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GeekPi 0180

GeekPi ICE Tower Cooler Instruction Manual

Model: 0180

Brand: GeekPi

1. INTRODUCTION

This manual provides detailed instructions for the installation and operation of the GeekPi ICE Tower Cooler, designed specifically for the Raspberry Pi 5 (4GB/8GB models). This cooling solution helps maintain optimal operating temperatures for your Raspberry Pi 5, enhancing stability and performance during intensive tasks.



Image 1.1: GeekPi ICE Tower Cooler mounted on a Raspberry Pi 5 board.

2. PACKAGE CONTENTS

Verify that all components listed below are present in your package:

- ICE Tower Cooler with RGB PWM Fan
- Aluminum Heatsink
- Mounting Brackets (2 pieces)
- Acrylic Base Plate
- Thermal Pad
- Screws and Standoffs (various sizes for assembly)
- Small Screwdriver

Package includes



Image 2.1: All components included in the ICE Tower Cooler package.

3. FEATURES

- **Compatibility:** Designed for the Raspberry Pi 5 (4GB/8GB models).
- **Efficient Cooling:** The tower-style aluminum heatsink with multiple fins maximizes surface area for heat dissipation. The fan, positioned at the top, directs airflow through the heatsink, accelerating cooling. This design effectively keeps the Raspberry Pi 5's temperature within optimal operating limits.
- **RGB PWM Fan:** Features a 4CM fan with Pulse Width Modulation (PWM) control, allowing for automatic speed adjustment based on the motherboard's temperature. This function is supported by the official Raspberry Pi OS. The fan also includes RGB lighting effects.
- **Easy Installation:** The cooler is designed for secure attachment to the Raspberry Pi 5's GPIO header, ensuring proper contact with heat-generating components.
- **Compact Design:** Despite its cooling capabilities, the cooler maintains a compact form factor, suitable for various project enclosures.

