

Lab ID#: 216
Receipt Date: Nov 1, 2018
Test Date: Nov 11, 2018

Report:

Report Date: Nov 14, 2018

DUT INFORMATION

Brand	Enermax
Manufacturer (OEM)	Channel Well Technology
Series	MaxTytan
Model Number	EDT1250EWT
Serial Number	
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15-7
Rated Frequency (Hz)	47-63
Rated Power (W)	1250
Type	ATX12V
Cooling	140mm Magnetic Cyclone Bearing Fan (ED142512M-PA)
Semi-Passive Operation	✓
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	104	3	0.3
	Watts	100		1248	15	3.6
Total Max. Power (W)		1250				

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 (600mm)	8	8	16-18AWG	No
SATA (500mm+150mm+150mm+150mm)	4	16	18AWG	No
4 pin Molex (500mm+140mm+140mm+140mm)	2	8	18AWG	No
FDD Adapter (+100mm)	1	1	20AWG	No
Coolergenie - Power Supply Cable (+600mm)	1	1	22-24AWG	No
Coolergenie - 4 pin Fan Cable (+500mm)	1	1	26AWG	No
Coolergenie - 4 pin Fan Extension Cable (+500mm)	1	1	26AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

General Data	
Manufacturer (OEM)	Channel Well Technology
Platform Model	CST
Primary Side	
Transient Filter	6x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor & Bypass Relay
Bridge Rectifier(s)	2x Vishay LVB1560 (600V, 15A @ 125°C)
APFC MOSFETS	2x Toshiba TK25N60X (600V, 25A @ 150°C, 0.105 Ohm)
APFC Boost Diode	2x SCS110AG (600V, 10A @ 117°C)
Hold-up Cap(s)	1x Chemi-Con (420V, 560uF, 2000h @ 105°C, KMR) 1x Nichicon (400V, 680uF, 2000h @ 105°C, GG)
Main Switchers	4x Alpha & Omega AOTF29S50 (600V, 18A @ 100°C, 0.15 Ohm)
FET Drivers	2x Silicon Labs Si8230BD
Primary MCU	Texas Instruments UCD3138 (31.25MHz, 32-bit ARM7TDMI-S Processor, 32KB Flash, 3x Feedback loop control, 14bit DAC, up to 2MHz switching freq)
Secondary MCU	Microchip PIC32MX230F064D (40 MHz, 64KB Flash, 13x analog channels, 10bit ADC, USB interface)
Topology	Primary side: Full-Bridge & LLC Resonant Converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	12x Alpha & Omega AON6240 (40V, 67A @ 100°C, 1.6 mOhm)
5V & 3.3V	DC-DC Converters: 6x Sinopower SM3117NSUC (30V, 85A @ 100°C, 7.2 mOhm @ Vgs=10V) PWM Controller: 1x Anpec APW7159C
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (105°C, KY, KZE) Polymers: Apaq, Nippon Chemi-Con
Supervisor IC	Infinno ST9S313-DAG(OVP, UVP) & LM358
Fan Model	Enemax ED142512M-PA (139mm, 12V, 0.30A, 1560 RPM, twister bearing)
5VSB Circuit	
Rectifier	1x M03N65D FET
Standby PWM Controller	On Bright OB5269CP & SPN5003 (N-Channel Enhancement Mode FET)

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	91.244%
Efficiency With 10W (≤500W) or 2% (>500W)	0.000
Average Efficiency 5VSB	81.071%
Standby Power Consumption (W)	0.0495655
Average PF	0.995
Avg Noise Output	23.12 dB(A)
Efficiency Rating (ETA)	TITANIUM
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	

All data and graphs included in this test report can be used by any individual on the following conditions:

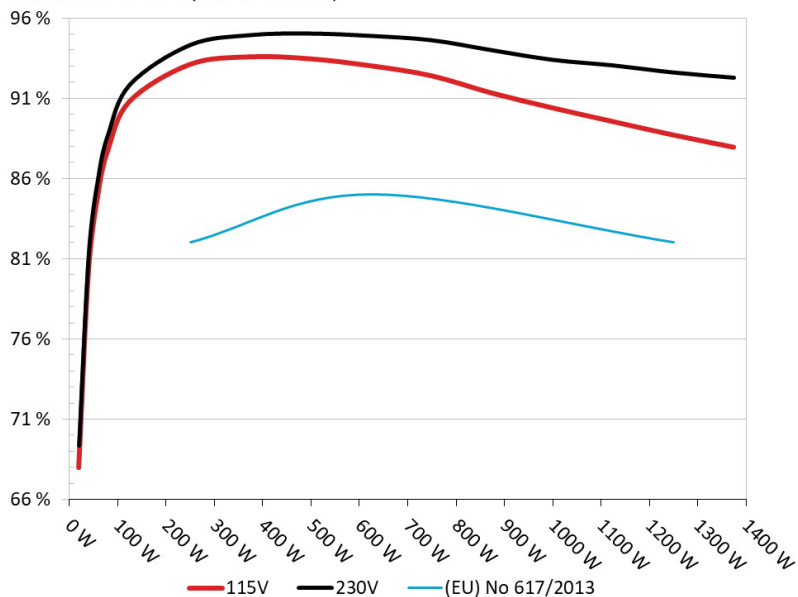
- › It should be mentioned that the test results are provided by Cybenetics
- › The link to the original test results document should be provided in any case

