

Anex

ABKO Settler Hybrid Bronze STH-700B

Lab ID#: AB70002223
 Receipt Date: Aug 8, 2023
 Test Date: Aug 22, 2023

Report: 23PS2223A
 Report Date: Aug 23, 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)	700
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	86.677%
Average Efficiency 5VSB	76.158%
Standby Power Consumption (W)	0.2132000
Average PF	0.977
Avg Noise Output	40.93 dB(A)
Efficiency Rating (ETA)	BRONZE
Noise Rating (LAMBDA)	Standard

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	17	17	58.4	2.5	0.3
	Watts	100		700	12.5	3.6
Total Max. Power (W)		700				

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

Hold-Up Time (ms)	11.3
AC Loss to PWR_OK Hold Up Time (ms)	12.9
PWR_OK Inactive to DC Loss Delay (ms)	-1.6

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CABLES AND CONNECTORS

Captive Cables

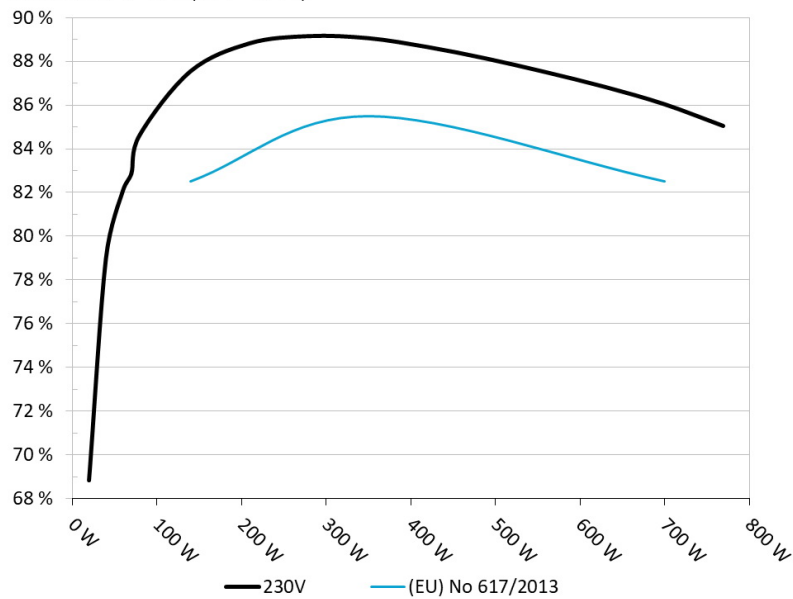
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (550mm)	1	1	18AWG	No
4+4 pin EPS12V (600mm+150mm)	1	2	18AWG	No
6+2 pin PCIe (610mm+150mm)	2	4	18AWG	No
12+4 pin PCIe (600mm) (600W)	1	1	18-26AWG	No
SATA (470mm+160mm+160mm+160mm)	1	4	18AWG	No
SATA (460mm+160mm) / 4-pin Molex (+160mm)	1	2 / 1	18AWG	No
4-pin Molex (460mm+160mm) / SATA (+160mm)	1	2 / 1	18AWG	No

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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: ABKO Settler Standard 700W
Ambient: 30°C - 40°C (86°F - 104°F)

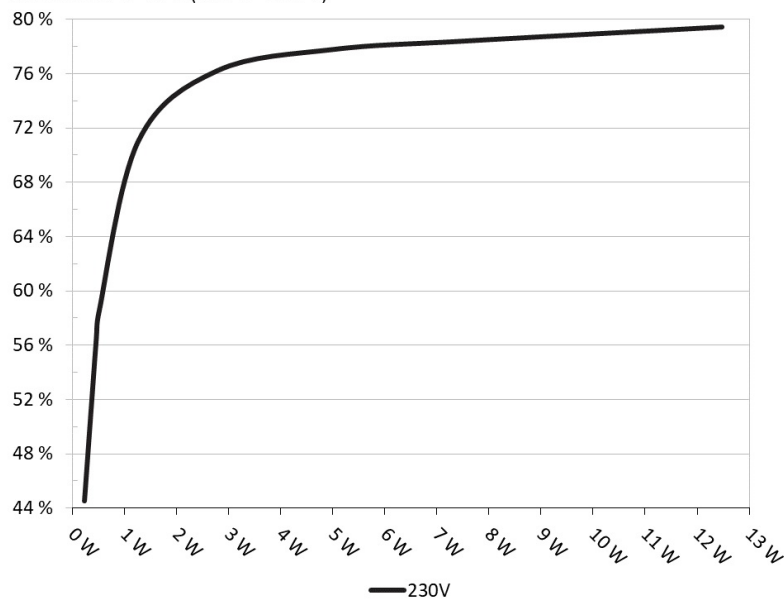


INFO

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 700W
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	0.228W	44.151%	0.025
	5.057V	0.517W		229.89V
2	0.09A	0.455W	56.09%	0.038
	5.057V	0.812W		229.9V
3	0.55A	2.774W	75.824%	0.155
	5.043V	3.658W		229.88V
4	1A	5.031W	77.412%	0.233
	5.031V	6.5W		229.88V
5	1.5A	7.528W	78.021%	0.284
	5.018V	9.647W		229.88V
6	2.5A	12.477W	79.056%	0.342
	4.991V	15.784W		229.88V

