Raijintek Ermis 550B

Serial Number RJK550B211000004

Lab ID RJ55001950

Certification ID 251950

Test Result Report ID: 21PS1950A

Certificate Issue Date: Dec 15, 2021

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	Raijintek
Model	Ermis 550B
OEM/ODM	Casecom
Serial Number	RJK550B211000004
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	8-4
Rated Frequency (Hz)	47-63

Rated Power (W)	550
Operating Temperature (Continuous Full Load) (°C)	
Type	SFX
Cable Design	Fixed cables
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	80mm Sleeve Bearing Fan (DF0801512SEHN)
Semi-Passive Operation	✗
Cybenetics Testing Information	
Lab ID	RJ55001950
Date of receipt	Dec 3, 2021
Testing Date	Dec 15, 2021
Report Issued Date	Dec 15, 2021
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Captive Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (350mm)	1	1	18-22AWG	No
4+4 pin EPS12V (350mm)	1	1	18AWG	No
6+2 pin PCIe (410mm+150mm)	1	2	18AWG	No
SATA (370mm+200mm+100mm)	1	3	18AWG	No
4-pin Molex (370mm+200mm)	1	2	18AWG	No
Modular Cables				
AC Power Cord (1120mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	41	2.5	0.3
	Watts	100		492	12.5	3.6
Total Max. Power (W)		550				

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	85.313%
Average Noise Output (>1450 Load Combinations)	29.57dBA
Average PF (>1450 Load Combinations)	0.988
Efficiency With 10W (≤500W) or 2% (>500W) Load	55.772%
Standby Power Consumption	0.0797W
Non-Accredited	
12V Ripple (Full Load)	67.36mV
5V Ripple (Full Load)	44.48mV
3.3V Ripple (Full Load)	36.56mV
5VSB Ripple (Full Load)	57.82mV
12V Load Regulation	0.59%
5V Load Regulation	0.53%
3.3V Load Regulation	1.28%

5VSB Load Regulation	2.34%
Inrush Current	33.460A

230V

Accredited		
Average Efficiency (>1450 load combinations)		87.867%
Average Noise Output (>1450 Load Combinations)		29.51dBA
Average PF (>1450 Load Combinations)		0.947
Efficiency With 10W (≤500W) or 2% (>500W) Load		-
Standby Power Consumption		0.1646W
Non-Accredited		
12V Ripple (Full Load)		54.77mV
5V Ripple (Full Load)		45.13mV
3.3V Ripple (Full Load)		36.02mV
5VSB Ripple (Full Load)		59.35mV
12V Load Regulation		0.57%
5V Load Regulation		0.51%
3.3V Load Regulation		1.52%
5VSB Load Regulation		2.36%
Inrush Current		87.780A
Hold-Up Time & PWR_OK Signal		18.80ms
AC Loss to PWR_OK Hold Up Time		15.20ms
PWR_OK Inactive to DC Loss Delay		3.60ms
PSU Timings: T1 (20% / 100%)	76.0ms	61.0ms
PSU Timings: T3 (20% / 100%)	285.0ms	276.0ms
OPP (24.41°C / 38.76°C)	118.33%	108.15%

Hold-Up Time & PWR_OK Signal

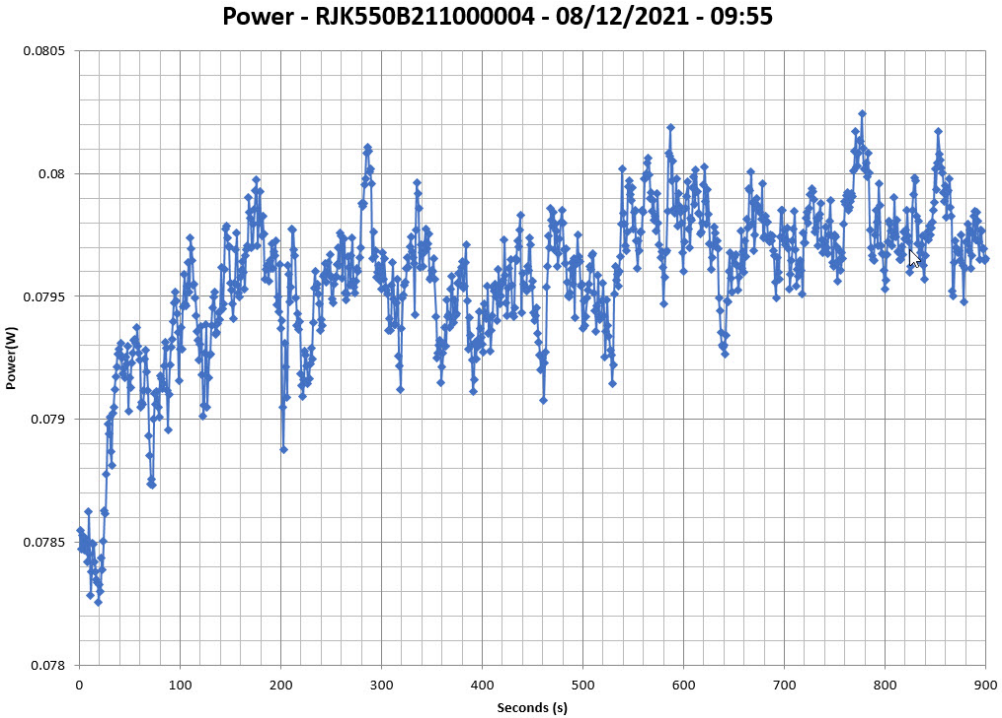
Hold-Up Time (ms)	18.8
AC Loss to PWR_OK Hold Up Time (ms)	15.2

