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› Thermaltake Toughpower GF3 1000W Power Supply User Manual

Thermaltake PS-TPD-1000FNFACE-4

Thermaltake Toughpower GF3 1000W Power Supply User Manual

Model: PS-TPD-1000FNFACE-4

1. INTRODUCTION

The Thermaltake Toughpower GF3 series power supply is designed for high-performance computing systems, featuring a native PCIe 12+4pin modular connector for next-generation PCIe 5.0 graphics cards and compatibility with Intel ATX 3.0 specifications. This fully modular unit, available in various wattages including 1000W, delivers 80 PLUS Gold efficiency. It incorporates critical features such as low ripple noise ($<30\text{mV}$), strict voltage regulation ($<\pm 3\%$), and a hold-up time greater than 17 milliseconds. Constructed with 100% high-quality Japanese capacitors and other premium components, the Toughpower GF3 ensures continuous and stable power delivery for demanding applications.

2. KEY FEATURES

- **Model Number:** PS-TPD-1000FNFACE-4
- **ATX 3.0 Compatible:** Designed to meet Intel's ATX 3.0 specification.
- **Native PCIe Gen 5.0 Connector:** Features a native 12+4pin (12VHPWR) connector capable of delivering up to 600W for PCIe 5.0 graphics cards.
- **100% Japanese Capacitors:** Ensures high reliability and durability.
- **80 PLUS Gold Certified:** Provides high power efficiency, reducing heat and operating costs.
- **Fully Modular Design:** Allows for clean cable management and improved airflow.
- **Low Ripple Noise:** Less than 30mV for stable power output.
- **Strict Voltage Regulation:** Maintains voltage within $\pm 3\%$ of the nominal value.
- **Smart Zero Fan:** Minimizes noise by stopping the fan operation at low loads.

3. PACKAGE CONTENTS

Upon opening the package, please verify that all components are present and undamaged.

- Thermaltake Toughpower GF3 1000W Power Supply Unit
- Modular Cable Set (including 12VHPWR, CPU, PCIe, SATA, Peripheral cables)

- AC Power Cord
- Mounting Screws
- User Manual (this document)



Figure 3.1: Thermaltake Toughpower GF3 1000W Power Supply and its retail packaging.

