

Anex

Montech Titan Gold 1200W

Lab ID#: MT12002123
 Receipt Date: Jan 20, 2023
 Test Date: Jan 27, 2023

Report: 23PS2123A
 Report Date: Jan 27, 2023

DUT INFORMATION

Brand	Montech
Manufacturer (OEM)	CWT
Series	Titan
Model Number	TTTAN1200221100114
Serial Number	TTTAN1200221100114
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	7.5-15
Rated Frequency (Hz)	50-60
Rated Power (W)	1200
Type	ATX12V
Cooling	135mm Fluid Dynamic Bearing Fan (HA13525H12SF-Z)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P
Power Analyzers	RS HMC8015, N4L PPA1530, N4L PPA5530
Oscilloscopes	Picoscope 4444, Rigol DS7014, Siglent SDS2104X PLUS
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Temperature Logger	Picoscope TC-08
Tachometer	UNI-T UT372
Multimeters	Keysight 34465A, Keithley 2015 - THD
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Isolation Transformer	4kVA

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.0 PSU Power Excursion	✓

115V

Average Efficiency	88.882%
Efficiency With 10W (≤500W) or 2% (>500W)	76.922
Average Efficiency 5VSB	77.902%
Standby Power Consumption (W)	0.0191000
Average PF	0.989
Avg Noise Output	36.60 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard+

230V

Average Efficiency	90.957%
Average Efficiency 5VSB	77.738%
Standby Power Consumption (W)	0.0857000
Average PF	0.970
Avg Noise Output	36.75 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard+

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	22	22	100	3	0.3
	Watts	120		1200	15	3.6
Total Max. Power (W)		1200				

HOLD-UP TIME & POWER OK SIGNAL (230V)

Hold-Up Time (ms)	21.2
AC Loss to PWR_OK Hold Up Time (ms)	18.6
PWR_OK Inactive to DC Loss Delay (ms)	2.6

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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	16-18AWG	No
4+4 pin EPS12V (700mm)	1	1	16AWG	No
8 pin EPS12V (700mm)	1	1	16AWG	No
6+2 pin PCIe (500mm+150mm)	2	4	16-18AWG	No
6+2 pin PCIe (600mm)	1	1	16AWG	No
12+4 pin PCIe (600mm) (600W)	1	1	16-24AWG	No
SATA (500mm+150mm+150mm+150mm)	3	12	18AWG	No
4-pin Molex (500mm+120mm+120mm+120mm)	1	4	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

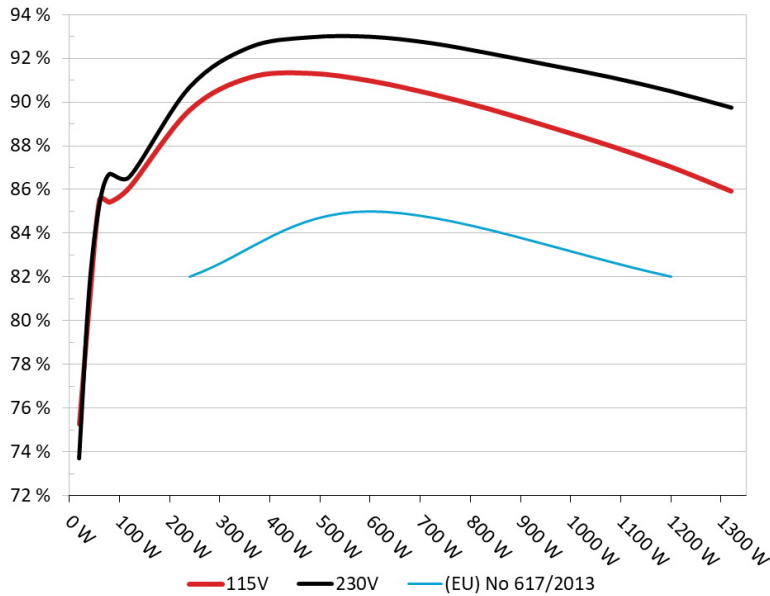
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Montech Titan Gold 1200W

