SilverStone GM600 2U Gold

Serial Number DXGM62GU21340099

Lab ID SL60001940

Certification ID 251940

Test Result Report ID: 21PS1940A

Certificate Issue Date: Nov 19, 2021

230V

Scheme: ETA-EMI PSU

Aristeidis Bitziopoulos, Certification Body General Manager

General Information

Test Equipment

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 Chroma 63640-80-80 x10 Chroma 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P, GW Instek ASR-3500
Power Analyzers	Rohde & Schwarz HMC8015 & NPA701
Oscilloscopes	Picoscope 4444, 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
EMI Analyzer	TekBox TBMR-110M-EU
Isolation Transformer	4kVA
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Testing Methodology	Cybenetics PSU Test Protocol

DUT Information(Non-accredited measurements)

Product Identification Details	
Brand	SilverStone
Model	GM600 2U Gold
OEM/ODM	TC Sure Star Computer Co.
Serial Number	DXGM62GU21340099
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	13-6
Rated Frequency (Hz)	47-63

Rated Power (W)	600
Operating Temperature (Continuous Full Load) (°C)	
Type	2U
Cable Design	Fixed cables
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	40mm Double Ball Bearing Fan (04028DA-12S-AUG)
Semi-Passive Operation	✗
Cybenetics Testing Information	
Lab ID	SL60001940
Date of receipt	Sep 17, 2021
Testing Date	Nov 18, 2021
Report Issued Date	Nov 19, 2021
DUT Notes	SST-2M0600FCGD-A
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Power Specifications

Rail		12V	5VSB
Max. Power	Amps	50	3.5
	Watts	600	17.5
Total Max. Power (W)		600	

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6

Performance Summary 230V

Accredited		
Average Efficiency (>1450 load combinations)		89.318%
Average PF (>1450 Load Combinations)		0.934
Efficiency With 10W (≤500W) or 2% (>500W) Load		-
Standby Power Consumption		7.2112W
Non-Accredited		
12V Ripple (Full Load)		144.95mV
5VSB Ripple (Full Load)		45.74mV
12V Load Regulation		1.31%
5VSB Load Regulation		6.08%
Inrush Current		90.730A
Hold-Up Time & PWR_OK Signal		7.20ms
AC Loss to PWR_OK Hold Up Time		19.00ms
PWR_OK Inactive to DC Loss Delay		-11.80ms
PSU Timings: T1 (20% / 100%)	193.0ms	195.0ms
PSU Timings: T3 (20% / 100%)	255.0ms	255.0ms

