

Anex

ABKO Settler Hybrid Bronze STH-800B

Lab ID#: AB80002227
 Receipt Date: Aug 8, 2023
 Test Date: Aug 24, 2023

Report: 23PS2227A
 Report Date: Aug 28, 2023

DUT INFORMATION	
Brand	ABKO
Manufacturer (OEM)	CHUANGHU ELECTRONICS
Series	Settler Hybrid Bronze
Model Number	
Serial Number	
DUT Notes	

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	200-240
Rated Current (Arms)	6.3
Rated Frequency (Hz)	47-63
Rated Power (W)	800
Type	ATX12V
Cooling	120mm Rifle Bearing Fan (BDH12025S)
Semi-Passive Operation	X
Cable Design	Fixed cables

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	✓

230V

Average Efficiency	86.218%
Average Efficiency 5VSB	76.377%
Standby Power Consumption (W)	0.2131000
Average PF	0.977
Avg Noise Output	41.99 dB(A)
Efficiency Rating (ETA)	BRONZE
Noise Rating (LAMBDA)	Standard

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	17	17	66.7	2.5	0.3
	Watts	100		800	12.5	3.6
Total Max. Power (W)		800				

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

Hold-Up Time (ms)	10.8
AC Loss to PWR_OK Hold Up Time (ms)	13.4
PWR_OK Inactive to DC Loss Delay (ms)	-2.6

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CABLES AND CONNECTORS

Captive Cables

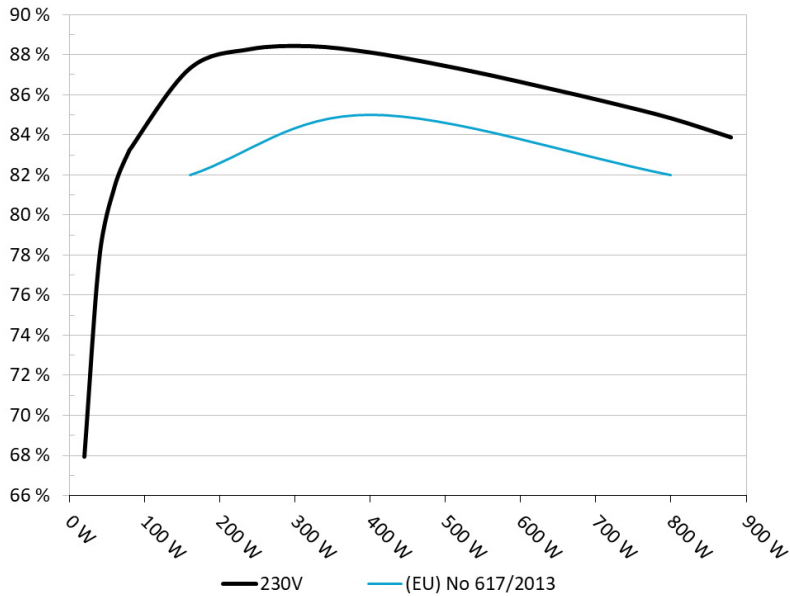
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (540mm)	1	1	18AWG	No
4+4 pin EPS12V (600mm+150mm)	1	2	18AWG	No
6+2 pin PCIe (600mm+150mm)	2	4	18AWG	No
12+4 pin PCIe (600mm) (600W)	1	1	18-26AWG	No
SATA (470mm+150mm+150mm+150mm)	1	4	18AWG	No
SATA (470mm+150mm) / 4-pin Molex (+150mm)	1	2 / 1	18AWG	No
4-pin Molex (470mm+150mm) / SATA (+150mm)	1	2 / 1	18AWG	No

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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: ABKO Settler Standard 800W
Ambient: 30°C - 40°C (86°F - 104°F)

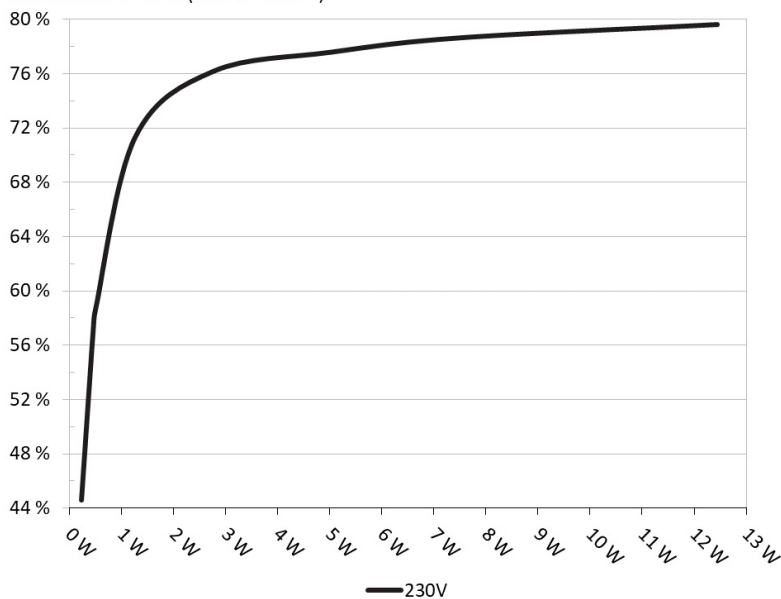


INFO

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: ABKO Settler Standard 800W
Ambient: 28°C - 32°C (82.4°F - 89.6°F)