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



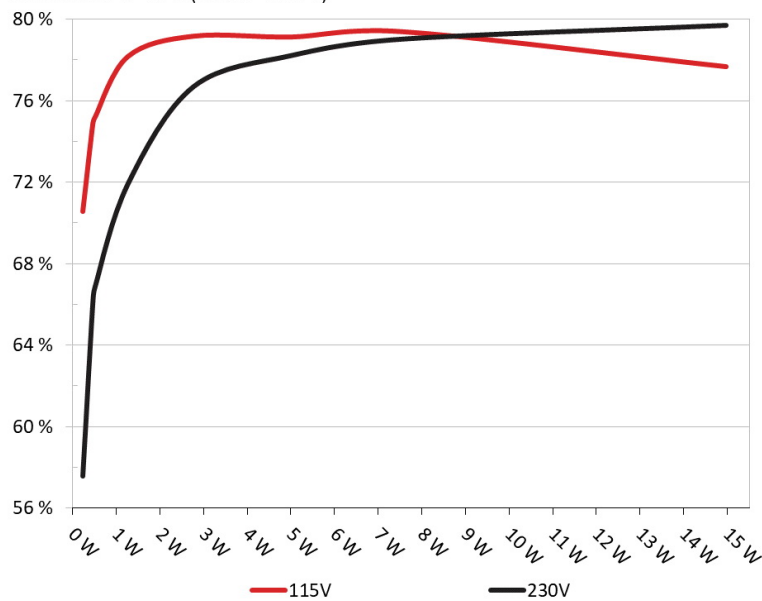
INFO

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: Montech Titan Gold 1200W

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

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227W	70.565%	0.031
	5.044V	0.322W		114.87V
2	0.09A	0.454W	74.827%	0.059
	5.044V	0.607W		114.87V
3	0.55A	2.769W	79.171%	0.268
	5.035V	3.498W		114.87V
4	1A	5.027W	79.132%	0.356
	5.027V	6.353W		114.87V
5	1.5A	7.528W	79.396%	0.419
	5.018V	9.481W		114.87V
6	3A	14.974W	77.674%	0.5
	4.991V	19.278W		114.86V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227W	57.555%	0.011
	5.047V	0.395W		229.95V
2	0.09A	0.454W	65.974%	0.02
	5.045V	0.687W		229.94V
3	0.55A	2.77W	76.689%	0.1
	5.035V	3.613W		229.94V
4	1A	5.028W	78.217%	0.167
	5.027V	6.428W		229.94V
5	1.5A	7.529W	79.012%	0.208
	5.019V	9.528W		229.94V
6	3A	14.975W	79.692%	0.322
	4.992V	18.792W		229.94V