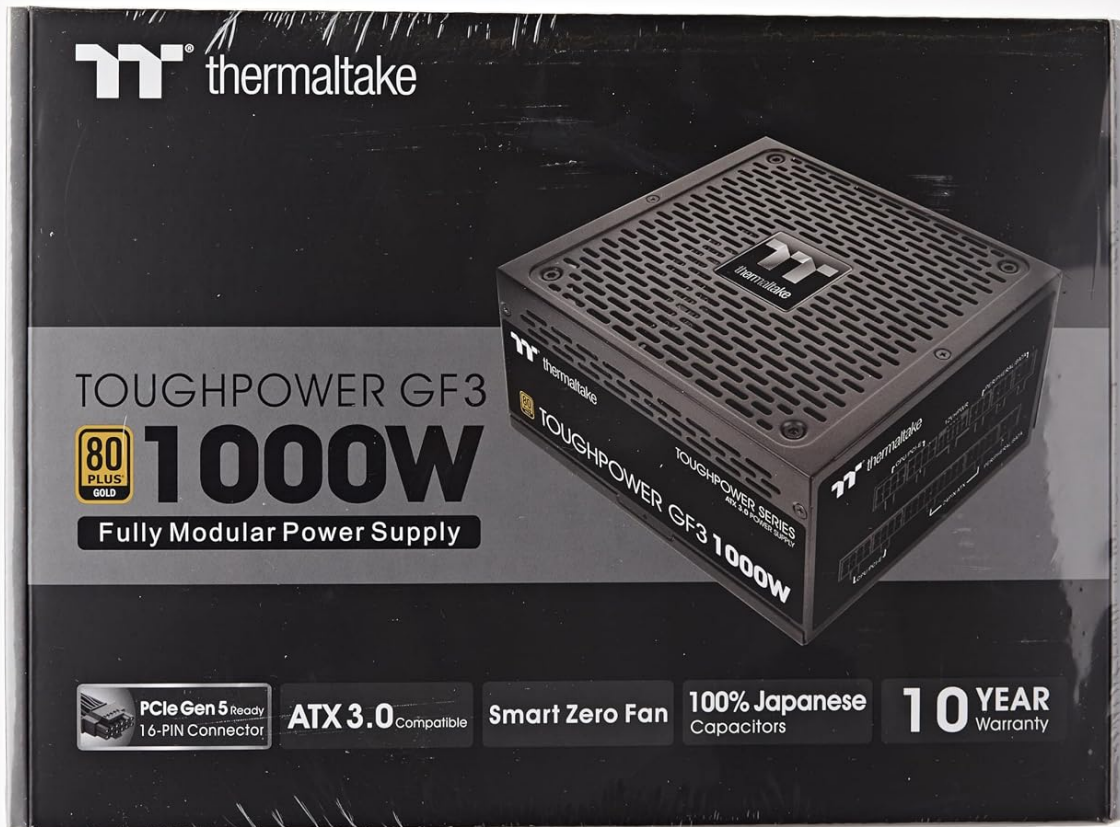


Figure 3.2: Front view of the retail box, highlighting key features.

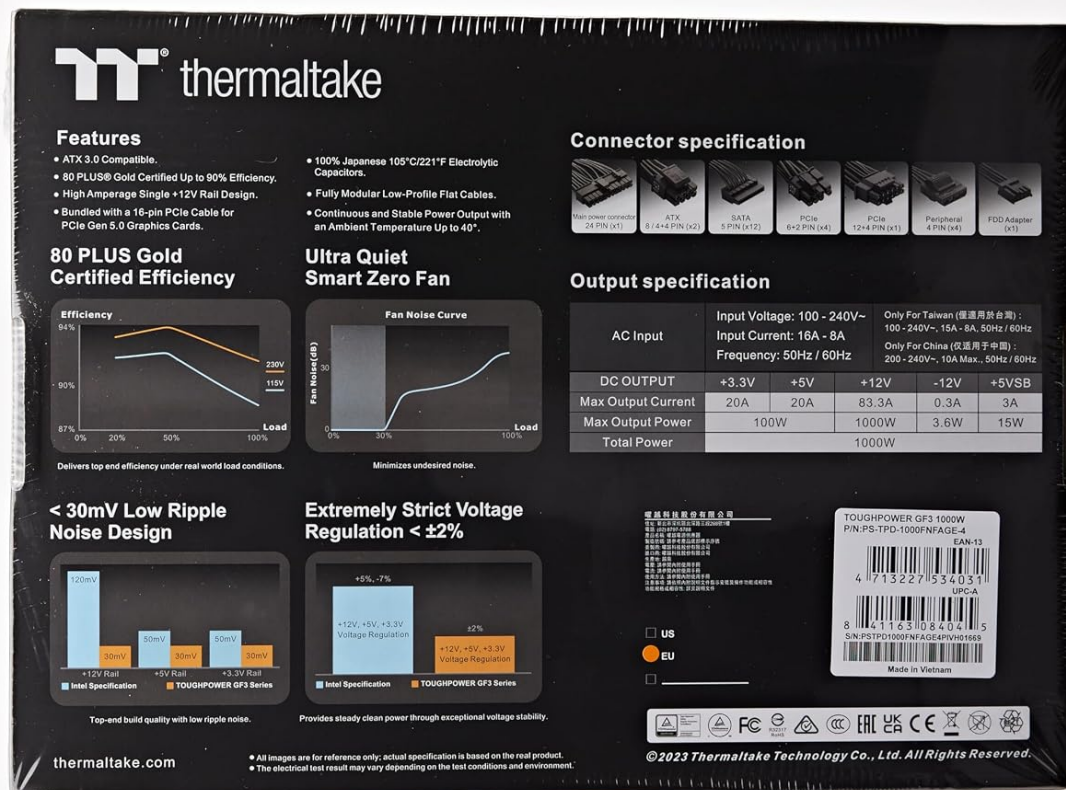


Figure 3.3: Back view of the retail box, showing detailed specifications and features.

4. SETUP AND INSTALLATION

Before installation, ensure your computer system is powered off and unplugged from the wall outlet. It is recommended to wear an anti-static wrist strap to prevent electrostatic discharge (ESD) damage to components.

4.1 Physical Installation

1. **Prepare your PC Case:** Open your PC case and locate the power supply mounting area, typically at the bottom or top rear.
2. **Mount the PSU:** Carefully slide the Toughpower GF3 1000W into the designated bay. Align the screw holes on the PSU with those on the case.
3. **Secure the PSU:** Use the provided mounting screws to firmly secure the power supply to the PC case.



