



**MSI MAG A750GLS PCIE5**

Serial Number -

Lab ID MS75002810

Certification ID 252810

Test Result Report ID: 25PS2810A

Certificate Issue Date: May 13, 2025

Scheme: ETA-EMI PSU

115V

230V

115V

230V

Scheme: LAMBDA PSU

Outside Validation Scope

## General Information

### Test Equipment

|                       |                                                                                     |
|-----------------------|-------------------------------------------------------------------------------------|
| Electronic Loads      | Chroma 63601-5 x2<br>Chroma 63600-2<br>Chroma 63640-80-80 x10<br>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                             | MSI               |
| Model                             | MAG A750GLS PCIE5 |
| OEM/ODM                           | Huntkey           |
| Serial Number                     | -                 |
| Product Specifications            |                   |
| Manufacturer-Provided Information |                   |
| Rated Voltage (Vrms)              | 100-240           |
| Rated Current (Arms)              | 5-10              |

|                                                   |                                                                                     |
|---------------------------------------------------|-------------------------------------------------------------------------------------|
| Rated Frequency (Hz)                              | 50-60                                                                               |
| Rated Power (W)                                   | 750                                                                                 |
| Operating Temperature (Continuous Full Load) (°C) |                                                                                     |
| Type                                              | ATX12V                                                                              |
| Cable Design                                      | Fully Modular                                                                       |
| Warranty                                          | -                                                                                   |
| Cybenetics Measurements                           |                                                                                     |
| Dimensions (W x H x D)                            |                                                                                     |
| Weight                                            |                                                                                     |
| Cooling                                           | 135mm Fluid Dynamic Bearing Fan (HA13525H12F-Z)                                     |
| Semi-Passive Operation                            | ✓                                                                                   |
| Cybenetics Testing Information                    |                                                                                     |
| Lab ID                                            | MS75002810                                                                          |
| Date of receipt                                   | Apr 23, 2025                                                                        |
| Testing Date                                      | May 9, 2025                                                                         |
| Report Issued Date                                | May 13, 2025                                                                        |
| Engineer Name                                     | -                                                                                   |
| Authorized By the Laboratory Technical Manager    | Aristeidis Bitziopoulos                                                             |
| Signature                                         |  |

### Cables and Connectors(Non-accredited measurements)

| Modular Cables                                           |             |                         |          |                     |
|----------------------------------------------------------|-------------|-------------------------|----------|---------------------|
| Description                                              | Cable Count | Connector Count (Total) | Gauge    | In Cable Capacitors |
| ATX connector 20+4 pin (600mm)                           | 1           | 1                       | 18-22AWG | No                  |
| 4+4 pin EPS12V (650mm+105mm)                             | 1           | 2                       | 18AWG    | No                  |
| 6+2 pin PCIe (600mm)                                     | 2           | 2                       | 18AWG    | No                  |
| 2x 6+2 pin PCIe (600mm)                                  | 1           | 2                       | 18AWG    | No                  |
| 12+4 pin PCIe (600mm) (450W)                             | 1           | 1                       | 16-24AWG | No                  |
| SATA (500mm+150mm+150mm) / 4-pin Molex (+150mm)          | 1           | 3 / 1                   | 18AWG    | No                  |
| SATA (500mm+150mm) / 4-pin Molex (+150mm) / FDD (+150mm) | 1           | 2 / 1 / 1               | 18-20AWG | No                  |

|                                      |   |   |       |   |
|--------------------------------------|---|---|-------|---|
| AC Power Cord (1400mm) - C13 coupler | 1 | 1 | 18AWG | - |
|--------------------------------------|---|---|-------|---|

### Protection Features(Manufacturer)

|                                |   |
|--------------------------------|---|
| Over Voltage Protection        | ✓ |
| Under Voltage Protection       | ✓ |
| Over Power Protection          | ✓ |
| Over Current (+12V) Protection | ✓ |
| Over Temperature Protection    | ✓ |
| Short Circuit Protection       | ✓ |
| Surge Protection               | ✓ |

### Power Specifications

|                      |       |      |    |      |      |      |
|----------------------|-------|------|----|------|------|------|
| Rail                 |       | 3.3V | 5V | 12V  | 5VSB | -12V |
| Max. Power           | Amps  | 18   | 18 | 62.5 | 2.5  | 0.3  |
|                      | Watts | 100  |    | 750  | 12.5 | 3.6  |
| Total Max. Power (W) |       | 750  |    |      |      |      |

### Parts Description

|                                   |                                                                              |
|-----------------------------------|------------------------------------------------------------------------------|
|                                   |                                                                              |
| Manufacturer (OEM)                | Huntkey                                                                      |
| PCB Type                          | Double-Sided                                                                 |
|                                   |                                                                              |
| Transient Filter                  | 4x Y caps, 2x X caps, 2x CM chokes, 1x MOV                                   |
| Inrush Protection                 | 1x NTC Thermistor SCK207R0 (7 Ohm @25°C) & Relay                             |
| Bridge Rectifier(s)               | 2x GBJ1506 (600V, 15A @ 100°C)                                               |
| APFC MOSFETs                      | 2x Silan Microelectronics SVS20N60TD2 (600V, 12A @ 100°C, Rds(on): 0.190Ohm) |
| APFC Boost Diode                  | 1x STMicroelectronics STPSC4H065D (650V, 22A @ 25°C)                         |
| Bulk Cap(s)                       | 1x Elite (450V, 470uF, 2000 @ 105°C, PL(M))                                  |
| Main Switchers                    | 2x Infineon IPA60R190P6 (650V, 12.7A @ 100°C, Rds(on): 0.190Ohm)             |
| PFC/LLC Resonant Combo Controller | NXP TEA2017                                                                  |

|                          |                                                                                                                                                                                            |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Topology                 | Primary side: Semi-Digital, APFC, Half-Bridge, LLC Resonant Converter<br>Secondary side: Synchronous Rectification & DC-DC converters                                                      |
|                          |                                                                                                                                                                                            |
| +12V MOSFETs             | 6x Alpha & Omega AONS66402 (40V, 135A @ 100°C, Rds(on): 1.6mOhm)                                                                                                                           |
| 5V & 3.3V                | DC-DC Converters: 4x Infineon BSC022N03S (30V, 50A @ 100°C, Rds(on): 2.2mOhm) PWM Controller(s): 1x ANPECAPW7159C                                                                          |
| Filtering Capacitors     | Electrolytic: 5x CapXon (2-5,000h @ 105°C, GF) 1x Elite (6-10,000h @ 105°C, EDJ) 1x Aishi (3-6,000h @ 105°C, RF) 1x Aishi (2000h @ 105°C, L7) Polymer: 7x Apaq, 1x Polycap, 8x BIOSTAR, 8x |
| Synchronous Rectifier IC | Monolithic Power MP6924                                                                                                                                                                    |
| Supervisor IC            | Infotronic IN1T703I-SDG                                                                                                                                                                    |
| Fan Model                | Hong Hua HA13525H12F-Z (135mm, 12V, 0.50A, Fluid Dynamic Bearing Fan)                                                                                                                      |
|                          |                                                                                                                                                                                            |
| Rectifier                | 2x PanJIT SR34LF SBR (40V, 3A)                                                                                                                                                             |
| Standby PWM Controller   | IN2P380C                                                                                                                                                                                   |

## 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                  | ✓                 |
| ALPM (Alternative Low Power Mode) compatible | ✓                 |
| ATX v3.1 PSU Power Excursion                 | ✓                 |