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Montech Titan Gold 1200W

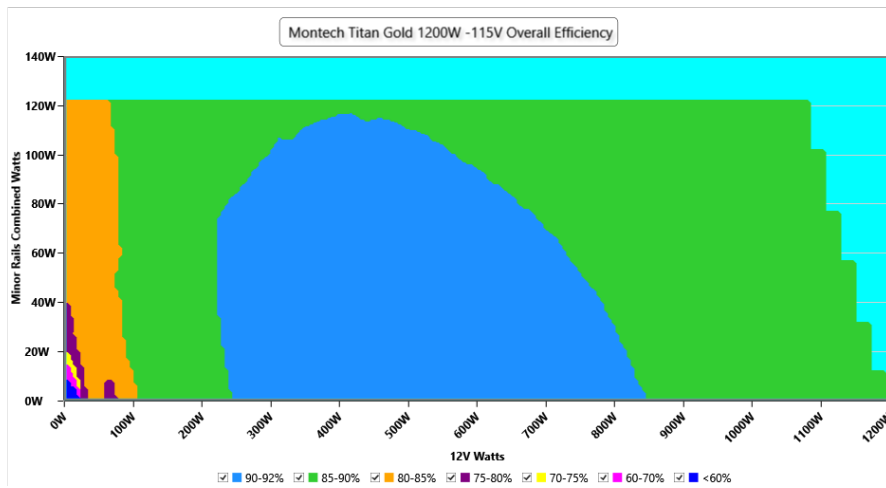
115V

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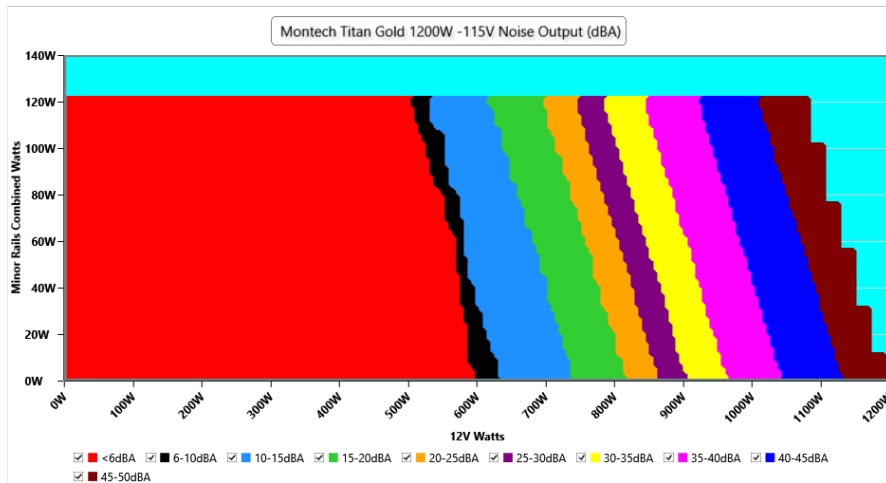
EFFICIENCY GRAPH 115V



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 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

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.87 V	114.83 V	113.85 V	114.92 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.98 Hz	59.40 Hz	60.02 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.418	1.417	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.15 %	0.11 %	N/A	0.20 %	2.00 %	PASS
Real Power:	0.019 W	0.017 W	N/A	0.021 W	N/A	N/A
Apparent Power:	10.173 W	10.154 W	N/A	10.192 W	N/A	N/A
Power Factor:	0.002	N/A	N/A	N/A	N/A	N/A

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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10-110% LOAD TESTS 115V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	8.073A	2.001A	2.021A	1.003A	119.987	86.106%	0	<6.0	44.38°C	0.983
	12.187V	4.999V	3.266V	4.985V	139.348				40.29°C	114.83V
20%	17.158A	3.002A	3.034A	1.205A	239.945	89.642%	0	<6.0	45.17°C	0.991
	12.184V	4.997V	3.263V	4.979V	267.669				40.83°C	114.79V
30%	26.580A	3.503A	3.543A	1.407A	359.207	91.128%	0	<6.0	45.99°C	0.986
	12.158V	4.996V	3.26V	4.974V	394.173				41.34°C	114.74V
40%	36.103A	4.004A	4.054A	1.61A	479.61	91.323%	407	<6.0	43.89°C	0.988
	12.143V	4.995V	3.257V	4.968V	525.177				48.98°C	114.7V
50%	45.254A	5.005A	5.071A	1.813A	599.338	90.979%	441	<6.0	42.43°C	0.991
	12.128V	4.996V	3.254V	4.965V	658.764				47.95°C	114.65V
60%	54.506A	6.006A	6.091A	2A	719.773	90.393%	650	14.9	42.87°C	0.992
	12.109V	4.996V	3.251V	4.961V	796.271				48.94°C	114.61V
70%	63.712A	7.009A	7.112A	2.22A	839.563	89.68%	871	24.8	43.51°C	0.994
	12.093V	4.995V	3.248V	4.956V	936.185				50.53°C	114.56V
80%	73.026A	8.002A	8.136A	2.322A	959.496	88.86%	1196	34.8	43.81°C	0.994
	12.073V	4.994V	3.245V	4.952V	1079.79				52.05°C	114.51V
90%	82.645A	8.514A	8.638A	2.425A	1079.338	88.003%	1568	42.1	44.58°C	0.995
	12.062V	4.992V	3.241V	4.948V	1226.487				53.67°C	114.46V
100%	92.041A	9.017A	9.173A	3.04A	1199.38	87.047%	2005	48.7	45.3°C	0.995
	12.056V	4.991V	3.238V	4.935V	1377.867				55.36°C	114.4V
110%	101.376A	10.024A	10.298A	3.042A	1319.981	85.935%	2167	50.4	46.51°C	0.996
	12.051V	4.988V	3.233V	4.932V	1536.029				57.44°C	114.34V
CL1	0.115A	14.464A	14.625A	0A	121.303	81.069%	412	<6.0	41.78°C	0.983
	12.210V	4.992V	3.261V	5.017V	149.628				47.27°C	114.82V
CL2	0.113A	22.021A	0A	0A	111.323	79.786%	411	<6.0	41.23°C	0.983
	12.218V	4.993V	3.272V	5.035V	139.533				48.27°C	114.83V
CL3	0.118A	0A	22.307A	0A	74.041	75.651%	409	<6.0	41.8°C	0.977
	12.186V	4.999V	3.254V	4.995V	97.877				50.87°C	114.84V
CL4	99.479A	0A	0A	0A	1199.942	87.721%	1892	48.7	45.23°C	0.995
	12.062V	5.006V	3.247V	4.983V	1367.913				56.16°C	114.42V

