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GeekPi DP-0038

GeekPi DeskPi Lite Pi5 Case Instruction Manual

Model: DP-0038

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your GeekPi DeskPi Lite Pi5 Case. Designed specifically for the Raspberry Pi 5, this case enhances functionality with PCIe expansion for M.2 NVMe SSDs, an active cooling system, and convenient connectivity options.

Key Features:

- **Compatibility:** Specifically designed for the Raspberry Pi 5.
- **Expandability:** Supports PCIe expansion for M.2 NVMe SSDs (2230, 2242, 2260, 2280 sizes).
- **Advanced Cooling:** Integrated Armor Lite V5 Active Cooler for optimal thermal management.
- **Convenient Connectivity:** PCB daughter board with MicroHDMI to standard HDMI adapter and rear-routed USB-C port.
- **GPIO Access:** Features a GPIO expansion board and dust cover for easy and protected access.
- **Power Management:** Includes a power switch button and a reset push button for the Pi 5 board.



Figure 1: GeeekPi DeskPi Lite Pi5 Case with labeled ports including USB, Ethernet, HDMI, USB-C power, power switch, and GPIO rubber cover.

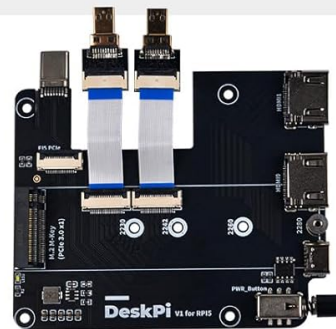
2. PACKAGE CONTENTS

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

PRODUCT LIST



Deskpi Lite



DeskPi V1 For RPi5
Daughter board



Aluminum Heatsink for Pi 5



PCIe FPC cable



GPIO expansion board



M2x6.5mm



M2x3mm



M2.5X6



M2.5X10

Figure 2: All components included in the DeskPi Lite Pi5 Case package.

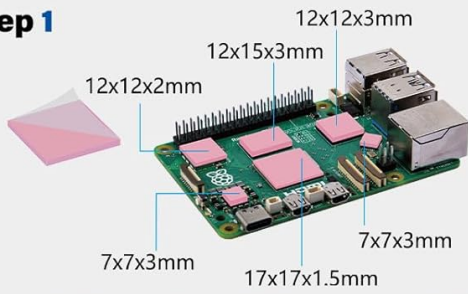
- DeskPi Lite Pi5 Case (Top and Bottom Shell)
- DeskPi V1 For RPi5 Daughter Board
- Armor Lite V5 Active Cooler (Aluminum Heatsink with Fan)
- PCIe FPC Cable
- GPIO Expansion Board
- Thermal Pads (various sizes)
- M2x6.5mm Standoff
- M2x3mm Screws
- M2.5x6 Screws
- M2.5x10 Screws

3. SETUP INSTRUCTIONS

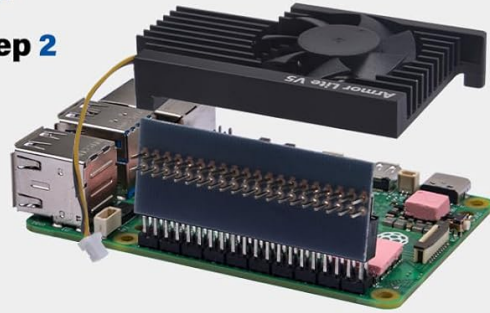
Follow these steps carefully to assemble your GeekPi DeskPi Lite Pi5 Case with your Raspberry Pi 5 and M.2 NVMe SSD.

Installation steps

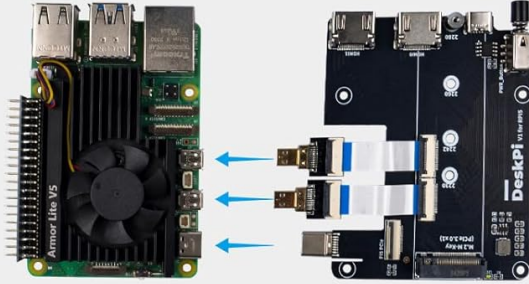
Step 1



Step 2



Step 3



Step 4



Step 5



Step 6



Figure 3: Visual guide for the installation steps.

