

EVGA SuperNOVA 1600 T2

Lab ID#: 200 Receipt Date: Oct 9, 2018 Test Date: Oct 16, 2018

Report:

Report Date: Oct 20, 2018

DUT INFORMATION		
Brand	EVGA	
Manufacturer (OEM)	Super Flower	
Series	SuperNOVA	
Model Number		
Serial Number	1403441610800013	
DUT Notes		

DUT SPECIFICATIO	ONS
Rated Voltage (Vrms)	115-240
Rated Current (Arms)	17-10
Rated Frequency (Hz)	50-60
Rated Power (W)	1600
Туре	ATX12V
Cooling	140mm Double Ball-Bearing Fan (RL4Z B1402512EH)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

TEST EQUIPMENT

Electronic Loads	Chroma 6314A x2 Chroma 63601-5 x2 63123A x6 Chroma 63600-2 63102A 63640-80 x10 63101A 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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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	/
(EU) No 617/2013 Compliance	<i>J</i>

115V	
Average Efficiency	91.769%
Efficiency With 10W (≤500W) or 2% (>500W)	0.000
Average Efficiency 5VSB	78.664%
Standby Power Consumption (W)	0.1113630
Average PF	0.992
Avg Noise Output	34.51 dB(A)
Efficiency Rating (ETA)	TITANIUM
Noise Rating (LAMBDA)	Standard++

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	24	24	133.3	3	0.5
	Watts	120		1599.6	15	6
Total Max. Power (W)		1600				

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	16-22AWG	Yes
4+4 pin EPS12V (750mm)	2	2	16-22AWG	Yes
6+2 pin PCle (750mm+150mm)	5	10	16-22AWG	Yes
6+2 pin PCle (750mm)	4	4	16-22AWG	Yes
SATA (550mm+100mm+100mm)	3	12	18-20AWG	No
SATA (550mm+100mm) / 4 pin Molex (+100mm+100mm)	1	2/2	18AWG	No
4 pin Molex (550mm+100mm+100mm)	1	3	18AWG	No
FDD Adapter (+100mm)	2	2	20AWG	No
AC Power Cord (1720mm) - C19 coupler	1	1	16AWG	No

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General Data	
Manufacturer (OEM)	Super Flower
Platform Model	Leadex Titanium
Primary Side	
Transient Filter	6x Y caps, 2x X caps, 2x MC chokes, 1x MOV, NTC Thermistor
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	Bridgeless Design - 1x US30K80R & 8x Infineon MOSFETs
APFC MOSFETS	8x Infineon MOSFETs
APFC Boost Diodes	4x Infineon IDL10G65C5 (650V, 10A @ 125°C)
Hold-up Cap(s)	4x Nippon Chemi-Con (400V, 390uF each. 1560uF combined, 2000h @ 105°C, KMW)
Main Switchers	4x Infineon IPP50R140CP (550V, 15A @ 100°C, 0.140hm)
APFC Controller	SF29603
LLC Resonant Controller	SFAA9013
Topology	Primary side: Bridgeless PFC, Full-Bridge & LLC Resonant Controller Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	12x Infineon BSC027N04LS G (40V, 88A @ 100°C, 2.7mOhm)
5V & 3.3V	DC-DC Converters: 8x Infineon IPD060N03B (30V, 47A @ 100°C, 9.5mOhm) PWM Controller: APW7159C
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (1-5,000 @ 105°C, KZE), Nippon Chemi-Con (4-10,000 @ 105°C, KY), Nippon Chemi-Con (W, 105°C), Nippon Chemi-Con (1,000 @ 105°C, KRG) Polymers: Nippon Chemi-Con
Supervisor IC	AA9013 & LM324ADG
Fan Model	Globe Fan RL4Z-B1402512EH (140mm, 12V, 0.6A, 2000 RPM, 153.47 CFM, 39.5 dB(A), 70,000-hour MTBF)
5VSB Circuit	
Rectifier	1x Mospec S10C60C SBR (60V, 10A)
Standby PWM Controller	29604

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5VSB EFFICIENCY



INFO

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

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5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)				
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229		0.021
l	5.078V	0.388	59.021%	115.39V
2	0.090A	0.457	C0 025%	0.036
2	5.077V	0.664	08.825%	115.38V
_	0.550A	2.788	78.779%	0.176
3	5.068V	3.539		115.38V
	1.000A	5.061	70 5050/	0.276
4	5.060V	6.364	/9.525%	115.38V
-	1.500A	7.578		0.349
5	5.051V	9.490	79.852%	115.37V
6	3.000A	15.064	70 4000/	0.461
	5.021V	19.208	/8.426%	115.36V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229		0.009
I	5.078V	0.495	46.263%	230.87V
-	0.090A	0.457		0.013
2	5.077V	0.775	58.968%	230.88V
_	0.550A	2.788		0.061
3	5.068V	3.672	/5.926%	230.87V
	1.000A	5.061	77.0000/	0.106
4	5.060V	6.496	77.909%	230.86V
_	1.500A	7.579		0.151
5	5.052V	9.598	/8.964%	230.87V
	3.001A	15.072		0.256
6	5.023V	18.909	/9./08%	230.86V

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115V

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EFFICIENCY GRAPH 115V



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 115V



INFO

The PSU's noise in its entire operational range and under 30-32 °C (+-2 °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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VAMPIRE POWER -115V



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This graph is generated by the PPA Standby Power
Analysis software which takes full control of the
ower analyzer during the whole procedure. This
application features all of the EN50564 &
EC62301 test limits for standby power software
ectina

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COMMISSION REGULATION (EU) NO 617/2013 TESTING 115V

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Aristeidis Bitziopoulos Lab Director



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