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20-80W LOAD TESTS 115V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20W	1.222A	0.498A	0.503A	0.199A	19.995	75.281%	0	<6.0	39.68°C	0.872
	12.148V	5.019V	3.279V	5.016V	26.56				36.62°C	114.87V
40W	2.688A	0.698A	0.705A	0.299A	39.995	80.876%	0	<6.0	40.43°C	0.945
	12.157V	5.015V	3.277V	5.011V	49.453				37.11°C	114.87V
60W	4.155A	0.899A	0.908A	0.4A	59.995	85.542%	0	<6.0	42.43°C	0.965
	12.160V	5.002V	3.27V	4.997V	70.133				38.67°C	114.86V
80W	5.620A	1.1A	1.11A	0.501A	79.937	85.427%	0	<6.0	43.39°C	0.975
	12.153V	5.001V	3.268V	4.994V	93.576				39.43°C	114.85V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.19mV	7.47mV	7.45mV	9.29mV	Pass
20% Load	6.29mV	7.52mV	7.29mV	10.02mV	Pass
30% Load	10.97mV	7.78mV	7.65mV	10.07mV	Pass
40% Load	9.20mV	7.88mV	7.91mV	10.12mV	Pass
50% Load	8.97mV	8.19mV	7.86mV	9.96mV	Pass
60% Load	9.13mV	13.75mV	15.82mV	14.76mV	Pass
70% Load	10.16mV	8.14mV	10.71mV	10.48mV	Pass
80% Load	9.95mV	8.50mV	9.82mV	9.76mV	Pass
90% Load	10.21mV	8.96mV	9.46mV	10.37mV	Pass
100% Load	15.22mV	10.79mV	12.47mV	12.38mV	Pass
110% Load	16.84mV	10.36mV	11.71mV	11.67mV	Pass
Crossload1	6.99mV	9.98mV	9.72mV	9.65mV	Pass
Crossload2	9.07mV	15.77mV	7.65mV	9.55mV	Pass
Crossload3	55.63mV	7.78mV	13.60mV	9.70mV	Pass
Crossload4	15.00mV	9.64mV	10.40mV	10.40mV	Pass

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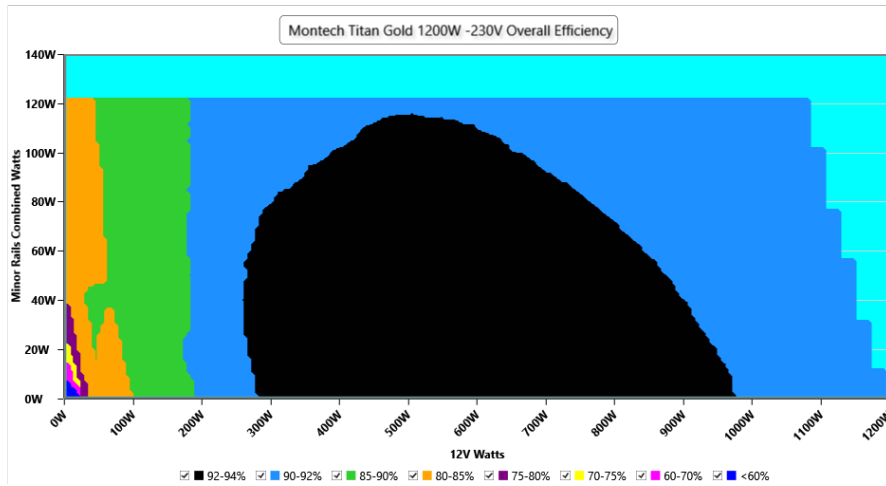
230V