PAGE 3/9

EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Enermax EDT1250EWT

Ambient: 37°C - 48°C (98.6°F - 118.4°F)



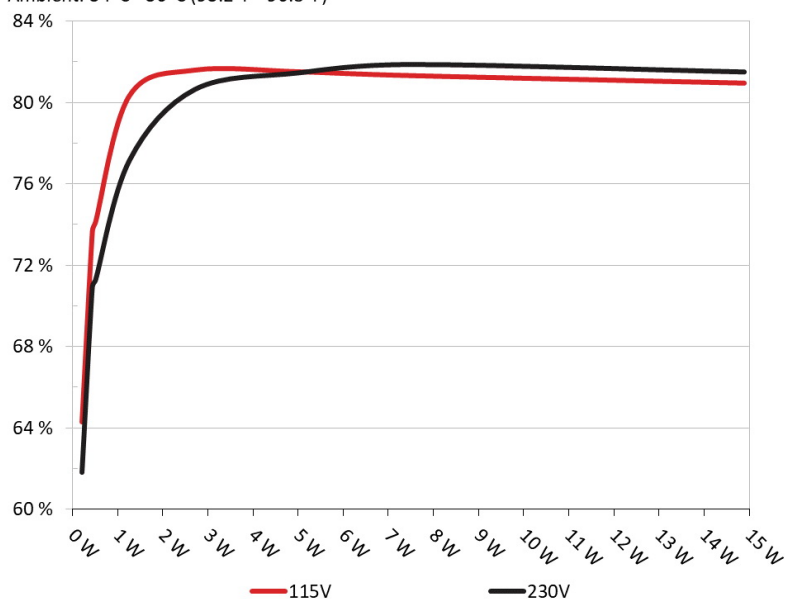
INFO

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

5VSB Efficiency: Enermax EDT1250EWT

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



INFO

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

All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.209	64.308%	0.032
	5.016V	0.325		115.06V
2	0.088A	0.439	73.658%	0.059
	5.015V	0.596		115.06V
3	0.542A	2.716	81.586%	0.270
	5.008V	3.329		115.04V
4	1.002A	5.010	81.503%	0.389
	4.999V	6.147		115.05V
5	1.502A	7.493	81.313%	0.456
	4.990V	9.215		115.05V
6	3.001A	14.892	80.944%	0.529
	4.962V	18.398		115.05V

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

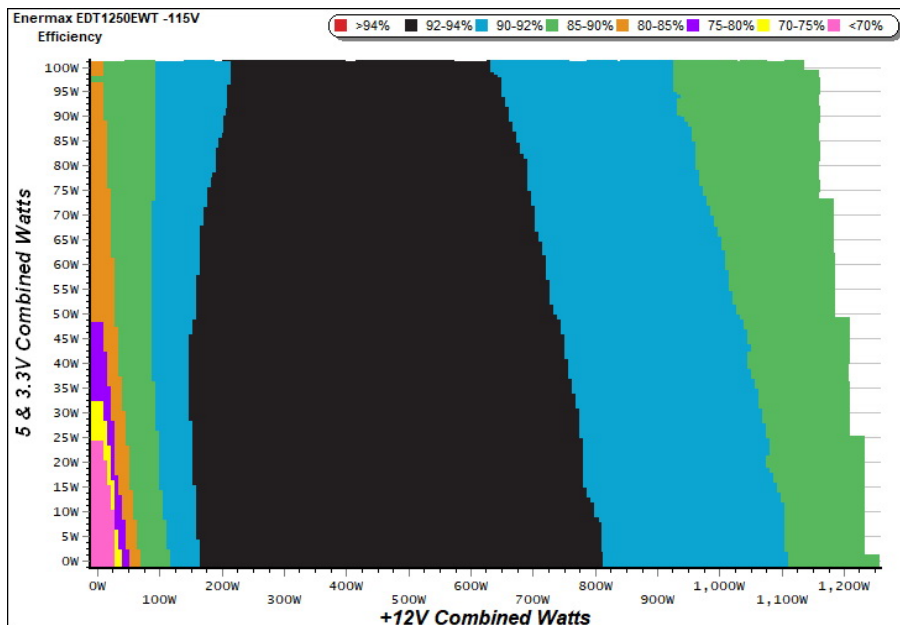
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.209	61.834%	0.010
	5.015V	0.338		230.21V
2	0.087A	0.437	70.942%	0.018
	5.014V	0.616		230.21V
3	0.542A	2.715	80.660%	0.097
	5.006V	3.366		230.19V
4	1.002A	5.008	81.471%	0.166
	4.998V	6.147		230.20V
5	1.502A	7.491	81.878%	0.229
	4.988V	9.149		230.20V
6	3.001A	14.881	81.513%	0.350
	4.958V	18.256		230.20V

