Thermaltake PS-TPD-0600NNFAGU-2

Thermaltake Toughpower GX2 600W 80+ Gold Non-Modular Power Supply User Manual

Model: PS-TPD-0600NNFAGU-2

1. INTRODUCTION

This manual provides essential information for the proper installation, operation, and maintenance of your Thermaltake Toughpower GX2 600W 80+ Gold Non-Modular Power Supply. Please read all instructions carefully before use to ensure safe and efficient operation.

Safety Precautions

- Do not unplug the AC power cord when the power supply is in use. Doing so may cause damage to your components.

- Do not place the power supply in high humidity or high-temperature environments.

- High voltages exist in the power supply. Do not open the power supply case unless you are an authorized service technician or electrician. Doing so will void the warranty.

- The power supply should be powered by the source indicated on the rating label.

- Make sure all cables are plugged in properly. Loose and improper connections could damage the power supply and your system.

- Please use only genuine Thermaltake modular cables with Thermaltake power supply models. Third-party cables might not be compatible and could cause serious damage to your system and power supply.

2. PRODUCT FEATURES

- **80 PLUS Gold Certified:** Supports up to 90% efficiency, optimized for C6 or C7 States.

- **Non-Modular Connectors:** Includes Main Power (24 pin) x 1, ATX 12V (4+4 pin) x 1, SATA (5 pin) x 6, PCI-E (6+2 pin) x 2, Peripheral (4 pin) x 3, FDD x 1.

- **Ultra Quiet 120mm Fan:** Dynamic Bearing fan provides superior cooling performance and silent operation.

- **High Quality Capacitors:** Ensures superb performance and reliability.

- **Low Ripple Noise:** Guarantees excellent power supply stability, keeping performance-critical

components reliable.

- **Single +12V Rail Design:** Powerful +12V single rail supports modern GPU demands with DC to DC design for stable power.
- **Industry Grade Protections:** Includes Over Power Protection (OPP), Over Voltage Protection (OVP), Under Voltage Protection (UVP), and Short Circuit Protection (SCP).

3. PACKAGE CONTENTS

- Thermaltake Toughpower GX2 600W Power Supply Unit
- AC Power Cord
- Mounting Screws
- Cable Ties
- User Manual

4. SPECIFICATIONS

Feature	Description
Model Name	GX2 80+ Gold 600W Power
Item Model Number	PS-TPD-0600NNFAGU-2
Watts	600W
80 PLUS Certification	Gold
Type	ATX 12V 2.3
Color	Black
Dimensions (W x H x D)	150mm x 86mm x 140mm (5.91 x 3.39 x 5.51 inches)
PFC (Power Factor Correction)	Active PFC
Input Voltage	100V-240V~
Input Current	9A max
Input Frequency Range	47Hz - 63Hz
Operating Temperature	+0°C to +40°C
Cooling System	120mm Fan: 2000±10% RPM
MTBF	100,000 hrs minimum
Safety Approval	CE, TUV SUD, CB, EAC and RCM certified
PCI-E Connectors	2 x (6+2 pin)

Output Specifications

DC Output	+3.3V	+5V	+12V	-12V	+5VSB
Max Output Current	20A	20A	49A	0.3A	3A
Max Output Power	100W		588W	3.6W	15W
Total Power	600W				

5. INSTALLATION GUIDE

Follow these steps to install your power supply into your computer system.

1. **Prepare Your System:** Ensure your computer is powered off and unplugged from the wall outlet. Open your computer case to access the PSU mounting area.

2. **Mount the PSU:** Carefully slide the Thermaltake Toughpower GX2 into the designated power supply bay in your PC case. Secure it with the provided mounting screws.

3. **Connect Main Power:** Connect the 24-pin Main Power connector to your motherboard. Ensure it clicks securely into place.

4. **Connect CPU Power:** Connect the 4+4-pin ATX 12V connector to the CPU power socket on your motherboard.

5. **Connect PCI-E Power:** For graphics cards requiring additional power, connect the 6+2-pin PCI-E connectors. The Toughpower GX2 provides two such connectors.

6. **Connect SATA Devices:** Use the SATA (5-pin) connectors for your SSDs, HDDs, and optical drives.

7. **Connect Peripheral Devices:** Use the Peripheral (4-pin) connectors for older components or case fans if needed.

8. **Cable Management:** Route cables neatly to improve airflow and aesthetics. Use the included cable ties to secure excess cabling.

