Cybenetics

Anex

EVGA SuperNOVA 550 G3

Lab ID#: 224
Receipt Date: -
Test Date: -

Report:
Report Date: Nov 24, 2018

DUT INFORMATION

Brand	EVGA
Manufacturer (OEM)	Super Flower
Series	SuperNOVA G3
Model Number	SuperNOVA 550 G3
Serial Number	1703470515899011
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10
Rated Frequency (Hz)	50-60
Rated Power (W)	550
Type	ATX12V
Cooling	130mm Hydraulic Dynamic Bearing Fan (H1282412L)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	22	22	45.8	3	0.5
	Watts	110		549.6	15	6
Total Max. Power (W)		550				

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	Yes
4+4 pin EPS12V (700mm)	1	1	18-22AWG	Yes
6+2 pin PCIe (700mm)	1	1	18-22AWG	Yes
6+2 pin PCIe (600mm+150mm)	1	2	18-22AWG	Yes
SATA (500mm+100mm+100mm)	2	6	18-20AWG	No
4 pin Molex (500mm+100mm+100mm+100mm)	1	4	18AWG	No
FDD Adapter (+100mm)	1	1	20AWG	No
AC Power Cord (1370mm) - C13 coupler	1	1	18AWG	No

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	89.362
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	78.240
Standby Power Consumption (W) -115V	0.0696769
Standby Power Consumption (W) -230V	0.1472520
Average PF	0.982
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	26.53
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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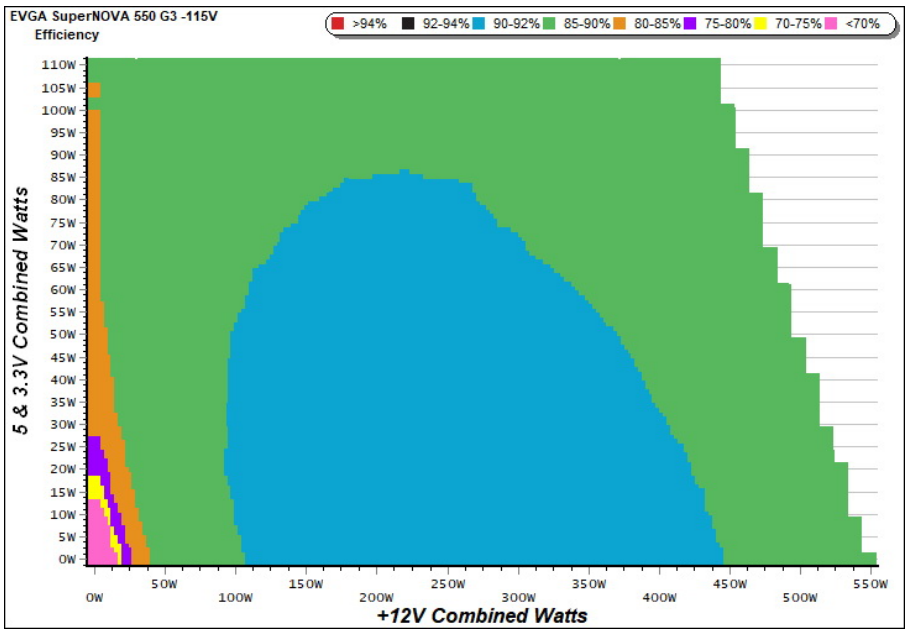
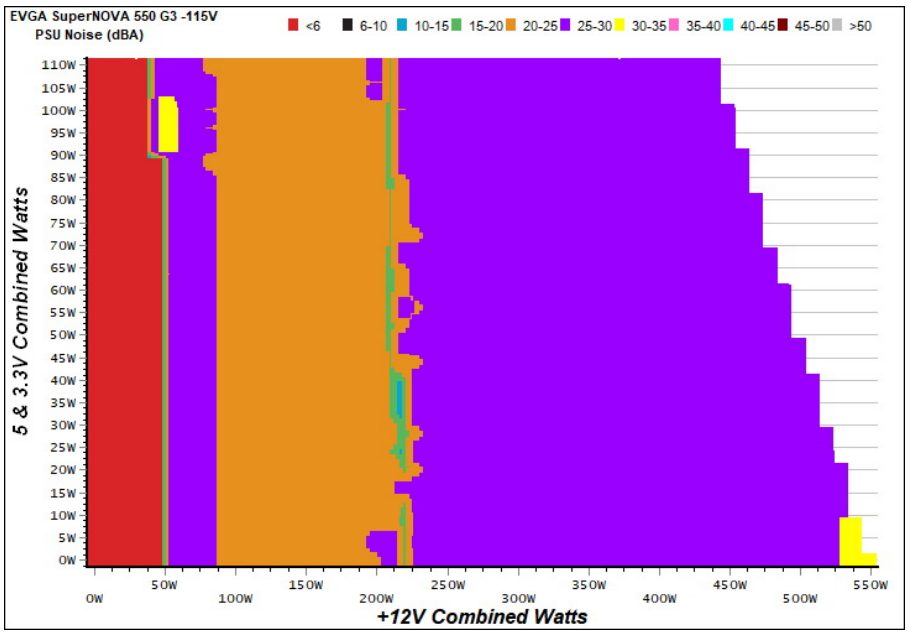
EFFICIENCY GRAPH