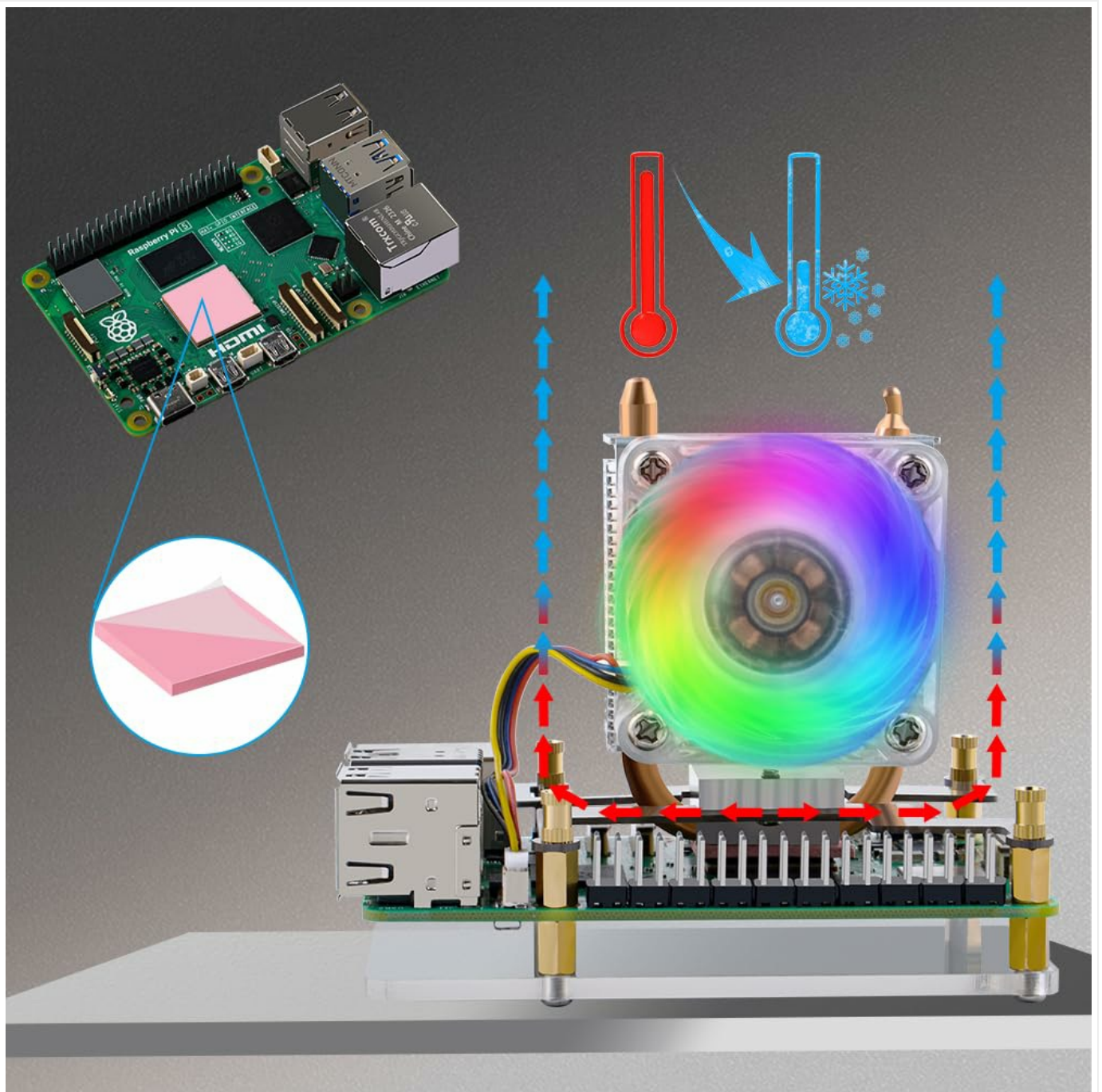


Image 3.1: Illustration of the cooling principle, showing airflow and heat dissipation.