### Performance Summary

115V

|                                                |          |
|------------------------------------------------|----------|
| Accredited                                     |          |
| Average Efficiency (>1450 load combinations)   | 89.664%  |
| Average Noise Output (>1450 Load Combinations) | 24.46dBA |
| Average PF (>1450 Load Combinations)           | 0.982    |
| Efficiency With 10W (≤500W) or 2% (>500W) Load | 77.641%  |

|                           |         |
|---------------------------|---------|
| Standby Power Consumption | 0.0767W |
| Non-Accredited            |         |
| 12V Ripple (Full Load)    | 34.04mV |
| 5V Ripple (Full Load)     | 19.78mV |
| 3.3V Ripple (Full Load)   | 24.55mV |
| 5VSB Ripple (Full Load)   | 20.32mV |
| 12V Load Regulation       | 0.47%   |
| 5V Load Regulation        | 0.51%   |
| 3.3V Load Regulation      | 0.70%   |
| 5VSB Load Regulation      | 2.59%   |
| Inrush Current            | 24.910A |

## 230V

|                                                       |          |
|-------------------------------------------------------|----------|
| Accredited                                            |          |
| Average Efficiency (>1450 load combinations)          | 91.831%  |
| Average Noise Output (>1450 Load Combinations)        | 24.42dBA |
| Average PF (>1450 Load Combinations)                  | 0.974    |
| Efficiency With 10W ( $\leq$ 500W) or 2% (>500W) Load | 78.841%  |
| Standby Power Consumption                             | 0.1300W  |
| Non-Accredited                                        |          |
| 12V Ripple (Full Load)                                | 34.10mV  |
| 5V Ripple (Full Load)                                 | 20.15mV  |
| 3.3V Ripple (Full Load)                               | 24.36mV  |
| 5VSB Ripple (Full Load)                               | 21.05mV  |
| 12V Load Regulation                                   | 0.51%    |
| 5V Load Regulation                                    | 0.55%    |
| 3.3V Load Regulation                                  | 0.76%    |
| 5VSB Load Regulation                                  | 2.63%    |
| Inrush Current                                        | 46.740A  |
| 12V Transient Response (200%)                         | 11.54V   |
| 5V Transient Response (200%)                          | 4.994V   |
| 3.3V Transient Response (200%)                        | 3.238V   |

|                                  |                           |                           |
|----------------------------------|---------------------------|---------------------------|
| 5VSB Transient Response (200%)   | 4.908V                    |                           |
| Hold-Up Time & PWR_OK Signal     | 15.80ms                   |                           |
| AC Loss to PWR_OK Hold Up Time   | 13.10ms                   |                           |
| PWR_OK Inactive to DC Loss Delay | 2.70ms                    |                           |
| PSU Timings: T1 (20% / 100%)     | 80.0ms                    | 80.0ms                    |
| PSU Timings: T3 (20% / 100%)     | 110.0ms                   | 111.0ms                   |
| 12V OCP (30.4°C / 41.6°C)        | 74.20A (118.72%), 11.988V | 71.50A (114.40%), 11.982V |
| 5V OCP (30.4°C / 41.6°C)         | 24.7A (137.22%), 5.068V   | 24.9A (138.33%), 5.067V   |
| 3.3V OCP (30.4°C / 41.6°C)       | 24.9A (138.33%), 3.302V   | 24.9A (138.33%), 3.303V   |
| 5VSB OCP (30.4°C / 41.6°C)       | 3.6A (144.00%), 4.96V     | 3.5A (140.00%), 4.967V    |
| OPP (29.96°C / 41.02°C)          | 130.54%                   | 122.29%                   |

## Hold-Up Time & PWR\_OK Signal

|                                       |      |
|---------------------------------------|------|
| Hold-Up Time (ms)                     | 15.8 |
| AC Loss to PWR_OK Hold Up Time (ms)   | 13.1 |
| PWR_OK Inactive to DC Loss Delay (ms) | 2.7  |

## Vampire Power

### Tables

#### 115V

| Detailed Results   |          |          |           |          |           |        |
|--------------------|----------|----------|-----------|----------|-----------|--------|
|                    | Average  | Min      | Limit Min | Max      | Limit Max | Result |
| Mains Voltage RMS: | 114.93 V | 114.84 V | 113.85 V  | 115.03 V | 116.15 V  | PASS   |
| Mains Frequency:   | 60.00 Hz | 59.97 Hz | 59.40 Hz  | 60.07 Hz | 60.60 Hz  | PASS   |
| Mains Voltage CF:  | 1.421    | 1.419    | 1.340     | 1.423    | 1.490     | PASS   |
| Mains Voltage THD: | 0.31 %   | 0.24 %   | N/A       | 0.42 %   | 2.00 %    | PASS   |
| Real Power:        | 0.077 W  | 0.068 W  | N/A       | 0.087 W  | N/A       | N/A    |
| Apparent Power:    | 5.241 W  | 5.218 W  | N/A       | 5.263 W  | N/A       | N/A    |

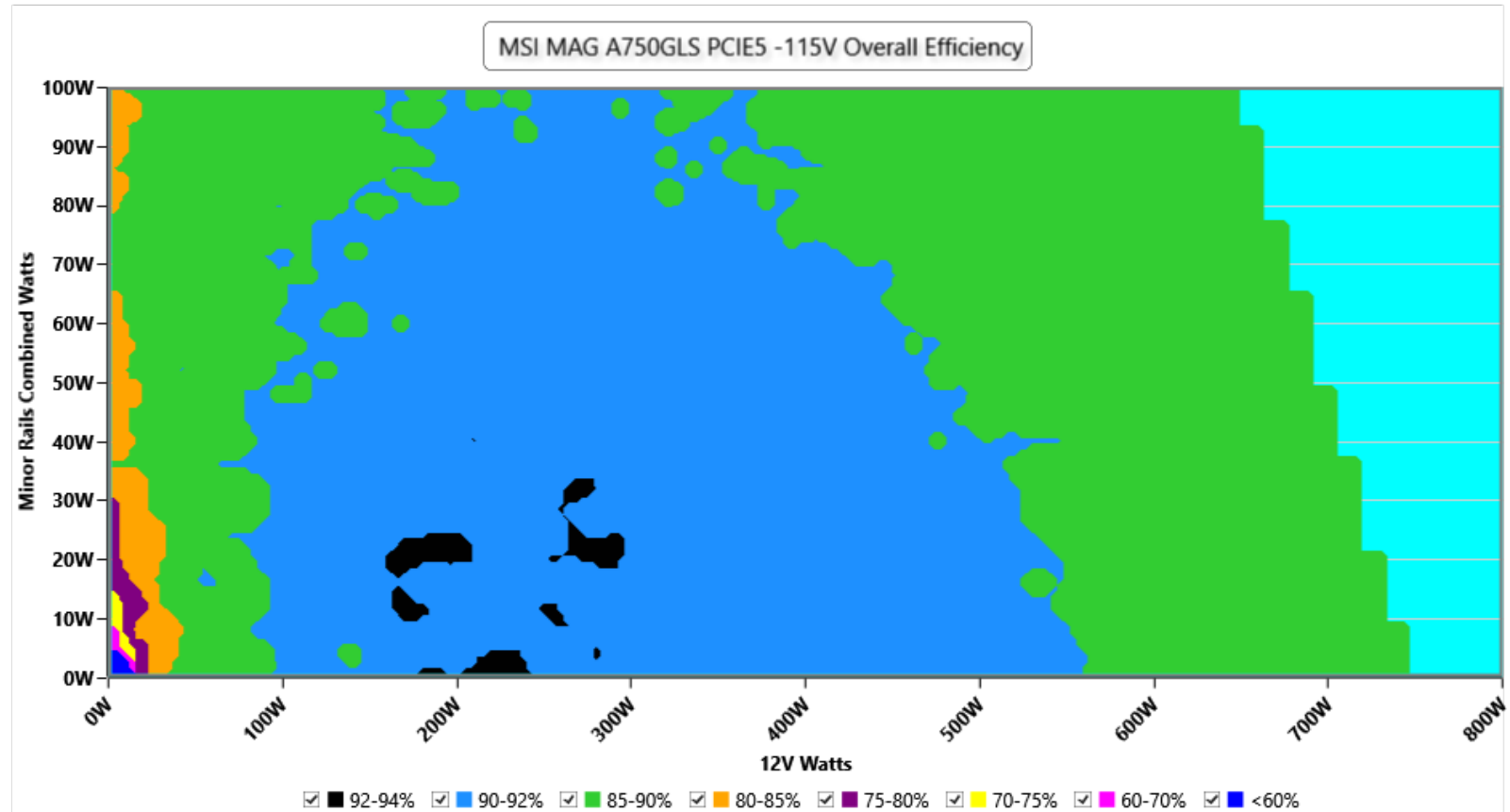
|               |       |     |     |     |     |     |
|---------------|-------|-----|-----|-----|-----|-----|
| Power Factor: | 0.014 | N/A | N/A | N/A | N/A | N/A |
|---------------|-------|-----|-----|-----|-----|-----|

