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Thermaltake PS-TPD-0650F3FAGU-2

Thermaltake Toughpower GF2 ARGB 650W Power Supply User Manual

Model: PS-TPD-0650F3FAGU-2

1. INTRODUCTION

The Thermaltake Toughpower GF2 ARGB 650W is a high-performance, fully modular power supply unit designed to provide stable and reliable power to your PC system. Featuring 80 PLUS Gold efficiency, a patented 16.8 million color Riing Duo 14 RGB Fan, and addressable LEDs, this PSU combines robust functionality with stunning aesthetics. This manual will guide you through the proper installation, operation, and maintenance to ensure optimal performance and longevity of your unit.



Figure 1.1: Thermaltake Toughpower GF2 ARGB 650W Power Supply Unit.

2. KEY FEATURES

- **Patented 16.8 Million Colors Riing Duo 14 RGB Fan:** Equipped with 18 addressable LEDs, providing vibrant and customizable lighting effects.
- **Addressable RGB Lighting Synchronization:** Compatible with mainstream motherboards for synchronized lighting control.
- **Smart Zero Fan:** Designed to minimize noise, the fan will not spin until the load exceeds 30% of the power supply's capacity.
- **80 PLUS Gold Certified:** Delivers up to 90% efficiency at 115Vac input, reducing heat and operating costs.
- **Fully Modular Low-Profile Flat Cables:** Offers flexible cable management, reduces clutter, and improves airflow within the PC chassis.
- **High-Quality Components:** Built with premium capacitors and components for stable and reliable power delivery.



TOUGHPower GF2 ARGB 650W

Toughpower GF2 ARGB 650W Gold is constructed with premium components and advanced technology which makes this PSU become a reliable and stable power supply unit. The patented 16.8 million-color Riing Duo 140mm RGB fan with 18 LEDs preinstalled helps deliver brighter and richer lighting.

Figure 2.1: ARGB lighting on the Toughpower GF2.



SMART ZERO FAN

Designed with our Smart Zero Fan, the fan will not spin until the load exceeds 30% of the power supply, minimizing the fan noise.

Figure 2.2: Smart Zero Fan functionality.