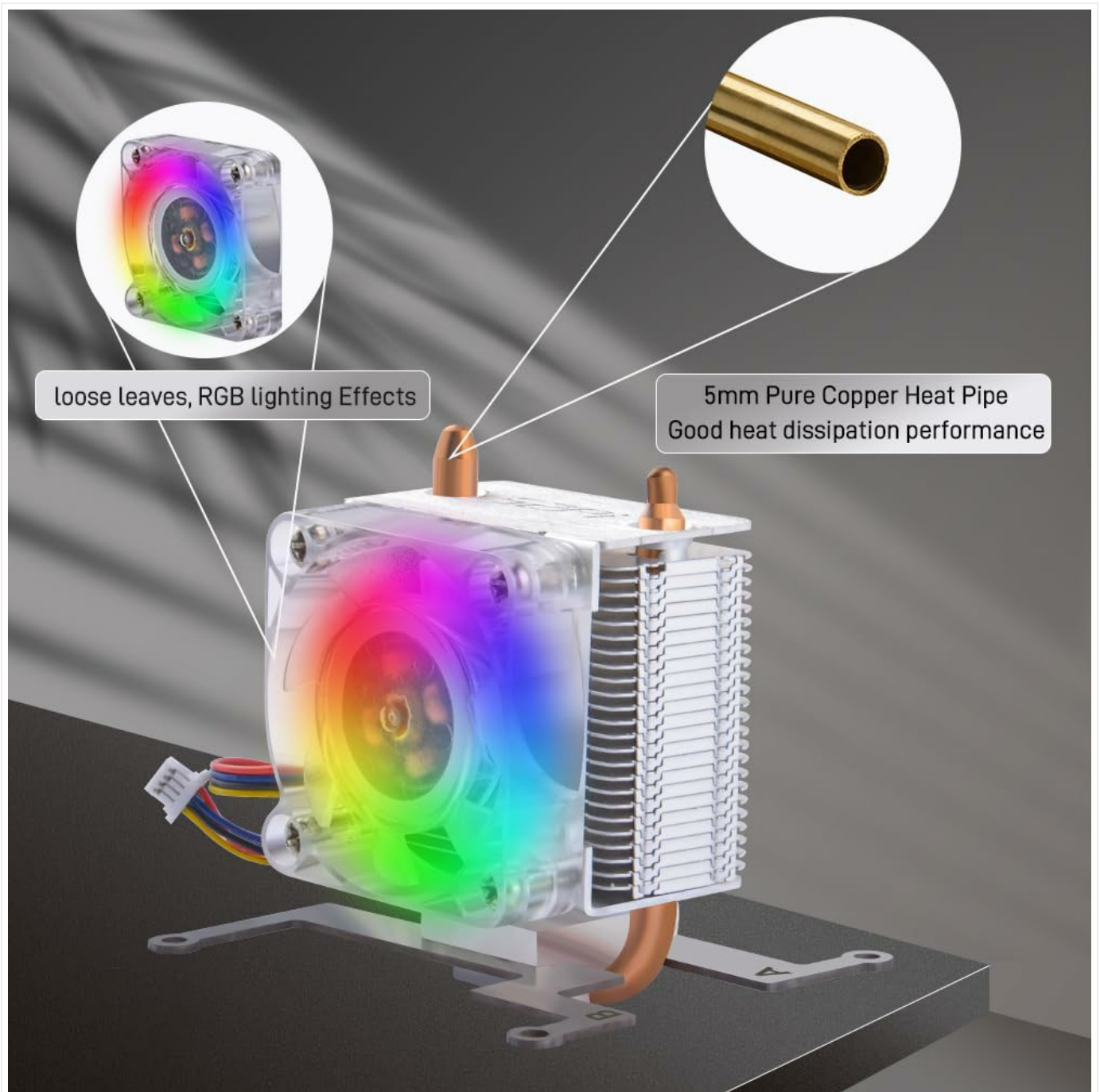


Image 3.2: Detail of the RGB fan and 5mm pure copper heat pipes for efficient heat transfer.