## 230V

| Detailed Results   |          |          |           |          |           |        |
|--------------------|----------|----------|-----------|----------|-----------|--------|
|                    | Average  | Min      | Limit Min | Max      | Limit Max | Result |
| Mains Voltage RMS: | 229.91 V | 229.79 V | 227.70 V  | 230.03 V | 232.30 V  | PASS   |
| Mains Frequency:   | 50.00 Hz | 49.98 Hz | 49.50 Hz  | 50.02 Hz | 50.50 Hz  | PASS   |
| Mains Voltage CF:  | 1.418    | 1.416    | 1.340     | 1.420    | 1.490     | PASS   |
| Mains Voltage THD: | 0.24 %   | 0.15 %   | N/A       | 0.33 %   | 2.00 %    | PASS   |
| Real Power:        | 0.130 W  | 0.095 W  | N/A       | 0.182 W  | N/A       | N/A    |
| Apparent Power:    | 17.866 W | 17.820 W | N/A       | 17.938 W | N/A       | N/A    |
| Power Factor:      | 0.007    | N/A      | N/A       | N/A      | N/A       | N/A    |

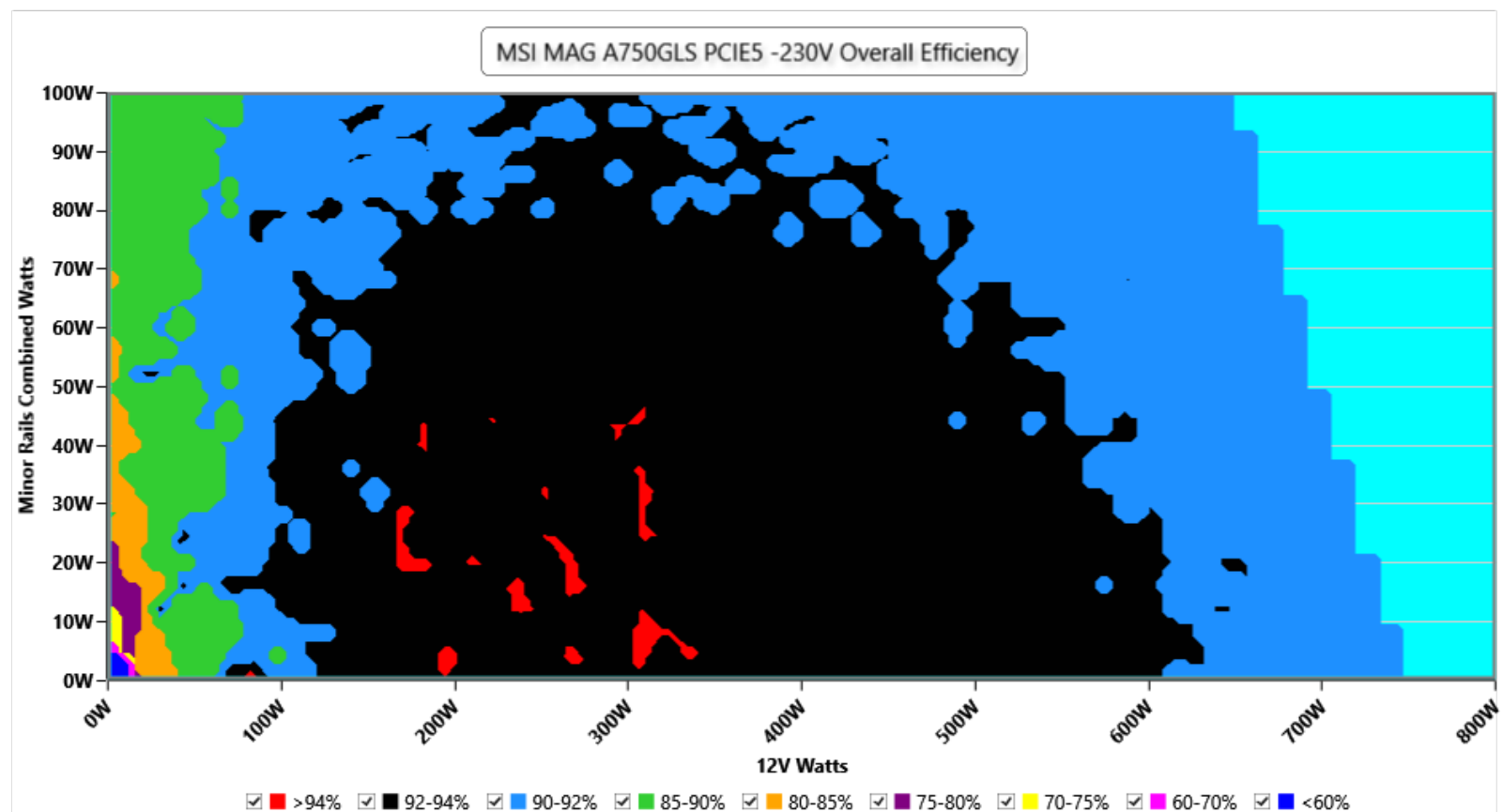
## Efficiency Graph

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

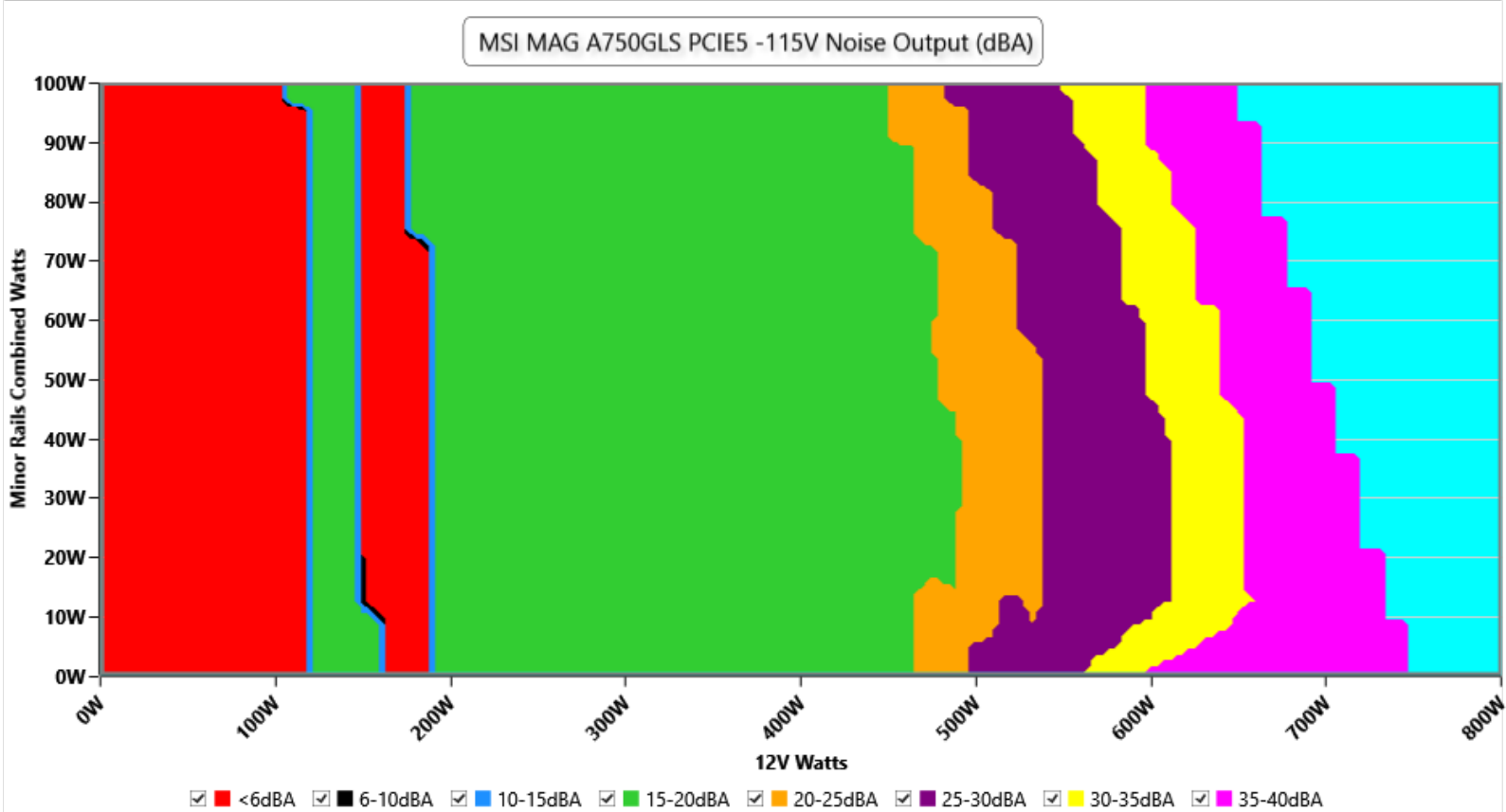