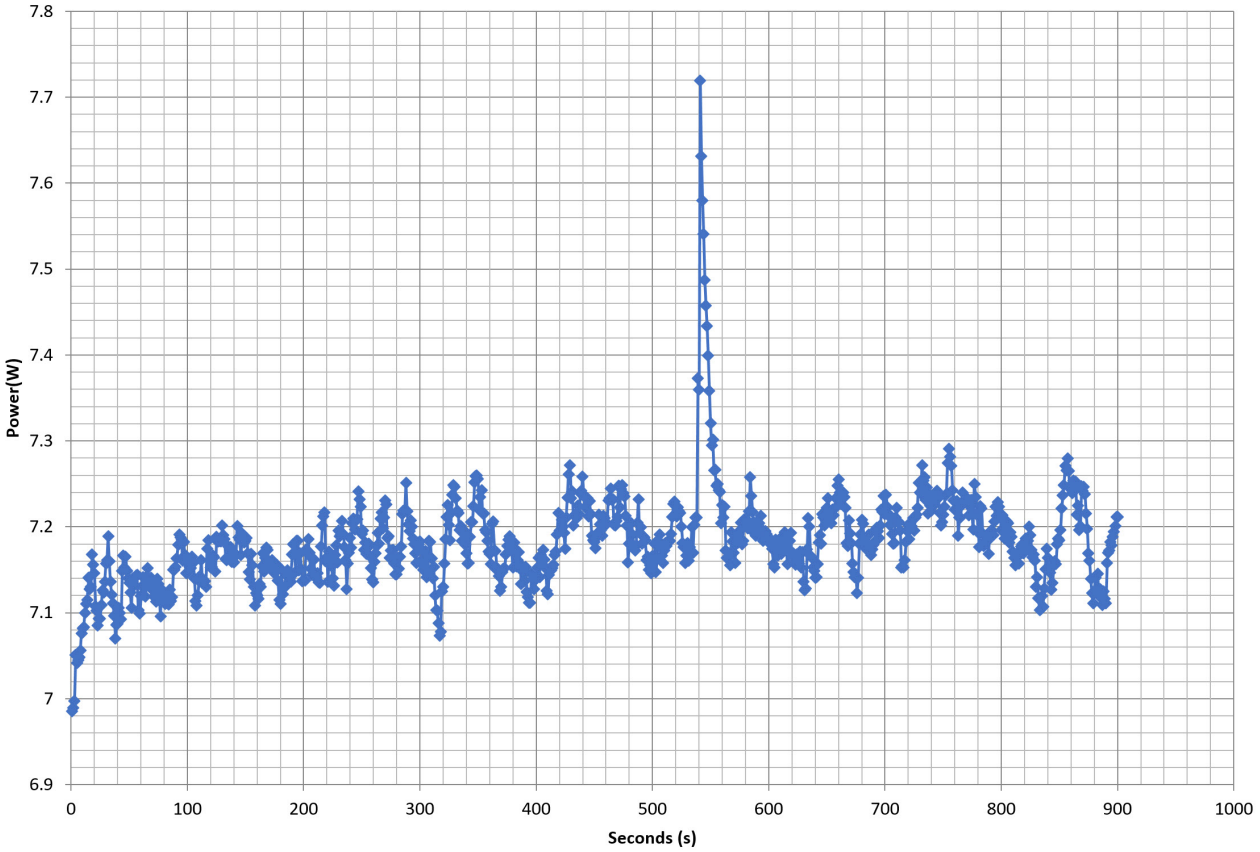
Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	7.2
AC Loss to PWR_OK Hold Up Time (ms)	19
PWR_OK Inactive to DC Loss Delay (ms)	-11.8