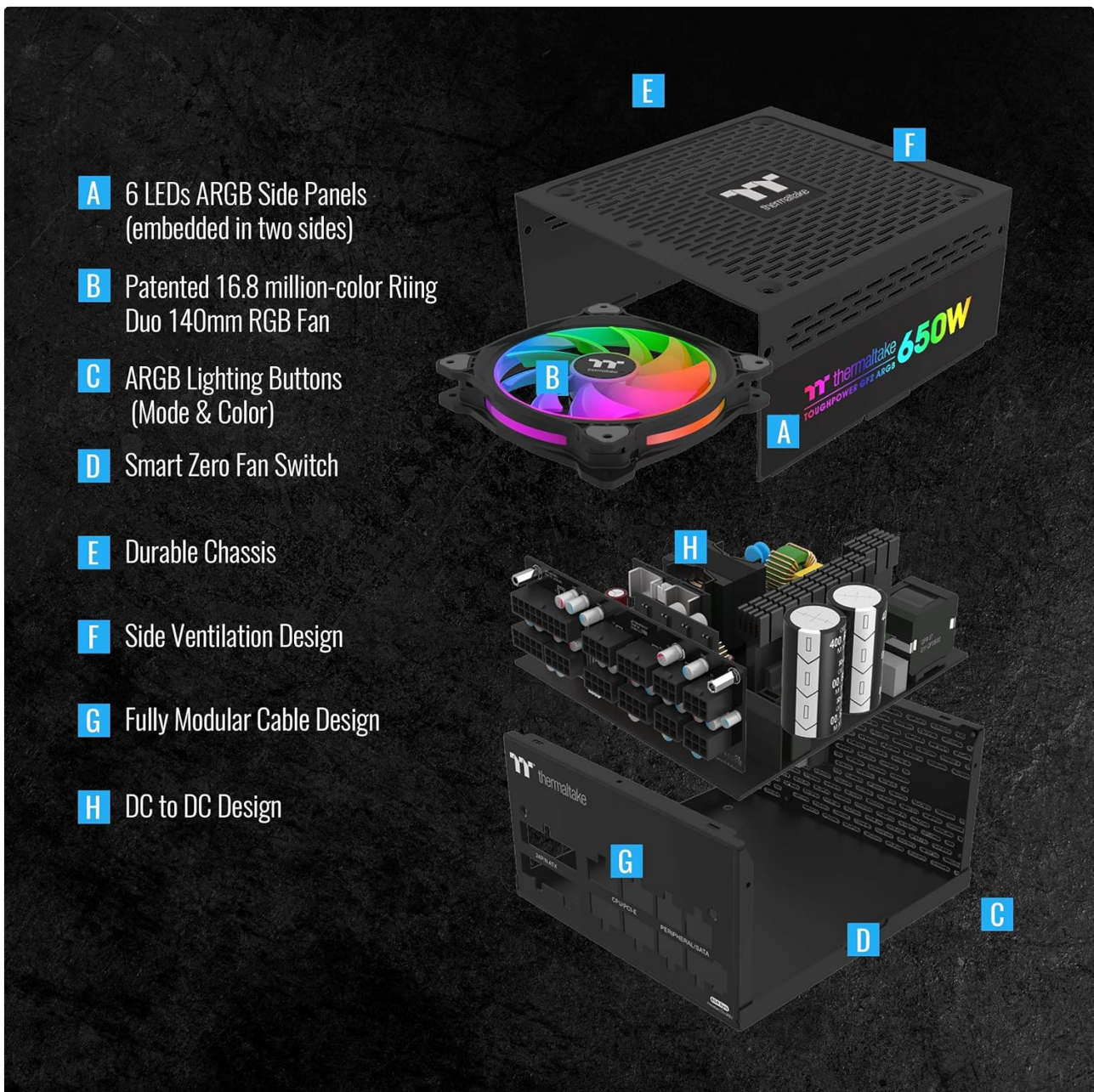


Figure 2.3: ARGB side panels and Riing Duo 140mm RGB fan.

3. SETUP AND INSTALLATION

Before beginning 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 damage to components from static discharge.

3.1 Installing the Power Supply Unit

1. Open your PC case and locate the power supply mounting area, typically at the top or bottom rear.
2. Carefully slide the Toughpower GF2 ARGB 650W into the designated slot. Ensure the fan faces the correct direction for optimal airflow (usually facing down if a bottom mount with a vent, or up if no bottom vent).
3. Secure the PSU to the case using the provided screws.

3.2 Cable Connections

The Toughpower GF2 ARGB 650W is fully modular, allowing you to connect only the cables you need. This improves cable management and airflow. Refer to your motherboard and component manuals for specific connection points.