PWR_OK Inactive to DC Loss Delay (ms)	3.6

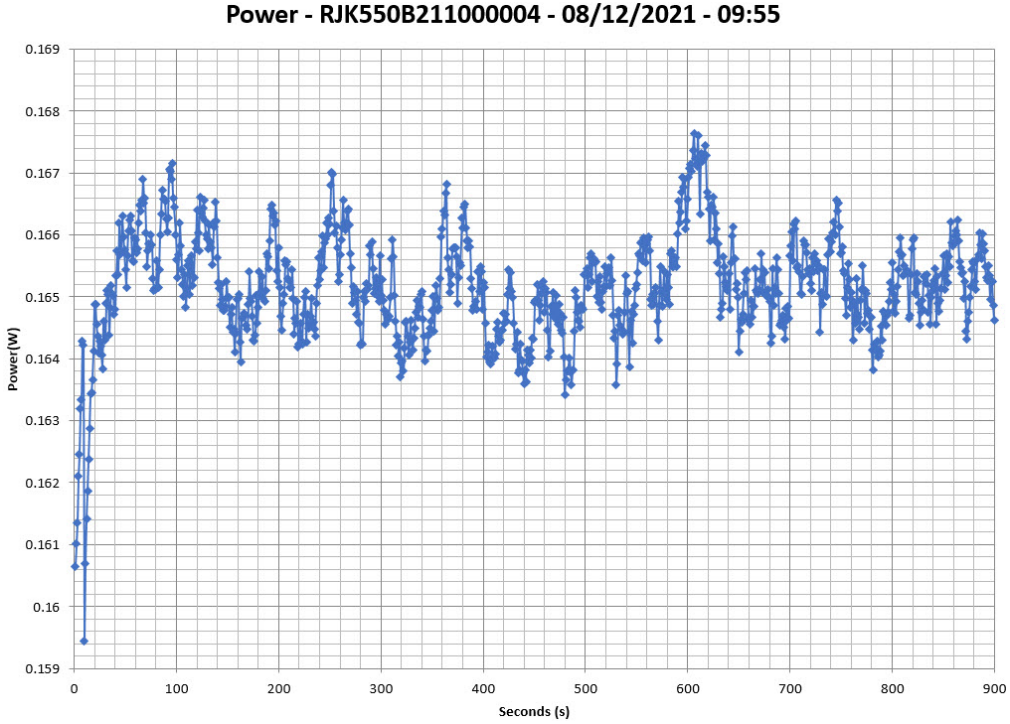
Vampire Power

Graphs

115V

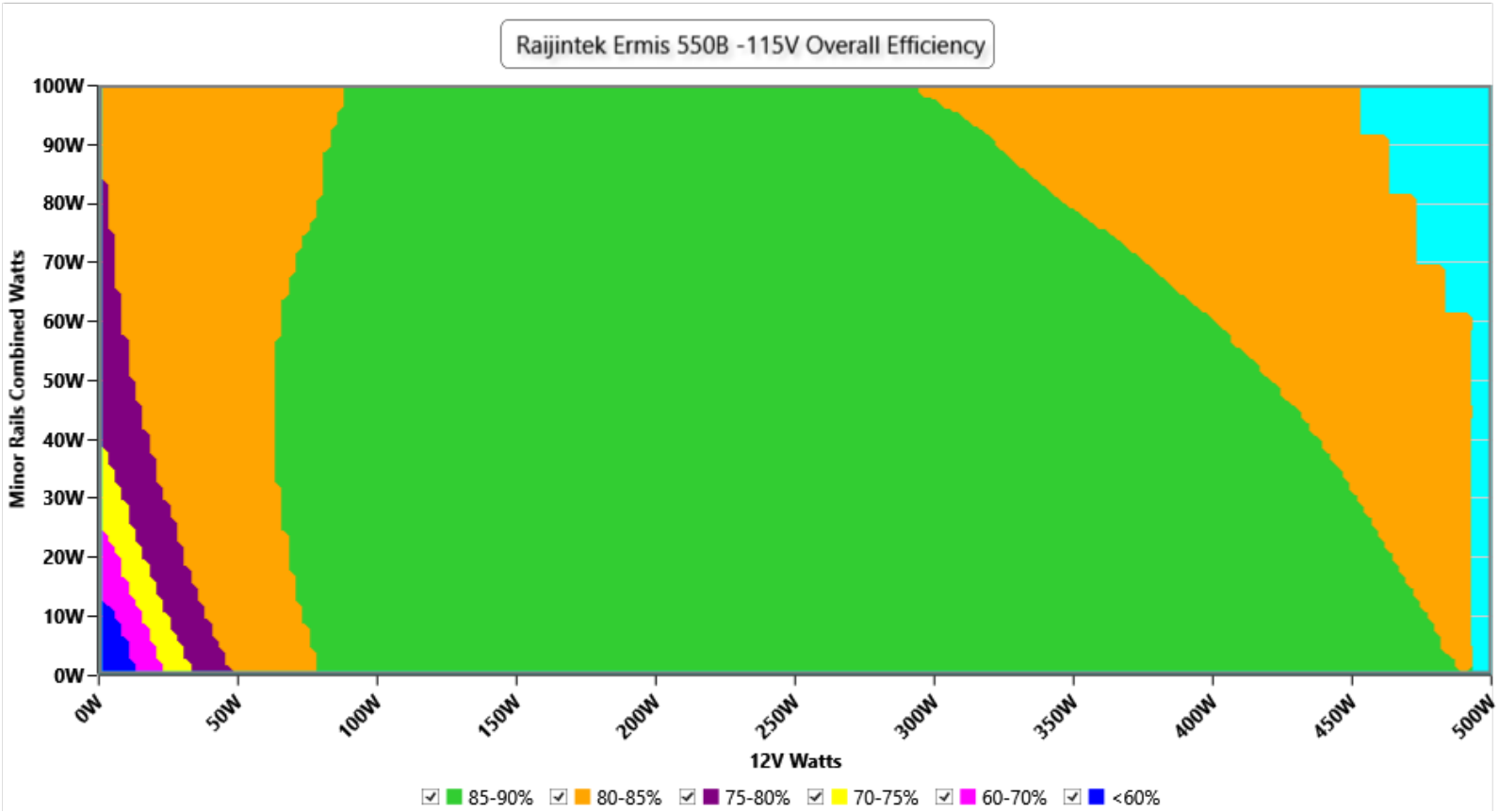


