ASUS ROG-THOR-1200P (#4)

J9YEKG0000137U6

Lab ID 620

Certification ID 25620

Test Result Report ID: 19PS620A

Certificate Issue Date: Apr 2, 2019

Scheme: ETA-EMI PSU

115V



230V



115V



230V



Scheme: LAMBDA 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	ASUS
Model	ROG-THOR-1200P (#4)
OEM/ODM	Seasonic
Serial Number	J9YEKG0000137U6
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	100-240
□□□□ (Arms)	15-7.5
□□□□ (Hz)	50-60

□□□□ (W)	1200
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	135mm Double Ball Bearing Fan (PLA13525B12M)
□□□□□	✓ (selectable)
Cybenetics Testing Information	
Lab ID	620
Date of receipt	Mar 21, 2019
Testing Date	Mar 31, 2019
Report Issued Date	Apr 2, 2019
□□□□□	RTSS01-1200P1
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□□ (Non-accredited measurements)

□□□□□				
□□	□□□□	□□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (610mm)	1	1	18-20AWG	□
4+4 pin EPS 12V □□ (650mm)	2	2	18AWG	□
6+2pin PCIe□□ (680mm)	4	4	18AWG	□
6+2pin PCIe□□ (680mm+70mm)	2	4	18AWG	□
SATA□□ (350mm+150mm+150mm+150mm)	1	4	18AWG	□
SATA□□ (400mm+115mm+115mm+115mm)	2	8	18AWG	□
□ 4pin Molex□□ to 2xSATA□□ (150mm)	1	2	18AWG	□

□ 4pin Molex□□ (350mm+120mm)	1	2	18AWG	□
□ 4pin Molex□□ (450mm+120mm+120mm)	1	3	18AWG	□
□ 4pin □□ (+105mm)	1	1	22AWG	□
RGB Cable (800mm)	1	1	22AWG	□
RGB Sinc Cable (800mm)	1	1	24AWG	□
AC Power Cord Type (1380mm)	1	1	18AWG	-

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	25	25	100	3	0.3
	□	125		1200	15	3.6
□□□□□ (W)		1200				

Parts Description

General Data	
Manufacturer (OEM)	Seasonic
Platform Model	Prime Ultra Platinum
Primary Side	
Transient Filter	6x Y caps, 3x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	2x Shindengen LL25XB60C (600V, 25A @ 105°C)
APFC MOSFETS	2x Infineon IPP60R099CP (650V, 19A @ 100°C, 0.099 Ohm)
APFC Boost Diode	1x STMicroelectronics STPSC10H065D (650V, 10A @ 135°C)
Hold-up Cap(s)	Hitachi (400V, 1x 820uF & 1x 470uF, 2000h @ 105°C, HU)
Main Switchers	4x Infineon IPP50R199CP (550V, 11A @ 100°C, 0.199 Ohm)
Drivers For Main Switchers	2x Silicon Labs Si8230BD
APFC Controller	ON Semiconductor NPC1654
Current Sensor IC	Allegro ACS725T
Switching Controller	Champion CM69016X
Topology	Primary side: Full-Bridge & LLC Resonant Converter Secondary side: Synchronous Rectification & DC-DC converters

Secondary Side	
+12V MOSFETS	8x Nexperia PSMN1R0-40YLD (40V, 200A @ 100°C, 1.4mOhm)
5V & 3.3V	DC-DC Converters: 6x Infineon BSC0906NS PWM Controller: APW7159
Filtering Capacitors	Electrolytics: Chemi-Con (105°C, W), Chemi-Con (4,000-10,000h @ 105°C, KY, KYB), 1x Rubycon (5VSB circuit, 105°C, YXD) Polymers: FPCAP, Nippon Chemi-Con
Micro Controller	Microchip ATmega8A
Flash Memory	Microchip SST26VF016B
Supervisor IC	Weltrend WT7527V (OVP, UVP, OCP, SCP, PG) & AS393M
Fan Model	Power Logic PLA13525B12M (135mm, 12V, 0.40A, 2000 RPM, 111.1 CFM, 41.6 dB[A], Double Ball Bearing)
5VSB Circuit	
Buck Converter	Leadtrend LD7750R
Rectifiers	STMicroelectronics STU6N65K3 (650V, 3A @ 100°C, 1.3Ohm)
-12V Circuit	
Buck Converter	Lite-On LSP5523 (3A max output current)

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	✓
□□ (EU) No 617/2013□□	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	89.445%
Average Noise Output (>1450 Load Combinations)	16.41dBA
PF□□□ (>1450 Load Combinations)	0.993
Efficiency With 10W (≤500W) or 2% (>500W) Load	73.105%

□□□□□□	0.0573W
Non-Accredited	
12V Ripple (Full Load)	19.20mV
5V Ripple (Full Load)	10.90mV
3.3V Ripple (Full Load)	21.80mV
5VSB Ripple (Full Load)	23.58mV
12V Load Regulation	0.25%
5V Load Regulation	0.60%
3.3V Load Regulation	0.42%
5VSB Load Regulation	2.92%
Inrush Current	32.796A