9. **Close Case and Power On:** Close your computer case, plug in the AC power cord, and power on your system.

CONNECTOR TYPE	CABLE LENGTH	CONNECTOR QTY
MAIN POWER CONNECTOR (24 PIN)	500MM	1
ATX 12V (4 + 4PIN)	600MM	1
SATA (5PIN)	3 X 450MM+150MM+150MM 3 X 450MM+150MM+150MM	6
PCI-E (6 + 2PIN)	2 X 500MM+150MM	2
PERIPHERAL (4 PIN)	3 X 450MM+150MM + 150MM+150MM	3
FLOPPY ADAPTER	150MM	1

120MM COOLING FAN

DESIGNED TO PROVIDE ULTRA-QUIET OPERATION AT ±10% 2000 RPM

Figure 5.1: Connector types and quantities for the Toughpower GX2 600W Power Supply.
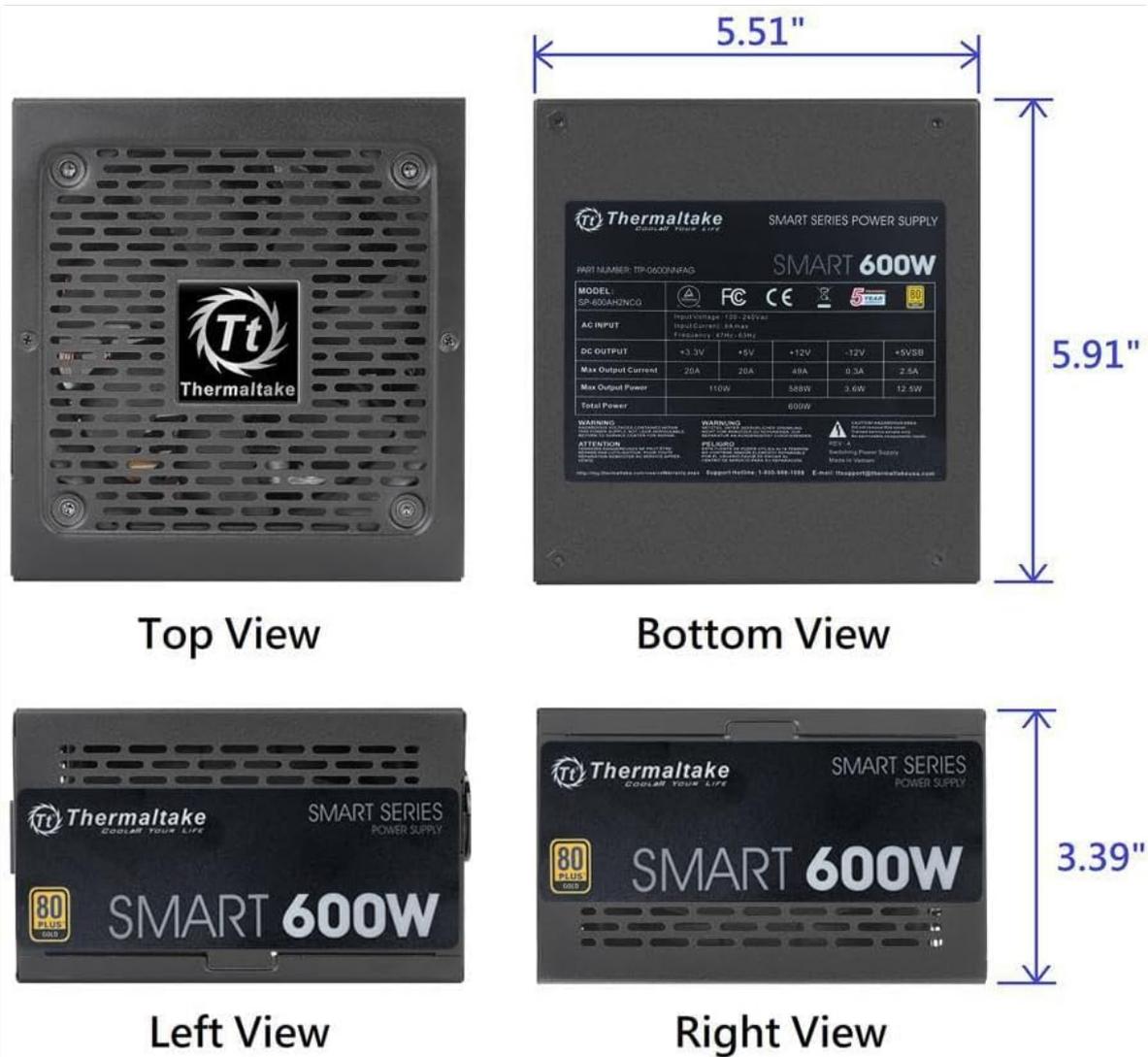
Figure 5.2: Physical dimensions of the power supply for case compatibility.