### INFO

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

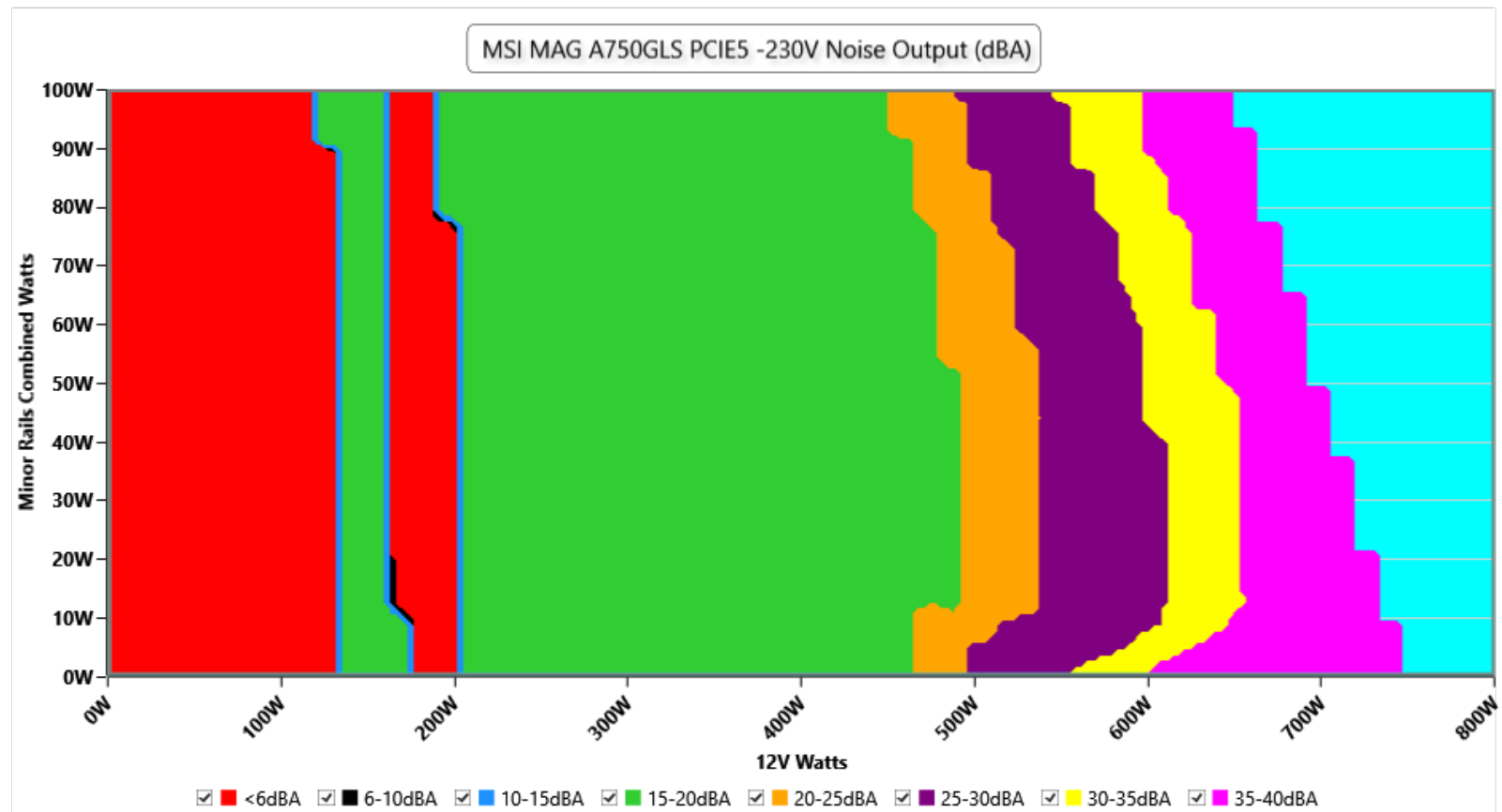
# Noise Graph

115V



## INFO

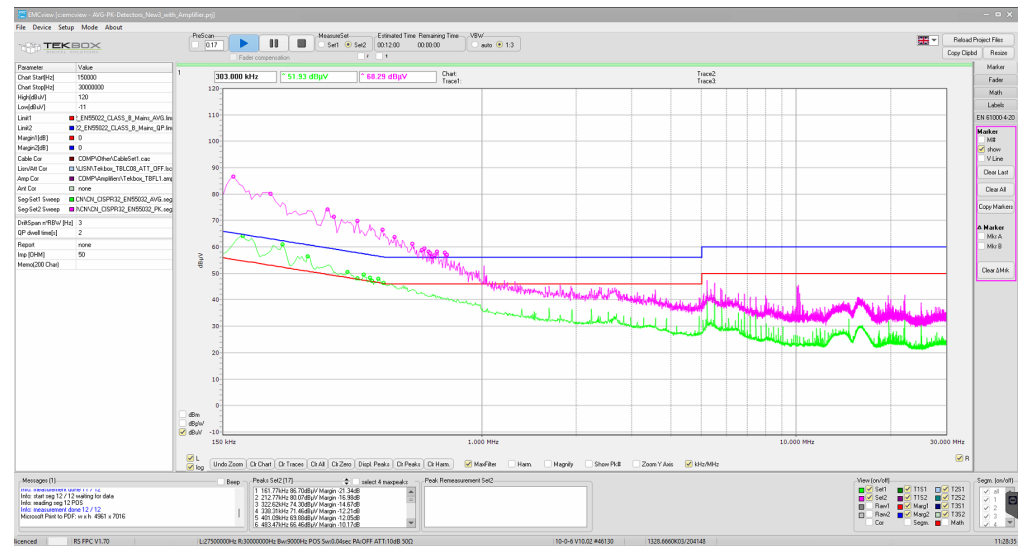
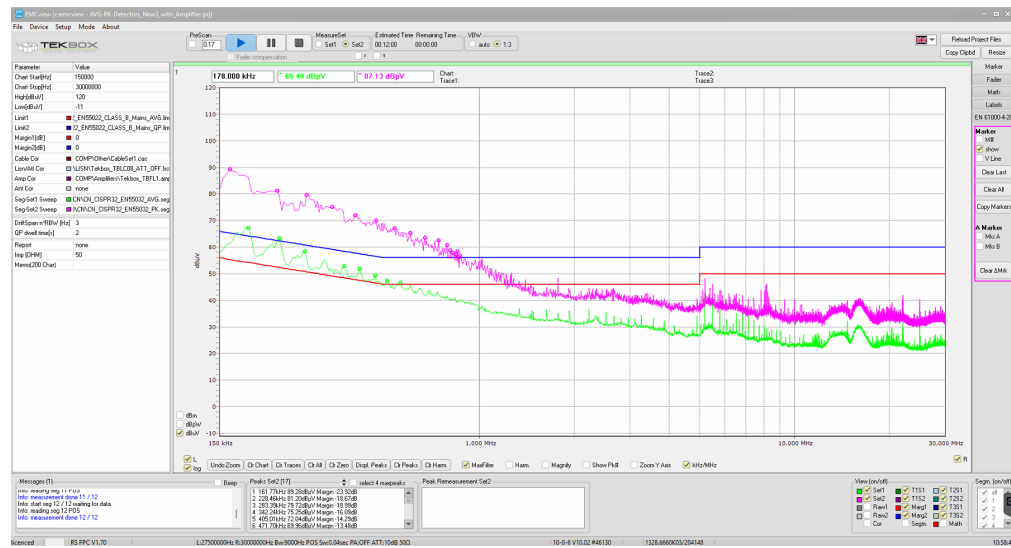
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails



### 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

# Conducted Emissions EN 55032 & CISPR 32

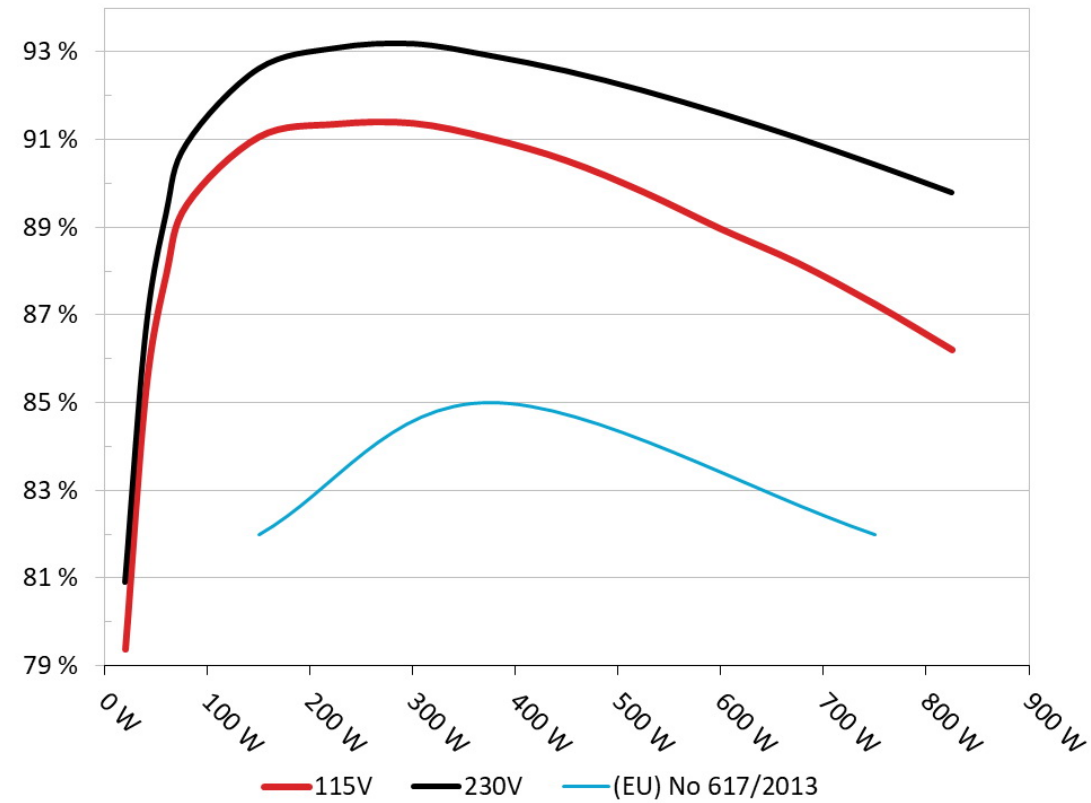


## Indicative Performance

### Efficiency under high ambient temperature

Efficiency: MSI MAG A750GLS PCIE5

Ambient: 36°C - 47°C (96.8°F - 116.6°F)



