EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
CYBENETICS ETA AND CYBENETICS LAMBDA PROCEDURE

Enermax Platimax D.F. 1200W

Lab ID#: 215
Receipt Date: Nov 3, 2018
Test Date: Nov 11, 2018

Report:
Report Date: Nov 13, 2018

DUT INFORMATION

Brand	Enermax
Manufacturer (OEM)	Channel Well Technology
Series	Platimax D.F.
Model Number	EPF1200EWT
Serial Number	
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	14-7
Rated Frequency (Hz)	47-63
Rated Power (W)	1200
Type	ATX12V
Cooling	140mm Twister Bearing Fan (ED142512H-FA)
Semi-Passive Operation	✓
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V1	12V2	12V3	12V4	5VSB	-12V
Max. Power	Amps	25	25	25	25	40	40	3	0.3
	Watts	130		1200				15	3.6
Total Max. Power (W)		1200							

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	16-20AWG	No
4+4 pin EPS12V (700mm)	1	1	16AWG	No
8 pin EPS12V (700mm)	1	1	16AWG	No
6+2 pin PCIe (2x600mm)	3	6	16-20AWG	No
SATA (500mm+150mm+150mm+150mm)	3	12	18AWG	No
4 pin Molex (500mm+140mm+140mm+140mm)	1	4	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	No

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General Data	
Manufacturer (OEM)	CWT
Primary Side	
Transient Filter	6x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	2x Vishay LVB2560 (600V, 25A @ 105°C)
APFC MOSFETS	2x Toshiba TK25A60X (600V, 25A @ 150°C, 0.105Ohm)
APFC Boost Diode	2x CREE C3D06060A (600V, 6A @ 154°C)
Hold-up Cap(s)	2x Nippon Chemi-Con (400V, 470uF, 2000h @ 105°C, KMR)
Main Switchers	4x B21N60EF
Driver ICs	2x Texas Instruments UCC21520
APFC Controller	Texas Instruments UCD3138A (31.25 MHz, 32-bit ARM7TDMI-S Processor, 32KB Flash, 4KB RAM, 3x Feedback loop control, 14-bit DAC, up to 2 MHz switching frequency)
LLC Resonant Controller	Champion CM6901T6X
Topology	Primary side: Interleaved PFC, Full-Bridge & LLC Resonant Controller Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	8x Infineon BSC014N06NS (60V, 100A @ 100°C, 1.45mOhm)
5V & 3.3V	DC-DC Converters: 2x UBIQ QM3016D (30V, 68A @ 100°C, 4mOhm) 2x UBIQ QM3006D (30V, 57A @ 100°C, 5.5mOhm) PWM Controller: 1x Anpec APW7159C
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (1-5,000 @ 105°C, KZE), Nippon Chemi-Con (4-10,000 @ 105°C, KY) Polymers: Su' scon, APAQ, Elite
Supervisor IC	Weltrend WT7518 (OCP, PG, SCP) & Weltrend WT751002 (OVP, UVP, PG) & LM358
Fan Model	Enermax ED142512H-FA (140mm, 12V, 0.46A, Twister Bearing)
5VSB Circuit	
Rectifiers	ISD04N65A (650V, 4A, 2.5Ohm), SPN5003 (N-Channel Enhancement Mode FET), & PS1045L SBR
Driver IC	Texas Instruments UCC27324
PWM Controller	On-Bright OB5282CP

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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	✓

115V

Average Efficiency	89.530%
Efficiency With 10W (≤500W) or 2% (>500W)	0.000
Average Efficiency 5VSB	78.557%
Standby Power Consumption (W)	0.0375785
Average PF	0.993
Avg Noise Output	32.33 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	S++