230V

Accredited	
□□□□ (>1450 load combinations)	91.709%
Average Noise Output (>1450 Load Combinations)	15.67dBA
PF□□□ (>1450 Load Combinations)	0.965
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
□□□□□□	0.0899W
Non-Accredited	
12V Ripple (Full Load)	18.87mV
5V Ripple (Full Load)	11.08mV
3.3V Ripple (Full Load)	20.40mV
5VSB Ripple (Full Load)	20.26mV
12V Load Regulation	0.26%
5V Load Regulation	0.58%
3.3V Load Regulation	0.42%
5VSB Load Regulation	2.92%
Inrush Current	65.055A
□□□□ & PG□□	23.60ms
AC Loss to PWR_OK Hold Up Time	20.50ms
PWR_OK Inactive to DC Loss Delay	3.10ms

OPP (0.00°C / 0.00°C)	-	-

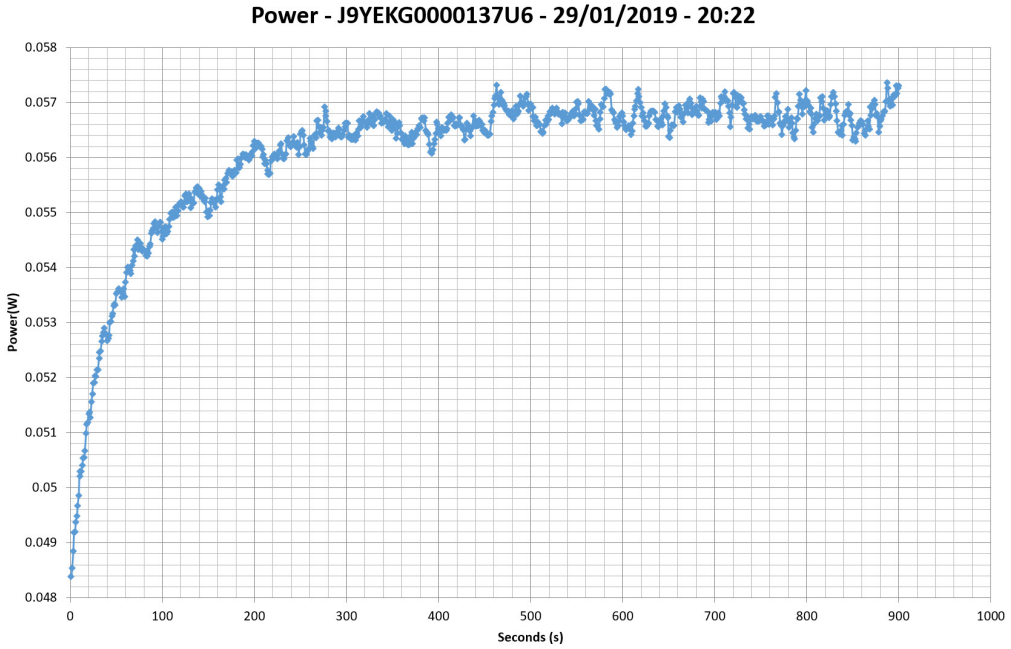
□□□□ & PG□□

Hold-Up Time (ms)	23.6
AC Loss to PWR_OK Hold Up Time (ms)	20.5
PWR_OK Inactive to DC Loss Delay (ms)	3.1