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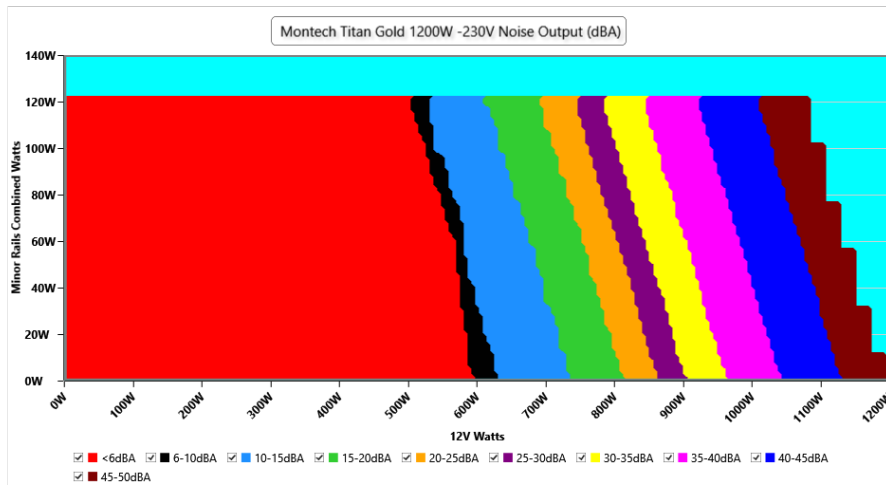
EFFICIENCY GRAPH 230V



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 230V



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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VAMPIRE POWER -230V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.95 V	229.89 V	227.70 V	229.99 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.417	1.416	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.17 %	0.15 %	N/A	0.19 %	2.00 %	PASS
Real Power:	0.086 W	0.074 W	N/A	0.102 W	N/A	N/A
Apparent Power:	34.483 W	34.459 W	N/A	34.510 W	N/A	N/A
Power Factor:	0.002	N/A	N/A	N/A	N/A	N/A

INFO

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10-110% LOAD TESTS 230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	8.064A	2A	2.02A	1.003A	119.974	86.588%	0	<6.0	44.39°C	0.916
	12.200V	4.999V	3.268V	4.985V	138.553				40.35°C	229.93V
20%	17.140A	3.002A	3.033A	1.205A	239.92	90.686%	0	<6.0	45.01°C	0.962
	12.196V	4.997V	3.264V	4.979V	264.563				40.67°C	229.91V
30%	26.587A	3.503A	3.543A	1.408A	359.067	92.51%	0	<6.0	45.98°C	0.974
	12.149V	4.995V	3.26V	4.973V	388.139				41.22°C	229.89V
40%	36.112A	4.004A	4.053A	1.61A	479.505	92.972%	405	<6.0	41.93°C	0.979
	12.137V	4.995V	3.257V	4.968V	515.749				46.97°C	229.87V
50%	45.273A	5.005A	5.07A	1.813A	599.262	92.997%	440	<6.0	42.43°C	0.983
	12.121V	4.996V	3.254V	4.965V	644.391				47.95°C	229.85V
60%	54.523A	6.006A	6.089A	2A	719.735	92.711%	650	14.9	42.69°C	0.984
	12.105V	4.996V	3.252V	4.962V	776.316				48.85°C	229.83V
70%	63.723A	7.008A	7.112A	2.219A	839.562	92.228%	825	23	43.28°C	0.985
	12.091V	4.995V	3.249V	4.956V	910.31				50.49°C	229.81V
80%	73.030A	8.002A	8.136A	2.322A	959.512	91.693%	1198	34.8	43.92°C	0.987
	12.073V	4.994V	3.245V	4.953V	1046.432				51.96°C	229.79V
90%	82.639A	8.513A	8.638A	2.426A	1079.357	91.144%	1572	42.1	44.11°C	0.988
	12.063V	4.992V	3.241V	4.948V	1184.223				53.16°C	229.77V
100%	92.051A	9.018A	9.173A	3.04A	1199.394	90.505%	2035	49	45.72°C	0.989
	12.055V	4.99V	3.238V	4.934V	1325.223				55.78°C	229.74V
110%	101.376A	10.024A	10.299A	3.043A	1320.006	89.756%	2173	50.5	46.78°C	0.989
	12.051V	4.988V	3.233V	4.931V	1470.652				57.65°C	229.72V
CL1	0.113A	14.458A	14.617A	0A	121.28	81.247%	400	<6.0	42.4°C	0.923
	12.183V	4.994V	3.263V	5.018V	149.27				47.83°C	229.93V
CL2	0.113A	22.001A	0A	0A	111.299	79.484%	403	<6.0	40.78°C	0.916
	12.197V	4.996V	3.274V	5.037V	140.029				47.94°C	229.93V
CL3	0.119A	0A	22.294A	0A	74.052	76.53%	404	<6.0	42.48°C	0.86
	12.167V	5.002V	3.256V	4.998V	96.764				51.53°C	229.93V
CL4	99.514A	0A	0A	0A	1199.926	91.13%	1894	48.8	45.36°C	0.989
	12.057V	5.007V	3.248V	4.985V	1316.725				56.27°C	229.74V