Stromverbrauch im Ruhezustand

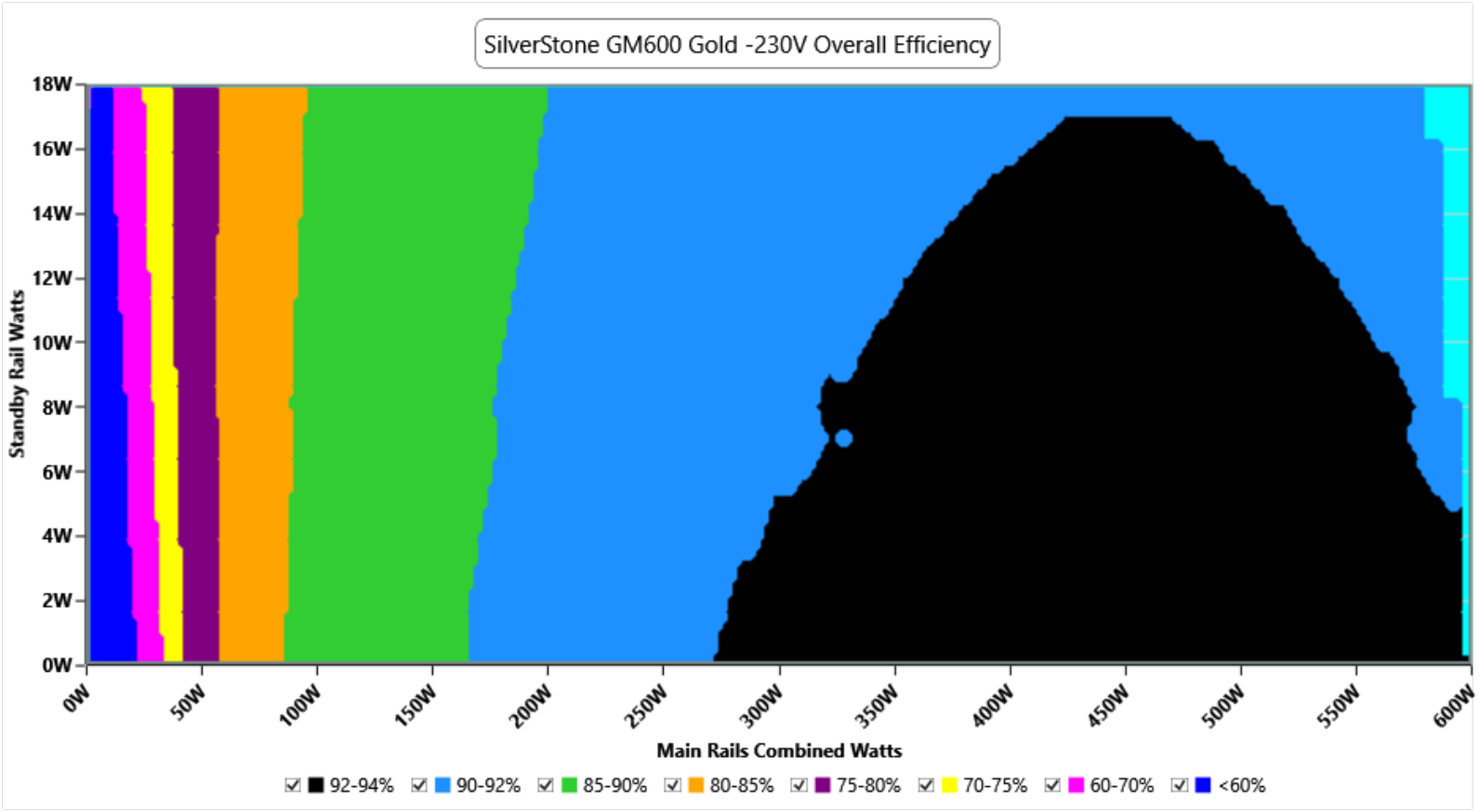
Graphs 230V

Power - DXGM62GU21340099 - 15/11/2021 - 09:03



Efficiency Graph

230V

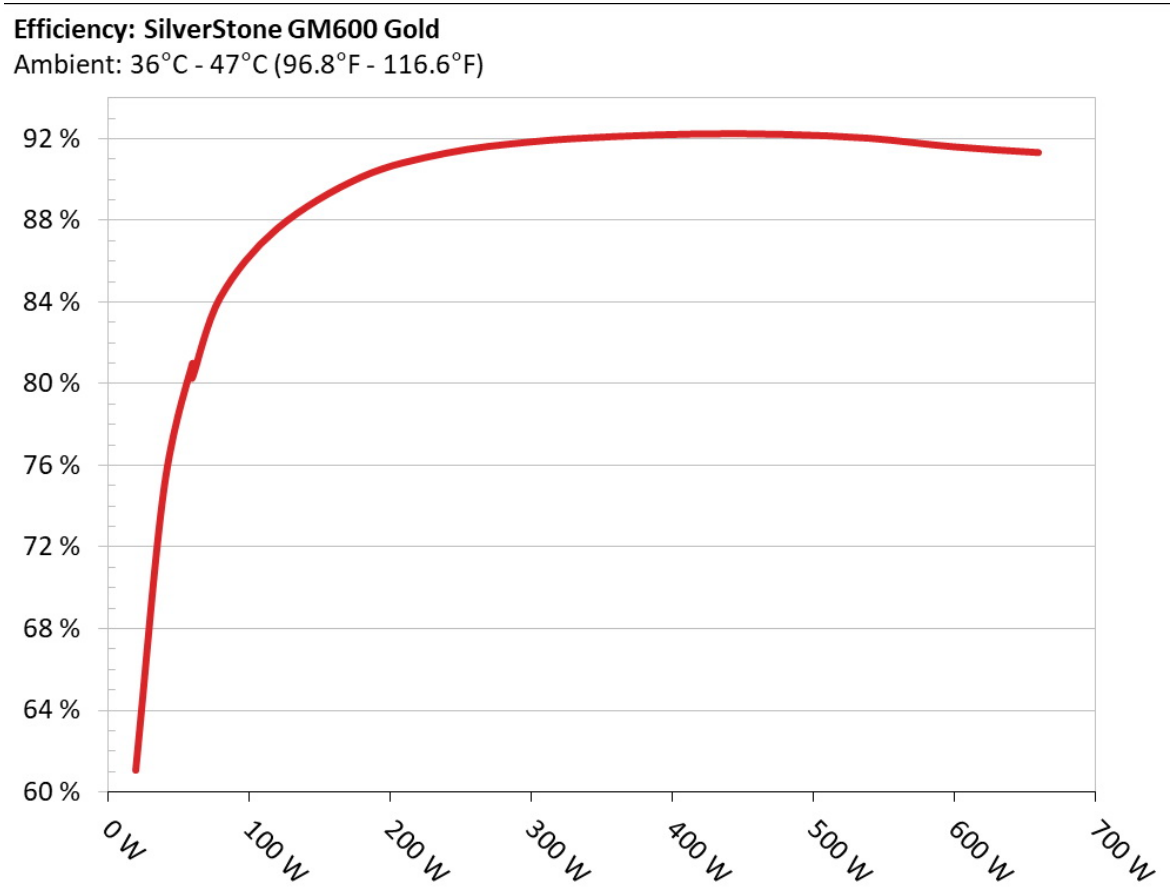


INFO

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