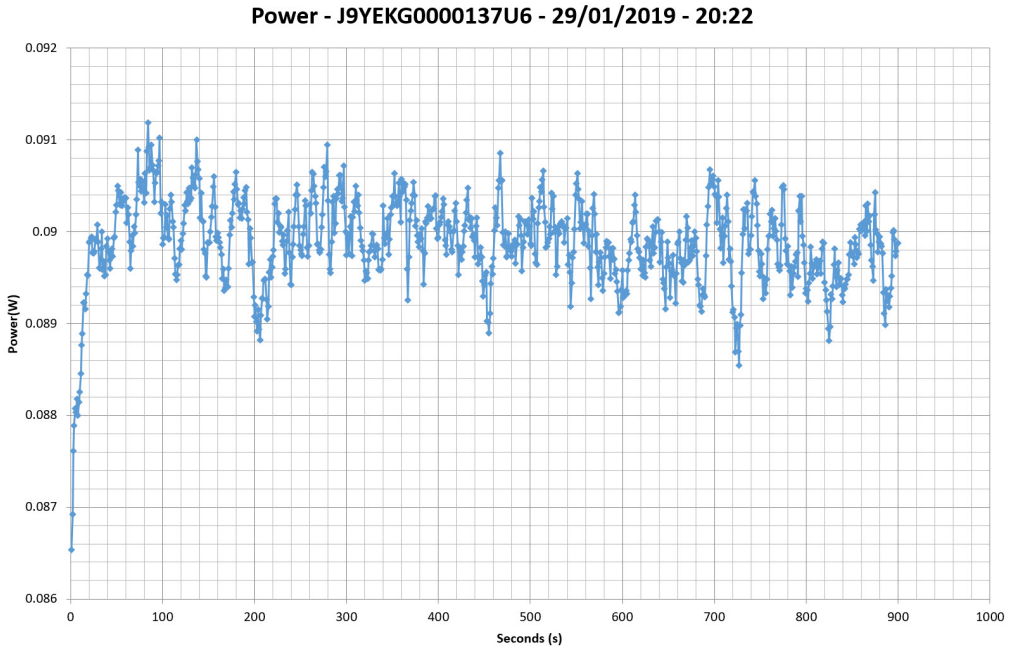
□□□□

Graphs

115V



230V



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