Figure 4.1: Angled view of the power supply, ready for installation.

4.2 Cable Connections

The Toughpower GF3 1000W is fully modular, allowing you to connect only the cables you need. Refer to your motherboard and component manuals for specific connection points.

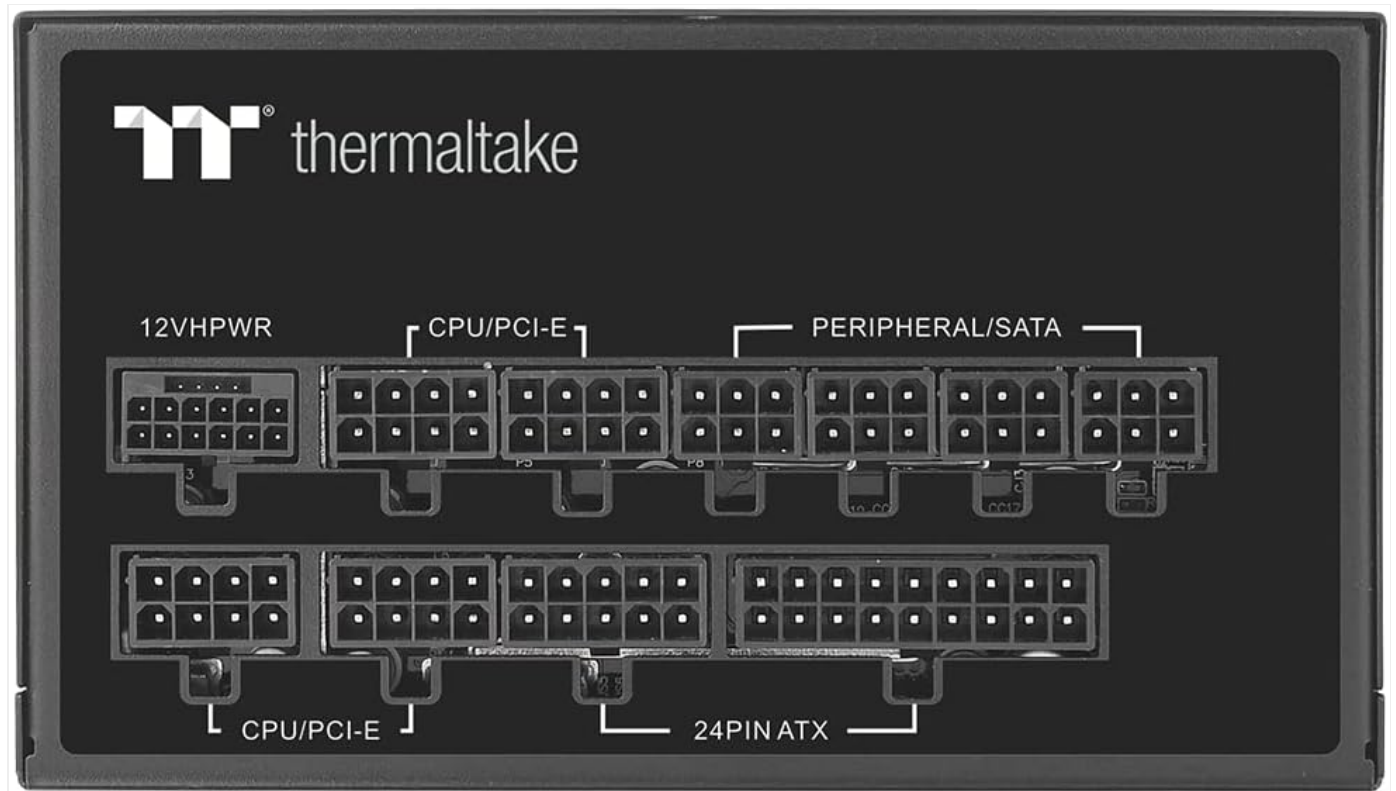


Figure 4.2: Modular cable connection panel on the power supply.

