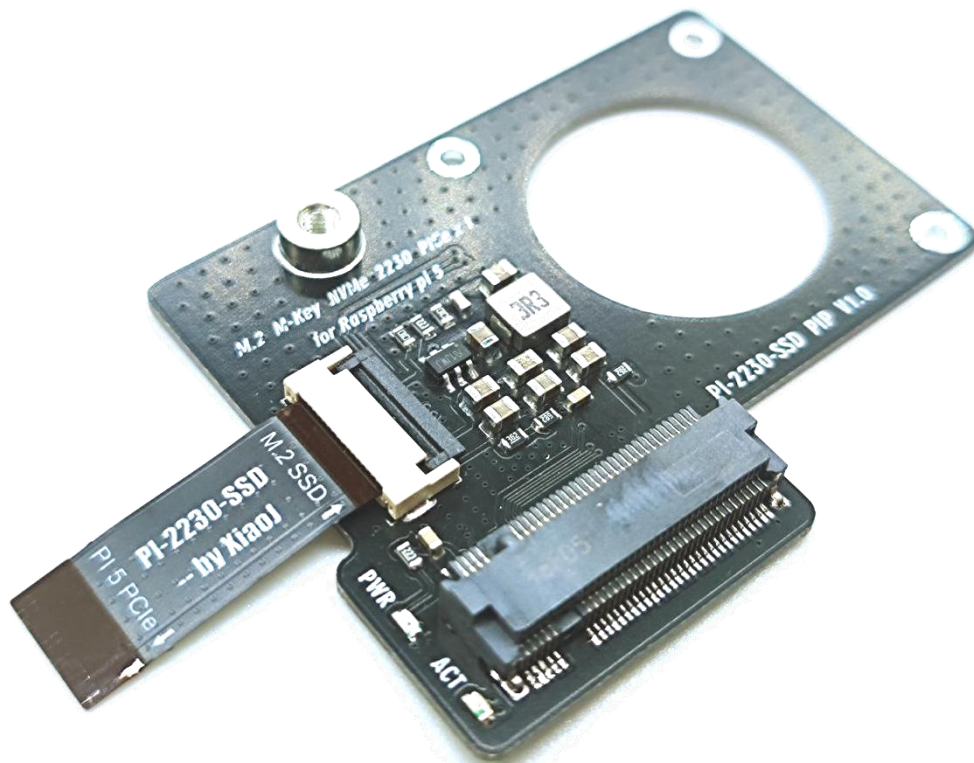
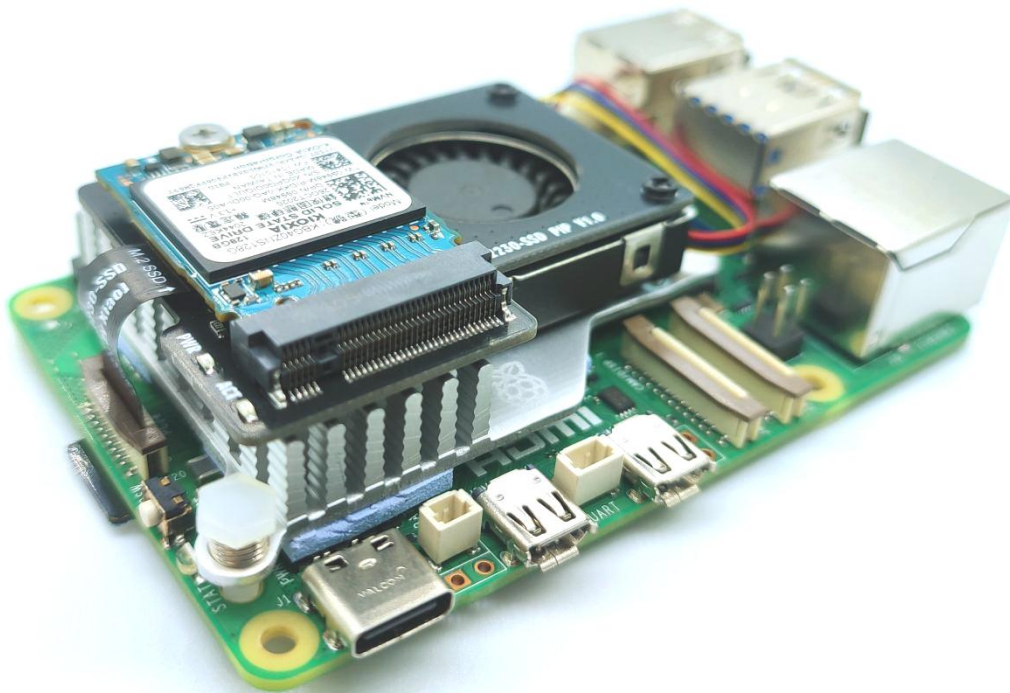