INSTALLATION STEPS

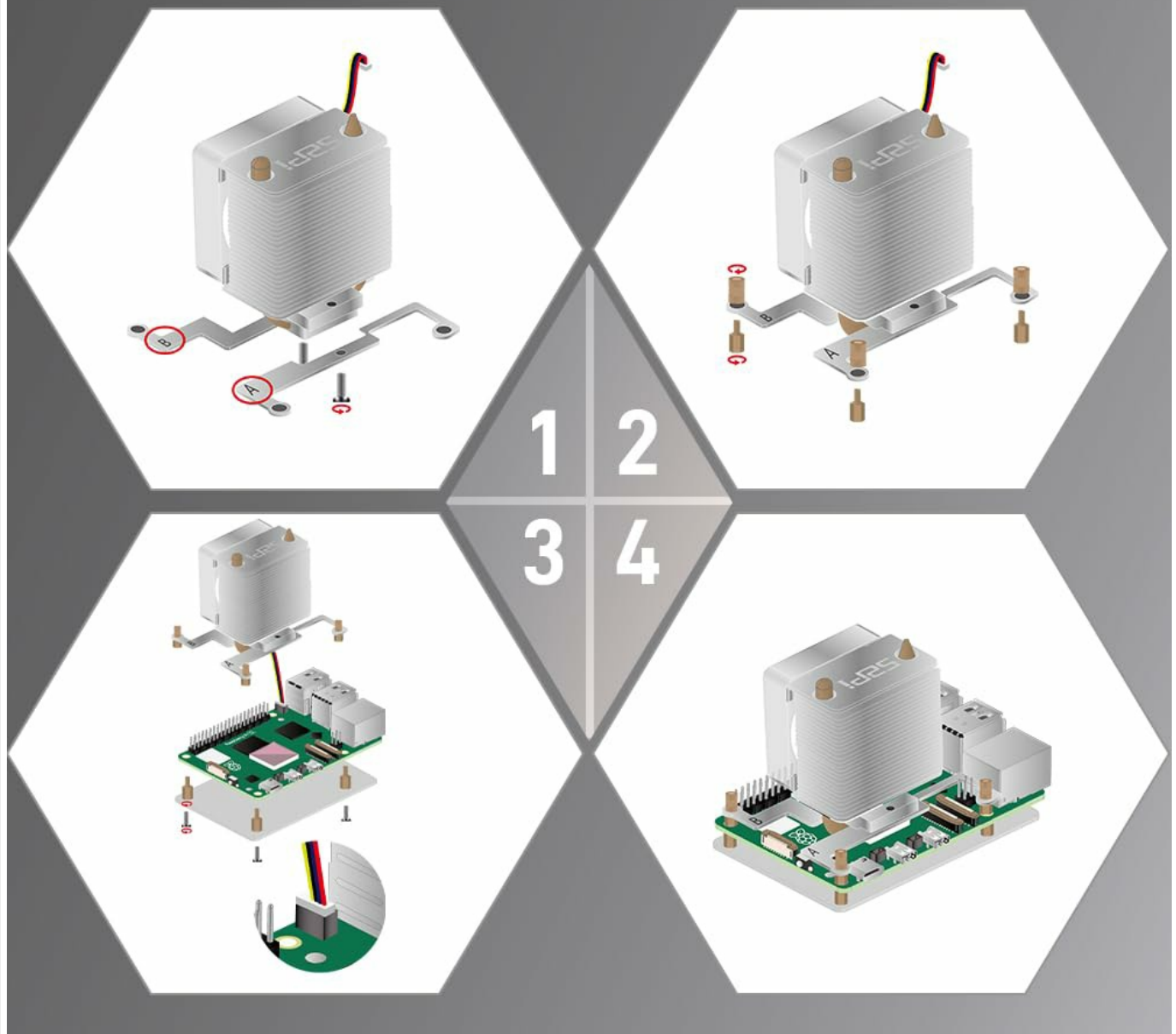


Image 3.3: Specifications of the 4CM PWM fan, including power and compatibility.

4. INSTALLATION GUIDE

Follow these steps to install the GeekPi ICE Tower Cooler on your Raspberry Pi 5:

1. **Prepare the Heatsink:** Attach the two mounting brackets to the base of the ICE Tower Cooler using the provided small screws. Ensure they are securely fastened.
2. **Apply Thermal Pad:** Carefully peel off the protective films from both sides of the thermal pad. Place the thermal pad onto the main processor (SoC) of your Raspberry Pi 5.
3. **Position the Cooler:** Align the ICE Tower Cooler with the Raspberry Pi 5's GPIO pins and the mounting holes. Gently press the cooler down to ensure good contact between the heatsink base and the thermal pad on the SoC.
4. **Secure the Cooler:** Use the longer standoffs and screws to secure the cooler to the Raspberry Pi 5 board, passing through the mounting brackets and the board's holes. Tighten them evenly to prevent uneven pressure.
5. **Connect the Fan:** Plug the 4-pin fan connector into the appropriate fan header on your Raspberry Pi 5 board. Refer to your Raspberry Pi 5 documentation for the exact fan header location.

6. **Assemble Base (Optional):** If using the acrylic base plate, attach it to the bottom of your Raspberry Pi 5 using the remaining standoffs and screws.