230V



Efficiency Graph

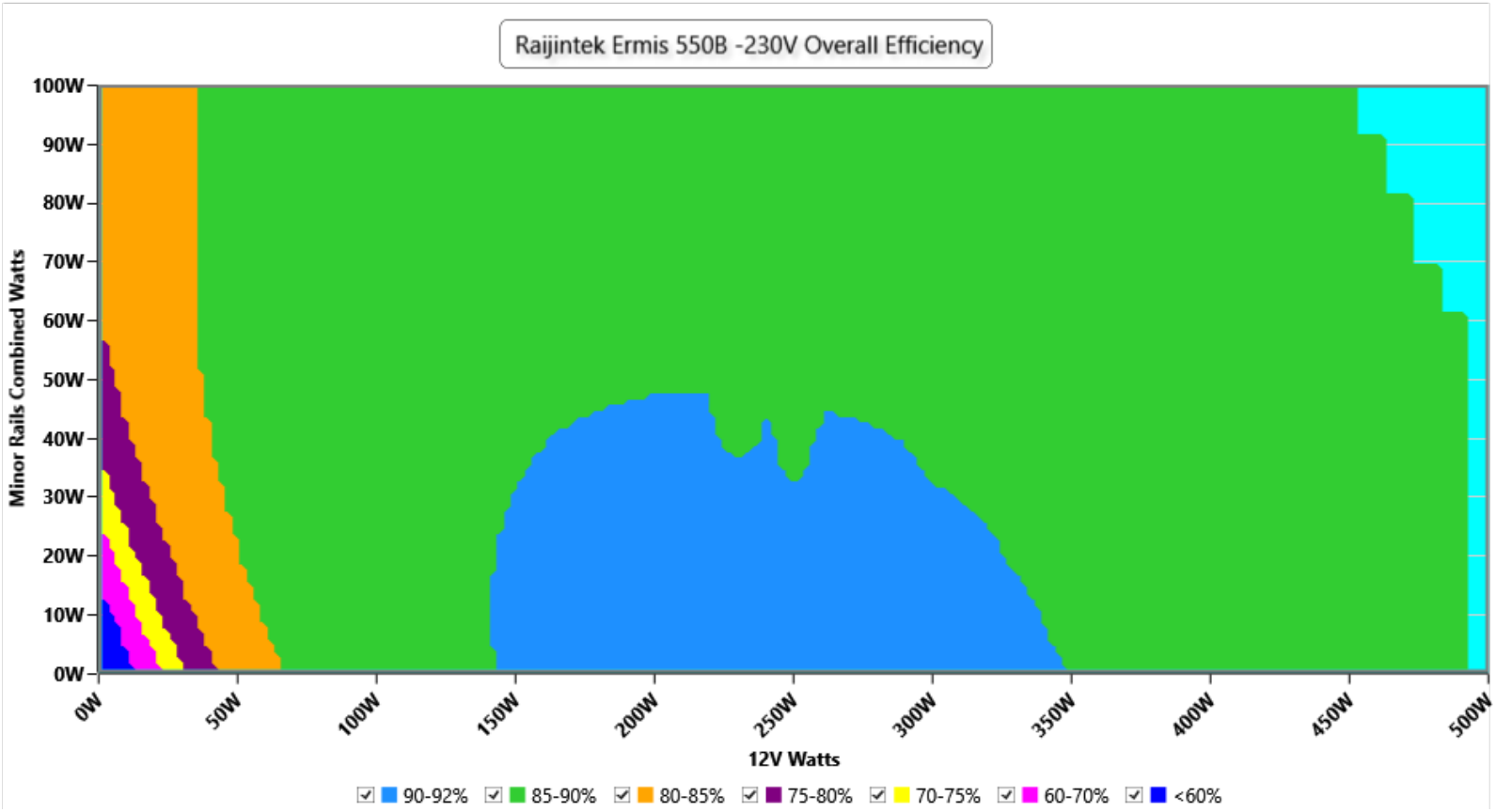
115V



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