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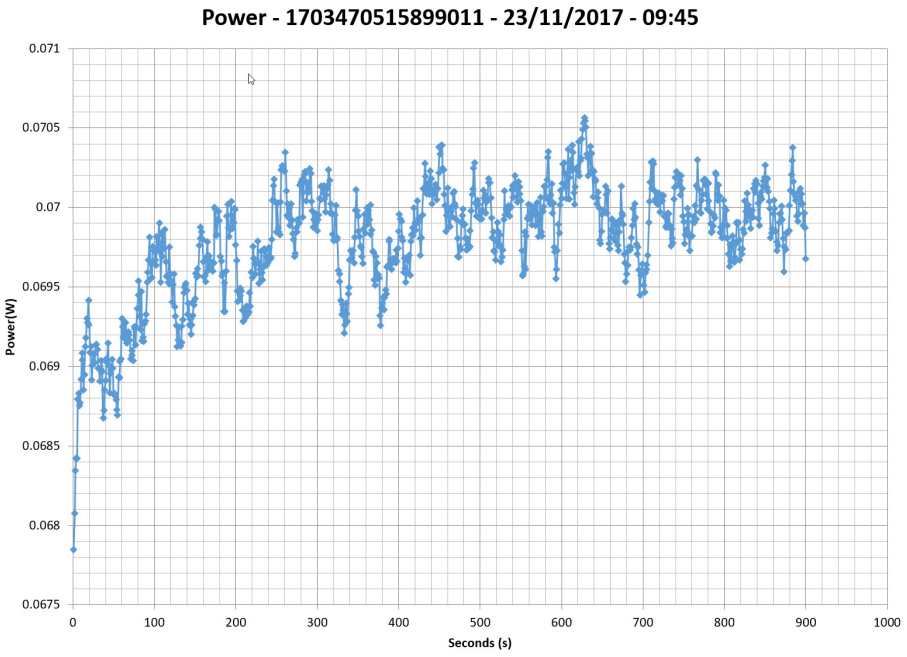
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.216	64.865%	0.031
	5.102V	0.333		115.00V
2	0.088A	0.448	73.083%	0.057
	5.100V	0.613		115.00V
3	0.543A	2.762	78.645%	0.254
	5.089V	3.512		114.99V
4	1.003A	5.091	79.163%	0.352
	5.077V	6.431		114.99V
5	1.502A	7.608	79.011%	0.406
	5.065V	9.629		114.99V
6	3.002A	15.050	77.394%	0.476
	5.013V	19.446		114.99V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.216	52.048%	0.012
	5.102V	0.415		230.10V
2	0.088A	0.448	64.183%	0.020
	5.100V	0.698		230.11V
3	0.543A	2.761	75.768%	0.098
	5.089V	3.644		230.08V
4	1.003A	5.091	77.277%	0.164
	5.078V	6.588		230.09V
5	1.502A	7.607	78.133%	0.219
	5.065V	9.736		230.09V
6	3.002A	15.087	78.390%	0.321
	5.026V	19.246		230.09V