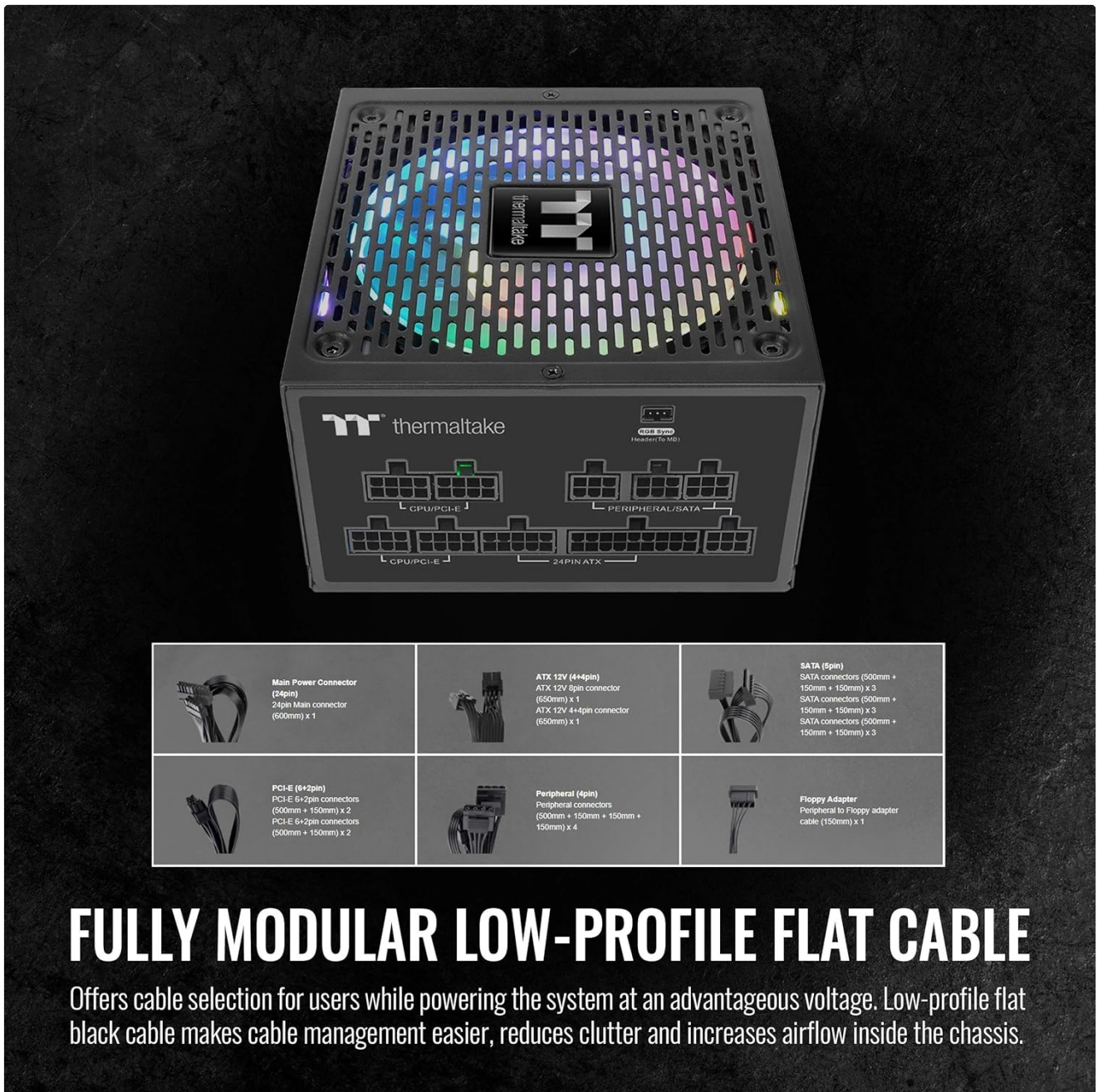


Figure 3.1: Fully modular low-profile flat cables and connectors.

- **24-pin ATX Main Power Connector:** Connects to the motherboard's main power socket.
- **CPU (4+4-pin) Connector:** Connects to the CPU power socket on the motherboard. Modern motherboards may require an 8-pin or even two 8-pin connectors.
- **PCI-E (6+2-pin) Connectors:** Used for graphics cards. Connect as many as required by your GPU.
- **SATA Power Connectors:** For SSDs, HDDs, and optical drives.
- **Peripheral (4-pin) Connectors:** For older components or case fans.
- **ARGB Sync Cable:** Connect this cable to a compatible 5V addressable RGB header on your motherboard to synchronize lighting effects.

Ensure all connections are firm and properly seated. Route cables neatly to improve airflow and aesthetics.

4. OPERATING INSTRUCTIONS

4.1 Powering On/Off

1. After all components are connected, ensure the power switch on the back of the PSU is in the 'OFF' (O) position.
2. Plug the AC power cord into the PSU and then into a wall outlet or surge protector.
3. Flip the power switch on the PSU to the 'ON' (I) position.
4. Press the power button on your PC case to start the system.