Indicative Performance

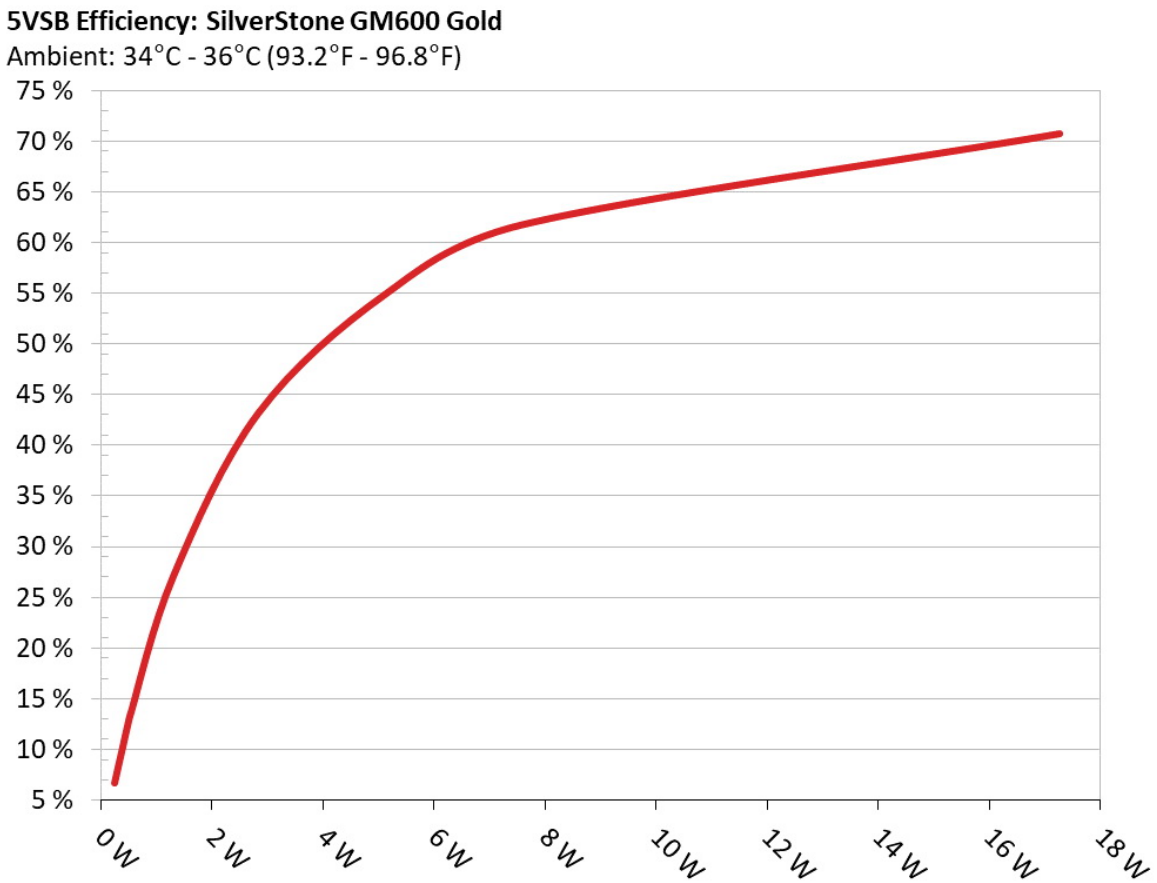
Efficiency under high ambient temperature



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 (ERP LOT 3/6 & CEC) 230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.235W	6.683%	0.086
	5.22V	3.516W		230.27V