- **24-pin ATX Motherboard Cable:** Connect the large 24-pin cable from the PSU to the corresponding port on your motherboard.
- **CPU Power Cable(s):** Connect the 4+4 pin or 8-pin CPU power cable(s) to your motherboard's CPU power connector(s).
- **PCIe 5.0 (12VHPWR) Cable:** For compatible next-gen graphics cards, connect the native 12+4pin cable directly from the PSU to your GPU. This cable can deliver up to 600W.
- **PCIe (6+2 pin) Cables:** For other graphics cards or additional power, connect the 6+2 pin PCIe cables to your GPU(s).
- **SATA Power Cables:** Connect SATA power cables to your SSDs, HDDs, and optical drives.
- **Peripheral (Molex) Cables:** Connect peripheral cables for fans, fan controllers, or other accessories as needed.

Ensure all cables are securely seated to prevent power issues. Utilize cable ties or routing channels in your case for optimal cable management and airflow.

5. OPERATING INSTRUCTIONS

5.1 Initial Power On

1. After all internal connections are made, close your PC case.
2. Connect the AC power cord to the power supply's inlet and then to a wall outlet or surge protector.
3. Flip the power switch on the back of the power supply to the "ON" (I) position.
4. Press the power button on your computer case to start the system.



Figure 5.1: Rear panel of the power supply with the main power switch.

5.2 Smart Zero Fan Operation

The Toughpower GF3 1000W features a Smart Zero Fan mode, which can be enabled or disabled via a switch on the power supply. When enabled, the fan will remain off until the power supply load reaches approximately 30%, ensuring silent operation under low load conditions. Once the load exceeds this threshold, the fan will activate to maintain optimal temperatures. Disabling Smart Zero Fan will cause the fan to spin continuously, regardless of load.

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SMART ZERO FAN-MINIMIZES UNDESIRED NOISE



TOUGHPOWER GF3 1000W

Figure 5.2: Smart Zero Fan switch location (illustrated on box).

5.3 Efficiency and Fan Noise Characteristics

The Toughpower GF3 1000W is 80 PLUS Gold certified, indicating high efficiency across various loads. The fan noise level is designed to be minimal, especially with the Smart Zero Fan feature enabled.



Figure 5.3: Power supply efficiency curve at different loads and voltages.



Figure 5.4: Fan noise curve illustrating noise levels at various loads.

6. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your power supply.

- **Dust Removal:** Periodically clean the power supply's fan grill and vents to prevent dust buildup, which can impede airflow and lead to overheating. Use compressed air for best results. Ensure the system is powered off and unplugged before cleaning.
- **Ventilation:** Ensure your PC case has adequate airflow and that the power supply's fan is not obstructed. Do not place the PC in an enclosed space that restricts air circulation.
- **Cable Management:** Maintain tidy cable management within your PC case to improve airflow and prevent heat buildup.

7. TROUBLESHOOTING

If you encounter issues with your Thermaltake Toughpower GF3 1000W power supply, consider the following common troubleshooting steps:

- **No Power:**

- Ensure the AC power cord is securely connected to both the PSU and the wall outlet.
- Verify that the power switch on the back of the PSU is in the "ON" (I) position.
- Check all modular cable connections to the PSU and components (motherboard, CPU, GPU, etc.) are firmly seated.
- Test the wall outlet with another device to ensure it has power.

- **System Instability/Crashes:**

- Ensure your system's power requirements do not exceed the PSU's 1000W capacity.
- Verify that all power cables are correctly and securely connected.
- Check for proper ventilation within the PC case to prevent overheating of components, including the PSU.

- **Fan Not Spinning (Smart Zero Fan Enabled):**

- This is normal behavior if the Smart Zero Fan feature is enabled and the power supply load is below 30%. The fan will activate when the load increases.
- If the fan does not spin even under high load, ensure the Smart Zero Fan switch is in the desired position. If it's enabled and the fan still doesn't spin under load, or if it's disabled and the fan never spins, contact support.

If these steps do not resolve the issue, please refer to the Warranty and Support section for further assistance.

