Thermalright TR-M.2 2280 TYPE AB

Thermalright TR-M.2 2280 Type A B SSD Heatsink Instruction Manual

Model: TR-M.2 2280 TYPE AB

Brand: Thermalright

1. Introduction

The Thermalright TR-M.2 2280 Type A B is a high-performance aluminum heatsink designed to provide efficient cooling for M.2 2280 Solid State Drives (SSDs). By dissipating heat effectively, this heatsink helps prevent thermal throttling, ensuring your SSD maintains optimal performance and extends its lifespan, especially during intensive read and write operations.

Figure 1: The Thermalright TR-M.2 2280 Type A B heatsink, designed for M.2 2280 SSDs, features a black aluminum fin array with silver mounting clips, providing effective passive cooling.

2. Setup and Installation

Warning: Always turn off your PC and disconnect it from the power supply before installing or removing any internal components to prevent damage or injury.

2.1. Package Contents

- 1x Thermalright TR-M.2 2280 Type A B Heatsink (consisting of top aluminum fin array and bottom metal plate)
- 2x High-performance thermal pads (pre-applied or separate)
- 4x Mounting screws
- 1x Small screwdriver (may be included)

Figure 2: An exploded diagram illustrating the components of the TR-M.2 2280 heatsink, including the ribbed aluminum heat sink, metal mounting clips, and two high-performance thermal pads for double-sided contact cooling.

2.2. Installation Steps

1. **Prepare the SSD:** If your M.2 SSD has a label or sticker on the top, do not remove it. The thermal pads are designed to work with the existing label. Removing the label may void your SSD's warranty.
2. **Disassemble the Heatsink:** Unscrew the four small screws on the sides of the heatsink to separate the aluminum fin array from the bottom metal plate.
3. **Prepare Thermal Pads:** Carefully peel off the protective films from both sides of the two thermal pads.
4. **Attach Thermal Pads to SSD:** Place one thermal pad onto the top side of your M.2 SSD, ensuring it covers the chips. Place the second thermal pad onto the bottom side of the M.2 SSD.
5. **Assemble Heatsink with SSD:** Place the M.2 SSD (with thermal pads attached) onto the bottom metal plate of the heatsink. Ensure the SSD's screw hole aligns with the corresponding opening on the metal plate. Then, carefully place the aluminum fin array on top of the SSD, aligning the screw holes.
6. **Secure the Heatsink:** Reinsert the four screws into the side holes and gently tighten them. Tighten screws diagonally to ensure even pressure. Do not overtighten.
7. **Install into Motherboard:** Locate an available M.2 slot on your motherboard. Insert the assembled SSD and heatsink into the M.2 slot at an angle, then gently push it down until it clicks into place. Secure the SSD with the motherboard's M.2 mounting screw.

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Video 1: This video provides a step-by-step guide on how to properly install the Thermalright TR-M.2 2280 heatsink onto an M.2 NVMe SSD, covering preparation, assembly, and mounting.

Figure 3: A visual representation of the TR-M.2 2280 heatsink mounted on an M.2 slot on a motherboard, demonstrating its refined PCIe device compatibility and compact design.

3. Operating the Heatsink

The Thermalright TR-M.2 2280 Type A B heatsink operates passively, meaning it does not require any external

power or software. Once installed, it continuously works to draw heat away from your M.2 SSD's controller and NAND flash chips through the thermal pads and dissipate it into the surrounding air via its aluminum fins. This process helps maintain lower operating temperatures for your SSD, which is crucial for sustained high performance and longevity.
Performance tests have shown that installing this heatsink can reduce SSD temperatures by an average of 8-10°C during various operations, significantly improving thermal management compared to an uncooled SSD.

4. Maintenance

To ensure optimal performance and longevity of your Thermalright TR-M.2 2280 Type A B heatsink, minimal maintenance is required:

- **Dust Removal:** Periodically inspect the heatsink fins for dust accumulation. Use compressed air or a soft brush to gently remove any dust, ensuring unobstructed airflow for efficient heat dissipation.
- **Thermal Pad Integrity:** The thermal pads are designed for long-term use. Avoid unnecessary removal or reinstallation of the heatsink, as this can compromise the thermal pads' effectiveness. If reinstallation is necessary, ensure the thermal pads are still intact and making good contact.

5. Troubleshooting

If you experience issues with your SSD's temperature or performance after installing the heatsink, consider the following:

- **High Temperatures Persist:**
  - Ensure the heatsink is correctly installed and the screws are tightened sufficiently to create firm contact between the thermal pads and the SSD chips.
  - Verify that the protective films were completely removed from both sides of the thermal pads.
  - Check your PC case's overall airflow. Poor case ventilation can limit the heatsink's ability to dissipate heat effectively.
- **Performance Degradation:**
  - While the heatsink is designed to prevent thermal throttling, if performance issues persist, ensure your SSD firmware is up to date.
  - Confirm that the M.2 slot on your motherboard is functioning correctly and providing adequate PCIe bandwidth.