INFO

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

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227W	44.418%	0.024
	5.044V	0.512W		229.88V
2	0.09A	0.454W	56.998%	0.038
	5.044V	0.798W		229.88V
3	0.55A	2.766W	75.967%	0.154
	5.029V	3.64W		229.88V
4	1A	5.017W	77.366%	0.233
	5.017V	6.487W		229.88V
5	1.5A	7.507W	78.428%	0.282
	5.004V	9.573W		229.88V
6	2.5A	12.446W	79.402%	0.341
	4.979V	15.674W		229.88V

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230V

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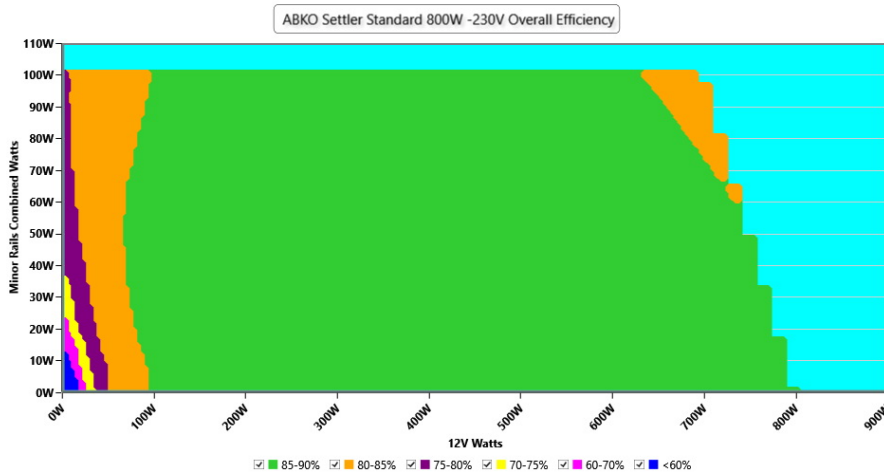
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EFFICIENCY GRAPH 230V

INFO

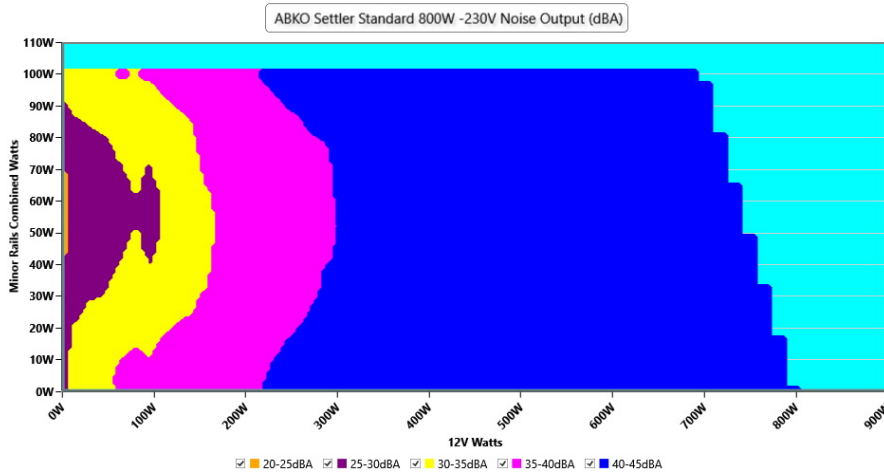
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



