Anex

EVGA 600 BQ

Lab ID#: 190
Receipt Date: -
Test Date: -

Report:
Report Date: Jun 10, 2018

DUT INFORMATION

Brand	EVGA
Manufacturer (OEM)	Andyson
Series	BQ
Model Number	600 BQ
Serial Number	1701230615800480
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	50-60
Rated Power (W)	600
Type	ATX12V
Cooling	120mm Fluid Dynamic Bearing Fan (S1202512L)
Semi-Passive Operation	✗
Cable Design	Semi Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	50	2.5	0.3
	Watts	120		600	12.5	3.6
Total Max. Power (W)		600				

CABLES AND CONNECTORS

Captive Cables			
Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (610mm)	1	1	18-22AWG
4+4 pin EPS12V (620mm)	1	1	18AWG
Modular Cables			
6+2 pin PCIe (600mm+100mm)	1	2	18AWG
SATA (460mm+120mm+120mm)	2	6	18AWG
4 pin Molex (470mm+120mm+120mm) / FDD (+120mm)	1	3 / 1	18AWG

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	85.095
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	77.608
Standby Power Consumption (W) -115V	0.0812430
Standby Power Consumption (W) -230V	0.1651580
Average PF	0.992
ErP Lot 3/6 Ready	ErP Lot 3/6 2010: ✓ ErP Lot 3/6 2013: ✓ ErP Lot 3/6 2014, CEC: Partially
(EU) No 617/2013 Compliance	✓
Avg Noise Output	37.30
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard+

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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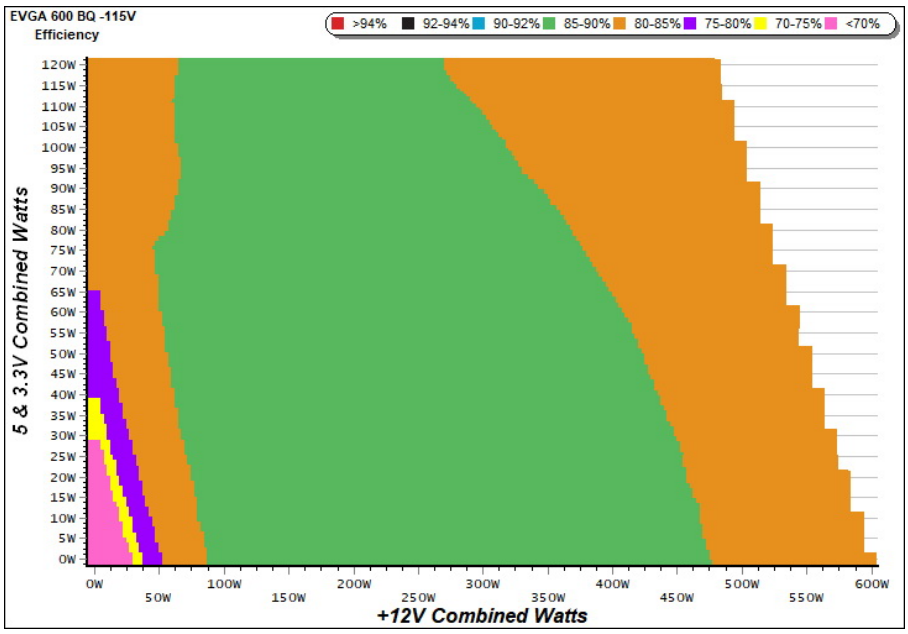
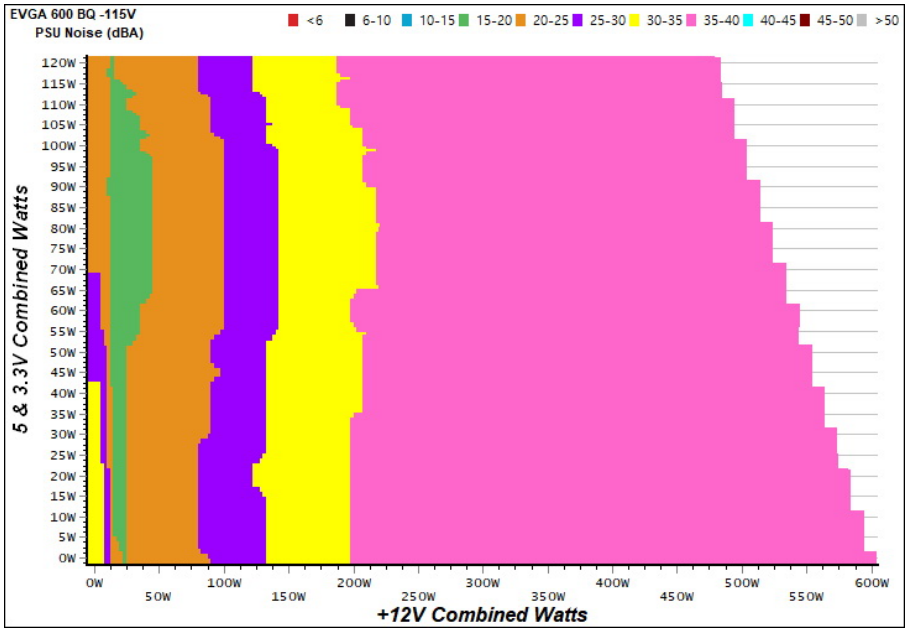
EFFICIENCY GRAPH