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20-80W LOAD TESTS 230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20W	1.220A	0.498A	0.503A	0.199A	19.989	73.718%	0	<6.0	39.62°C	0.497
	12.154V	5.018V	3.28V	5.016V	27.115				36.61°C	229.95V
40W	2.686A	0.698A	0.705A	0.299A	39.99	81.396%	0	<6.0	40.47°C	0.698
	12.165V	5.014V	3.278V	5.011V	49.129				37.16°C	229.95V
60W	4.152A	0.899A	0.908A	0.4A	59.99	85.277%	0	<6.0	41.66°C	0.797
	12.169V	5.002V	3.271V	4.997V	70.345				38.12°C	229.94V
80W	5.615A	1.1A	1.11A	0.501A	79.925	86.715%	0	<6.0	42.99°C	0.851
	12.163V	5.001V	3.27V	4.994V	92.167				39.1°C	229.94V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.67mV	7.16mV	6.62mV	7.90mV	Pass
20% Load	7.01mV	7.26mV	7.19mV	7.64mV	Pass
30% Load	12.34mV	7.62mV	7.24mV	8.73mV	Pass
40% Load	9.45mV	7.98mV	7.39mV	8.05mV	Pass
50% Load	13.97mV	17.98mV	24.05mV	19.20mV	Pass
60% Load	9.18mV	14.22mV	18.25mV	14.15mV	Pass
70% Load	9.38mV	8.04mV	10.29mV	8.73mV	Pass
80% Load	9.80mV	8.19mV	9.36mV	8.72mV	Pass
90% Load	10.26mV	8.91mV	9.57mV	8.88mV	Pass
100% Load	16.33mV	9.88mV	12.66mV	10.24mV	Pass
110% Load	16.97mV	10.14mV	13.74mV	11.22mV	Pass
Crossload1	6.82mV	10.45mV	10.12mV	7.35mV	Pass
Crossload2	8.92mV	15.56mV	6.72mV	6.86mV	Pass
Crossload3	55.27mV	8.29mV	12.62mV	7.02mV	Pass
Crossload4	15.29mV	9.30mV	11.18mV	9.62mV	Pass

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

Anex

Montech Titan Gold 1200W



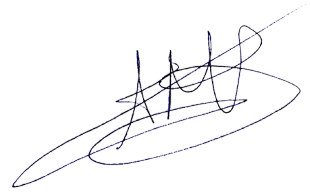
Top side



AC INPUT/ AC入力/交流輸入		100-240V~ 50-60Hz 7.5A-15A (不適用中国) 200-240V~ 50-60Hz 7.5A (适用中国, Only for China, Korea)			
DC OUTPUT DC出力/直流輸出	+3.3V	+5V	+12V	-12V	+5VSB
	22A	22A	100A	0.3A	3A
Max. POWER 最大電源容量/最大總功率	120W		1200W	3.6W	15.0W
	1200W				

Power specifications label

CERTIFICATIONS 115V

Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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