Instructions for PI-2230-SSD

-- by XiaoJ



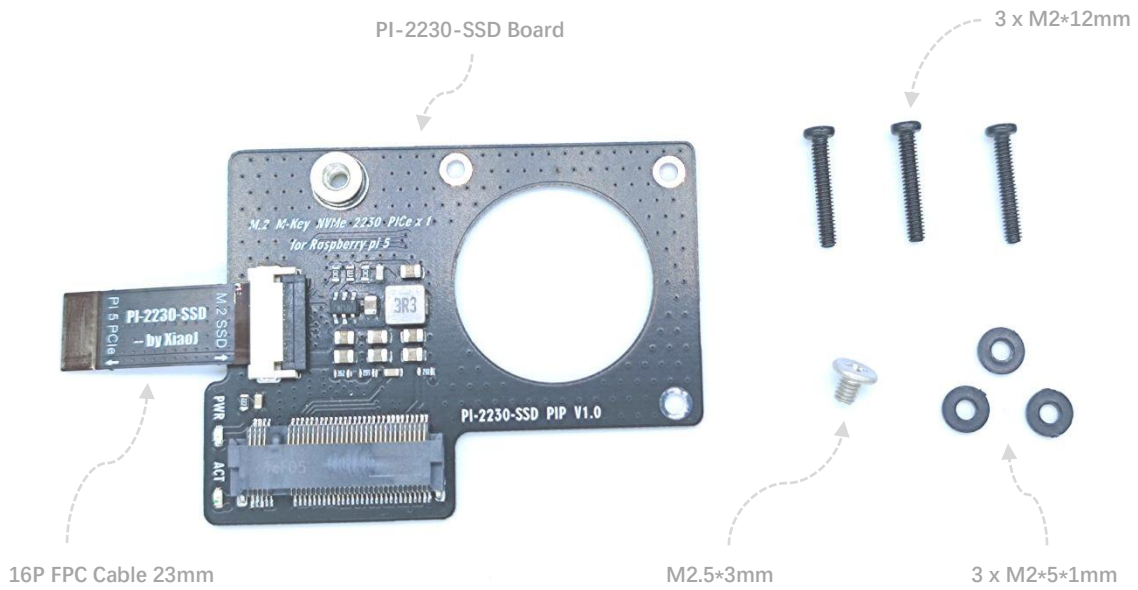
The PI-2230-SSD is an SSD expansion board specifically designed for the Raspberry PI 5 (hereinafter referred to as RPi 5) to provide PCIe to M.2 NVMe SSD function. The expansion board is designed based on the Raspberry PI official active cooler and must work with the active cooler. The board is only applicable to the M.2 M-key 2230 SSD of the NVMe protocol, and the compact size after installation does not affect the use of the official case and 40pin GPIO.



