EDA ED-HMI3020-070C Embedded Computers User Guide

Contents

EDA ED-HMI3020-070C Embedded Computers

Product Information

- **Specifications**
  - **Model:** ED-HMI3020-070C
  - **Manufacturer:** EDA Technology Co., LTD
  - **Application:** IOT, industrial control, automation, green energy, artificial intelligence
  - **Supported Readers:** Mechanical Engineer, Electrical Engineer, Software Engineer, System Engineer
  - **Support:** Indoor Use Only

Product Usage Instructions

- **Safety Instructions**
  - Use the product in an environment that meets design specifications.
  - Avoid illegal operations that may lead to personal safety accidents or property losses.
  - Do not modify the equipment without permission.
  - Securely fix the equipment during installation to prevent falling.
  - Maintain a distance of at least 20cm from the equipment if it has an antenna.
  - Avoid using liquid cleaning equipment and keep away from liquids and flammable materials.
  - Only use the product indoors.
- **Contact Information**
  - **If you need further assistance or have any questions, you can contact EDA Technology Co., LTD:**
    - **Email:** sales@edatec.cn.
    - **Phone:** +86-18217351262
    - **Website:** www.edatec.cn
- **Copyright Statement**
  - ED-HMI3020-070C and its related intellectual property rights are owned by EDA Technology Co., LTD. Any unauthorized distribution or modification of this document is prohibited.

- **Related Manuals**
  - You can find additional product documents such as datasheets, user manuals, and application guides on the EDA Technology Co., LTD website.
- **Reader Scope**
  - This manual is designed for Mechanical Engineers, Electrical Engineers, Software Engineers, and System Engineers who will be using the product.
- **Foreword**
  - The product manual provides important information regarding the proper use and handling of the product. Please read through the manual carefully before using the product.

FAQs

- **Q: Can I use the product outdoors?**
  - **A:** No, the product is only supported for indoor use.
- **Q: What should I do if I encounter technical issues?**
  - **A:** You can contact technical support via email at **support@edatec.cn**. or by phone at +86-18627838895.

Foreword

Related Manuals

All kinds of product documents contained in the product are shown in the following table, and users can choose to view the corresponding documents according to their needs.

Documents	Instruction
ED-HMI3020-070C Datasheet	This document introduces the product features, software and hardware specifications, dimensions and ordering code of ED-HMI3020-070C to help users understand the overall system parameters of the products.
ED-HMI3020-070C User Manual	This document introduces the appearance, installation, startup and configuration of ED-HMI3020-070C to help users use the product better.
ED-HMI3020-070C Application Guide	This document introduces downloading OS files, flashing to SD cards, Firmware Update, and Configuring booting from SSD of ED- HMI3020-070C to help users use the product better.

Users can visit the following website for more information: https://www.edatec.cn.

Reader Scope

- **This manual applies to the following readers:**
  - Mechanical Engineer
  - Electrical Engineer
  - Software Engineer
  - System Engineer

Related Agreement

Symbolic Convention

Symbolic	Instruction
	Prompt symbols, indicating important features or operations.
	Notice symbols, which may cause personal injury, system damage, or signal interruption/loss.
	Warning symbols, which may cause great harm to people.

Safety Instructions

This product should be used in an environment that meets the requirements of design specifications, otherwise it may cause failure, and functional abnormality or component damage caused by non-compliance with relevant regulations are not within the product quality assurance scope.

- Our company will not bear any legal responsibility for personal safety accidents and property losses caused by the illegal operation of products.
- Please do not modify the equipment without permission, which may cause equipment failure.
- When installing equipment, it is necessary to fix the equipment to prevent it from falling.
- If the equipment is equipped with an antenna, please keep a distance of at least 20cm from the equipment during use.
- Do not use liquid cleaning equipment, and keep away from liquids and flammable materials.
- This product is only supported for indoor use.

Installing OS

This chapter introduces how to download OS files and flash them to an SD card.

- Downloading OS File
- Flashing to SD Card

Downloading OS File

If the operating system is damaged during use, you need to re-download the latest version of OS file and flash to an SD card. The download path is **ED-HMI3020-070C/raspios**.

Flashing to SD Card

ED-HMI3020-070C starts the system from the SD card by default. If you want to use the latest OS, you need to flash the OS to the SD card. It is recommended to use the Raspberry Pi tool, and the download path is as follows:

Raspberry Pi Imager: https://downloads.raspberrypi.org/imager/imager_latest.exe.

Preparation:

- The download and installation of the Raspberry Pi Imager tool to the computer has been completed.

- A card reader has been prepared.
- The OS file has been obtained.
- The SD card of ED-HMI3020-070C has been obtained.