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:	229.91 V	229.79 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:	1.418	1.416	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.19 %	0.16 %	N/A	0.26 %	2.00 %	PASS
Real Power:	0.213 W	0.174 W	N/A	0.288 W	N/A	N/A
Apparent Power:	21.216 W	21.123 W	N/A	21.320 W	N/A	N/A
Power Factor:	0.009	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 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%	4.763A	1.958A	1.958A	0.997A	79.998	83.235%	1423	34.4	34.11°C	0.914
	12.261V	5.108V	3.371V	5.015V	96.112				38.35°C	229.87V
20%	10.538A	2.946A	2.946A	1.199A	159.934	87.293%	1646	38.2	34.95°C	0.962
	12.245V	5.092V	3.36V	5.002V	183.218				39.59°C	229.85V
30%	16.675A	3.444A	3.446A	1.403A	239.973	88.263%	1834	40.5	35.24°C	0.976
	12.229V	5.081V	3.352V	4.99V	271.884				40.36°C	229.84V
40%	22.831A	3.945A	3.948A	1.607A	320.02	88.412%	1969	42.0	35.64°C	0.984
	12.213V	5.069V	3.343V	4.978V	361.967				41.27°C	229.83V
50%	28.594A	4.948A	4.952A	1.813A	399.251	88.107%	2106	43.6	36.5°C	0.988
	12.196V	5.053V	3.332V	4.964V	453.144				42.59°C	229.81V
60%	34.483A	5.959A	5.962A	2A	479.689	87.579%	2161	44.1	36.85°C	0.989
	12.179V	5.035V	3.321V	4.952V	547.725				43.36°C	229.8V
70%	40.319A	6.977A	6.98A	2.227A	559.506	86.969%	2169	44.1	37.25°C	0.991
	12.163V	5.017V	3.31V	4.939V	643.34				44.27°C	229.78V
80%	46.237A	8.001A	8.005A	2.333A	639.508	86.291%	2171	44.1	37.82°C	0.993
	12.146V	4.999V	3.298V	4.929V	741.11				45.85°C	229.77V
90%	52.503A	8.523A	8.516A	2.439A	719.322	85.594%	2171	44.1	38.28°C	0.994
	12.129V	4.986V	3.288V	4.92V	840.386				47.35°C	229.75V
100%	58.856A	9.048A	9.062A	2.546A	800.047	84.822%	2176	44.1	39.26°C	0.995
	12.112V	4.973V	3.278V	4.909V	943.202				49.29°C	229.73V
110%	64.830A	10.096A	10.204A	2.55A	879.866	83.871%	2174	44.1	40.31°C	0.995
	12.094V	4.952V	3.264V	4.902V	1049.07				51.23°C	229.72V
CL1	0.113A	12.038A	11.96A	0A	101.28	79.602%	1870	41.0	34.68°C	0.942
	12.254V	5V	3.319V	5.032V	127.233				39.99°C	229.86V
CL2	0.113A	17.09A	0A	0A	86.369	78.296%	1586	37.4	31.67°C	0.929
	12.260V	4.973V	3.358V	5.038V	110.317				38.75°C	229.86V
CL3	0.113A	0A	16.905A	0A	57.492	72.465%	1844	40.7	35.3°C	0.887
	12.262V	5.093V	3.319V	5.039V	79.337				44.33°C	229.87V
CL4	66.028A	0A	0A	0A	799.937	85.625%	2179	44.1	39.39°C	0.995
	12.115V	5.072V	3.328V	4.983V	934.239				50.32°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	1.210A	0.487A	0.488A	0.198A	19.997	67.955%	986	24	30.21°C	0.679
	12.272V	5.131V	3.383V	5.042V	29.428				33.26°C	229.88V
40W	2.664A	0.683A	0.683A	0.298A	39.996	77.892%	987	24	31.48°C	0.818
	12.268V	5.127V	3.381V	5.037V	51.348				34.83°C	229.87V
60W	4.120A	0.878A	0.879A	0.397A	59.995	81.389%	1092	27	32.54°C	0.877
	12.265V	5.123V	3.378V	5.033V	73.712				36.1°C	229.87V
80W	5.572A	1.074A	1.075A	0.497A	79.938	83.891%	1233	30.5	33.08°C	0.913
	12.261V	5.119V	3.375V	5.029V	95.288				36.89°C	229.87V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	13.15mV	9.30mV	9.72mV	21.74mV	Pass
20% Load	14.53mV	9.91mV	9.62mV	24.86mV	Pass
30% Load	14.94mV	11.14mV	9.36mV	26.65mV	Pass
40% Load	17.65mV	10.68mV	9.87mV	28.39mV	Pass
50% Load	19.90mV	11.85mV	10.23mV	29.26mV	Pass
60% Load	25.17mV	12.37mV	10.38mV	29.05mV	Pass
70% Load	34.69mV	13.90mV	11.66mV	31.92mV	Pass
80% Load	46.61mV	16.81mV	15.09mV	34.02mV	Pass
90% Load	56.99mV	18.95mV	16.06mV	36.67mV	Pass
100% Load	63.15mV	22.00mV	16.99mV	35.21mV	Pass
110% Load	74.46mV	23.27mV	18.72mV	37.17mV	Pass
Crossload1	14.18mV	14.45mV	14.18mV	23.40mV	Pass
Crossload2	13.05mV	14.61mV	11.20mV	23.94mV	Pass
Crossload3	14.02mV	12.82mV	14.68mV	21.13mV	Pass
Crossload4	66.80mV	23.19mV	17.41mV	34.98mV	Pass

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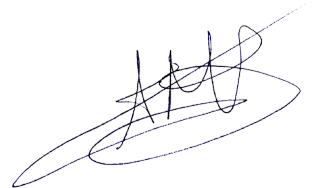
ABKO Settler Hybrid Bronze STH-800B



Top side

AC INPUT	200-240VAC 6.3A 47-63HZ				
Rail	+3.3V	+5V	+12V	+5VSB	-12V
MAX LOAD	17A	17A	66.7A	2.5A	0.3A
	100W		800W	12.5W	3.6W
Total	800W (能效)				

Power specifications label



Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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