Indicator description:

1. "PWR" Red indicator. Light on indicates that the SSD is powered on, light off indicates that the SSD is powered off
2. "ACT" Green indicator. Light flashing indicates that the SSD is reading /writing, light off indicates that the SSD is idle

Parts list

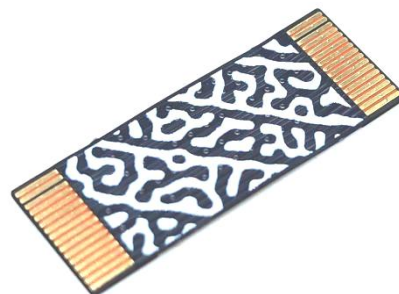


FPC Cable

The FPC cable supporting the board is specially customized, with a length of 23mm, which optimizes the power and signal wiring, providing more stable power supply and communication quality for SSD



16P FPC Cable - Front



16P FPC Cable - Back

Installation Procedure

1. Remove the three screws fastening the fan on the active cooler and replace them with matching M2*12 screws, and install M2*5*1 gaskets between the board and the fan, as shown in the following figure



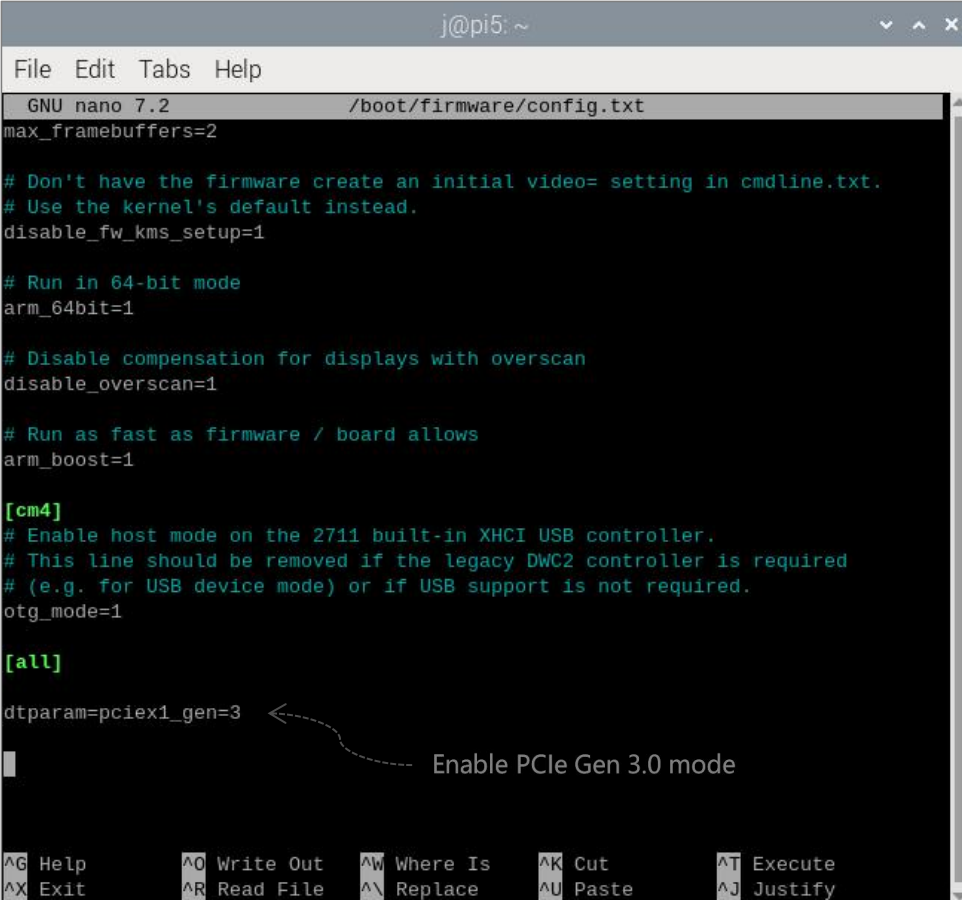
2. Install the FPC cable according to the label on it . Ensure that the cable is installed in the correct direction and the FPC seat is latched tightly