8. SPECIFICATIONS

Attribute	Value
Brand	Thermaltake
Model Number	PS-TPD-1000FNFAGE-4
Series	TPD-1650AH3FSG (Note: This series name appears in the data, but the model is 1000W GF3)
Output Wattage	1000 Watts
80 PLUS Certification	Gold
Form Factor	ATX
Modularity	Fully Modular
PFC	Active PFC
Capacitors	100% Japanese Capacitors
Cooling Method	Air (Smart Zero Fan)
Dimensions (LxWxH)	19.69 x 19.69 x 11.02 inches
Item Weight	4.4 pounds (2 Kilograms)
Color	Black

Attribute	Value
Date First Available	November 11, 2022

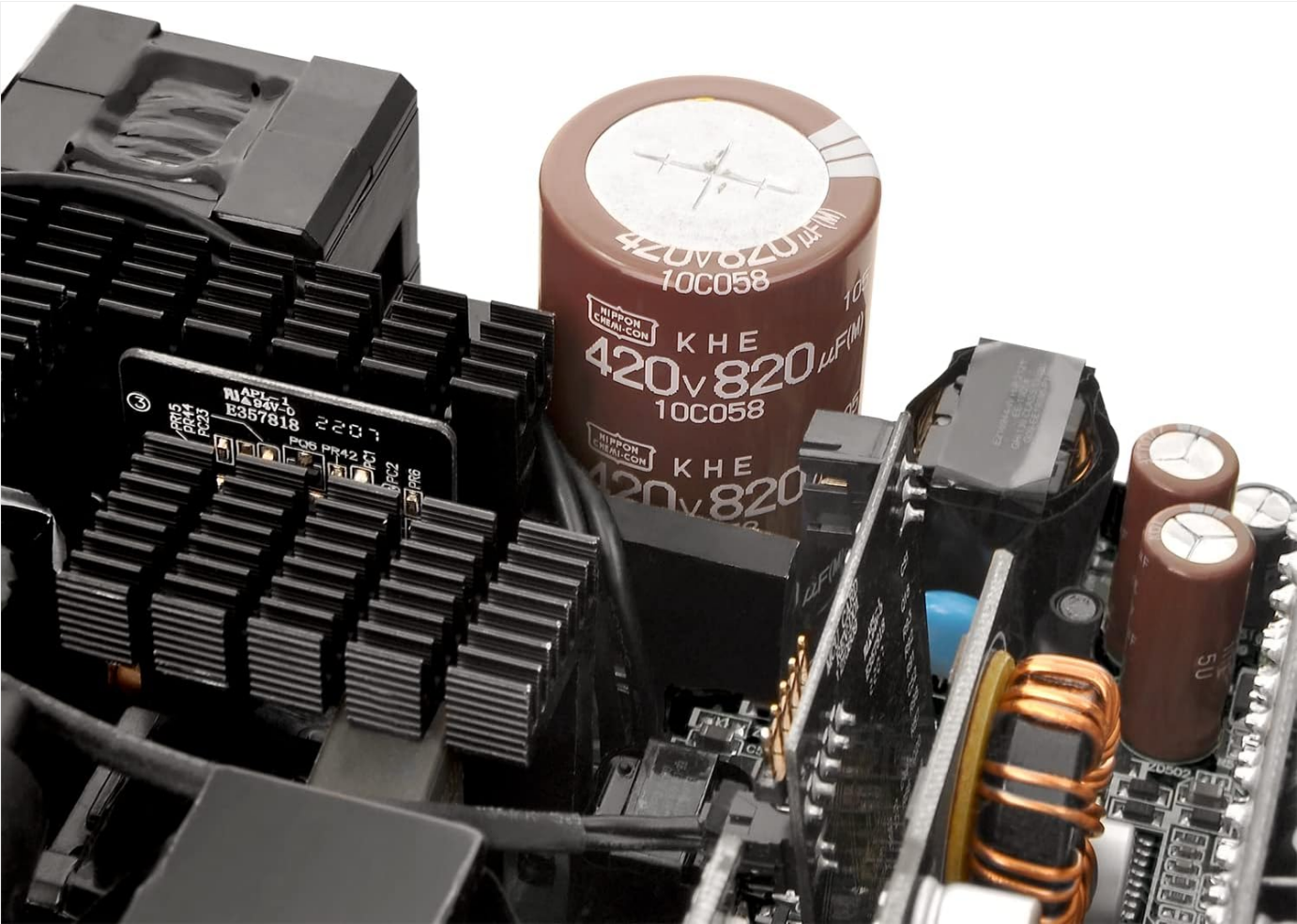


Figure 8.1: Product label with detailed electrical specifications.

8.1 Internal Components Overview



Figure 8.2: Internal view of the power supply's main PCB and components.