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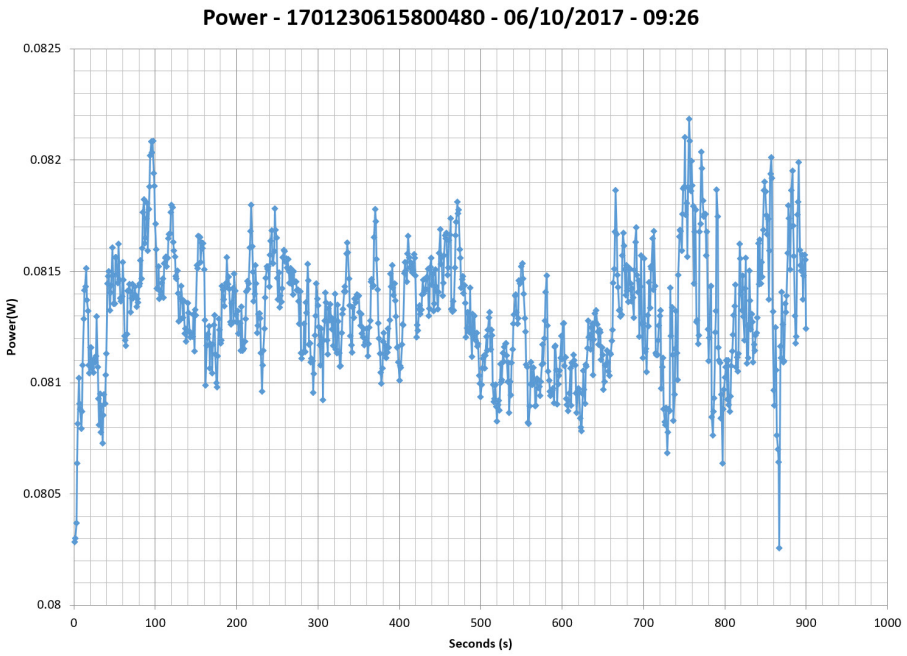
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.214	69.032%	0.038
	5.071V	0.310		115.05V
2	0.088A	0.446	74.457%	0.072
	5.070V	0.599		115.05V
3	0.543A	2.747	77.643%	0.278
	5.061V	3.538		115.04V
4	1.003A	5.066	78.312%	0.345
	5.052V	6.469		115.04V
5	1.502A	7.575	77.812%	0.378
	5.043V	9.735		115.04V
6	2.502A	12.566	77.163%	0.412
	5.023V	16.285		115.04V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.215	60.734%	0.013
	5.071V	0.354		230.20V
2	0.088A	0.445	67.424%	0.024
	5.070V	0.660		230.20V
3	0.543A	2.746	74.620%	0.124
	5.061V	3.680		230.18V
4	1.003A	5.066	76.641%	0.195
	5.052V	6.610		230.18V
5	1.502A	7.574	76.590%	0.249
	5.043V	9.889		230.19V
6	2.502A	12.566	77.678%	0.309
	5.023V	16.177		230.19V