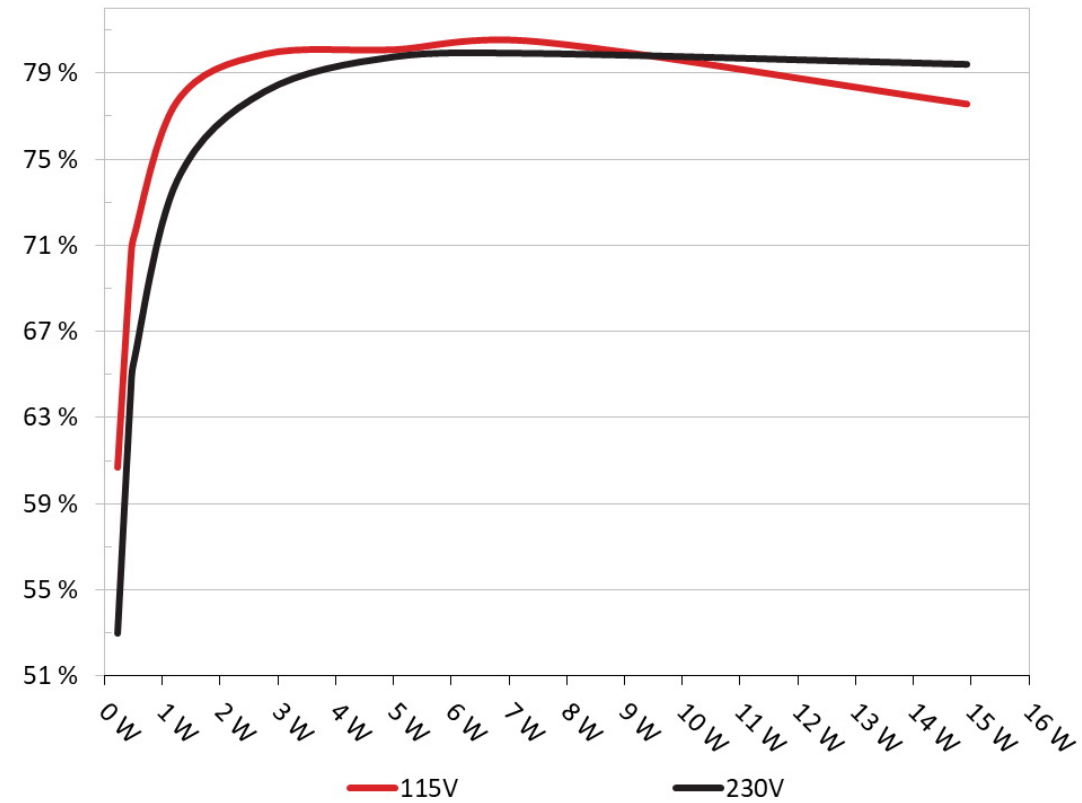
### INFO

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: MSI MAG A750GLS PCIE5

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



### 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 | 0.227W        | 60.685%    | 0.069       |
|        | 5.042V | 0.374W        |            | 114.93V     |
| 2      | 0.09A  | 0.454W        | 70.316%    | 0.116       |
|        | 5.041V | 0.646W        |            | 114.94V     |
| 3      | 0.55A  | 2.767W        | 79.908%    | 0.359       |
|        | 5.031V | 3.463W        |            | 114.93V     |
| 4      | 1A     | 5.022W        | 80.116%    | 0.432       |
|        | 5.021V | 6.268W        |            | 114.92V     |
| 5      | 1.5A   | 7.516W        | 80.485%    | 0.463       |
|        | 5.01V  | 9.339W        |            | 114.92V     |
| 6      | 3A     | 14.929W       | 77.591%    | 0.513       |
|        | 4.977V | 19.24W        |            | 114.91V     |

#### 230V

| Test # | 5VSB   | DC/AC (Watts) | Efficiency | PF/AC Volts |
|--------|--------|---------------|------------|-------------|
| 1      | 0.045A | 0.227W        | 53.004%    | 0.024       |
|        | 5.044V | 0.428W        |            | 229.9V      |
| 2      | 0.09A  | 0.454W        | 64.162%    | 0.039       |
|        | 5.042V | 0.708W        |            | 229.9V      |
| 3      | 0.55A  | 2.768W        | 78.122%    | 0.173       |
|        | 5.031V | 3.543W        |            | 229.9V      |
| 4      | 1A     | 5.022W        | 79.744%    | 0.257       |
|        | 5.021V | 6.298W        |            | 229.9V      |
| 5      | 1.5A   | 7.517W        | 79.892%    | 0.317       |
|        | 5.01V  | 9.408W        |            | 229.9V      |
| 6      | 3A     | 14.93W        | 79.388%    | 0.395       |
|        | 4.976V | 18.806W       |            | 229.9V      |

## Protection Features

|                                        |                                                                                                                                |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| OCP (Normal @ 30.4°C)                  | 12V: 74.20A (118.72%), 11.988V<br>5V: 24.7A (137.22%), 5.068V<br>3.3V: 24.9A (138.33%), 3.302V<br>5VSB: 3.6A (144.00%), 4.96V  |
| OCP (Hot @ 41.6°C)                     | 12V: 71.50A (114.40%), 11.982V<br>5V: 24.9A (138.33%), 5.067V<br>3.3V: 24.9A (138.33%), 3.303V<br>5VSB: 3.5A (140.00%), 4.967V |
| OPP (Normal @ 30.0°C)                  | 979.05W (130.54%)                                                                                                              |
| OPP (Hot @ 41.0°C)                     | 917.16W (122.29%)                                                                                                              |
| OTP                                    | ✓ (105°C @ Secondary Side)                                                                                                     |
| SCP                                    | 12V to Earth: ✓<br>5V to Earth: ✓<br>3.3V to Earth: ✓<br>5VSB to Earth: ✓<br>-12V to Earth: ✓                                  |
| PWR_OK                                 | Proper Operation                                                                                                               |
| UVP (Full Load @ 90V)                  | ✓                                                                                                                              |
| UVP (No Damage @ 80V)                  | ✓                                                                                                                              |
| Conducted Emissions EN55032 & CISPR 32 | ✗                                                                                                                              |
| NLO                                    | ✓                                                                                                                              |
| Fan Failure Protection                 | ✗                                                                                                                              |
| SIP                                    | Surge: MOV<br>Inrush: NTC & Bypass Relay                                                                                       |

## 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%  | 4.400A  | 1.96A   | 1.982A  | 0.997A | 75.002        | 88.524%    | 0               | <6.0              | 44.11°C        | 0.936       |
|      | 12.135V | 5.103V  | 3.33V   | 5.016V | 84.76         |            |                 |                   | 40.46°C        | 114.89V     |
| 20%  | 9.814A  | 2.941A  | 2.975A  | 1.199A | 149.937       | 91.055%    | 0               | <6.0              | 42.7°C         | 0.981       |
|      | 12.129V | 5.1V    | 3.327V  | 5.005V | 164.654       |            |                 |                   | 40.56°C        | 114.87V     |
| 30%  | 15.580A | 3.433A  | 3.473A  | 1.402A | 224.938       | 91.348%    | 823             | 19.6              | 41.23°C        | 0.979       |
|      | 12.123V | 5.098V  | 3.325V  | 4.995V | 246.245       |            |                 |                   | 44.88°C        | 114.84V     |
| 40%  | 21.362A | 3.926A  | 3.973A  | 1.605A | 300.025       | 91.367%    | 834             | 20.1              | 41.71°C        | 0.986       |
|      | 12.116V | 5.095V  | 3.322V  | 4.984V | 328.397       |            |                 |                   | 44.11°C        | 114.82V     |
| 50%  | 26.749A | 4.91A   | 4.971A  | 1.81A  | 374.429       | 91.024%    | 835             | 20.1              | 42.48°C        | 0.989       |
|      | 12.110V | 5.092V  | 3.319V  | 4.973V | 411.345       |            |                 |                   | 45.97°C        | 114.79V     |
| 60%  | 32.180A | 5.895A  | 5.969A  | 2A     | 449.249       | 90.516%    | 963             | 24.2              | 42.58°C        | 0.991       |
|      | 12.104V | 5.089V  | 3.317V  | 4.962V | 496.348       |            |                 |                   | 48.25°C        | 114.76V     |
| 70%  | 37.622A | 6.882A  | 6.97A   | 2.222A | 524.263       | 89.8%      | 1354            | 34.9              | 43.3°C         | 0.992       |
|      | 12.098V | 5.086V  | 3.315V  | 4.95V  | 583.801       |            |                 |                   | 51.63°C        | 114.74V     |
| 80%  | 43.131A | 7.867A  | 7.97A   | 2.328A | 599.449       | 88.961%    | 1658            | 39.5              | 43.75°C        | 0.993       |
|      | 12.092V | 5.083V  | 3.312V  | 4.94V  | 673.834       |            |                 |                   | 51.79°C        | 114.7V      |
| 90%  | 48.979A | 8.363A  | 8.459A  | 2.433A | 674.485       | 88.183%    | 1797            | 42                | 44.44°C        | 0.994       |
|      | 12.087V | 5.081V  | 3.31V   | 4.931V | 764.909       |            |                 |                   | 51.38°C        | 114.68V     |
| 100% | 54.635A | 8.86A   | 8.979A  | 3.054A | 749.692       | 87.245%    | 1968            | 44.5              | 45.83°C        | 0.994       |
|      | 12.080V | 5.078V  | 3.308V  | 4.911V | 859.313       |            |                 |                   | 51.4°C         | 114.65V     |
| 110% | 60.164A | 9.851A  | 10.076A | 3.059A | 824.721       | 86.206%    | 2135            | 46.2              | 46.58°C        | 0.994       |
|      | 12.074V | 5.075V  | 3.305V  | 4.904V | 956.67        |            |                 |                   | 53.44°C        | 114.63V     |
| CL1  | 0.114A  | 11.837A | 11.976A | 0A     | 101.285       | 84.945%    | 838             | 20.2              | 40.2°C         | 0.962       |
|      | 12.131V | 5.085V  | 3.315V  | 5.015V | 119.283       |            |                 |                   | 44.37°C        | 114.88V     |

