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Seasonic CORE V2 GX-650 (ATX3)

Seasonic CORE GX-650-650W Power Supply User Manual

Model: CORE V2 GX-650 (ATX3) | Brand: Seasonic

1. INTRODUCTION

This manual provides essential information for the installation, operation, maintenance, and troubleshooting of your Seasonic CORE GX-650-650W Power Supply. Please read this manual thoroughly before installing and using the product to ensure proper functionality and safety.

2. SAFETY INFORMATION

Always observe the following safety precautions:

- Ensure the power supply is disconnected from the AC outlet before installation or handling.
- Do not open the power supply unit. High voltages are present inside, and there are no user-serviceable parts.
- Install the power supply in a well-ventilated area, away from heat sources, direct sunlight, and moisture.
- Use only the modular cables provided with your Seasonic power supply. Using third-party cables may cause damage to the PSU or connected components.
- Ensure all connectors are securely seated before powering on the system.
- This product is designed for use in computer systems only. Do not use it for any other purpose.

3. PACKAGE CONTENTS

Verify that all items are present in your package:

- Seasonic CORE GX-650-650W Power Supply Unit
- Modular Cable Set (including ATX 3.0 & PCIe 5.0 12V-2x6 cable)
- AC Power Cord
- Mounting Screws
- Cable Ties/Velcro Straps
- User Manual (this document)



Image: The Seasonic CORE GX-650 power supply unit shown alongside its retail packaging.

4. PRODUCT FEATURES

The Seasonic CORE GX-650-650W Power Supply offers the following key features:

- **High Efficiency:** 80 PLUS Gold Certified for reduced energy consumption and heat generation.
- **ATX 3.0 & PCIe 5.0 Ready:** Includes a 16-Pin PCIe Gen 5 Cable (12V-2x6) for compatibility with modern graphics cards.
- **OptiSink Design:** Optimized heat dissipation for enhanced performance and longevity.
- **Fully Modular Cabling:** Allows for cleaner builds and improved airflow by using only necessary cables.
- **Compact Size:** 140 mm depth for easier installation in various PC cases.
- **Quiet Operation:** Features a 120 mm Hydro Dynamic Bearing (HDB) Fan for silent and efficient cooling.
- **Tight Voltage Regulation:** Ensures stable power delivery to components (12 V, 5 V and 3.3 V within $\pm 3\%$).
- **Ample +12 V Output:** Provides robust power for high-performance components.
- **DC to DC Converter Design:** For improved voltage stability and efficiency.
- **Cable-free Connection Design:** Enhances reliability and build quality.
- **Gold-Plated High Current Terminals:** For motherboard, CPU, and PCIe connections, ensuring optimal conductivity.
- **PVC Embossed Cables:** Durable and flexible cables for easy routing.

5. SETUP AND INSTALLATION

Follow these steps to install your power supply:

1. **Prepare Your System:** Ensure your computer is completely powered off and unplugged from the wall outlet. Open your computer case.
2. **Mount the Power Supply:** Carefully place the power supply into the designated PSU bay in your computer case. Secure it with the provided mounting screws. Ensure the fan is oriented correctly for optimal airflow (typically facing down or up, depending on your case design).



Image: Angled view of the Seasonic CORE GX-650 power supply, showing its compact form factor and fan grille.

3. **Connect Modular Cables:** Identify the necessary cables for your components. This power supply is fully modular, allowing you to connect only the cables you need. Refer to the labels on the power supply and the cables for correct connections.



Image: Front view of the Seasonic CORE GX-650, highlighting the clearly labeled modular cable connection ports for MB, CPU/PCIe, and Peripheral/SATA/Molex.

- **24-pin ATX Motherboard Cable:** Connect to the 'MB' port on the PSU and the corresponding port on your motherboard.
 - **CPU (EPS) Cables:** Connect to the 'CPU/PCIe' ports on the PSU and the 4+4 pin or 8-pin CPU power ports on your motherboard.
 - **PCIe Cables:** For graphics cards, connect the 6+2 pin PCIe cables or the dedicated 12V-2x6 (16-pin) PCIe Gen 5 cable to the 'CPU/PCIe' ports on the PSU and the graphics card.
 - **SATA/Molex Cables:** Connect to the 'Peripheral/SATA/Molex' ports on the PSU and your storage drives or other peripherals.
4. **Cable Management:** Route cables neatly to improve airflow and aesthetics. Use cable ties or Velcro straps if provided.
 5. **Connect AC Power:** Once all internal connections are secure, connect the AC power cord to the power supply's inlet and then to a wall outlet.
 6. **Power On:** Flip the power switch on the back of the PSU to the 'ON' position. You can now power on your computer.



Image: Rear panel of the Seasonic CORE GX-650 power supply, showing the AC power inlet and the main power switch.

6. OPERATING INSTRUCTIONS

The Seasonic CORE GX-650-650W power supply operates automatically once installed and powered on. It provides stable power to your system components. The 120 mm Hydro Dynamic Bearing (HDB) fan will adjust its speed based on the power supply's temperature and load to maintain optimal cooling and quiet operation.

7. MAINTENANCE

To ensure the longevity and optimal performance of your power supply:

- **Cleaning:** Periodically clean the exterior of the power supply and the fan grille to prevent dust buildup. Use compressed air to gently clear dust from the fan and vents. Ensure the power supply is unplugged before cleaning.
- **Ventilation:** Ensure that the power supply's intake and exhaust vents are not obstructed. Maintain adequate airflow within your computer case.
- **Cable Integrity:** Regularly check that all modular cables are securely connected and not damaged.



Image: Top view of the Seasonic CORE GX-650 power supply, showing the fan grille for cooling.

8. TROUBLESHOOTING

If you encounter issues with your power supply, consider the following:

- **No Power:**

- Check if the AC power cord is securely connected to both the power supply and the wall outlet.
- Ensure the power switch on the back of the PSU is in the 'ON' position.
- Verify that all modular cables (especially the 24-pin motherboard and CPU cables) are firmly seated.
- Test the wall outlet with another device to confirm it has power.

- **System Instability/Crashes:**

- Ensure your power supply wattage is sufficient for all your components.
- Check for loose cable connections.
- Monitor system temperatures to rule out overheating of other components.

- **Unusual Noises:**

- A slight fan noise is normal under load. If you hear grinding or excessive noise, ensure no cables are obstructing the fan.
- If coil whine is present and persistent, it may indicate an issue. Contact support if it's disruptive.

If problems persist after following these steps, contact Seasonic customer support.

9. SPECIFICATIONS

Detailed specifications for the Seasonic CORE GX-650-650W Power Supply:

Feature	Detail
Model Name	CORE V2 GX-650 (ATX3)
Brand	Seasonic
Output Wattage	650 Watts
Form Factor	ATX
Efficiency Certification	80 PLUS Gold Certified
Modular Type	Fully Modular
ATX Standard	ATX 3.0
PCIe Standard	PCIe 5.0 (with 12V-2x6 cable)
Cooling Method	Air (120 mm HDB Fan)
Product Dimensions	5.5 x 5.9 x 3.4 inches (140 x 150 x 86 mm)
Item Weight	3.4 Pounds (1.54 kg)
Compatible Devices	ATX motherboards, PCIe 5.0 graphics cards, standard ATX power supplies, various storage drives, and standard cooling systems

10. WARRANTY AND SUPPORT

The Seasonic CORE GX-650-650W Power Supply comes with a **7-Year Warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.

For technical support, warranty claims, or further assistance, please visit the official Seasonic website or contact their customer service department. Keep your proof of purchase for warranty validation.