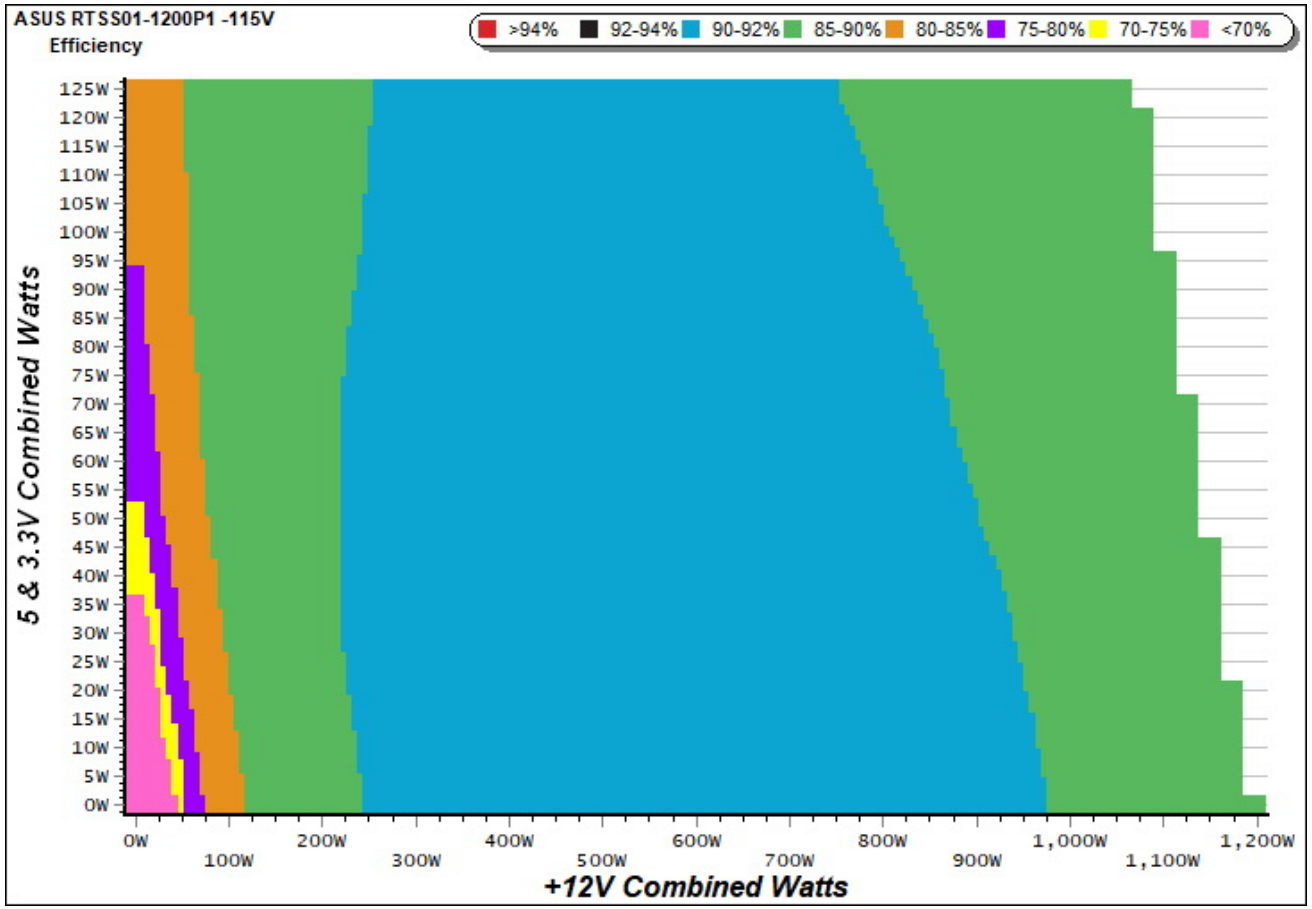
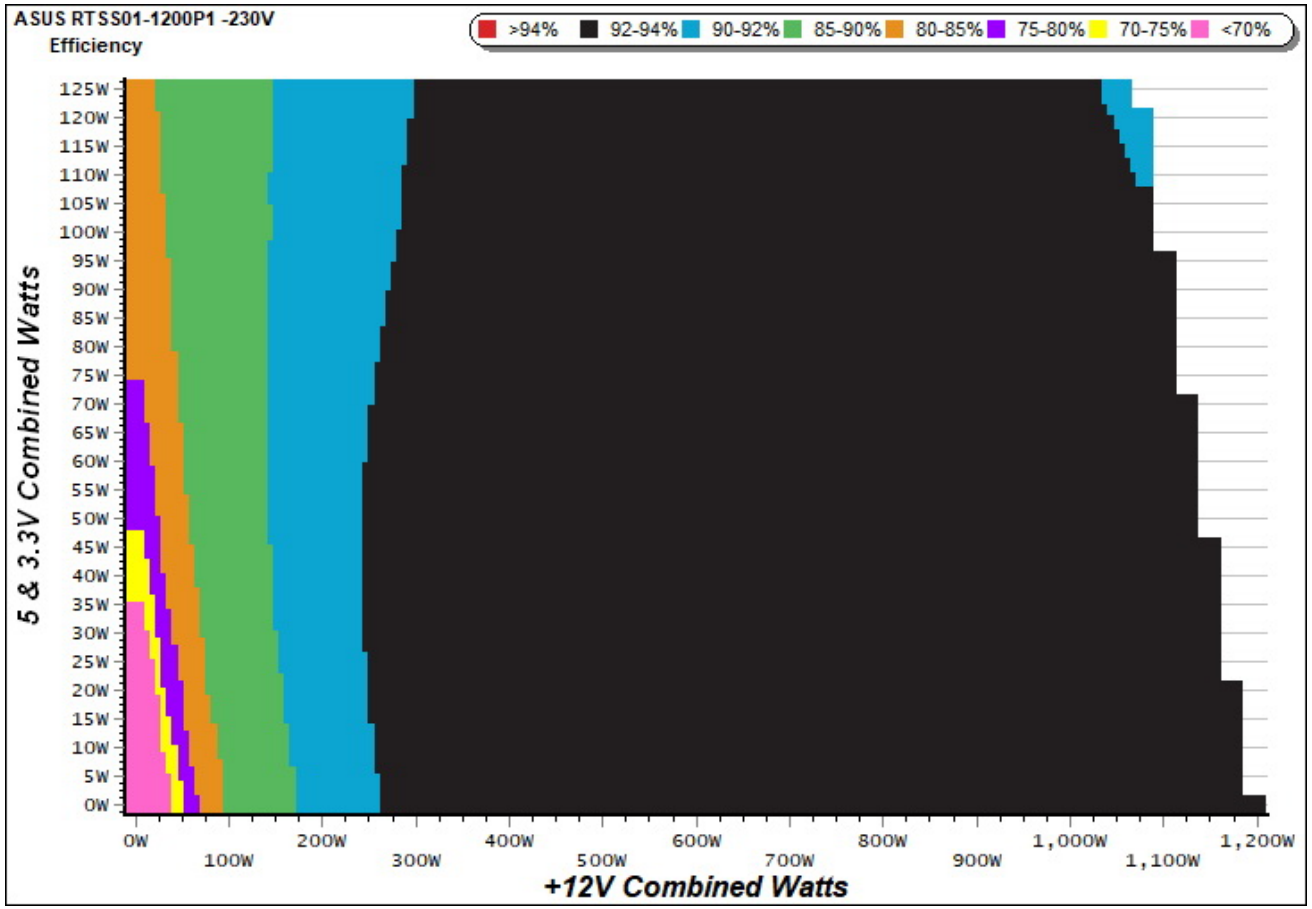
115V