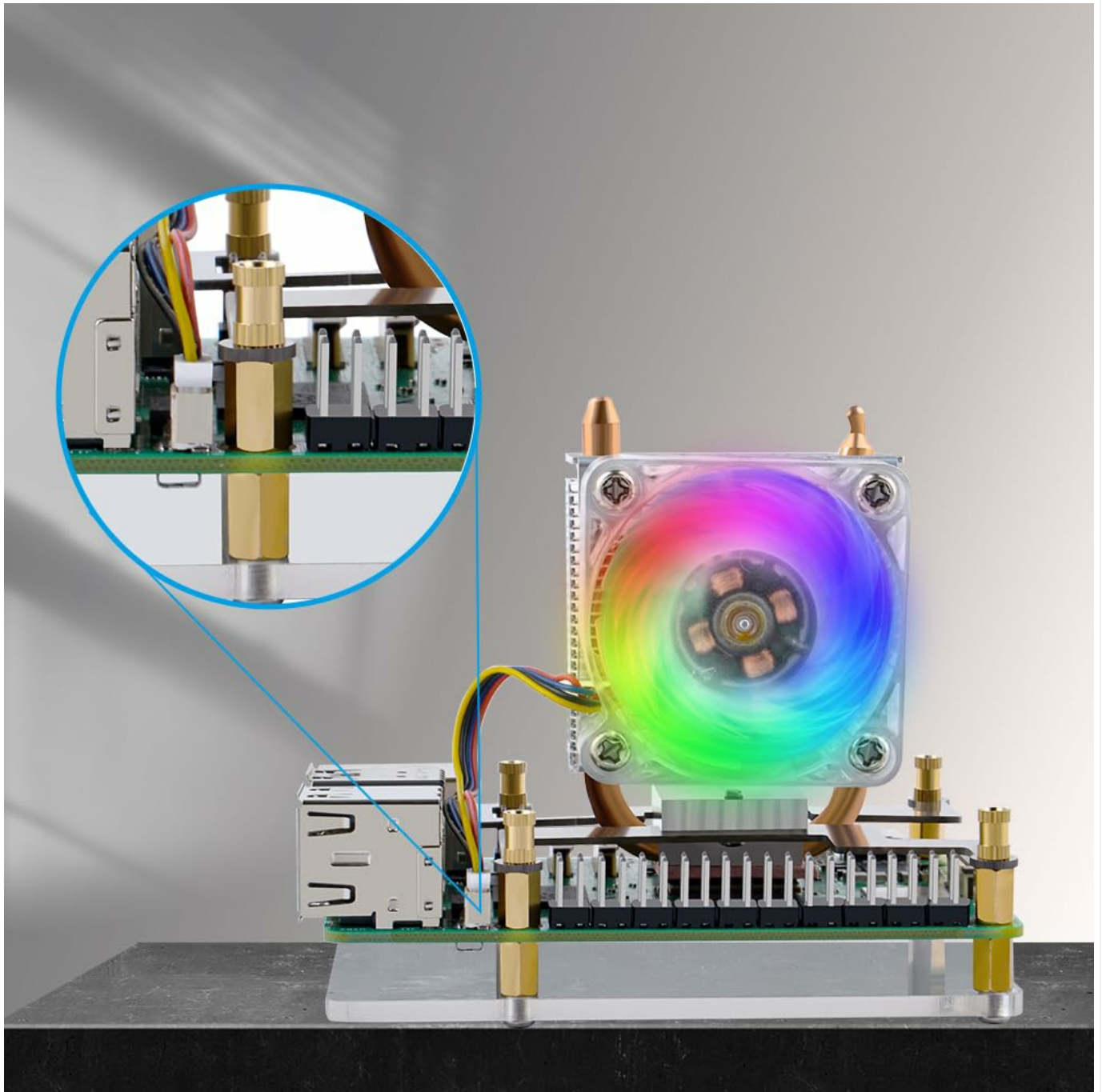


Image 4.1: Visual guide for the installation process of the cooler on Raspberry Pi 5.

5. OPERATION

Once installed, the GeekPi ICE Tower Cooler operates automatically. The PWM fan will adjust its speed based on the Raspberry Pi 5's CPU temperature, as managed by the operating system. This ensures efficient cooling only when needed, reducing noise and power consumption during idle periods.

- **Automatic Fan Control:** The fan speed is controlled by the Raspberry Pi OS. No manual configuration is typically required for basic operation.
- **RGB Lighting:** The fan features integrated RGB lighting, which will illuminate when the fan is powered.
- **Monitoring:** You can monitor your Raspberry Pi 5's temperature using various software tools available for Raspberry Pi OS to verify cooling performance.

6. SPECIFICATIONS

Feature	Detail
Model Number	0180
Brand	GeekPi
Compatible Devices	Raspberry Pi 5
Cooling Method	Air Cooling (Heatsink with Fan)
Fan Type	4CM PWM Fan with RGB Lighting
Power Connector	4-Pin
Voltage	5 Volts
Rated Power	0.4W @ 5V, 0.08A
Noise Level	17.6 Decibels
Product Dimensions	3.93 x 1.96 x 4.7 inches (approximate)
Item Weight	4.23 ounces (approximate)