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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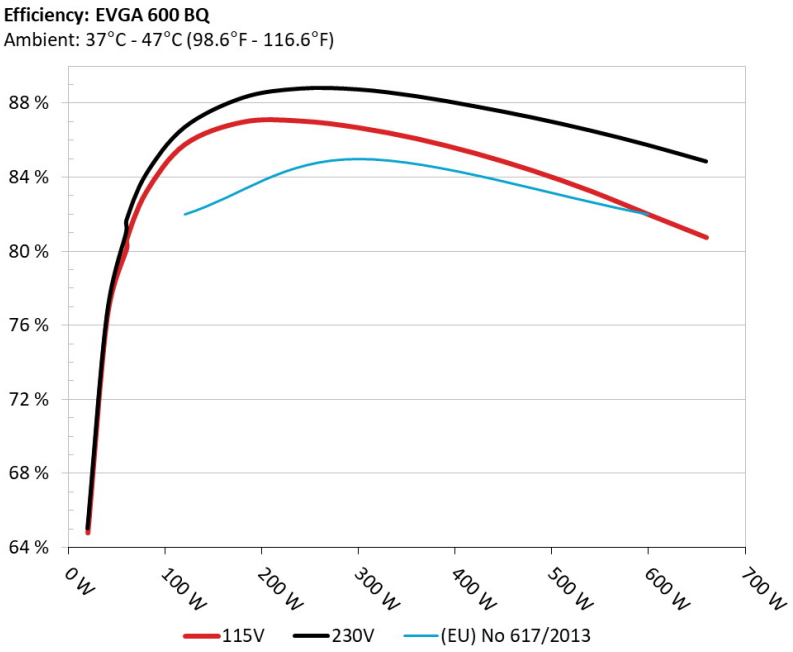
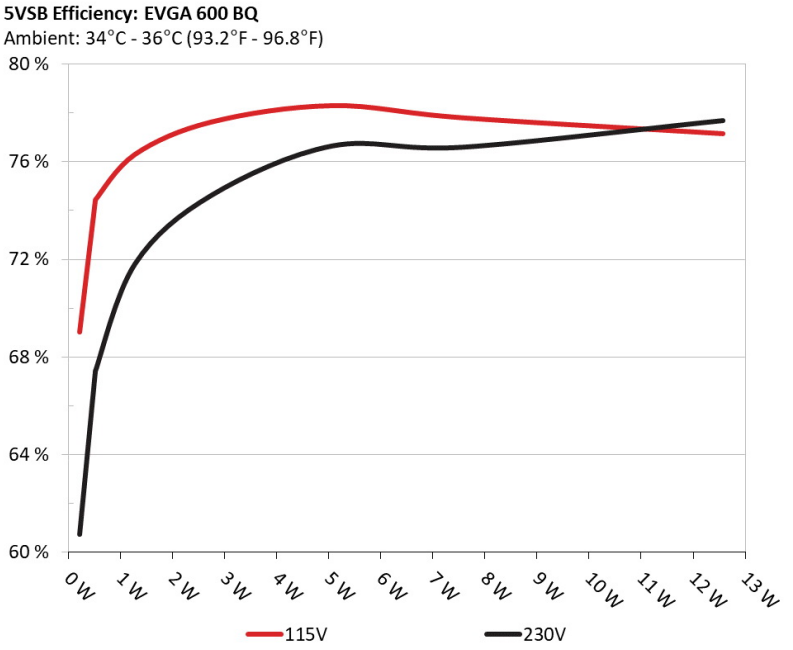
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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	3.177A	1.975A	1.961A	0.991A	59.833	80.164%	1296	32.5	38.17°C	0.973
	12.034V	5.074V	3.361V	5.033V	74.638				42.05°C	115.12V
2	7.390A	2.950A	2.944A	1.196A	119.767	85.761%	1474	38.3	38.64°C	0.990
	12.032V	5.073V	3.358V	5.015V	139.652				42.57°C	115.12V
3	11.957A	3.453A	3.454A	1.400A	179.925	86.979%	1614	37.5	39.43°C	0.994
	12.029V	5.071V	3.355V	4.997V	206.860				43.80°C	115.13V
4	16.516A	3.944A	3.935A	1.605A	239.787	87.034%	1737	39.3	39.73°C	0.992
	12.025V	5.070V	3.352V	4.982V	275.509				45.05°C	115.13V
5	20.735A	4.936A	4.925A	1.811A	299.774	86.671%	1757	39.7	40.09°C	0.992
	12.022V	5.069V	3.348V	4.964V	345.874				46.95°C	115.13V
6	24.960A	5.918A	5.918A	2.020A	359.725	86.078%	1770	39.9	40.99°C	0.993
	12.017V	5.069V	3.345V	4.944V	417.904				49.00°C	115.13V
7	29.184A	6.909A	6.909A	2.230A	419.687	85.297%	1770	39.9	42.30°C	0.994
	12.013V	5.069V	3.343V	4.924V	492.033				52.04°C	115.13V
8	33.411A	7.895A	7.904A	2.445A	479.596	84.355%	1770	39.9	43.38°C	0.995
	12.008V	5.069V	3.339V	4.902V	568.545				55.58°C	115.14V
9	38.079A	8.388A	8.422A	2.454A	539.686	83.252%	1776	39.9	44.97°C	0.996
	12.003V	5.071V	3.336V	4.887V	648.259				59.71°C	115.14V
10	42.693A	8.879A	8.909A	2.565A	599.474	81.986%	1776	39.9	45.46°C	0.996
	11.999V	5.071V	3.332V	4.870V	731.195				61.61°C	115.15V
11	47.703A	8.879A	8.916A	2.570A	659.392	80.742%	1776	39.9	46.55°C	0.996
	11.995V	5.070V	3.331V	4.856V	816.667				65.37°C	115.15V
CL1	0.099A	14.027A	14.004A	0.004A	119.438	81.675%	1770	39.9	44.93°C	0.991
	12.023V	5.083V	3.351V	4.990V	146.235				52.97°C	115.15V
CL2	49.950A	1.004A	1.002A	1.000A	612.815	82.236%	1776	39.9	46.61°C	0.996
	12.001V	5.070V	3.337V	4.932V	745.194				62.86°C	115.16V