| Test | 12V     | 5V     | 3.3V    | 5VSB   | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|------|---------|--------|---------|--------|---------------|------------|-----------------|-------------------|----------------|-------------|
| CL2  | 0.114A  | 17.7A  | 0A      | 0A     | 91.374        | 84.461%    | 837             | 20.2              | 40.81°C        | 0.946       |
|      | 12.133V | 5.084V | 3.326V  | 5.025V | 108.181       |            |                 |                   | 44.63°C        | 114.88V     |
| CL3  | 0.114A  | 0A     | 17.923A | 0A     | 60.788        | 80.1%      | 835             | 20.1              | 39.52°C        | 0.939       |
|      | 12.133V | 5.099V | 3.314V  | 5.021V | 75.892        |            |                 |                   | 42.98°C        | 114.9V      |
| CL4  | 62.026A | 0A     | 0A      | 0.001A | 749.555       | 88.128%    | 1903            | 43.5              | 45.56°C        | 0.994       |
|      | 12.084V | 5.095V | 3.321V  | 4.997V | 850.548       |            |                 |                   | 50.22°C        | 114.66V     |

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%  | 4.402A  | 1.96A  | 1.983A | 0.997A | 75.014        | 89.979%    | 0               | <6.0              | 45.11°C        | 0.94        |
|      | 12.135V | 5.102V | 3.329V | 5.015V | 83.41         |            |                 |                   | 40.44°C        | 229.9V      |
| 20%  | 9.817A  | 2.942A | 2.976A | 1.199A | 149.971       | 92.617%    | 0               | <6.0              | 44°C           | 0.957       |
|      | 12.128V | 5.1V   | 3.327V | 5.004V | 161.899       |            |                 |                   | 40.61°C        | 229.89V     |
| 30%  | 15.586A | 3.434A | 3.475A | 1.402A | 224.981       | 93.089%    | 838             | 20.2              | 41.21°C        | 0.974       |
|      | 12.121V | 5.097V | 3.324V | 4.994V | 241.685       |            |                 |                   | 44.47°C        | 229.88V     |
| 40%  | 21.369A | 3.927A | 3.975A | 1.606A | 300.08        | 93.188%    | 839             | 20.3              | 41.53°C        | 0.982       |
|      | 12.114V | 5.093V | 3.322V | 4.983V | 322.017       |            |                 |                   | 43.97°C        | 229.87V     |
| 50%  | 26.765A | 4.912A | 4.973A | 1.811A | 374.581       | 92.919%    | 835             | 20.1              | 42.05°C        | 0.983       |
|      | 12.108V | 5.09V  | 3.319V | 4.971V | 403.128       |            |                 |                   | 45.07°C        | 229.85V     |
| 60%  | 32.201A | 5.898A | 5.972A | 2.001A | 449.405       | 92.567%    | 962             | 24.2              | 42.59°C        | 0.984       |
|      | 12.101V | 5.088V | 3.316V | 4.96V  | 485.462       |            |                 |                   | 45.87°C        | 229.84V     |
| 70%  | 37.661A | 6.886A | 6.973A | 2.224A | 524.419       | 92.119%    | 1152            | 29.7              | 43.32°C        | 0.988       |
|      | 12.089V | 5.084V | 3.314V | 4.948V | 569.296       |            |                 |                   | 45.95°C        | 229.82V     |
| 80%  | 43.159A | 7.872A | 7.975A | 2.329A | 599.599       | 91.605%    | 1626            | 39                | 43.81°C        | 0.989       |
|      | 12.088V | 5.081V | 3.311V | 4.938V | 654.532       |            |                 |                   | 48.35°C        | 229.81V     |
| 90%  | 49.010A | 8.367A | 8.463A | 2.435A | 674.632       | 91.043%    | 1839            | 42.7              | 44.93°C        | 0.99        |
|      | 12.082V | 5.079V | 3.309V | 4.929V | 740.996       |            |                 |                   | 49.6°C         | 229.79V     |

| Test        | 12V            | 5V             | 3.3V           | 5VSB          | DC/AC (Watts) | Efficiency | Fan Speed (RPM) | PSU Noise (dB[A]) | Temps (In/Out) | PF/AC Volts |
|-------------|----------------|----------------|----------------|---------------|---------------|------------|-----------------|-------------------|----------------|-------------|
| <b>100%</b> | <b>54.665A</b> | <b>8.864A</b>  | <b>8.984A</b>  | <b>3.056A</b> | 749.839       | 90.435%    | 1994            | 45                | 45.93°C        | 0.991       |
|             | 12.076V        | 5.076V         | 3.306V         | 4.909V        | 829.176       |            |                 |                   | 49.29°C        | 229.78V     |
| <b>110%</b> | <b>60.196A</b> | <b>9.856A</b>  | <b>10.081A</b> | <b>3.061A</b> | 824.86        | 89.797%    | 2133            | 46.2              | 46.8°C         | 0.991       |
|             | 12.070V        | 5.073V         | 3.303V         | 4.901V        | 918.562       |            |                 |                   | 49.14°C        | 229.76V     |
| <b>CL1</b>  | <b>0.116A</b>  | <b>11.842A</b> | <b>11.981A</b> | <b>0A</b>     | 101.302       | 86.546%    | 838             | 20.2              | 40.28°C        | 0.942       |
|             | 12.128V        | 5.083V         | 3.314V         | 5.014V        | 117.047       |            |                 |                   | 44.97°C        | 229.89V     |
| <b>CL2</b>  | <b>0.116A</b>  | <b>17.709A</b> | <b>0A</b>      | <b>0A</b>     | 91.386        | 85.875%    | 834             | 20.1              | 40.75°C        | 0.938       |
|             | 12.131V        | 5.081V         | 3.325V         | 5.024V        | 106.413       |            |                 |                   | 43.94°C        | 229.89V     |
| <b>CL3</b>  | <b>0.115A</b>  | <b>0A</b>      | <b>17.929A</b> | <b>0A</b>     | 60.805        | 81.628%    | 833             | 20.1              | 40.06°C        | 0.928       |
|             | 12.131V        | 5.098V         | 3.313V         | 5.02V         | 74.527        |            |                 |                   | 43.1°C         | 229.9V      |
| <b>CL4</b>  | <b>62.053A</b> | <b>0A</b>      | <b>0A</b>      | <b>0.001A</b> | 749.649       | 91.274%    | 1902            | 43.5              | 45.13°C        | 0.991       |
|             | 12.081V        | 5.094V         | 3.32V          | 4.996V        | 821.316       |            |                 |                   | 47.32°C        | 229.78V     |