□□

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.

230V



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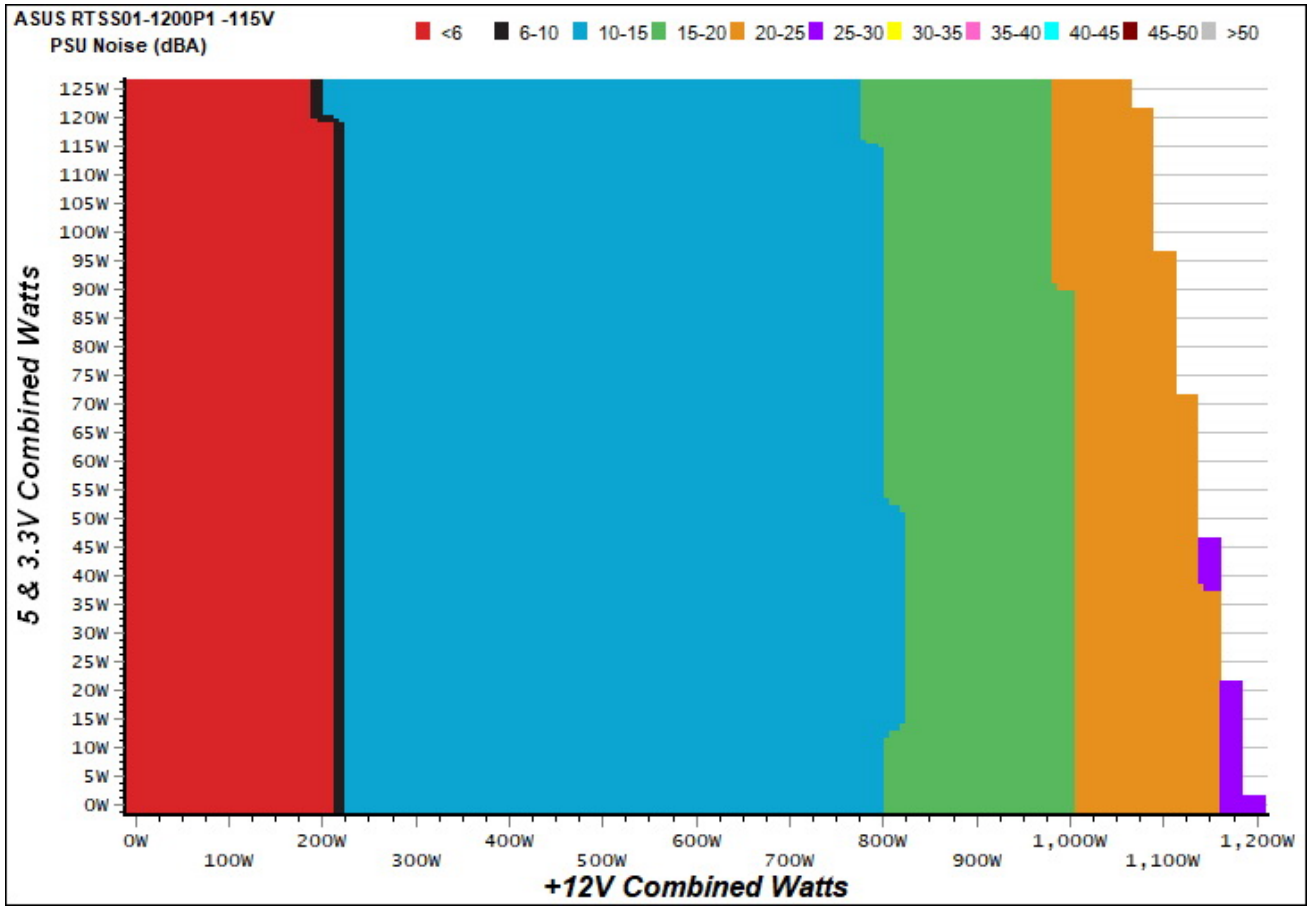
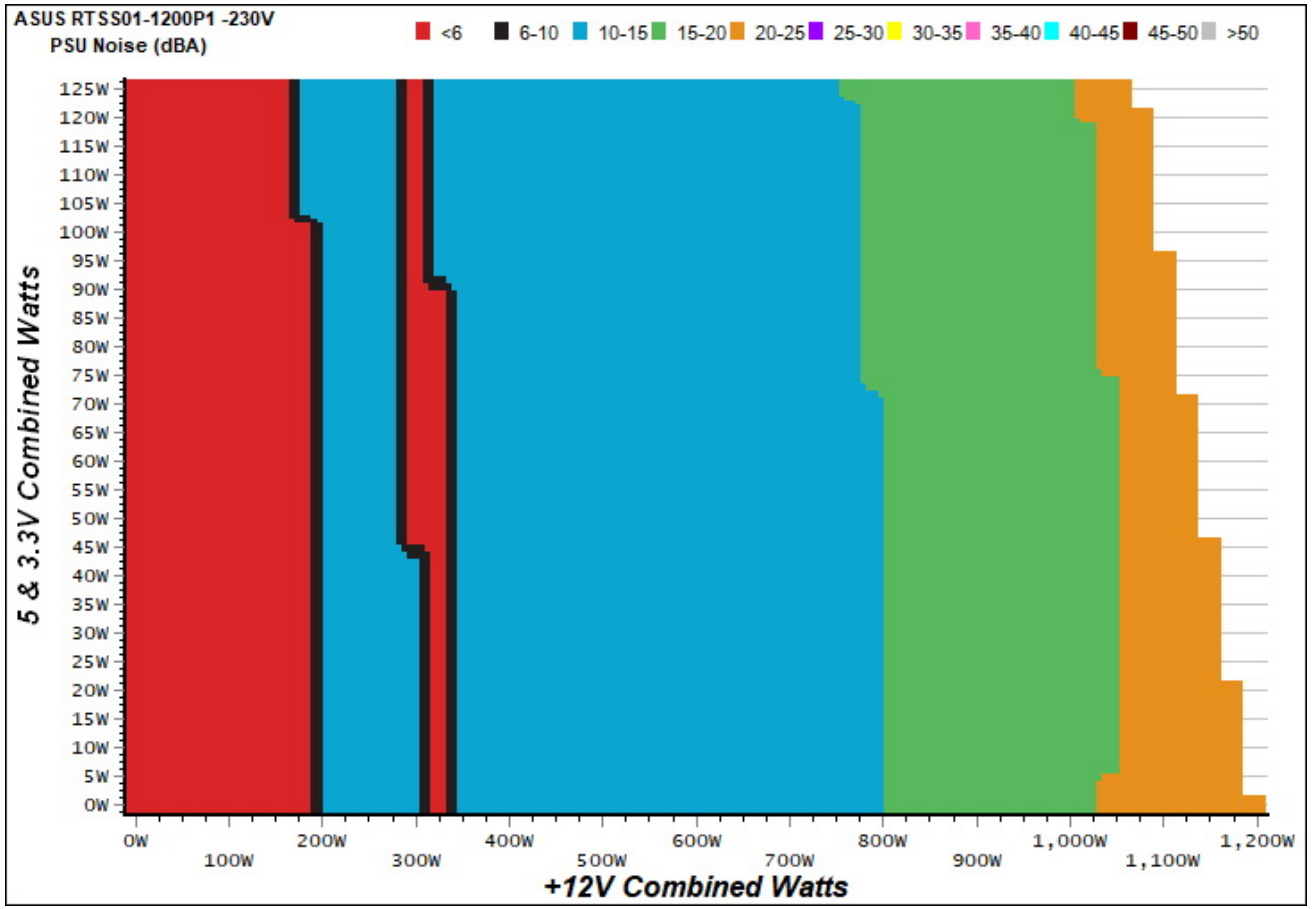
115V