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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	1.213A	0.492A	0.473A	0.196A	19.676	64.781%	1015	25.3	0.932
	12.037V	5.068V	3.360V	5.060V	30.373				115.11V
2	2.454A	0.980A	0.981A	0.396A	39.803	76.485%	1163	29.0	0.965
	12.036V	5.071V	3.361V	5.052V	52.040				115.11V
3	3.690A	1.467A	1.486A	0.592A	59.827	80.645%	1265	31.8	0.973
	12.034V	5.073V	3.361V	5.042V	74.186				115.11V
4	4.919A	1.975A	1.960A	0.791A	79.783	83.176%	1326	32.0	0.988
	12.034V	5.073V	3.360V	5.035V	95.921				115.11V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.7 mV	5.3 mV	6.0 mV	8.6 mV	Pass
20% Load	6.9 mV	5.7 mV	6.6 mV	9.4 mV	Pass
30% Load	8.3 mV	6.1 mV	7.0 mV	10.3 mV	Pass
40% Load	9.3 mV	6.8 mV	7.7 mV	11.5 mV	Pass
50% Load	10.1 mV	7.7 mV	8.5 mV	12.7 mV	Pass
60% Load	11.9 mV	8.6 mV	9.3 mV	14.4 mV	Pass
70% Load	14.6 mV	9.5 mV	10.2 mV	16.0 mV	Pass
80% Load	19.0 mV	10.8 mV	11.6 mV	18.0 mV	Pass
90% Load	22.5 mV	11.8 mV	12.2 mV	19.4 mV	Pass
100% Load	26.4 mV	12.8 mV	13.3 mV	22.0 mV	Pass
110% Load	29.0 mV	14.0 mV	15.0 mV	24.7 mV	Pass
Crossload 1	8.3 mV	6.6 mV	9.2 mV	19.3 mV	Pass
Crossload 2	26.2 mV	13.2 mV	13.8 mV	17.4 mV	Pass

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HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	13.31
AC Loss to PWR_OK Hold Up Time (ms)	12.66
PWR_OK Inactive to DC Loss Delay (ms)	0.65

Top side

Power specifications label

CERTIFICATIONS

CYBENETICS GOLD

CYBENETICS STANDARD+

Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

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