230V



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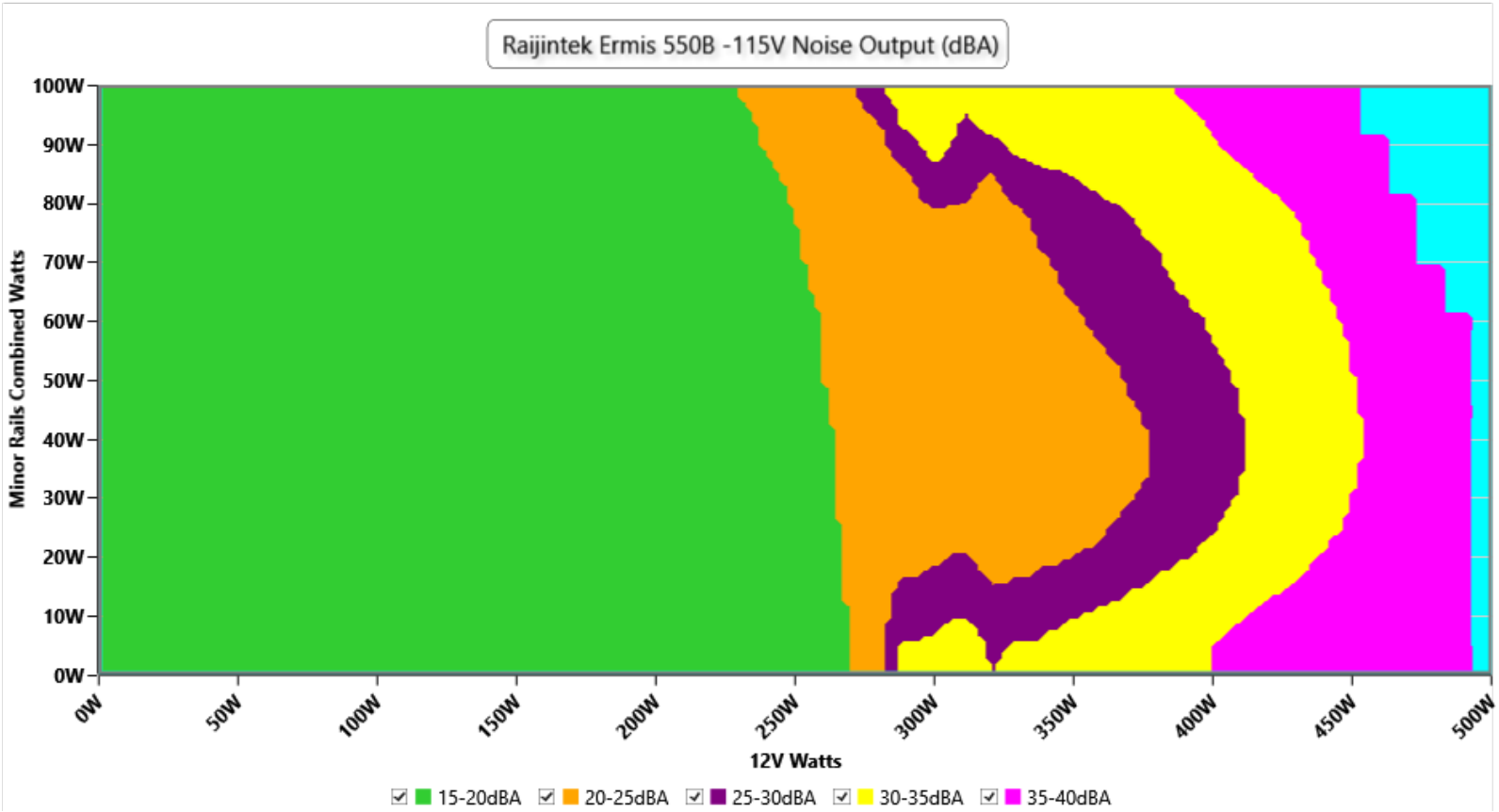
Noise Graph