□□

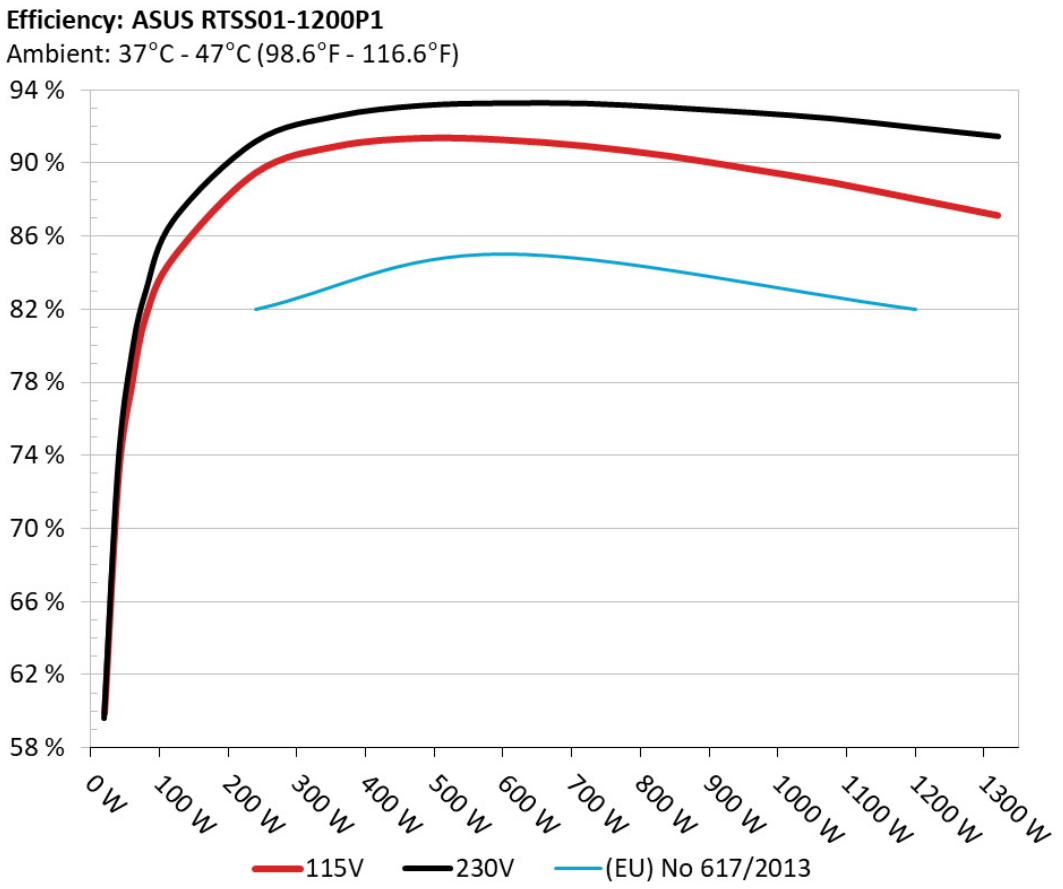
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

230V



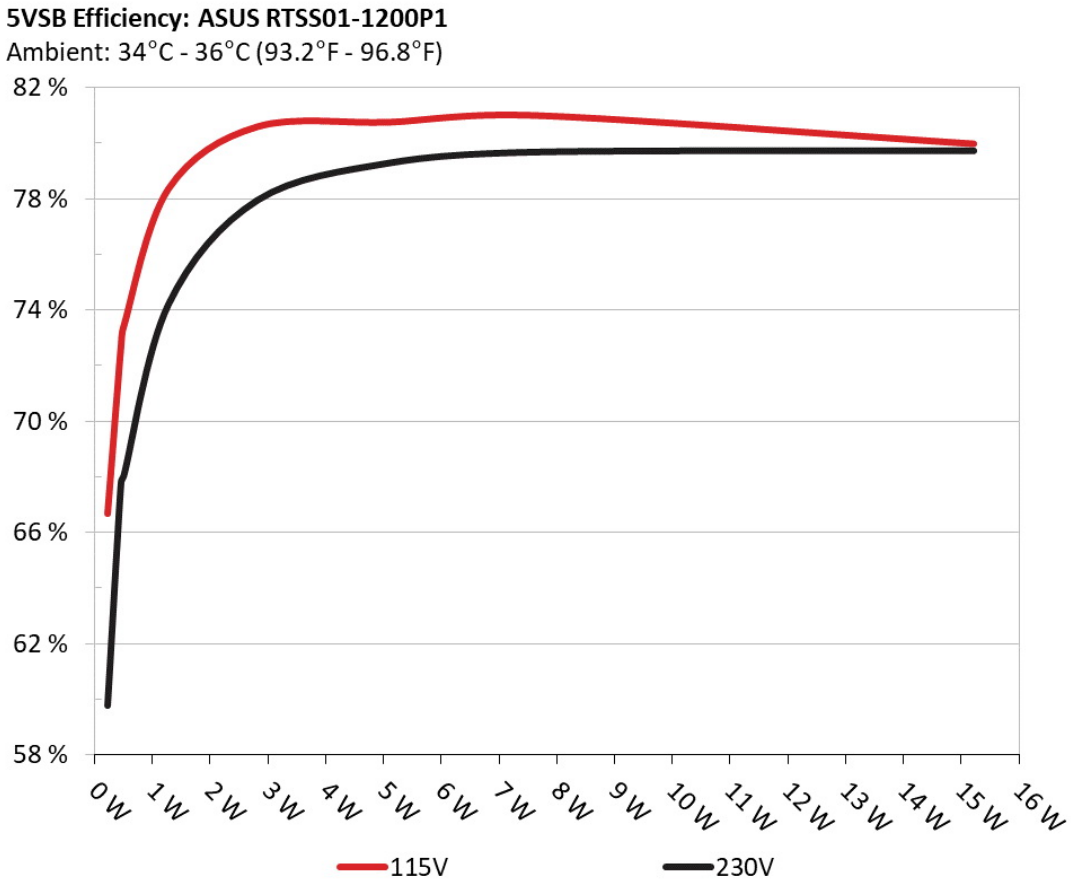
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance



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□□□□



□□

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

□□□□ □□ 5Vsb □□ (ErP Lot3/6 & CEC)