3.1. Heatsink and Thermal Pad Installation

1. Carefully peel off the protective films from both sides of the thermal pads.
2. Apply the thermal pads to the corresponding chips on your Raspberry Pi 5 board as indicated in Figure 3, Step 1. Ensure good contact.
3. Align the Armor Lite V5 Active Cooler with the Raspberry Pi 5 board, ensuring the fan connector is near the fan header. Gently press down to secure it, making sure the thermal pads create firm contact between the heatsink and the chips.
4. Secure the heatsink to the Raspberry Pi 5 board using the provided screws, as shown in Figure 3, Step 2.
5. Connect the fan cable from the Armor Lite V5 Active Cooler to the appropriate fan header on the Raspberry Pi 5 board.

Fast Cooling

Equipped with a 3510 heat sink, it can quickly reduce the temperature of the Raspberry Pi board.

Reminder: The fan will only start working when the CPU temperature reaches about 65 degrees.

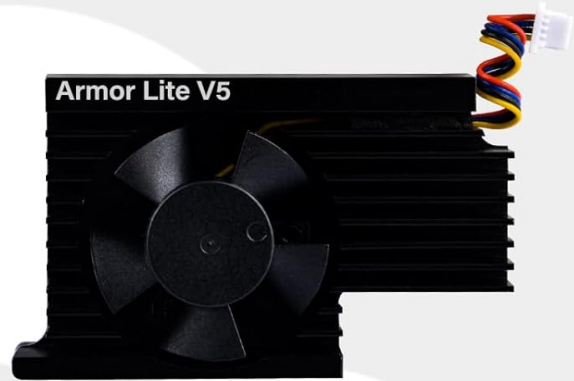


Figure 4: Armor Lite V5 Active Cooler installed on the Raspberry Pi 5.

3.2. Daughter Board and PCIe Cable Connection

1. Connect the PCIe FPC cable to the Raspberry Pi 5's PCIe slot and the DeskPi V1 Daughter Board's PCIe slot. Ensure the cable is inserted correctly and securely.
2. Carefully align and connect the Raspberry Pi 5 board to the DeskPi V1 Daughter Board, ensuring all ports and connectors are properly seated. This connection includes the USB-C port and the HDMI ports.
3. Insert the M.2 NVMe SSD into the designated slot on the DeskPi V1 Daughter Board. Secure it with the provided M2x6.5mm standoff and M2x3mm screw. The case supports M.2 NVMe SSDs of sizes 2230, 2242, 2260, and 2280.

