
Crossload 1	8.1 mV	6.3 mV	7.0 mV	5.0 mV	Pass
Crossload 2	33.6 mV	15.0 mV	14.8 mV	11.2 mV	Pass

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HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	10.0
AC Loss to PWR_OK Hold Up Time (ms)	13.3
PWR_OK Inactive to DC Loss Delay (ms)	-3.3

Top side

Serial number label

CERTIFICATIONS