115V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.045A	0.232	66.667%	0.037
	5.139V	0.348		115.11V
2	0.090A	0.463	72.684%	0.067
	5.138V	0.637		115.11V
3	0.550A	2.821	80.577%	0.277
	5.128V	3.501		115.11V
4	1.000A	5.119	80.741%	0.371
	5.118V	6.340		115.11V
5	1.500A	7.663	80.979%	0.424
	5.107V	9.463		115.11V
6	3.000A	15.225	79.963%	0.493
	5.075V	19.040		115.11V

230V

□□ #	5VSB	DC/AC (□)	□□	PF/AC □□
1	0.045A	0.232	59.794%	0.013
	5.139V	0.388		230.29V
2	0.090A	0.463	67.789%	0.022
	5.138V	0.683		230.29V
3	0.550A	2.820	77.965%	0.110
	5.127V	3.617		230.29V
4	1.000A	5.118	79.312%	0.180
	5.117V	6.453		230.29V
5	1.500A	7.660	79.700%	0.240
	5.106V	9.611		230.29V
6	3.000A	15.215	79.747%	0.345
	5.071V	19.079		230.29V

Supplementary Tests (For Reference)

10-110%□□□□

115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	8.069A	1.997A	1.980A	0.979A	119.989	84.836%	574	11.4	40.28°C	0.983
	12.195V	5.005V	3.330V	5.106V	141.436				46.61°C	115.12V
2	17.127A	3.000A	2.971A	1.178A	239.688	89.464%	577	11.5	40.89°C	0.985
	12.191V	5.001V	3.329V	5.093V	267.916				47.67°C	115.11V
3	26.518A	3.501A	3.454A	1.378A	359.196	90.923%	580	11.6	41.23°C	0.990
	12.188V	4.998V	3.328V	5.081V	395.053				48.93°C	115.11V
4	35.982A	4.003A	3.967A	1.579A	479.632	91.352%	584	11.8	41.86°C	0.994
	12.185V	4.995V	3.326V	5.068V	525.037				50.25°C	115.11V
5	45.090A	5.009A	4.961A	1.781A	599.789	91.266%	618	13.0	42.23°C	0.996
	12.182V	4.992V	3.325V	5.054V	657.191				51.83°C	115.12V
6	54.203A	6.014A	5.957A	1.984A	719.939	90.921%	687	15.8	42.71°C	0.997
	12.179V	4.989V	3.323V	5.041V	791.827				53.18°C	115.12V
7	63.285A	7.020A	6.953A	2.188A	839.657	90.382%	766	18.9	43.49°C	0.997
	12.176V	4.986V	3.322V	5.027V	929.006				54.64°C	115.13V
8	72.436A	8.030A	7.950A	2.394A	960.163	89.669%	851	22.0	43.76°C	0.998
	12.173V	4.982V	3.320V	5.013V	1070.791				55.78°C	115.13V
9	81.923A	8.536A	8.434A	2.398A	1079.498	88.924%	953	25.3	44.94°C	0.998
	12.170V	4.979V	3.319V	5.005V	1213.953				57.51°C	115.13V
10	91.264A	9.044A	8.952A	3.012A	1199.945	88.028%	1423	37.9	45.69°C	0.998
	12.165V	4.977V	3.318V	4.981V	1363.136				59.24°C	115.14V
11	101.168A	9.048A	8.952A	3.017A	1320.008	87.128%	1799	44.5	46.74°C	0.998
	12.161V	4.974V	3.317V	4.974V	1515.023				60.84°C	115.14V
CL1	0.149A	15.001A	14.999A	0.000A	126.603	82.327%	769	18.9	42.80°C	0.989
	12.198V	4.997V	3.322V	5.111V	153.780				51.98°C	115.13V

CL2	100.020A	1.002A	0.997A	1.000A	1229.983	88.265%	1476	39.3	45.23°C	0.998
	12.164V	4.981V	3.322V	5.037V	1393.505				58.68°C	115.14V

The results above are not used in the certification process

230V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
1	8.069A	1.998A	1.979A	0.979A	119.991	86.865%	574	11.4	40.29°C	0.868
	12.195V	5.005V	3.330V	5.106V	138.135				46.93°C	230.30V
2	17.125A	2.999A	2.970A	1.178A	239.658	91.184%	578	11.6	40.84°C	0.940
	12.191V	5.002V	3.329V	5.093V	262.830				47.83°C	230.29V
3	26.514A	3.501A	3.453A	1.378A	359.148	92.583%	580	11.7	41.49°C	0.964
	12.188V	4.999V	3.328V	5.081V	387.919				49.05°C	230.28V
4	35.979A	4.004A	3.966A	1.579A	479.602	93.152%	584	11.8	41.91°C	0.977
	12.185V	4.996V	3.326V	5.068V	514.859				50.14°C	230.28V
5	45.089A	5.008A	4.963A	1.781A	599.778	93.289%	621	13.2	42.11°C	0.983
	12.182V	4.992V	3.325V	5.055V	642.927				51.33°C	230.29V
6	54.202A	6.014A	5.957A	1.984A	719.925	93.270%	688	15.8	42.79°C	0.987
	12.179V	4.989V	3.323V	5.041V	771.873				52.65°C	230.29V
7	63.293A	7.019A	6.953A	2.188A	839.686	93.054%	766	18.8	43.02°C	0.988
	12.175V	4.986V	3.322V	5.027V	902.367				53.65°C	230.29V
8	72.447A	8.028A	7.952A	2.394A	960.167	92.775%	834	21.2	43.93°C	0.989
	12.171V	4.983V	3.321V	5.014V	1034.939				55.43°C	230.30V
9	81.930A	8.535A	8.435A	2.398A	1079.507	92.439%	927	24.4	44.56°C	0.990
	12.169V	4.980V	3.319V	5.005V	1167.806				57.09°C	230.30V
10	91.266A	9.043A	8.950A	3.012A	1199.957	91.951%	1406	37.6	45.49°C	0.990
	12.165V	4.977V	3.318V	4.981V	1305.001				58.61°C	230.31V
11	101.169A	9.048A	8.954A	3.017A	1320.037	91.468%	1775	44.4	46.65°C	0.991
	12.161V	4.975V	3.317V	4.974V	1443.172				60.70°C	230.31V
CL1	0.147A	15.001A	14.999A	0.000A	126.581	84.299%	754	18.3	42.78°C	0.880
	12.198V	4.997V	3.322V	5.110V	150.157				51.22°C	230.32V