4.2 RGB Lighting Control

The Toughpower GF2 ARGB 650W features addressable RGB lighting. You can control the lighting in two ways:

- **Motherboard Synchronization:** If connected to a compatible 5V ARGB header on your motherboard, use the motherboard's RGB software (e.g., ASUS Aura Sync, GIGABYTE RGB Fusion, MSI Mystic Light Sync, ASRock Polychrome Sync) to customize lighting effects.
- **Analog Control:** The PSU may feature a physical button on the unit itself to cycle through pre-set lighting modes and colors if not connected to a motherboard ARGB header. Refer to the specific product diagram for button location.

4.3 Smart Zero Fan Operation

The Smart Zero Fan feature ensures silent operation at low loads. The PSU fan will remain off until the system load exceeds 30% of the power supply's maximum capacity. Once the load increases, the fan will automatically activate to maintain optimal temperatures. This feature can typically be toggled on or off via a switch on the PSU itself.

5. MAINTENANCE

Proper maintenance helps extend the lifespan of your power supply and ensures stable operation.

- **Dust Removal:** Periodically clean dust from the PSU's fan grille and vents using compressed air. Ensure the system is powered off and unplugged before cleaning.
- **Airflow:** Ensure adequate airflow around the PSU within your PC case. Avoid blocking vents or fan intakes.
- **Cable Management:** Maintain tidy cable routing to prevent obstruction of airflow.

6. TROUBLESHOOTING

If you encounter issues with your Thermaltake Toughpower GF2 ARGB 650W, refer to the following common troubleshooting steps:

- **No Power:**
 - Check if the AC power cord is securely plugged into both the PSU and the wall outlet.
 - Ensure the power switch on the back of the PSU is in the 'ON' (I) position.
 - Verify all modular cables are correctly and firmly connected to both the PSU and the respective components (motherboard, GPU, etc.).
 - 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 650W capacity.
 - Check for loose cable connections.
 - Monitor system temperatures to ensure components are not overheating.
- **Loud Fan Noise:**

- If the Smart Zero Fan feature is enabled, the fan will only spin under higher loads. This is normal.
- Ensure the PSU fan intake/exhaust is not obstructed by cables or case components.
- Clean any dust accumulation from the fan and vents.

- **RGB Lighting Issues:**

- Verify the ARGB sync cable is correctly connected to a 5V ARGB header on your motherboard.
- Ensure your motherboard's RGB software is up-to-date and configured correctly.
- If using analog control, try cycling through modes using the physical button on the PSU.

If issues persist after following these steps, please refer to the Warranty and Support section for further assistance.

7. SPECIFICATIONS

Specification	Value
Brand	Thermaltake
Model Name	Toughpower GF2
Item Model Number	PS-TPD-0650F3FAGU-2
Wattage	650W
Efficiency	80 PLUS Gold
Form Factor	ATX
Cooling System	14cm Hydraulic Bearing Fan (Ring Duo 14 RGB)
PFC (Power Factor Correction)	Active PFC
Input Voltage	100V – 240V~
Dimensions (W x H x D)	150mm x 86mm x 160mm (5.9 x 3.4 x 6.3 inches)
MTBF	100,000 hrs minimum
Safety Approval	CE/cTUVus/TÜV/FCC/BSMI/EAC/S-Mark/C-TICK



Figure 7.1: Internal component layout and features.

8. WARRANTY AND SUPPORT

8.1 Warranty Information

The Thermaltake Toughpower GF2 ARGB 650W power supply comes with a **10-Year Warranty**. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

8.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or warranty claims, please visit the official Thermaltake support website or contact their customer service. You may also find additional resources, FAQs, and driver downloads on their website.

For a detailed PDF version of the user manual, you can refer to the official document [User Manual \(PDF\)](#)