3. Insert the 2230 SSD and secure it with the M2.5*3 screw

PCIe Enable Configuration

1. Please ensure that the operating system of RPi 5 is the latest version (Release date: December 5th 2023 and later).
2. Enable the RPi 5 PCIe function, add the follow command **dtparam = pciex1_gen = 3** to the **[all]** section at the end of your Raspberry Pi **/boot/firmware/config.txt** save and restart system. The details are shown in the following figure



```
j@pi5: ~
File Edit Tabs Help
GNU nano 7.2 /boot/firmware/config.txt
max_framebuffers=2

# Don't have the firmware create an initial video= setting in cmdline.txt.
# Use the kernel's default instead.
disable_fw_kms_setup=1

# Run in 64-bit mode
arm_64bit=1

# Disable compensation for displays with overscan
disable_overscan=1

# Run as fast as firmware / board allows
arm_boost=1

[cm4]
# Enable host mode on the 2711 built-in XHCI USB controller.
# This line should be removed if the legacy DWC2 controller is required
# (e.g. for USB device mode) or if USB support is not required.
otg_mode=1

[all]
dtparam=pciex1_gen=3

```

← Enable PCIe Gen 3.0 mode

^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify

3. After the system restart, run the **lspci** and **lsblk** commands to check whether the PCIe function is normal

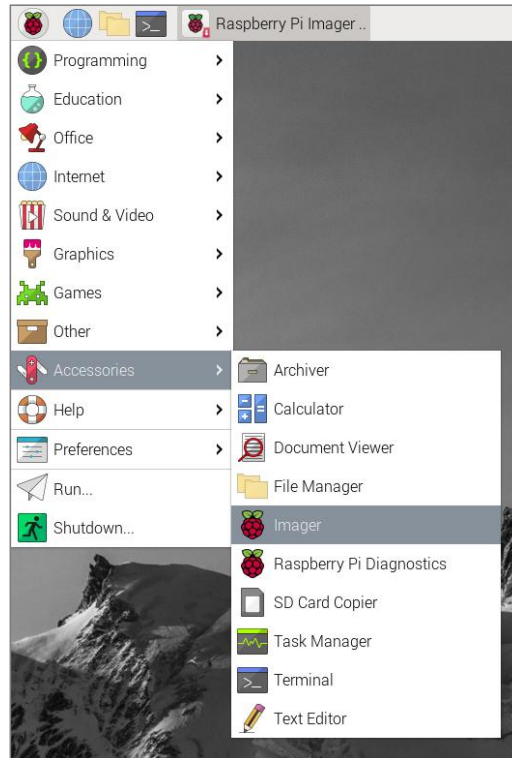


```
j@pi5: ~  
File Edit Tabs Help  
j@pi5:~$ lspci  
0000:00:00.0 PCI bridge: Broadcom Inc. and subsidiaries Device 2712 (rev 21)  
0000:01:00.0 Non-Volatile memory controller: KIOXIA Corporation NVMe SSD Controller BG4  
0001:00:00.0 PCI bridge: Broadcom Inc. and subsidiaries Device 2712 (rev 21)  
0001:01:00.0 Ethernet controller: Device 1de4:0001  
j@pi5:~$ lsblk  
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS  
mmcblk0     179:0    0  59.5G  0 disk  
└─mmcblk0p1 179:1    0   512M  0 part /boot/firmware  
└─mmcblk0p2 179:2    0    59G   0 part  
nvme0n1     259:0    0  119.2G  0 disk  
└─nvme0n1p1 259:1    0   512M  0 part  
└─nvme0n1p2 259:2    0  118.7G  0 part /  
j@pi5:~$
```