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 |
|------------|---------------|---------------|---------------|---------------|---------------|------------|-----------------|-------------------|----------------|-------------|
| <b>20W</b> | <b>1.224A</b> | <b>0.49A</b>  | <b>0.495A</b> | <b>0.199A</b> | 20.007        | 79.385%    | 0               | <6.0              | 37.29°C        | 0.655       |
|            | 12.137V       | 5.103V        | 3.33V         | 5.038V        | 25.207        |            |                 |                   | 36.34°C        | 114.91V     |
| <b>40W</b> | <b>2.694A</b> | <b>0.686A</b> | <b>0.694A</b> | <b>0.298A</b> | 40.003        | 85.284%    | 0               | <6.0              | 40.59°C        | 0.914       |
|            | 12.136V       | 5.104V        | 3.331V        | 5.035V        | 46.935        |            |                 |                   | 37.67°C        | 114.9V      |
| <b>60W</b> | <b>4.164A</b> | <b>0.882A</b> | <b>0.892A</b> | <b>0.398A</b> | 60            | 87.951%    | 0               | <6.0              | 42.35°C        | 0.933       |
|            | 12.135V       | 5.104V        | 3.331V        | 5.031V        | 68.225        |            |                 |                   | 38.23°C        | 114.89V     |
| <b>80W</b> | <b>5.630A</b> | <b>1.077A</b> | <b>1.09A</b>  | <b>0.497A</b> | 79.945        | 89.52%     | 0               | <6.0              | 42.27°C        | 0.941       |
|            | 12.134V       | 5.104V        | 3.331V        | 5.028V        | 89.331        |            |                 |                   | 39.26°C        | 114.89V     |

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 |
|------------|---------------|---------------|---------------|---------------|---------------|------------|-----------------|-------------------|----------------|-------------|
| <b>20W</b> | <b>1.224A</b> | <b>0.49A</b>  | <b>0.496A</b> | <b>0.199A</b> | 20.015        | 80.919%    | 0               | <6.0              | 38.7°C         | 0.563       |
|            | 12.137V       | 5.103V        | 3.33V         | 5.038V        | 24.738        |            |                 |                   | 36.36°C        | 229.88V     |
| <b>40W</b> | <b>2.694A</b> | <b>0.686A</b> | <b>0.694A</b> | <b>0.298A</b> | 40.011        | 86.597%    | 0               | <6.0              | 41.92°C        | 0.854       |
|            | 12.136V       | 5.104V        | 3.331V        | 5.034V        | 46.217        |            |                 |                   | 37.14°C        | 229.89V     |
| <b>60W</b> | <b>4.164A</b> | <b>0.882A</b> | <b>0.892A</b> | <b>0.398A</b> | 60.01         | 89.316%    | 0               | <6.0              | 42.59°C        | 0.922       |
|            | 12.135V       | 5.104V        | 3.33V         | 5.031V        | 67.209        |            |                 |                   | 38.95°C        | 229.88V     |
| <b>80W</b> | <b>5.632A</b> | <b>1.078A</b> | <b>1.09A</b>  | <b>0.497A</b> | 79.968        | 90.912%    | 0               | <6.0              | 44.69°C        | 0.939       |
|            | 12.134V       | 5.103V        | 3.33V         | 5.027V        | 87.954        |            |                 |                   | 39.35°C        | 229.87V     |

The results above are not used in the certification process

## Ripple Measurements

## 115V

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| 10% Load   | 22.10mV | 18.49mV | 21.99mV | 16.27mV | Pass      |
| 20% Load   | 19.24mV | 17.17mV | 22.15mV | 15.30mV | Pass      |
| 30% Load   | 20.46mV | 18.09mV | 22.10mV | 15.35mV | Pass      |
| 40% Load   | 22.15mV | 18.29mV | 21.95mV | 17.08mV | Pass      |
| 50% Load   | 22.05mV | 18.55mV | 21.95mV | 17.55mV | Pass      |
| 60% Load   | 23.99mV | 18.70mV | 22.10mV | 17.85mV | Pass      |
| 70% Load   | 26.09mV | 18.54mV | 22.20mV | 18.77mV | Pass      |
| 80% Load   | 28.39mV | 19.77mV | 24.76mV | 20.36mV | Pass      |
| 90% Load   | 31.77mV | 20.38mV | 23.94mV | 21.69mV | Pass      |
| 100% Load  | 34.04mV | 19.78mV | 24.55mV | 20.32mV | Pass      |
| 110% Load  | 38.23mV | 21.62mV | 24.80mV | 21.26mV | Pass      |
| Crossload1 | 23.02mV | 17.28mV | 22.64mV | 19.16mV | Pass      |
| Crossload2 | 22.51mV | 20.44mV | 22.35mV | 19.08mV | Pass      |

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| Crossload3 | 22.00mV | 17.83mV | 25.27mV | 17.95mV | Pass      |
| Crossload4 | 34.42mV | 19.71mV | 22.75mV | 22.59mV | Pass      |

The results above are not used in the certification process

## 230V

| Test       | 12V     | 5V      | 3.3V    | 5VSB    | Pass/Fail |
|------------|---------|---------|---------|---------|-----------|
| 10% Load   | 21.85mV | 17.83mV | 21.54mV | 16.22mV | Pass      |
| 20% Load   | 19.60mV | 18.90mV | 21.13mV | 15.81mV | Pass      |
| 30% Load   | 21.03mV | 18.03mV | 21.53mV | 16.27mV | Pass      |
| 40% Load   | 21.44mV | 17.47mV | 21.38mV | 16.32mV | Pass      |
| 50% Load   | 22.00mV | 18.65mV | 23.12mV | 17.18mV | Pass      |
| 60% Load   | 24.56mV | 18.49mV | 22.46mV | 17.60mV | Pass      |
| 70% Load   | 26.19mV | 18.70mV | 22.31mV | 18.11mV | Pass      |
| 80% Load   | 28.09mV | 19.67mV | 23.22mV | 20.00mV | Pass      |
| 90% Load   | 32.54mV | 20.33mV | 24.45mV | 21.28mV | Pass      |
| 100% Load  | 34.10mV | 20.15mV | 24.36mV | 21.05mV | Pass      |
| 110% Load  | 38.28mV | 21.90mV | 24.66mV | 21.45mV | Pass      |
| Crossload1 | 24.02mV | 17.29mV | 24.00mV | 19.05mV | Pass      |
| Crossload2 | 22.92mV | 20.39mV | 22.15mV | 19.28mV | Pass      |
| Crossload3 | 21.69mV | 18.24mV | 25.63mV | 18.16mV | Pass      |
| Crossload4 | 34.26mV | 19.08mV | 23.03mV | 21.37mV | Pass      |

The results above are not used in the certification process

## MSI MAG A750GLS PCIE5



Top side

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

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Power specifications label

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