All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

115V

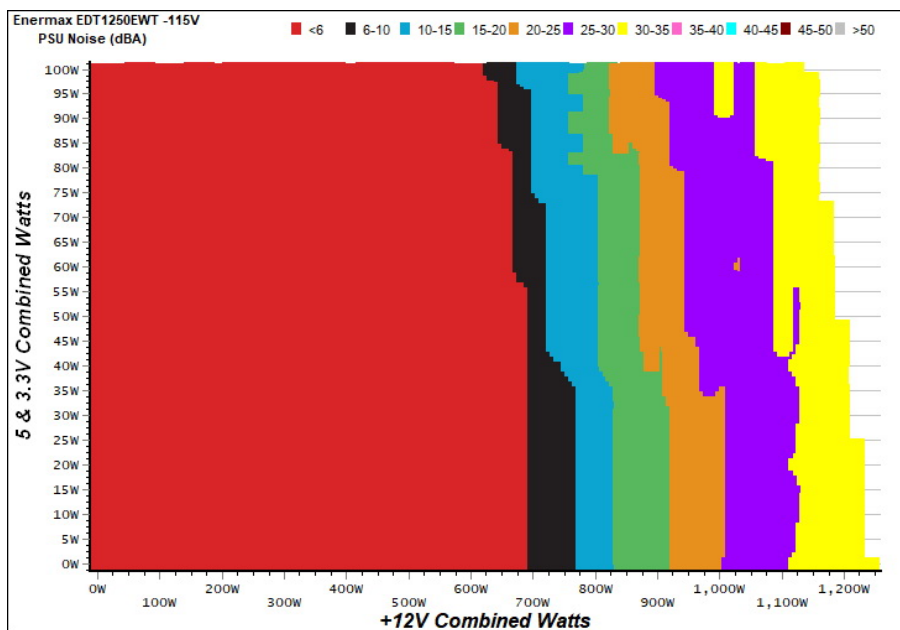
EFFICIENCY GRAPH 115V



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

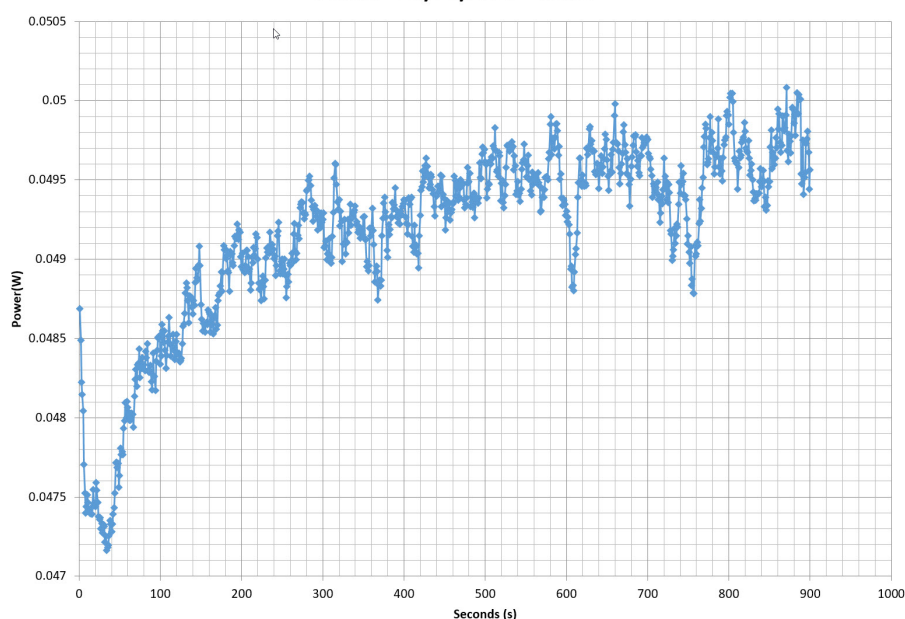
The PSU's noise in its entire operational range and under 30-32 °C (+2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

VAMPIRE POWER -115V

Power - 13/11/2017 - 09:30



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

All data and graphs included in this test report can be used by any individual on the following conditions:

- › It should be mentioned that the test results are provided by Cybenetics
- › The link to the original test results document should be provided in any case

PAGE 8/9

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

All data and graphs included in this test report can be used by any individual on the following conditions:

- › It should be mentioned that the test results are provided by Cybenetics
- › The link to the original test results document should be provided in any case

PAGE 9/9

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

Enermax MaxTytan 1250W

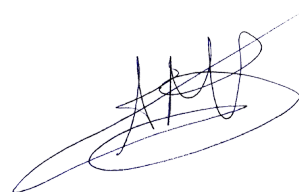


Top side



Power specifications label

CERTIFICATIONS 115V

Aris Mpitsiopoulos
Lab Director

All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

PAGE 10/9