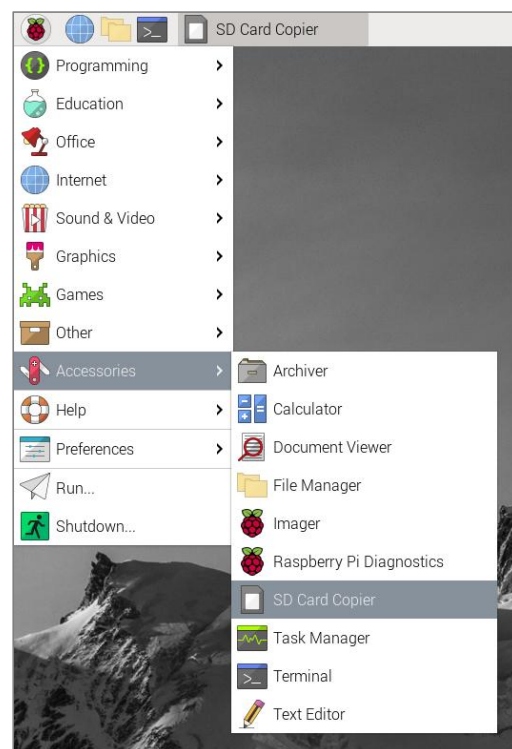
SSD Controller Detected

Boot from SSD

1. Format the SSD with **Raspberry Pi Imager** and burn the latest version of Raspberry Pi OS

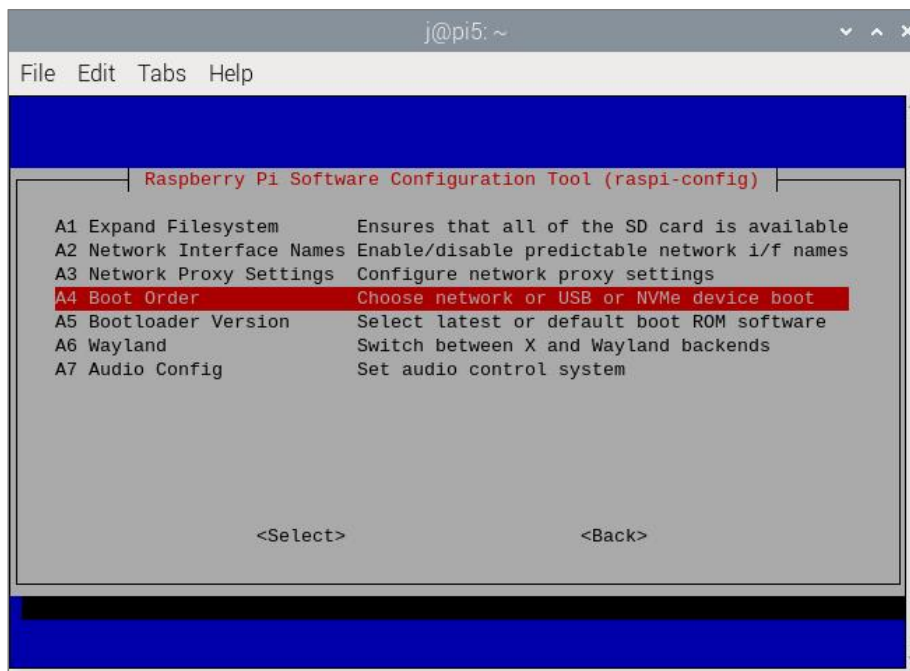
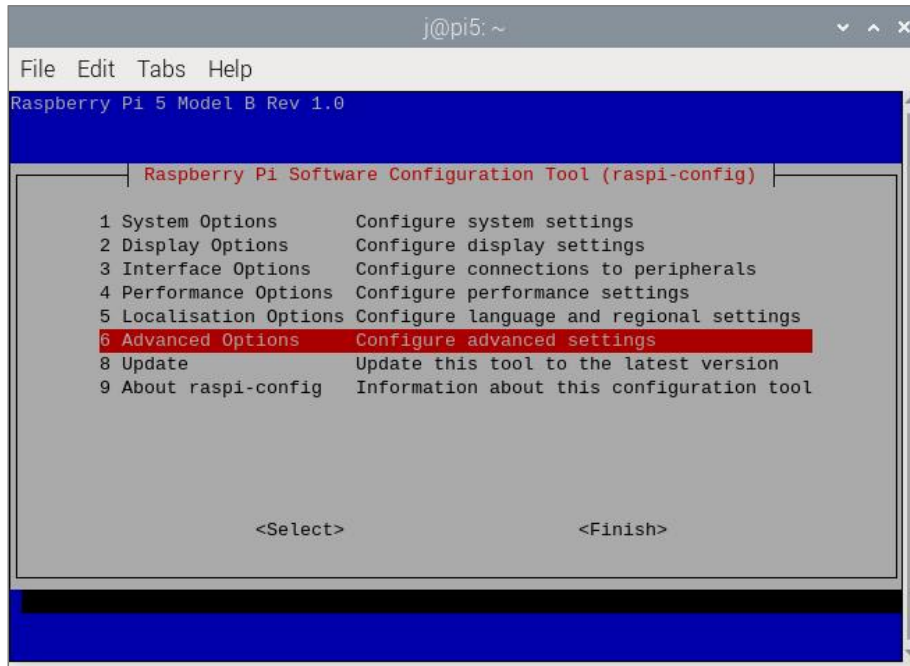