4CM PWM fan

The CPU fan delivers automatic speed adjustment function,

- ▶ DC 5V Power in (Can be powered by the Raspberry Pi)
- ▶ Rated power 0.4W @5V, 0.08A
- ▶ Super Cool fan background light (RGB Color)
- ▶ Compatible with Raspberry Pi 5

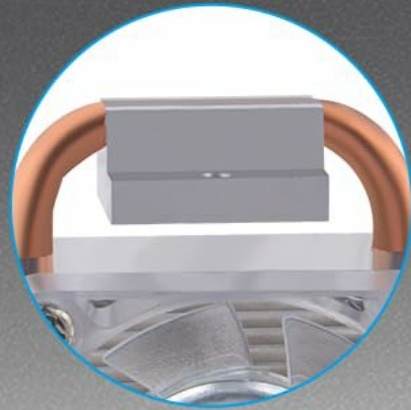
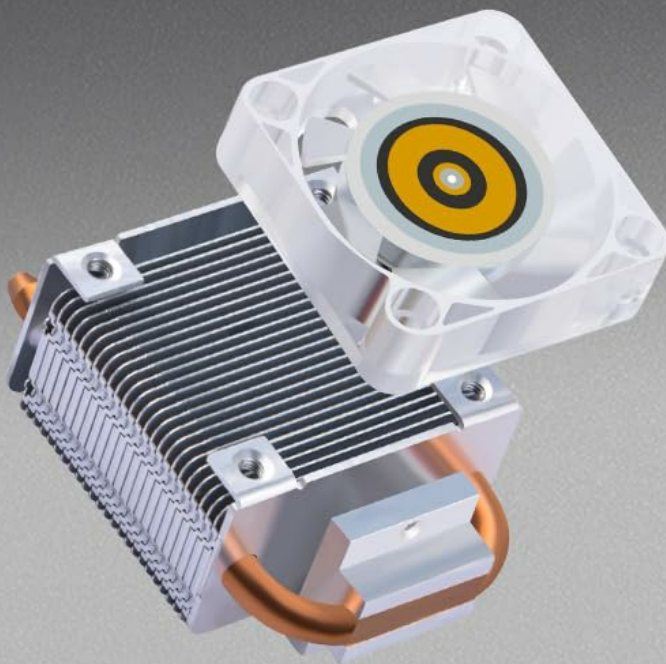


Image 6.1: Detailed dimensions of the ICE Tower Cooler structure.

7. TROUBLESHOOTING

- **Fan not spinning or RGB not lighting up:**
 - Ensure the 4-pin fan connector is correctly and securely plugged into the Raspberry Pi 5's fan header.
 - Verify that the Raspberry Pi 5 is receiving adequate power.
 - Check Raspberry Pi OS settings to ensure fan control is enabled and configured correctly.
- **High temperatures despite cooler installation:**
 - Confirm that the thermal pad is correctly placed on the SoC and that the cooler makes firm contact.
 - Ensure there is sufficient airflow around the Raspberry Pi and cooler. Avoid enclosing it in a sealed, unventilated space.
 - Check for any obstructions to the fan blades.
- **Excessive fan noise:**

- The fan speed is controlled by PWM. If the Raspberry Pi is under heavy load, the fan will spin faster. Reduce workload if noise is a concern.
- Ensure the fan is securely mounted and not vibrating against other components.

8. MAINTENANCE

To ensure optimal performance and longevity of your GeeekPi ICE Tower Cooler, periodic maintenance is recommended:

- **Dust Removal:** Regularly inspect the heatsink fins and fan blades for dust accumulation. Use a soft brush or compressed air to gently remove dust. Ensure the fan is not spinning when cleaning with compressed air.
- **Connection Check:** Periodically verify that the fan's 4-pin connector remains securely attached to the Raspberry Pi 5's fan header.
- **Thermal Pad Integrity:** If you frequently remove and re-install the cooler, consider replacing the thermal pad to ensure efficient heat transfer.

9. WARRANTY AND SUPPORT

For warranty information or technical support regarding your GeeekPi ICE Tower Cooler, please refer to the official GeeekPi website or contact their customer service directly. Keep your purchase receipt as proof of purchase for any warranty claims.

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