CL2	100.016A	1.002A	0.999A	1.000A	1229.944	92.192%	1416	37.8	45.44°C	0.991
	12.164V	4.982V	3.323V	5.037V	1334.115				58.44°C	230.32V

The results above are not used in the certification process

20-80□□□□□

115V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	PF/AC □□
1	1.184A	0.498A	0.477A	0.195A	19.521	59.899%	0	<6.0	0.862
	12.192V	5.011V	3.335V	5.131V	32.590				115.13V
2	2.432A	0.999A	0.987A	0.390A	39.938	72.958%	570	11.2	0.937
	12.191V	5.007V	3.332V	5.125V	54.741				115.12V
3	3.611A	1.498A	1.469A	0.586A	59.410	77.914%	570	11.2	0.956
	12.190V	5.006V	3.331V	5.119V	76.251				115.12V
4	4.854A	1.998A	1.979A	0.782A	79.786	81.647%	572	11.3	0.975
	12.195V	5.005V	3.331V	5.113V	97.721				115.12V

The results above are not used in the certification process

230V

□□ #	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□□ (dB[A])	PF/AC □□
1	1.186A	0.499A	0.477A	0.195A	19.547	59.627%	568	11.1	0.552
	12.188V	5.013V	3.335V	5.132V	32.782				230.32V
2	2.434A	1.000A	0.989A	0.390A	39.969	73.516%	569	11.2	0.690
	12.188V	5.008V	3.332V	5.126V	54.368				230.32V
3	3.614A	1.499A	1.469A	0.586A	59.457	79.481%	570	11.2	0.761
	12.191V	5.007V	3.331V	5.120V	74.807				230.32V
4	4.859A	1.999A	1.978A	0.782A	79.845	82.961%	572	11.3	0.812
	12.194V	5.006V	3.331V	5.113V	96.244				230.32V

The results above are not used in the certification process

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	13.8 mV	6.5 mV	14.2 mV	10.6 mV	Pass
20% Load	13.6 mV	7.0 mV	14.7 mV	10.7 mV	Pass
30% Load	7.5 mV	6.6 mV	14.6 mV	10.8 mV	Pass
40% Load	7.7 mV	7.3 mV	15.9 mV	11.6 mV	Pass
50% Load	8.2 mV	7.7 mV	15.8 mV	12.7 mV	Pass
60% Load	9.3 mV	7.4 mV	15.7 mV	15.0 mV	Pass
70% Load	10.2 mV	8.4 mV	16.4 mV	16.1 mV	Pass
80% Load	11.1 mV	8.1 mV	18.4 mV	16.8 mV	Pass
90% Load	11.7 mV	8.5 mV	19.7 mV	19.4 mV	Pass
100% Load	19.2 mV	10.9 mV	21.8 mV	23.6 mV	Pass
110% Load	24.1 mV	12.5 mV	22.3 mV	25.9 mV	Pass
Crossload 1	17.6 mV	10.3 mV	21.4 mV	13.2 mV	Pass
Crossload 2	19.7 mV	8.5 mV	15.4 mV	22.0 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	16.7 mV	6.5 mV	13.5 mV	9.3 mV	Pass
20% Load	15.4 mV	7.0 mV	14.6 mV	10.0 mV	Pass
30% Load	7.9 mV	7.0 mV	15.4 mV	9.9 mV	Pass
40% Load	7.1 mV	7.2 mV	15.0 mV	11.3 mV	Pass
50% Load	7.7 mV	7.5 mV	16.3 mV	11.8 mV	Pass
60% Load	9.2 mV	7.6 mV	15.7 mV	13.1 mV	Pass
70% Load	10.2 mV	7.9 mV	16.4 mV	16.2 mV	Pass
80% Load	11.1 mV	8.2 mV	19.7 mV	15.4 mV	Pass





Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	11.9 mV	10.2 mV	30.0 mV	31.1 mV	Pass
100% Load	18.9 mV	11.1 mV	20.4 mV	20.3 mV	Pass
110% Load	24.4 mV	12.1 mV	22.0 mV	20.9 mV	Pass
Crossload 1	20.3 mV	10.2 mV	21.6 mV	12.0 mV	Pass
Crossload 2	19.4 mV	7.7 mV	15.0 mV	18.9 mV	Pass

The results above are not used in the certification process

ASUS ROG-THOR-1200P (#4)

Top side

Power specifications label

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在任何情况下都应提供原始测试结果文档的网站链接

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