SSD size: 2230/2242/2260/2280

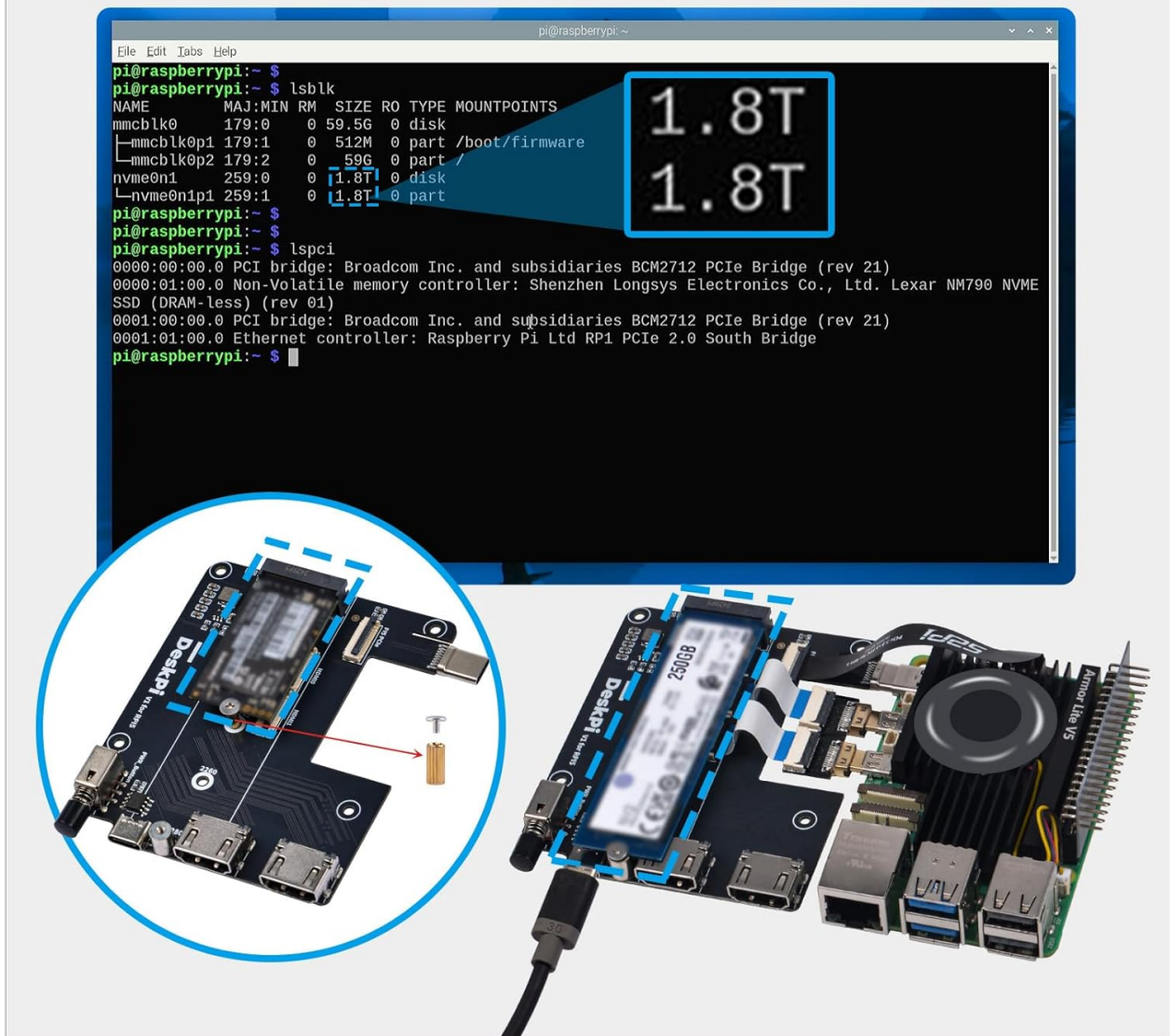


Figure 5: M.2 NVMe SSD installation on the daughter board.

3.3. Case Assembly

1. Place the assembled Raspberry Pi 5 and daughter board into the bottom shell of the DeskPi Lite case. Ensure it sits flush and all ports align with the case openings.
2. Secure the board assembly to the bottom case using the M2.5x6 screws.
3. Attach the GPIO expansion board to the GPIO pins on the Raspberry Pi 5.
4. Place the top shell of the case onto the bottom shell, aligning the screw holes. Secure the top shell with the M2.5x10 screws.

3.4. Video Installation Guide

For a visual step-by-step guide, please refer to the official installation video:

Your browser does not support the video tag.

Video 1: Official installation guide for the GeekPi DeskPi Lite Pi5 Case. This video demonstrates the complete assembly process, including thermal pad application, heatsink installation, daughter board connection, SSD mounting, and final case assembly.

4. OPERATING INSTRUCTIONS

Once assembled, the DeskPi Lite Pi5 Case provides enhanced control and monitoring features.

4.1. Power and Reset Buttons

- **Power Switch Button:** Located on the side of the case, this button allows for convenient power on/off control of your Raspberry Pi 5.
- **Reset Push Button:** Positioned on the front, this button provides a quick way to reset the Raspberry Pi 5 board.

4.2. LED Indicators

The case features LED indicators to provide status information:

- **Green LED:** Indicates disk status.
- **Red LED:** Indicates power status.



Figure 6: Power switch button and LED indicators.

4.3. GPIO Access

The integrated GPIO expansion board allows for easy access to the Raspberry Pi 5's GPIO pins from the outside of the case, protected by a rubber cover.

4.4. MicroSD Card Slot

The MicroSD card slot remains accessible from the outside, allowing for easy insertion and removal of the card without disassembling the case.

5. MAINTENANCE

To ensure the longevity and optimal performance of your DeskPi Lite Pi5 Case and Raspberry Pi 5, follow these maintenance guidelines:

- **Cleaning:** Periodically clean the exterior of the case with a soft, dry cloth. For dust accumulation in the ventilation grilles, use compressed air. Ensure the device is powered off and disconnected from power before cleaning.
- **Fan Maintenance:** If the active cooler fan becomes noisy or less effective, inspect it for dust buildup and gently clean it with compressed air or a soft brush.
- **Environmental Conditions:** Operate the case in a well-ventilated area, away from direct sunlight, excessive heat, and moisture.