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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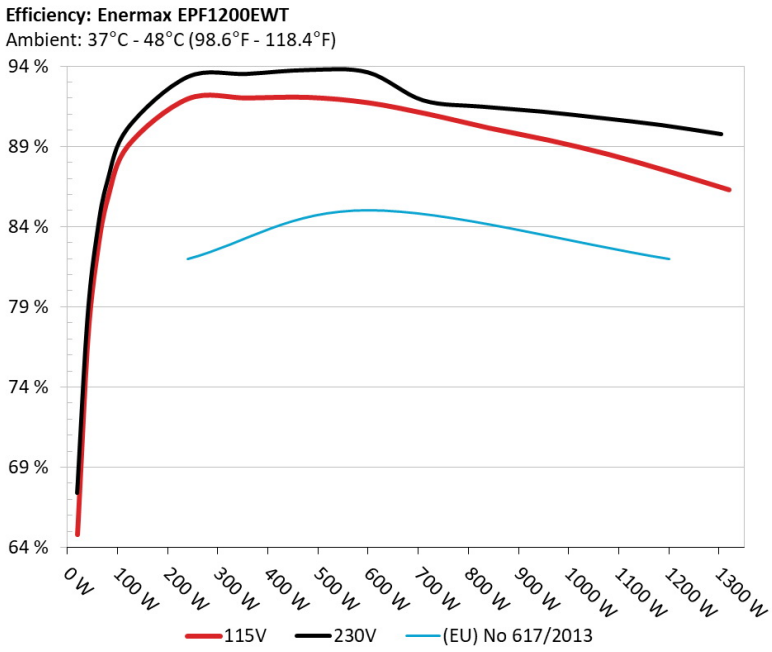
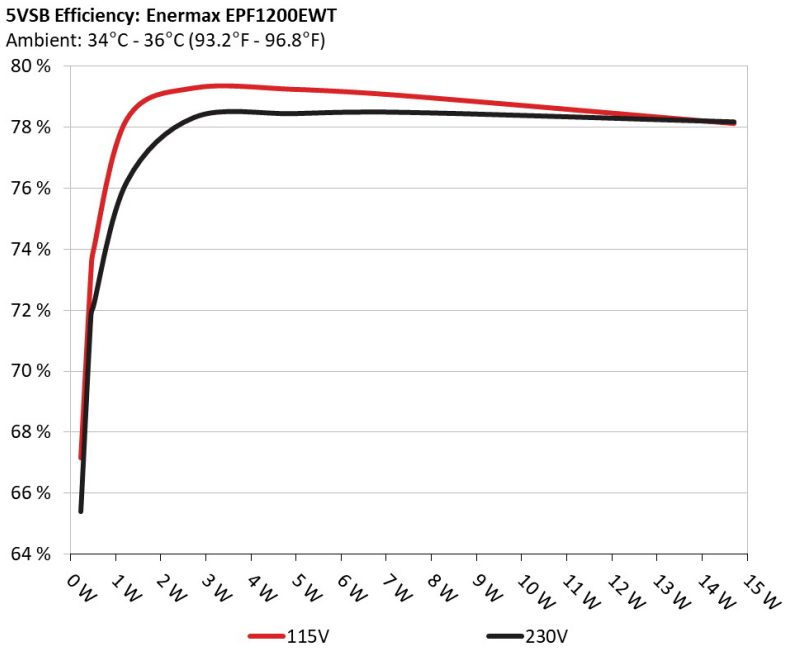
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.225	67.164%	0.025
	4.992V	0.335		115.28V
2	0.090A	0.449	73.246%	0.045
	4.990V	0.613		115.27V
3	0.550A	2.737	79.287%	0.210
	4.976V	3.452		115.27V
4	1.000A	4.962	79.240%	0.303
	4.962V	6.262		115.27V
5	1.500A	7.420	79.029%	0.361
	4.947V	9.389		115.26V
6	3.000A	14.701	78.122%	0.436
	4.901V	18.818		115.26V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.225	65.407%	0.009
	4.992V	0.344		230.84V
2	0.090A	0.449	71.840%	0.016
	4.990V	0.625		230.84V
3	0.550A	2.737	78.312%	0.085
	4.976V	3.495		230.78V
4	1.000A	4.962	78.438%	0.144
	4.962V	6.326		230.83V
5	1.500A	7.421	78.479%	0.198
	4.947V	9.456		230.83V
6	3.000A	14.702	78.165%	0.300
	4.901V	18.809		230.82V