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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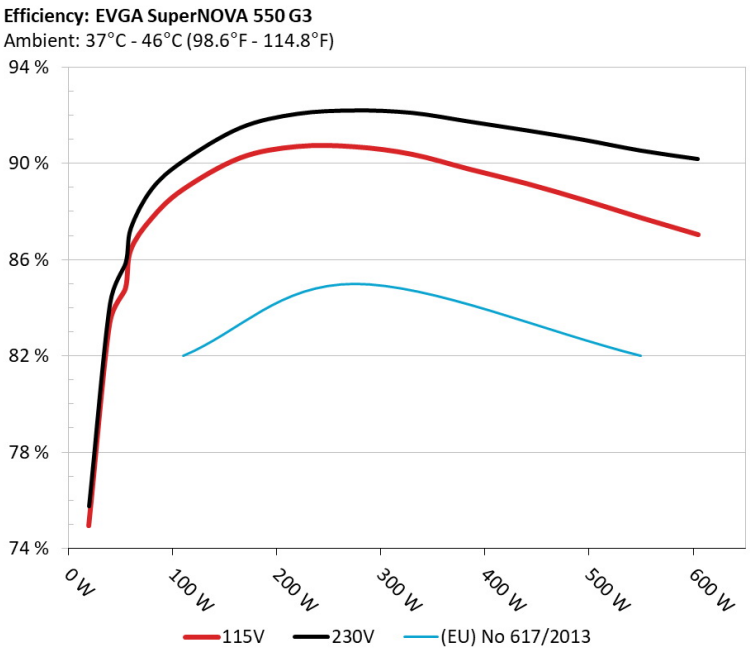
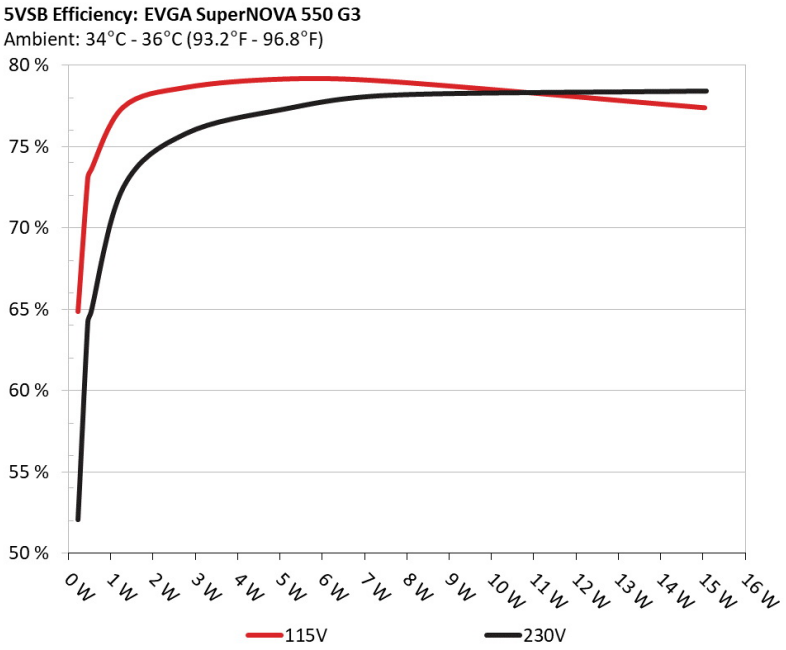
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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	2.713A	1.975A	1.992A	0.985A	54.789	84.773%	1233	31.7	38.00°C	0.934
	12.235V	5.065V	3.310V	5.075V	64.630				39.93°C	115.09V
2	6.453A	2.960A	2.987A	1.181A	109.812	88.891%	1263	32.1	38.43°C	0.966
	12.232V	5.068V	3.312V	5.068V	123.535				40.73°C	115.09V
3	10.533A	3.457A	3.500A	1.381A	164.897	90.211%	1279	32.2	38.68°C	0.979
	12.229V	5.066V	3.311V	5.060V	182.790				41.51°C	115.09V
4	14.609A	3.943A	3.984A	1.581A	219.781	90.686%	1300	32.4	39.01°C	0.986
	12.227V	5.066V	3.311V	5.054V	242.354				42.29°C	115.09V
5	18.350A	4.939A	4.977A	1.781A	274.795	90.675%	1340	33.1	39.31°C	0.989
	12.223V	5.068V	3.312V	5.047V	303.056				43.25°C	115.09V
6	22.094A	5.917A	5.974A	1.982A	329.746	90.364%	1380	34.1	40.55°C	0.991
	12.219V	5.069V	3.314V	5.039V	364.908				44.73°C	115.09V
7	25.844A	6.908A	6.965A	2.185A	384.785	89.746%	1443	36.8	41.45°C	0.993
	12.215V	5.069V	3.315V	5.032V	428.748				46.55°C	115.10V
8	29.589A	7.892A	7.958A	2.386A	439.702	89.150%	1505	37.9	42.21°C	0.993
	12.211V	5.070V	3.316V	5.025V	493.218				48.26°C	115.10V
9	33.774A	8.388A	8.471A	2.386A	494.812	88.462%	1572	37.6	43.73°C	0.994
	12.205V	5.070V	3.316V	5.022V	559.349				50.38°C	115.10V
10	37.699A	8.877A	8.954A	2.996A	549.655	87.729%	1641	39.0	44.96°C	0.995
	12.201V	5.070V	3.316V	5.004V	626.536				52.23°C	115.10V
11	42.220A	8.883A	8.957A	2.997A	604.615	87.025%	1728	39.9	46.35°C	0.995