Figure 5.3: Non-modular cables extending from the power supply unit.

6. OPERATING INSTRUCTIONS

The Thermaltake Toughpower GX2 600W is designed for continuous and stable power delivery. Its 80 PLUS Gold certification ensures high energy efficiency, reducing heat generation and operating costs.

Cooling Fan Operation

The integrated 120mm dynamic bearing fan operates at approximately 2000 RPM (±10%) to provide efficient cooling while maintaining a quiet acoustic profile. The fan is designed to operate continuously to ensure optimal thermal performance for the power supply and connected components.

Figure 6.1: The Thermaltake Toughpower GX2 600W Power Supply, highlighting its 80 Plus Gold efficiency for optimal energy use.

HIGH AMPERAGE SINGLE +12V RAIL

MAX OUTPUT CURRENT OF 49A

Figure 6.2: A top-down view of the power supply, illustrating the high amperage single +12V rail design for stable power delivery.
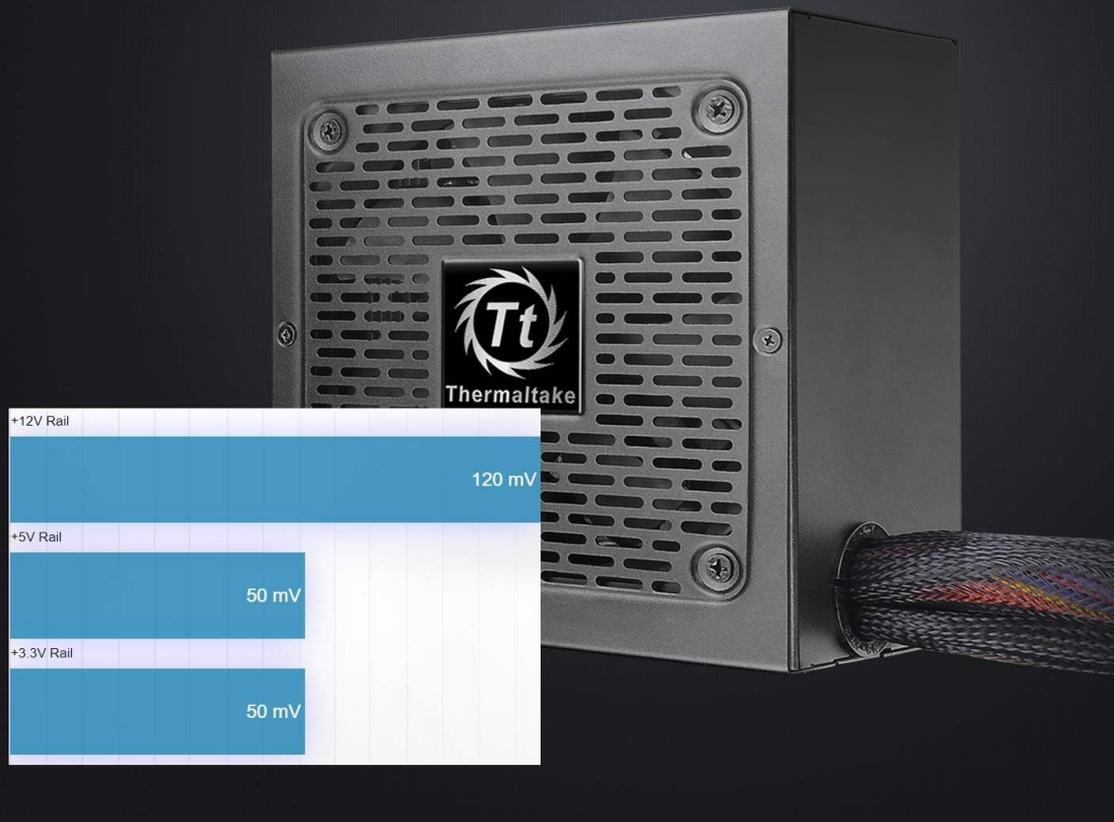
Figure 6.3: The power supply's design ensures low ripple noise, meeting Intel's requirements for stable operation across +12V, +5V, and +3.3V rails.