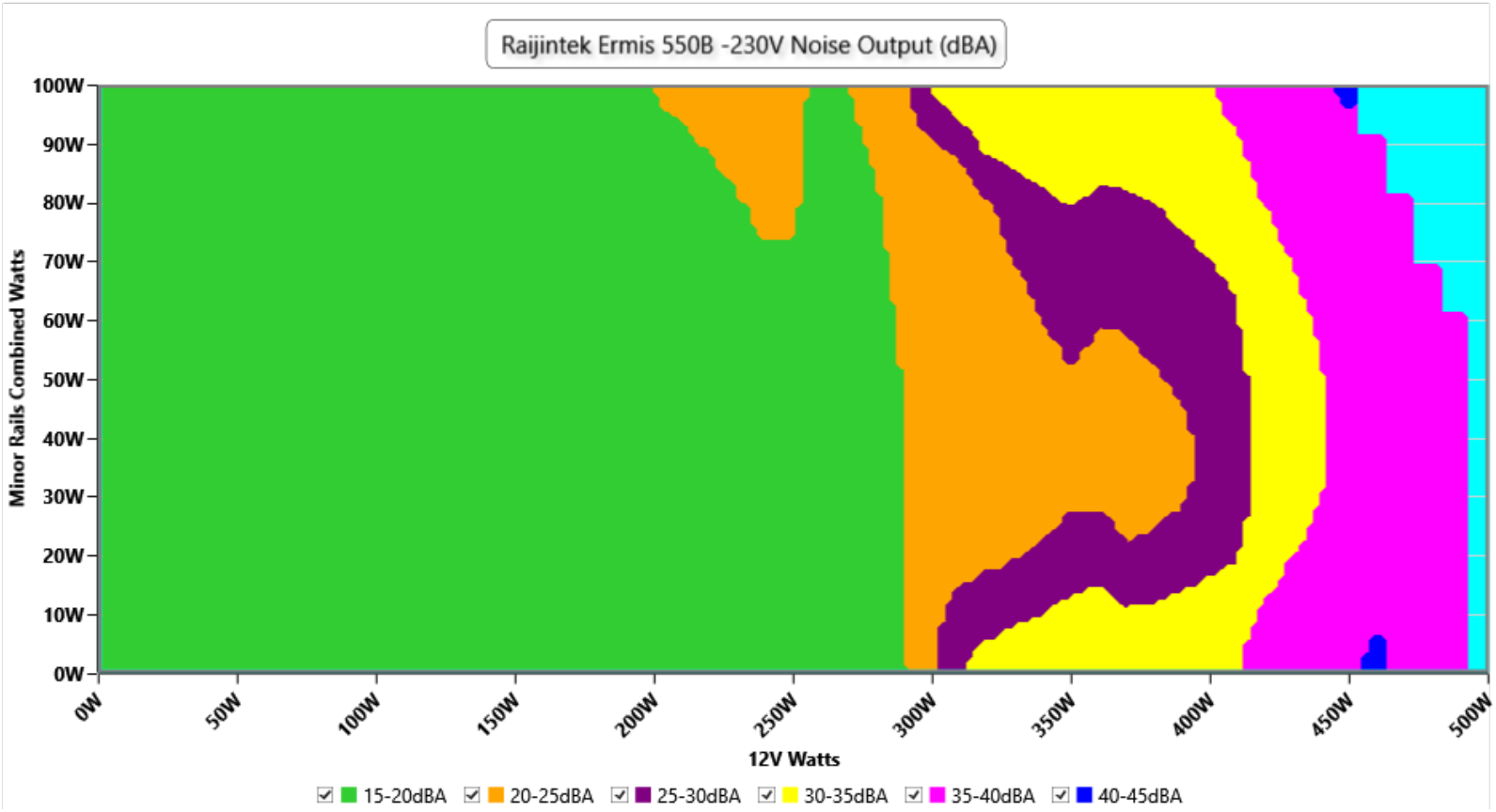
115V



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

230V



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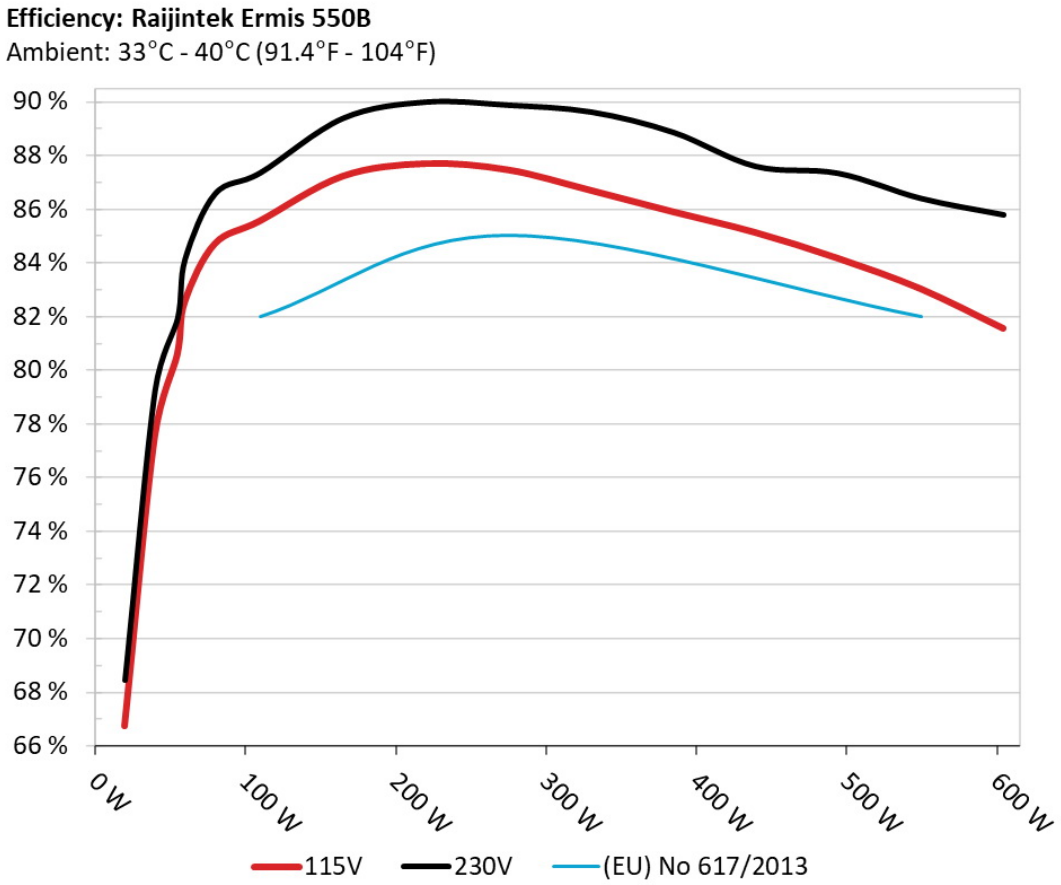
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