	12.196V	5.068V	3.315V	5.001V	694.759				54.53°C	115.10V
CL1	0.100A	13.020A	13.004A	0.005A	111.096	84.363%	1505	37.9	42.26°C	0.969
	12.219V	5.097V	3.344V	5.097V	131.688				46.13°C	115.12V
CL2	45.789A	1.002A	1.003A	1.002A	572.195	88.280%	1593	38.3	44.28°C	0.995
	12.203V	5.048V	3.293V	5.060V	648.157				51.95°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	1.196A	0.491A	0.480A	0.196A	19.712	74.948%	1165	29.1	0.770
	12.240V	5.063V	3.307V	5.097V	26.301				115.08V
2	2.412A	0.979A	0.996A	0.391A	39.760	83.339%	1186	29.5	0.893
	12.237V	5.064V	3.308V	5.092V	47.709				115.08V
3	3.632A	1.473A	1.509A	0.586A	59.874	86.380%	1197	29.9	0.949
	12.236V	5.064V	3.308V	5.086V	69.315				115.08V
4	4.841A	1.974A	1.992A	0.786A	79.808	87.691%	1220	30.9	0.954
	12.234V	5.065V	3.310V	5.079V	91.010				115.08V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	4.6 mV	3.9 mV	4.7 mV	6.4 mV	Pass
20% Load	5.7 mV	4.7 mV	4.9 mV	7.6 mV	Pass
30% Load	7.7 mV	5.4 mV	5.4 mV	8.7 mV	Pass
40% Load	8.1 mV	6.1 mV	6.1 mV	9.8 mV	Pass
50% Load	8.3 mV	6.8 mV	6.5 mV	11.3 mV	Pass
60% Load	8.9 mV	7.6 mV	6.8 mV	12.7 mV	Pass
70% Load	8.9 mV	8.8 mV	7.7 mV	17.2 mV	Pass
80% Load	9.3 mV	9.9 mV	8.6 mV	19.1 mV	Pass
90% Load	9.5 mV	10.5 mV	8.8 mV	19.1 mV	Pass
100% Load	10.0 mV	11.5 mV	9.9 mV	22.7 mV	Pass
110% Load	10.5 mV	12.5 mV	10.6 mV	26.3 mV	Pass
Crossload 1	6.3 mV	6.2 mV	6.9 mV	21.0 mV	Pass
Crossload 2	9.8 mV	11.3 mV	8.9 mV	18.0 mV	Pass

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HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	18.26
AC Loss to PWR_OK Hold Up Time (ms)	15.70
PWR_OK Inactive to DC Loss Delay (ms)	2.56

Top side

Power specifications label

CERTIFICATIONS

CYBENETICS PLATINUM

CYBENETICS A-