6. TROUBLESHOOTING

This section addresses common issues you might encounter.

6.1. SSD Not Detected

- **Check PCIe Cable:** Ensure the PCIe FPC cable is securely connected at both ends (Raspberry Pi 5 and daughter board).
- **SSD Seating:** Verify that the M.2 NVMe SSD is correctly seated in its slot and secured with the screw.
- **Raspberry Pi OS Configuration:** Ensure your Raspberry Pi OS is updated and configured to recognize NVMe drives. You may need to force PCIe to Gen3.0 in config.txt by adding `dtparam=pciex1_gen=3`.
- **SSD Compatibility:** Confirm your M.2 NVMe SSD is compatible with the PCIe interface and supported sizes (2230/2242/2260/2280).

Installed housing

Wi-Fi and BLE communication signals

```
File Edit Tabs Help
pi@raspberrypi:~/pi5/benchtest
[CHG] Device B8:F0:0C:9D:C4:05 RSSI: -58
[CHG] Device 6E:06:97:1B:93:A8 RSSI: -91
[CHG] Device 4A:9E:3C:A5:F3:A3 ManufacturerData Key: 0x004c
[CHG] Device 4A:9E:3C:A5:F3:A3 ManufacturerData Value:
10 06 43 1e 5f cd 30 d2 ..C...0.
[AULA-F87Pro 5.0] # info
Device F3:14:BF:B3:2D:B1 (random)
Name: AULA-F87Pro 5.0
Alias: AULA-F87Pro 5.0
Appearance: 0x03c1
Icon: input-keyboard
Paired: yes
Bonded: yes
Trusted: no
Blocked: no
Connected: yes
LegacyPairing: no
UUID: Generic Access Profile (00001800-0000-1000-8000-00005f9b34fb)
UUID: Device Information (0000180a-0000-1000-8000-00005f9b34fb)
UUID: Battery Service (0000180f-0000-1000-8000-00005f9b34fb)
UUID: Human Interface Device (00001812-0000-1000-8000-00005f9b34fb)
Modalias: usb:v354p:FA97d5701
ManufacturerData Key: 0x0086
ManufacturerData Value:
03 00 80
[CHG] Device F3:14:BF:B3:2D:B1 ServicesResolved: no
[CHG] Device F3:14:BF:B3:2D:B1 Connected: no
[bluetooth]#

File Edit Tabs Help
pi@raspberrypi:~/pi5/benchtest
Interface
wlan0 (IEEE 802.11), phy 0, reg: CN (DFS-FCC), SSID: HUAWEX-B4NKSX_5G
Levels
link quality: 100% (70/70)
signal level: -32 dBm (0.63 uW)
Statistics
RX: 51k (8.69 MiB)
TX: 1k (414.12 KiB)
Info
mode: Managed, connected to: EA:B6:68:3D:F8:06, time: 1:02h, inactive: 0.0s
freq: 5805 MHz, ctrl: 5775 MHz, channel: 161 (width: 80 MHz)
rx rate: 6.0 Mbit/s, tx rate: 24.0 Mbit/s
station flags: WME, preamble: short, slot: short
power mgt: on, tx-power: 31 dBm (1258.93 mW)
retry: short limit 7, rts/cts: off, frag: off
Network
wlan0 (UP RUNNING BROADCAST MULTICAST)
mac: D8:3A:DD:9F:A5:D2, qlen: 1000
ip: 192.168.3.90/24

info hist scan F4 F5 F6 F7 prefs F8 help F9 about F10 quit
```

Bluetooth - signal

Wifi - signal



Figure 7: Example of SSD detection using lsblk and wireless signal information.

6.2. Cooling Performance

- **Thermal Pad Contact:** Ensure the thermal pads are correctly placed and make firm contact between the Raspberry Pi 5 chips and the heatsink.
- **Fan Connection:** Verify the active cooler fan is properly connected to the Raspberry Pi 5's fan header.
- **Fan Operation:** Note that the fan typically activates when the CPU temperature reaches approximately 65 degrees Celsius. This is normal operation.