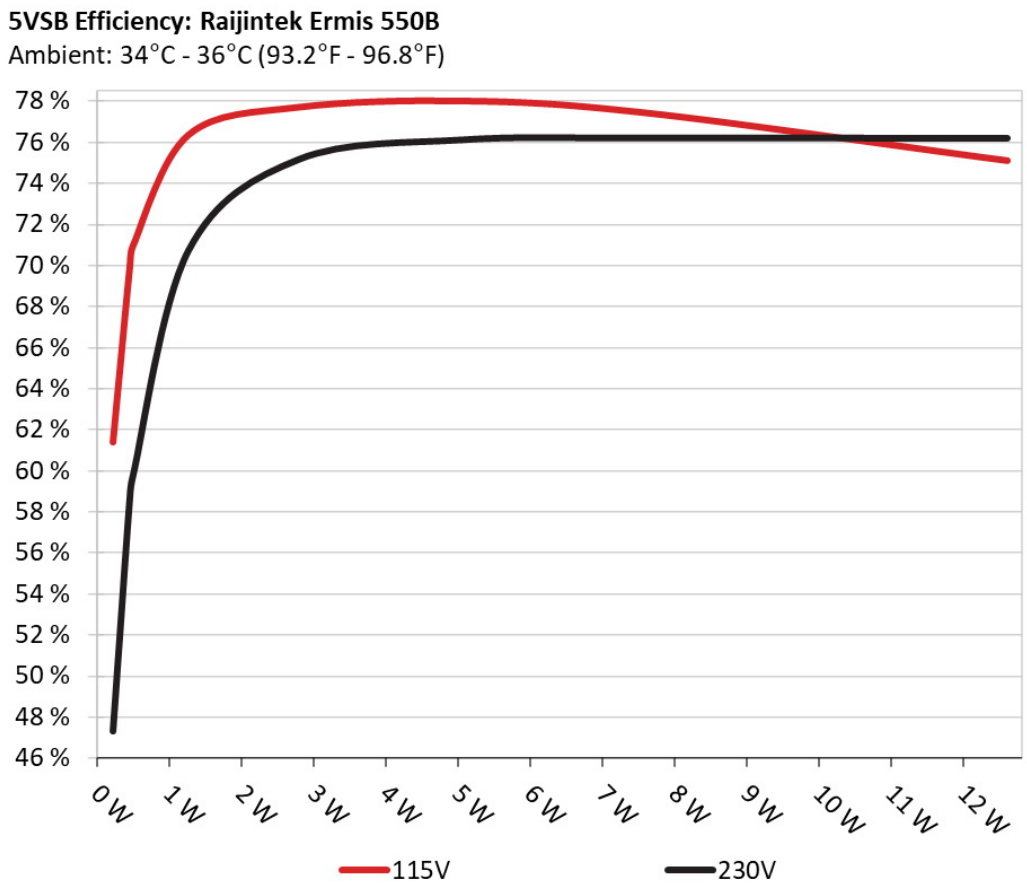
Efficiency under high ambient temperature



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)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.23W	61.886%	0.042
	5.112V	0.372W		115.16V
2	0.09A	0.46W	70.315%	0.073
	5.11V	0.654W		115.16V
3	0.55A	2.802W	78.183%	0.283
	5.096V	3.584W		115.15V
4	1A	5.083W	78.484%	0.365
	5.084V	6.476W		115.15V
5	1.5A	7.609W	77.903%	0.406
	5.073V	9.767W		115.14V
6	2.499A	12.609W	75.582%	0.449
	5.046V	16.682W		115.14V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.23W	47.815%	0.016
	5.112V	0.481W		230.31V
2	0.09A	0.46W	59.039%	0.026
	5.11V	0.779W		230.31V
3	0.55A	2.802W	75.664%	0.117
	5.096V	3.703W		230.28V
4	1A	5.084W	76.619%	0.188
	5.084V	6.635W		230.29V
5	1.5A	7.606W	76.699%	0.245
	5.071V	9.916W		230.3V
6	2.499A	12.605W	76.689%	0.314
	5.044V	16.436W		230.3V

Supplementary Tests (For Reference)