7. MAINTENANCE

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

- **Cleaning:** Periodically clean the exterior of the power supply and the fan grille with a soft, dry cloth. For deeper cleaning, use compressed air to remove dust from the fan and internal components, ensuring the system is powered off and unplugged.
- **Airflow:** Ensure adequate airflow around the power supply. Do not obstruct the fan intake or exhaust vents.
- **Cable Inspection:** Regularly check all cable connections to ensure they are secure and free from damage.

8. TROUBLESHOOTING

If you encounter issues with your power supply, refer to the following common problems and solutions.

No Power to System

- **Check AC Power:** Ensure the AC power cord is securely plugged into both the power supply and a working wall outlet. Verify the wall outlet has power.
- **Power Switch:** Confirm the power supply's main switch on the rear panel is in the 'ON' (I) position.
- **Internal Connections:** Double-check all internal power connections (24-pin ATX, 4+4-pin CPU, PCI-E, SATA) to ensure they are firmly seated.
- **Short Circuit:** Disconnect all components except the motherboard, CPU, and one stick of RAM. If the system powers on, reconnect components one by one to identify the faulty part.
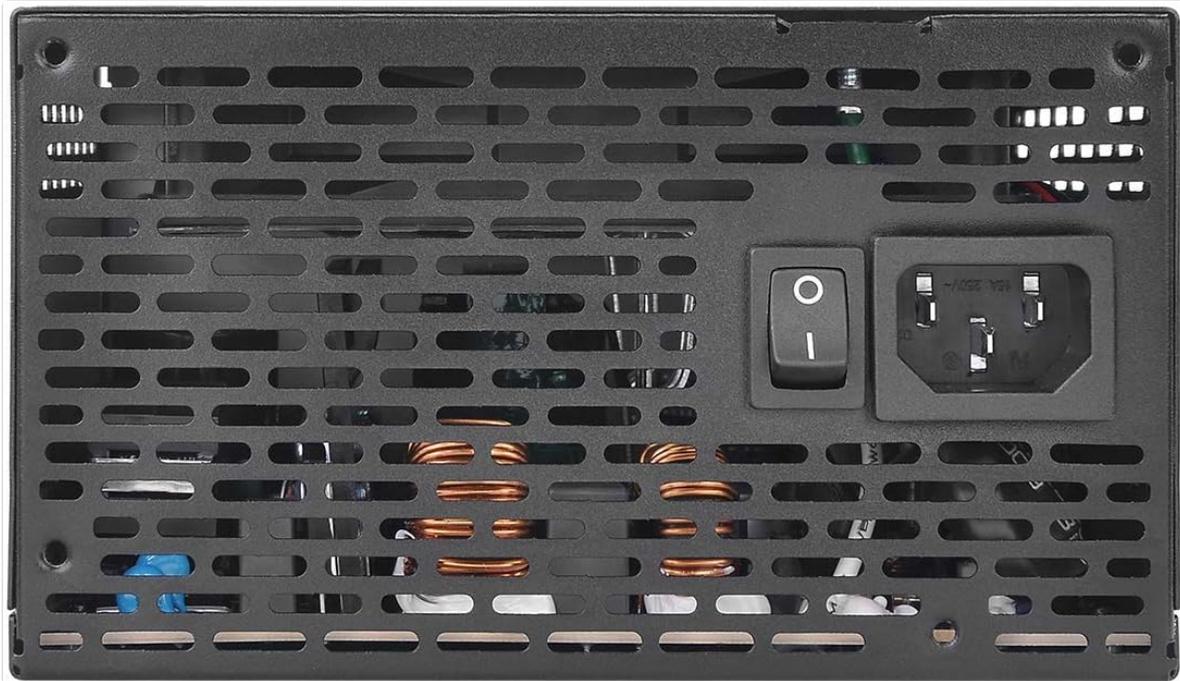

Figure 8.1: Rear panel of the power supply, showing the main power switch.

9. WARRANTY AND SUPPORT

The Thermaltake Toughpower GX2 600W Power Supply comes with an ample **5-year warranty**, guaranteeing reliable performance and peace of mind. For technical support, warranty claims, or further assistance, please visit the official Thermaltake website or contact their customer service department.
Official Thermaltake Website: www.thermaltake.com