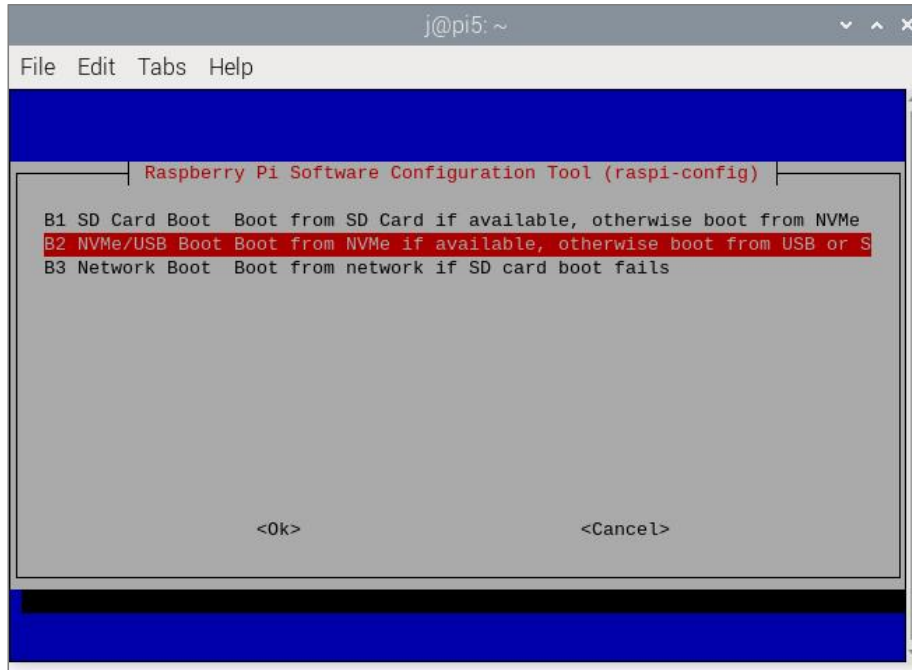
2. You can also use the **SD Card Copier** tool to copy the original system to the SSD



2. Run the **sudo raspi-config** command in the command terminal to open the system configuration tool of RPi 5 and set the system boot sequence, The steps are as follows

- a. Select **Advanced Options**
- b. Select **Boot Order**
- c. Select **NVMe/USB Boot**
- d. Restart system





Feedback and suggestions

If you have any problems or suggestions during the use, you can contact me by email: 416386001@qq.com