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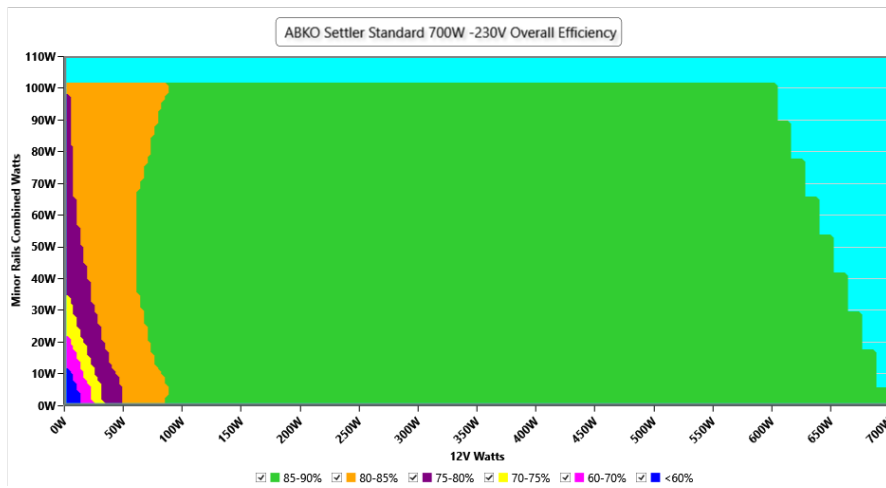
230V

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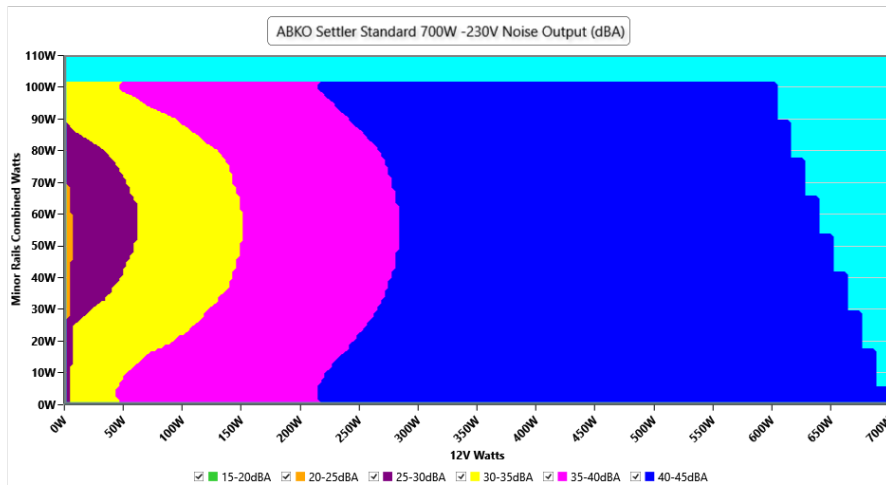
EFFICIENCY GRAPH 230V