115V

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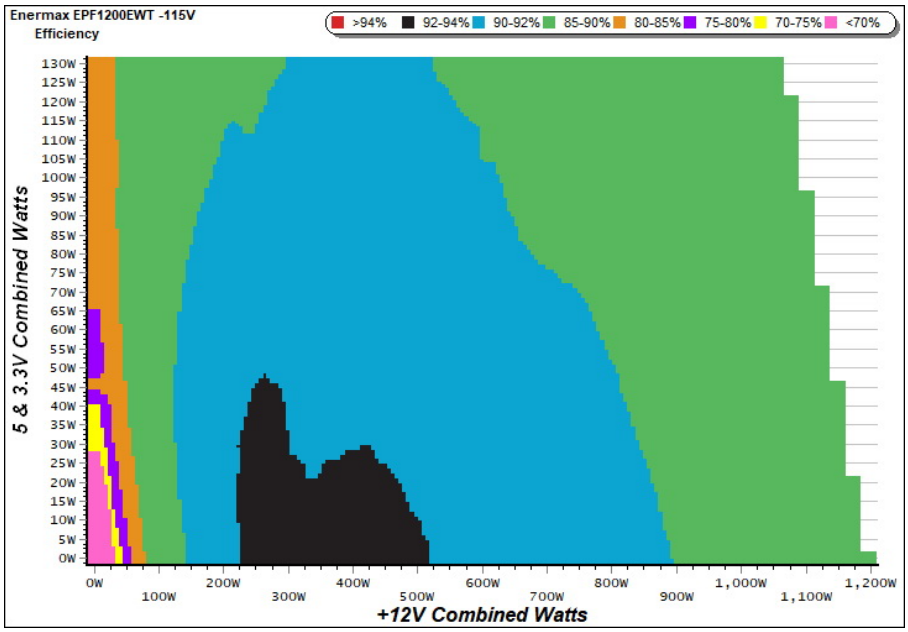
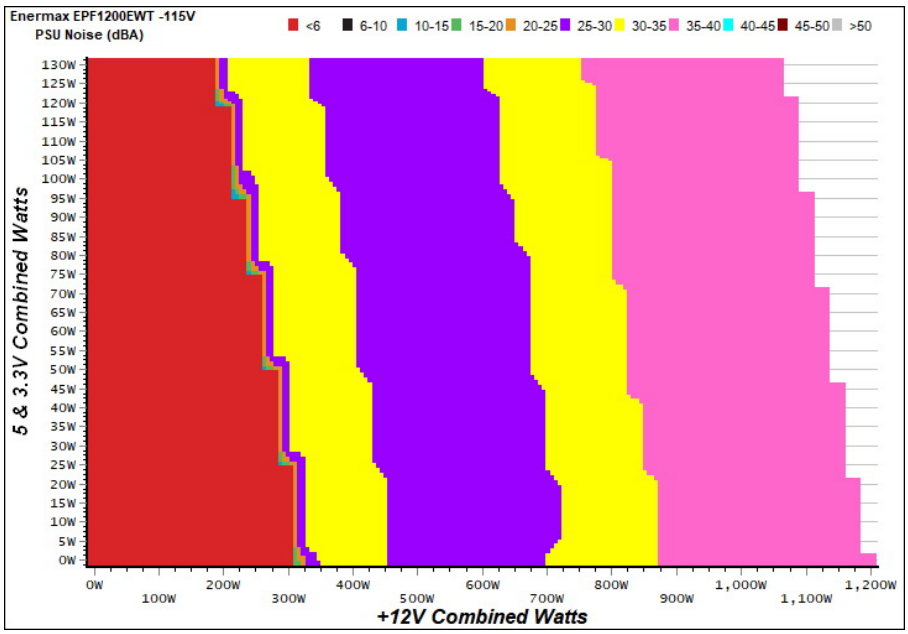
EFFICIENCY GRAPH 115V



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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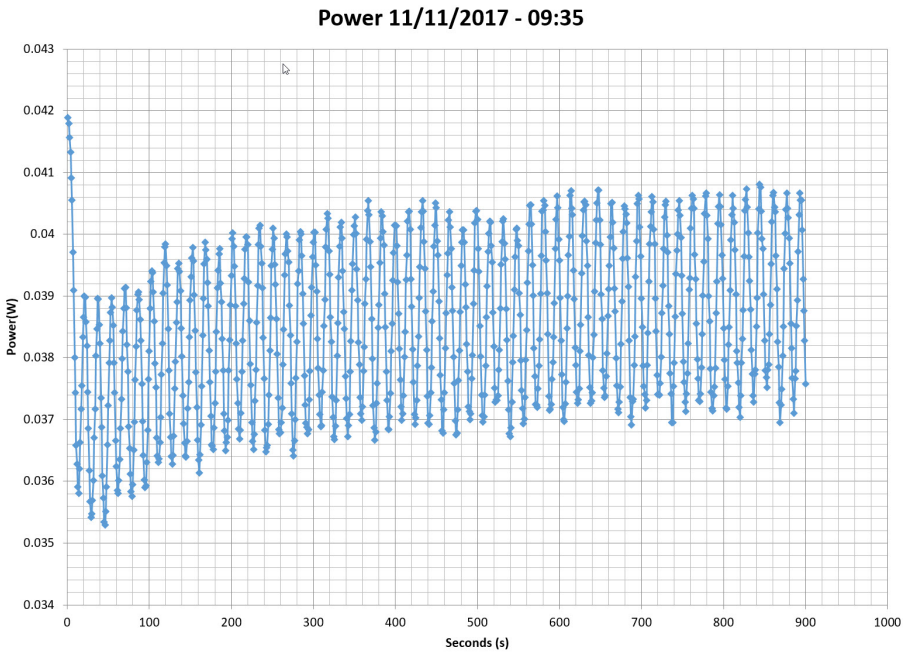
VAMPIRE POWER -115V



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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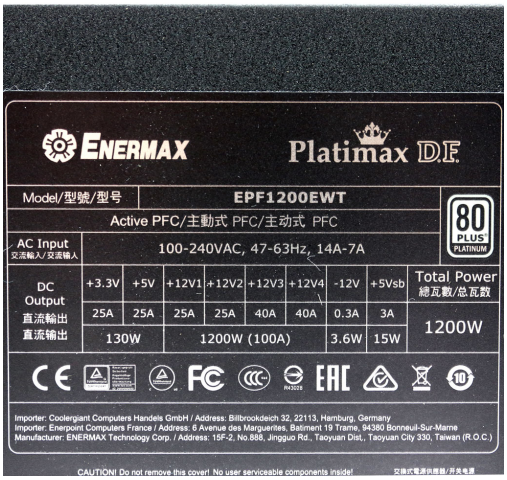
Top side



Power specifications label

CERTIFICATIONS 115V

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