Typical 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%	2.746A	1.958A	1.949A	0.983A	54.989	80.557%	1460	19.4	35.38°C	0.982
	12.159V	5.107V	3.386V	5.086V	68.261				39.51°C	115.17V
20%	6.504A	2.939A	2.928A	1.182A	109.922	85.536%	1461	19.4	35.43°C	0.969
	12.150V	5.104V	3.381V	5.074V	128.509				39.76°C	115.17V
30%	10.612A	3.431A	3.42A	1.382A	164.91	87.201%	1463	19.5	36.07°C	0.98
	12.143V	5.101V	3.377V	5.064V	189.115				40.74°C	115.17V
40%	14.731A	3.922A	3.911A	1.583A	219.985	87.673%	1477	19.4	36.7°C	0.988
	12.137V	5.1V	3.375V	5.055V	250.916				41.86°C	115.17V
50%	18.505A	4.904A	4.895A	1.784A	274.972	87.441%	1503	20.3	37.17°C	0.992
	12.130V	5.098V	3.371V	5.044V	314.467				42.56°C	115.16V
60%	22.282A	5.888A	5.885A	1.987A	329.96	86.678%	1995	29.5	37.25°C	0.994
	12.124V	5.096V	3.365V	5.033V	380.674				43.42°C	115.16V
70%	26.068A	6.875A	6.879A	2.19A	384.945	85.879%	2508	36.4	38.06°C	0.996
	12.117V	5.092V	3.358V	5.021V	448.244				45.4°C	115.16V
80%	29.851A	7.863A	7.868A	2.294A	439.309	85.113%	2800	38.4	38.61°C	0.997
	12.108V	5.088V	3.353V	5.012V	516.153				46.7°C	115.16V
90%	34.038A	8.358A	8.351A	2.398A	494.277	84.152%	2962	40.2	39.1°C	0.997
	12.099V	5.084V	3.351V	5.002V	587.362				48.17°C	115.15V
100%	38.231A	8.855A	8.871A	2.502A	549.408	83.016%	3182	42.5	39.13°C	0.998
	12.091V	5.081V	3.347V	4.993V	661.814				49.49°C	115.15V
110%	42.103A	9.84A	9.961A	2.507A	604.446	81.54%	3203	42.7	40.01°C	0.998
	12.082V	5.08V	3.342V	4.985V	741.294				51.18°C	115.14V
CL1	0.113A	11.758A	11.751A	0.001A	101.265	80.034%	1582	21.7	36.17°C	0.97
	12.144V	5.119V	3.377V	5.102V	126.527				41.65°C	115.18V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.113A	19.456A	0A	0.003A	101.39	79.681%	1526	20.6	34.44°C	0.97
	12.147V	5.14V	3.385V	5.107V	127.244				42.09°C	115.18V
CL3	0.113A	0A	19.498A	0.001A	67.368	73.006%	1474	19.5	35.19°C	0.973
	12.148V	5.109V	3.384V	5.104V	92.277				44.24°C	115.18V
CL4	45.381A	0.001A	0A	0.002A	549.423	84.328%	2968	40.3	36.78°C	0.998
	12.107V	5.089V	3.368V	5.077V	651.54				48.2°C	115.15V

The results above are not used in the certification process

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%	2.747A	1.957A	1.945A	0.984A	54.992	81.917%	1476	19.4	35.76°C	0.82
	12.157V	5.109V	3.392V	5.083V	67.131				40.02°C	230.29V
20%	6.504A	2.938A	3.044A	1.183A	109.927	87.346%	1478	19.6	35.85°C	0.906
	12.149V	5.105V	3.371V	5.071V	125.853				40.23°C	230.3V
30%	10.612A	3.43A	3.415A	1.383A	164.915	89.378%	1494	19.9	36.53°C	0.938
	12.143V	5.102V	3.382V	5.061V	184.515				40.99°C	230.3V
40%	14.729A	3.922A	3.907A	1.584A	219.992	89.987%	1515	20.5	36.8°C	0.949
	12.138V	5.1V	3.379V	5.051V	244.471				41.67°C	230.31V
50%	18.506A	4.905A	4.893A	1.786A	274.983	89.872%	1491	19.9	37°C	0.959
	12.130V	5.097V	3.373V	5.04V	305.972				42.37°C	230.31V
60%	22.288A	5.891A	5.881A	1.989A	329.965	89.616%	1512	20.5	37.53°C	0.968
	12.122V	5.094V	3.367V	5.028V	368.201				43.95°C	230.32V
70%	26.069A	6.874A	6.871A	2.192A	384.961	88.854%	2392	34.7	37.94°C	0.971
	12.116V	5.092V	3.362V	5.017V	433.255				45.48°C	230.32V
80%	29.864A	7.864A	8.407A	2.296A	439.457	87.59%	2902	39.4	38.78°C	0.974
	12.107V	5.088V	3.36V	5.007V	501.721				47.35°C	230.32V
90%	34.049A	8.357A	8.355A	2.4A	494.463	87.331%	3187	42.5	39.37°C	0.977
	12.100V	5.085V	3.35V	4.999V	566.195				48.54°C	230.33V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	38.243A	8.853A	9.16A	2.505A	549.577	86.395%	3193	42.3	39.52°C	0.979
	12.091V	5.083V	3.345V	4.99V	636.126				49.97°C	230.33V
110%	42.111A	9.84A	9.968A	2.508A	604.563	85.785%	3185	42.5	40.37°C	0.982
	12.082V	5.081V	3.34V	4.983V	704.746				51.92°C	230.33V
CL1	0.114A	11.748A	11.754A	0.001A	101.279	81.303%	1569	21.5	37.79°C	0.906
	12.143V	5.124V	3.377V	5.1V	124.576				42.9°C	230.34V
CL2	0.113A	19.417A	0A	0.003A	101.393	81.708%	1547	21.4	37.3°C	0.906
	12.147V	5.15V	3.386V	5.106V	124.092				44.54°C	230.33V
CL3	0.113A	0A	19.494A	0.001A	67.37	74.509%	1507	20.3	36°C	0.877
	12.148V	5.11V	3.385V	5.104V	90.419				45.26°C	230.31V
CL4	45.376A	0.001A	0A	0.002A	549.434	88.2%	2842	38.5	36.84°C	0.979
	12.108V	5.089V	3.369V	5.082V	622.95				48.21°C	230.3V