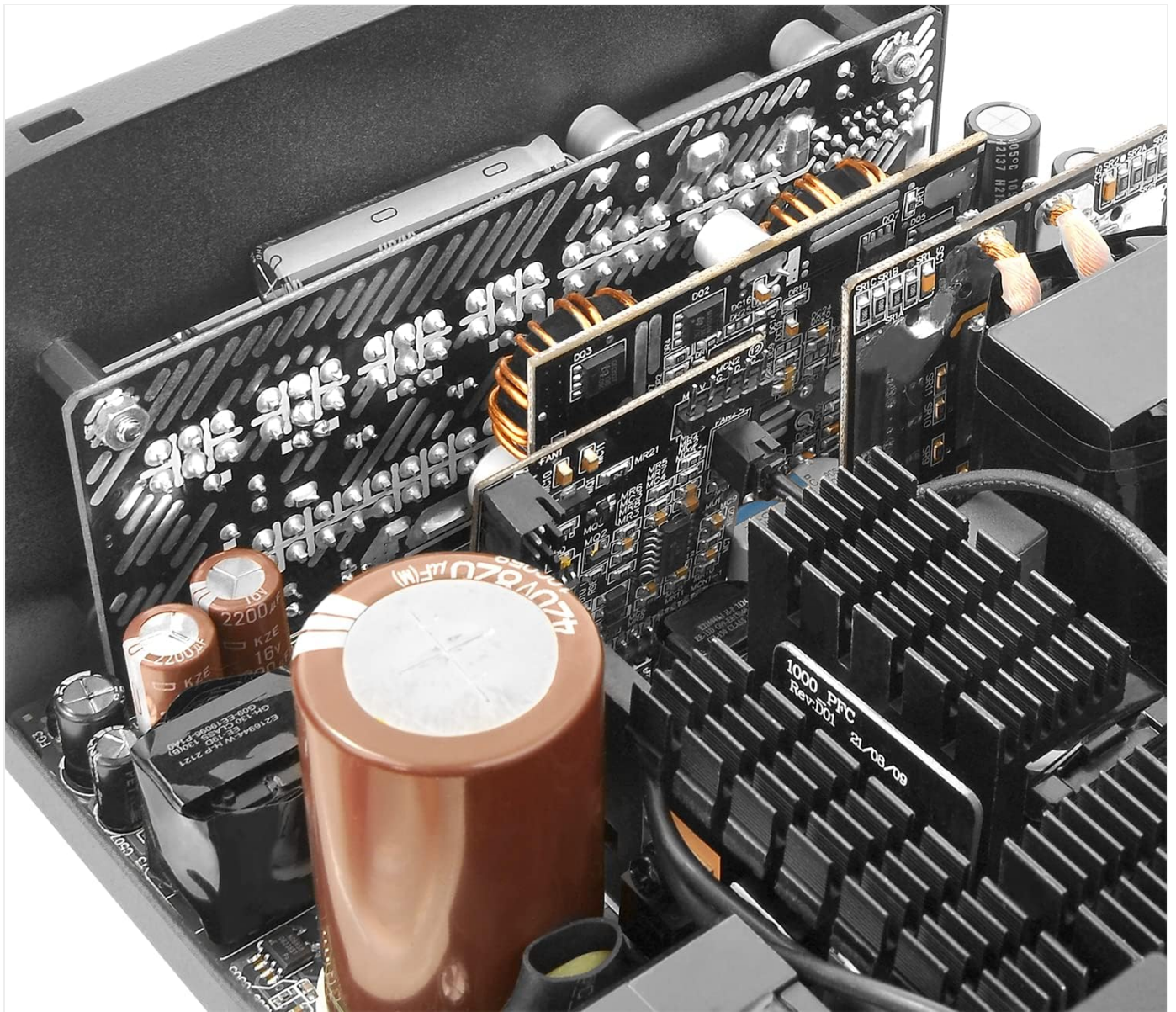


Figure 8.3: Close-up of a high-quality Japanese capacitor.



Figure 8.4: Internal view of the modular cable PCB and associated components.



Figure 8.5: Detailed internal view of the power supply's main board.

9. WARRANTY AND SUPPORT

The Thermaltake Toughpower GF3 1000W Power Supply comes with a 10-year warranty, ensuring long-term reliability and peace of mind. This warranty covers defects in materials and workmanship under normal use. For technical support, warranty claims, or further inquiries, please visit the official Thermaltake website or contact their customer service department. Keep your purchase receipt as proof of purchase for warranty purposes.

Thermaltake Official Website: www.thermaltake.com

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Question

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Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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