CPU Temperature Bench Test in 30minutes

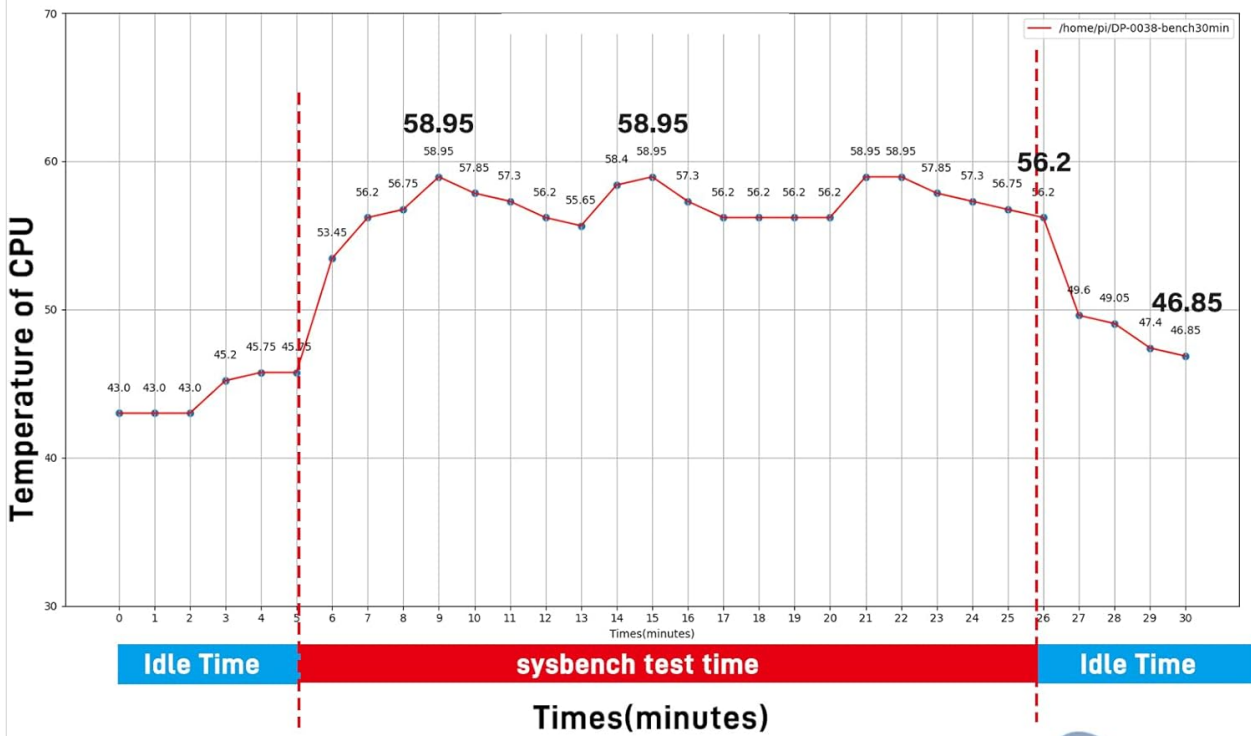


Figure 8: CPU temperature performance during idle and stress test periods.

6.3. Assembly Difficulties

- **Ribbon Cables:** Be gentle when handling and connecting the FPC ribbon cables. Ensure they are fully inserted and the latches are secured.
- **Component Alignment:** Double-check the alignment of the Raspberry Pi 5 board with the daughter board and the case. Do not force components if they do not fit easily.
- **Power Button Mechanism:** When installing the Raspberry Pi 5, ensure the case's power button mechanism aligns correctly with the Pi's onboard power button to avoid damage.

7. SPECIFICATIONS

Feature	Specification
Brand	GeeekPi
Model Name	DP-0038
Compatibility	Raspberry Pi 5
M.2 NVMe SSD Support	2230, 2242, 2260, 2280 (PCIe x4 interface)
Cooling System	Armor Lite V5 Active Cooler
HDMI Ports	Dual Full-Size HDMI Output (via adapter)
USB Ports	2x USB 3.0, 2x USB 2.0 (routed from Pi 5)
Ethernet Port	1x Gigabit Ethernet (routed from Pi 5)
Power Input	USB-C 5V Power IN (routed to rear)
GPIO Access	External GPIO expansion board with dust cover
Dimensions (Approx.)	147 mm (L) x 94 mm (W) x 34 mm (H)
Item Weight	7.4 ounces
Material	Plastic

8. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the official GeeekPi website or contact their customer service directly. Details regarding warranty periods, coverage, and support channels are typically provided by the manufacturer.

Always retain your proof of purchase for warranty claims.