The results above are not used in the certification process

Light 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	1.220A	0.489A	0.487A	0.196A	19.987	66.738%	1427	18.6	33.39°C	0.913
	12.162V	5.108V	3.39V	5.11V	29.949				36.59°C	115.17V
40W	2.688A	0.685A	0.681A	0.294A	39.988	77.507%	1436	18.9	34.34°C	0.956
	12.159V	5.108V	3.389V	5.106V	51.593				37.79°C	115.17V
60W	4.155A	0.881A	0.876A	0.392A	59.987	82.53%	1439	18.9	34.67°C	0.984
	12.158V	5.106V	3.388V	5.102V	72.685				38.45°C	115.17V
80W	5.620A	1.077A	1.072A	0.49A	79.933	84.684%	1449	19.2	35.17°C	0.972
	12.155V	5.106V	3.386V	5.098V	94.39				39.24°C	115.17V

The results above are not used in the certification process

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	0.489A	0.486A	0.196A	19.987	68.441%	1420	18.5	33.03°C	0.611
	12.160V	5.109V	3.396V	5.108V	29.203				36.12°C	230.26V
40W	2.688A	0.685A	0.68A	0.294A	39.988	79.247%	1440	19.0	33.53°C	0.757
	12.158V	5.108V	3.395V	5.104V	50.459				37.01°C	230.26V
60W	4.156A	0.881A	0.875A	0.392A	59.988	84.144%	1464	19.5	34.54°C	0.833
	12.157V	5.108V	3.394V	5.1V	71.292				38.2°C	230.27V
80W	5.620A	1.077A	1.07A	0.49A	79.933	86.569%	1476	19.4	34.81°C	0.88
	12.155V	5.107V	3.392V	5.096V	92.334				38.67°C	230.28V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	26.83mV	21.14mV	14.66mV	20.39mV	Pass
20% Load	26.83mV	21.65mV	15.98mV	24.90mV	Pass
30% Load	27.74mV	23.38mV	17.54mV	26.31mV	Pass
40% Load	26.43mV	26.17mV	18.40mV	27.68mV	Pass
50% Load	30.99mV	27.54mV	21.34mV	30.36mV	Pass
60% Load	35.24mV	27.80mV	23.11mV	31.78mV	Pass
70% Load	41.11mV	30.39mV	24.87mV	35.22mV	Pass
80% Load	50.53mV	33.85mV	29.57mV	41.04mV	Pass
90% Load	58.68mV	36.49mV	30.89mV	45.64mV	Pass
100% Load	67.36mV	44.48mV	36.56mV	57.82mV	Fail
110% Load	67.18mV	47.49mV	39.53mV	62.26mV	Fail
Crossload1	33.11mV	28.97mV	20.97mV	33.10mV	Pass
Crossload2	29.92mV	31.30mV	13.40mV	37.80mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	21.52mV	18.04mV	24.92mV	26.26mV	Pass
Crossload4	53.50mV	40.08mV	33.41mV	38.49mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	25.97mV	20.58mV	14.36mV	20.14mV	Pass
20% Load	24.15mV	20.58mV	14.86mV	22.92mV	Pass
30% Load	29.62mV	22.31mV	16.63mV	25.50mV	Pass
40% Load	26.18mV	24.34mV	19.21mV	27.58mV	Pass
50% Load	28.96mV	25.82mV	20.42mV	31.37mV	Pass
60% Load	38.38mV	27.24mV	22.70mV	30.46mV	Pass
70% Load	31.95mV	29.17mV	24.17mV	32.99mV	Pass
80% Load	37.87mV	31.97mV	28.57mV	35.72mV	Pass
90% Load	42.23mV	34.30mV	28.77mV	43.16mV	Pass
100% Load	54.77mV	45.13mV	36.02mV	59.35mV	Fail
110% Load	54.07mV	46.65mV	40.18mV	60.77mV	Fail
Crossload1	27.79mV	29.11mV	20.77mV	32.78mV	Pass
Crossload2	27.44mV	31.81mV	13.95mV	38.15mV	Pass
Crossload3	28.76mV	18.70mV	25.38mV	28.49mV	Pass
Crossload4	43.22mV	39.78mV	33.10mV	37.69mV	Pass

The results above are not used in the certification process

Raijintek Ermis 550B

Top side

Power specifications label

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

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com