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Video 2: An informational video discussing the benefits and necessity of using an M.2 heatsink for NVMe drives, including thermal performance comparisons and potential throttling issues.

6. Specifications

Feature	Detail
Brand	Thermalright
Model	TR-M.2 2280 TYPE AB
Cooler Heatsink Material	Aluminum

Feature	Detail
Product Dimensions (L x W x H)	70mm x 24mm x 13mm (2.76"L x 0.94"W x 0.47"H)
Cooler Heatsink Compatibility	M.2 2280 SSDs and desktops with M.2 interfaces
Item Weight	0.04 Kilograms
Mounting Type	Chassis Mount (via screws)
Included Components	Heatsink, thermal pads, mounting screws

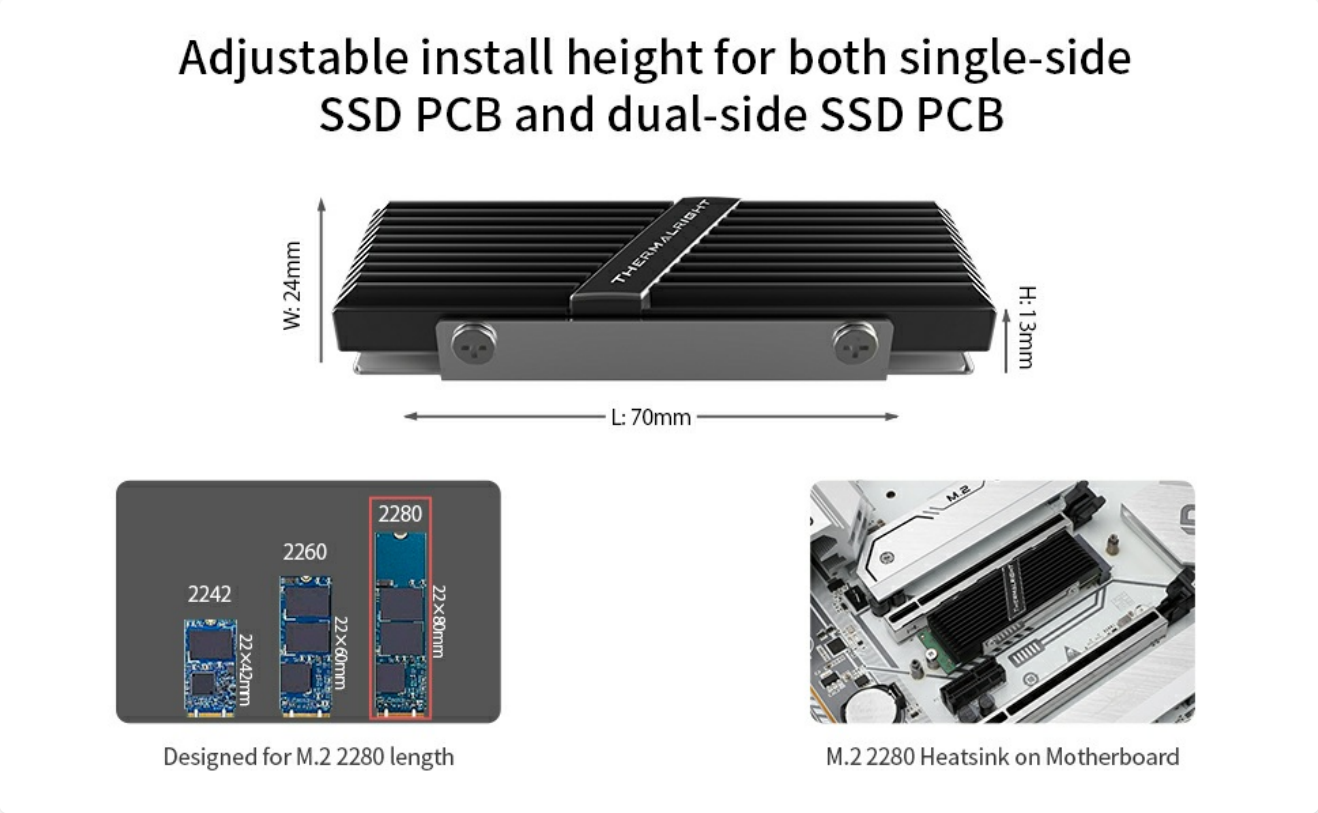

Figure 4: This image displays the dimensions of the TR-M.2 2280 heatsink (70mm L x 24mm W x 13mm H) and illustrates its compatibility with various M.2 2280 SSD lengths, highlighting its adjustable installation height for both single-sided and dual-sided SSD PCBs.

7. Warranty

Thermalright products are manufactured to high-quality standards. For specific warranty details regarding your TR-M.2 2280 Type A B heatsink, please refer to the warranty information provided with your product packaging or visit the official Thermalright website. Standard return policies typically allow for returns within 30 days of purchase.

8. Support

For further assistance, technical support, or inquiries about the Thermalright TR-M.2 2280 Type A B heatsink, please contact Thermalright customer service through their official website or the retailer where the product was purchased.
You can also visit the Thermalright Store on Amazon for additional product information and resources.