2	0.09A	0.468W	12.348%	0.092
	5.201V	3.79W		230.27V
3	0.55A	2.822W	43.167%	0.143
	5.133V	6.538W		230.28V
4	1A	5.097W	54.852%	0.182
	5.098V	9.293W		230.28V
5	1.5A	7.608W	61.806%	0.213
	5.073V	12.31W		230.28V
6	3.499A	17.254W	70.739%	0.276
	4.931V	24.392W		230.28V

Supplementary Tests (For Reference)

Typical Load Tests 230V

Test	Main Rail	Standby Rail	DC/AC (Watts)	Efficiency	Temps (In/Out)	PF/AC Volts
10%	4.544A	0.986A	59.992	80.266%	38.58°C	0.817
	12.101V	5.071V	74.742		42.13°C	230.27V
20%	9.430A	1.182A	119.976	87.568%	39.3°C	0.897
	12.087V	5.073V	137.009		43.21°C	230.27V
30%	14.325A	1.385A	179.937	90.105%	40.24°C	0.933
	12.072V	5.054V	199.697		44.42°C	230.27V
40%	19.236A	1.589A	239.975	91.276%	40.69°C	0.947
	12.059V	5.034V	262.91		45.25°C	230.27V
50%	24.153A	1.794A	299.94	91.828%	41.29°C	0.958
	12.045V	5.015V	326.631		46.31°C	230.29V
60%	29.053A	2A	359.433	92.089%	42.04°C	0.967
	12.028V	4.996V	390.312		47.64°C	230.29V
70%	34.007A	2.208A	419.583	92.219%	43.05°C	0.972
	12.015V	4.978V	454.986		49.27°C	230.3V
80%	38.999A	2.314A	479.332	92.194%	43.65°C	0.975
	11.996V	4.968V	519.919		50.47°C	230.29V

90%	44.073A	2.419A	539.871	92.007%	44.65°C	0.978
	11.977V	4.958V	586.774		52.33°C	230.29V
100%	48.712A	3.592A	599.78	91.587%	45.95°C	0.98
	11.953V	4.871V	654.875		54.54°C	230.29V
110%	53.860A	3.597A	659.83	91.307%	46.76°C	0.983
	11.926V	4.864V	722.652		56.2°C	230.29V

The results above are not used in the certification process

Light Load Tests 230V

Test	Main Rail	Standby Rail	DC/AC (Watts)	Efficiency	Temps (In/Out)	PF/AC Volts
10W	1.568A	0.194A	19.988	61.054%	35.67°C	0.608
	12.110V	5.167V	32.739		36.87°C	230.27V
20W	3.180A	0.291A	39.993	74.849%	36.26°C	0.747
	12.104V	5.149V	53.432		37.69°C	230.27V
30W	4.793A	0.39A	59.992	80.936%	36.6°C	0.816
	12.100V	5.131V	74.122		38.52°C	230.27V
40W	6.400A	0.488A	79.916	84.212%	37.23°C	0.854
	12.095V	5.122V	94.898		39.52°C	230.27V

The results above are not used in the certification process

Ripple Measurements 230V

Test	Main Rail	Standby Rail	Pass/Fail
10% Load	32.9 mV	18.5 mV	Pass
20% Load	30.4 mV	29.1 mV	Pass
30% Load	32.6 mV	31.0 mV	Pass
40% Load	39.6 mV	31.0 mV	Pass
50% Load	46.5 mV	33.0 mV	Pass
60% Load	51.9 mV	36.7 mV	Pass
70% Load	71.4 mV	39.0 mV	Pass
80% Load	82.2 mV	42.0 mV	Pass

90% Load	96.3 mV	45.2 mV	Pass
100% Load	145.0 mV	45.7 mV	Fail
110% Load	198.6 mV	47.1 mV	Fail

The results above are not used in the certification process

SilverStone GM600 2U Gold



Top side



Power specifications label

Cybenetics bietet freiwillige Zertifizierungsprogramme für Netzteile – ETA für Effizienz, LAMBDA für Lautstärke und SAFE für Sicherheit und korrekten Betrieb – sowie für Kühlprodukte mit DELTA für die Schalldämmung von Gehäusen und PHI für Luftstrom und statischen Druck von Lüftern

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com