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:	229.91 V	229.80 V	227.70 V	230.00 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.02 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.418	1.416	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.20 %	0.16 %	N/A	0.27 %	2.00 %	PASS
Real Power:	0.213 W	0.173 W	N/A	0.260 W	N/A	N/A
Apparent Power:	21.274 W	21.188 W	N/A	21.358 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%	3.968A	1.984A	1.943A	0.994A	70.002	82.368%	1573	37.0	34.27°C	0.905
	12.197V	5.041V	3.396V	5.029V	84.986				38.56°C	229.87V
20%	8.951A	2.985A	2.925A	1.196A	139.945	87.054%	1760	39.6	34.61°C	0.959
	12.182V	5.025V	3.385V	5.016V	160.756				39.25°C	229.86V
30%	14.296A	3.49A	3.421A	1.399A	209.981	88.335%	1912	41.4	35.36°C	0.977
	12.166V	5.015V	3.376V	5.004V	237.709				40.39°C	229.85V
40%	19.655A	3.997A	3.92A	1.603A	280.028	88.664%	2020	42.6	35.54°C	0.983
	12.151V	5.004V	3.367V	4.992V	315.832				41.19°C	229.84V
50%	24.677A	5.013A	4.919A	1.808A	350.001	88.569%	2036	42.7	36.19°C	0.988
	12.136V	4.988V	3.355V	4.978V	395.173				42.29°C	229.82V
60%	29.702A	6.036A	5.925A	2A	419.778	88.166%	2037	42.7	36.96°C	0.99
	12.122V	4.971V	3.342V	4.967V	476.12				43.61°C	229.81V
70%	34.761A	7.065A	6.939A	2.221A	489.933	87.633%	2038	42.7	37.3°C	0.991
	12.106V	4.955V	3.33V	4.953V	559.07				44.38°C	229.8V
80%	39.832A	8.002A	7.961A	2.326A	559.042	87.021%	2039	42.7	37.86°C	0.993
	12.091V	4.94V	3.316V	4.943V	642.425				46.01°C	229.78V
90%	45.313A	8.625A	8.472A	2.432A	629.721	86.339%	2039	42.7	38.62°C	0.994
	12.076V	4.927V	3.305V	4.934V	729.362				47.67°C	229.77V
100%	50.808A	9.154A	9.02A	2.539A	700.035	85.547%	2041	42.7	39.58°C	0.995
	12.062V	4.915V	3.293V	4.924V	818.306				49.66°C	229.75V
110%	55.913A	10.21A	10.16A	2.542A	769.438	84.556%	2043	42.7	40.37°C	0.996
	12.048V	4.896V	3.277V	4.917V	909.974				51.31°C	229.74V
CL1	0.113A	12.197A	11.91A	0A	101.287	79.792%	1967	42.0	34.03°C	0.947
	12.192V	4.935V	3.334V	5.046V	126.941				39.49°C	229.86V
CL2	0.113A	17.294A	0A	0A	86.37	77.905%	1931	41.6	34.25°C	0.936
	12.199V	4.914V	3.376V	5.053V	110.867				41.31°C	229.87V
CL3	0.113A	0A	16.835A	0A	57.492	73.318%	1788	39.7	34.08°C	0.894
	12.199V	5.031V	3.333V	5.051V	78.417				43.09°C	229.87V
CL4	58.033A	0A	0A	0A	699.92	86.433%	2043	42.7	39.11°C	0.995
	12.061V	5.013V	3.356V	5.001V	809.787				50.01°C	229.76V

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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	1.216A	0.494A	0.484A	0.198A	19.997	68.343%	861	19.9	30.13°C	0.686
	12.205V	5.063V	3.41V	5.055V	29.26				33.25°C	229.88V
40W	2.679A	0.692A	0.678A	0.297A	39.995	78.49%	981	23.7	31.17°C	0.826
	12.200V	5.059V	3.408V	5.051V	50.956				34.48°C	229.87V
60W	4.142A	0.89A	0.872A	0.396A	59.993	81.586%	1220	30.1	32.12°C	0.885
	12.197V	5.055V	3.405V	5.046V	73.535				35.58°C	229.87V
80W	5.603A	1.088A	1.066A	0.496A	79.933	84.14%	1381	33.4	33.85°C	0.919
	12.190V	5.052V	3.404V	5.041V	94.998				37.69°C	229.87V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	16.37mV	9.81mV	9.62mV	25.01mV	Pass
20% Load	16.68mV	9.86mV	9.46mV	25.53mV	Pass
30% Load	18.47mV	10.47mV	9.77mV	24.81mV	Pass
40% Load	20.57mV	10.88mV	10.33mV	26.70mV	Pass
50% Load	22.61mV	11.50mV	13.30mV	28.75mV	Pass
60% Load	28.19mV	11.90mV	12.99mV	30.08mV	Pass
70% Load	39.85mV	12.16mV	16.73mV	32.58mV	Pass
80% Load	56.02mV	14.36mV	20.21mV	33.09mV	Pass
90% Load	73.88mV	16.65mV	22.97mV	33.25mV	Pass
100% Load	84.56mV	20.17mV	26.39mV	38.70mV	Pass
110% Load	102.30mV	21.99mV	29.08mV	41.62mV	Pass
Crossload1	18.08mV	16.15mV	15.65mV	27.44mV	Pass
Crossload2	17.60mV	17.52mV	12.33mV	28.64mV	Pass
Crossload3	16.78mV	14.05mV	15.30mV	22.05mV	Pass
Crossload4	92.36mV	19.77mV	26.25mV	34.57mV	Pass

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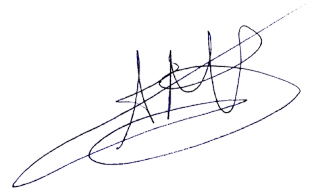
ABKO Settler Hybrid Bronze STH-700B



Top side

AC INPUT	200-240VAC 6.3A 47-63HZ				
Rail	+3.3V	+5V	+12V	+5VSB	-12V
MAX LOAD	17A	17A	58.4A	2.5A	0.3A
	100W		700W	12.5W	3.6W
Total	700W (改温度)				

Power specifications label



Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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