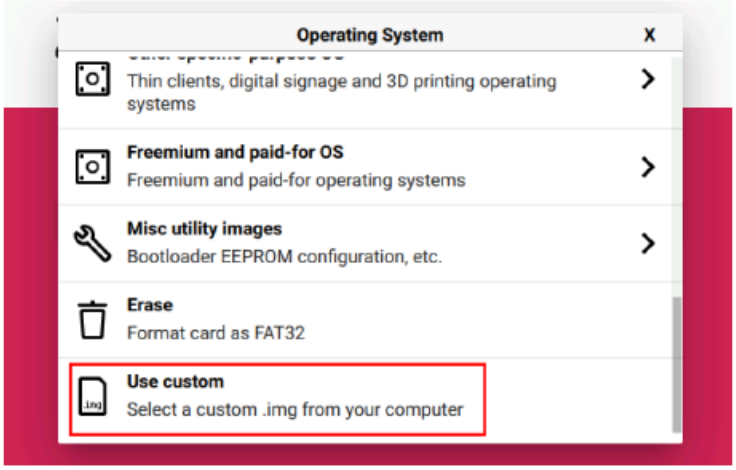
NOTE: Please turn off the power before inserting or removing the SD card.

- **a)** Find the location of the SD card, as shown in the red mark of the figure below.

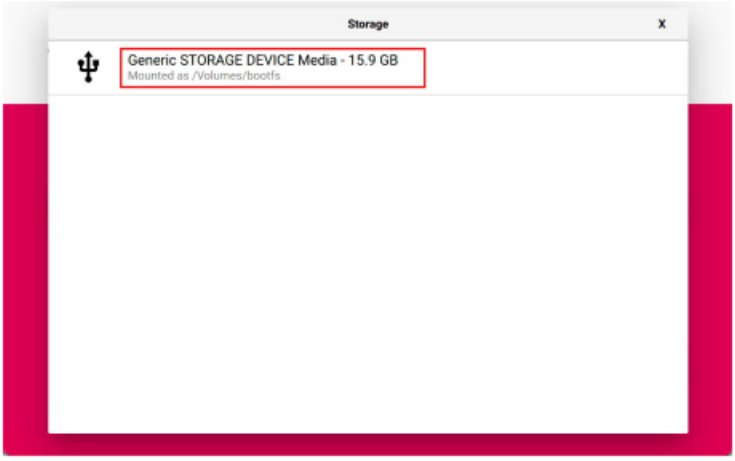
- **b)** Hold the SD card and pull it out.

Steps:
The steps are described using the Windows system as an example.

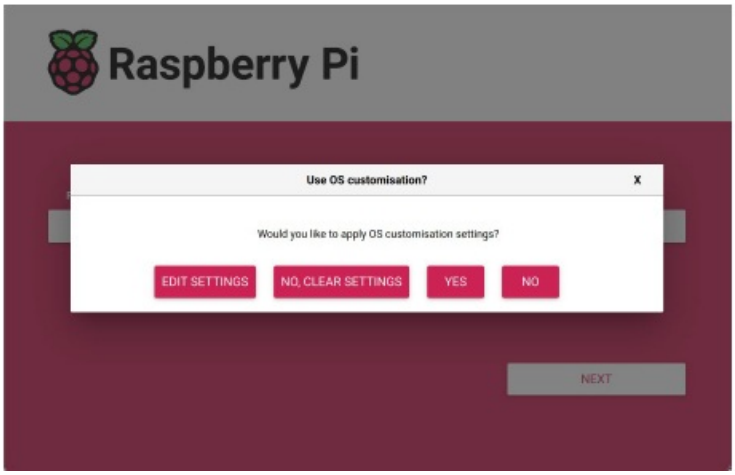
1. Insert the SD card into the card reader, and then insert the card reader into the USB port of the PC.
2. Open Raspberry Pi Imager, select “CHOOSE OS” and select “Use Custom ” in the pop-up pane.



3. According to the prompt, select the downloaded OS file under the user-defined path and return to the main page.
4. Click “CHOOSE STORAGE”, select the SD card of ED-HMI3020-070C in the “Storage” pane, and return to the main page.



5. Click “NEXT”, and select “NO ” in the pop-up “Use OS customization?” pane.



6. Select “YES” in the pop-up “Warning” pane to start writing the image.

7. After the OS writing is completed, the file will be verified.

8. After the verification is completed, click “CONTINUE” in the pop-up “Write Successful” box.
9. Close the Raspberry Pi Imager, and remove the card reader.
10. Insert the SD card into ED-HMI3020-070C, and power it on again.

Firmware Update

After the system starts normally, you can execute the following commands in the command pane to upgrade the firmware and optimize the software functions.

- sudo apt update
- sudo apt upgrade

Configuring booting from SSD (optional)

This chapter introduces the steps to configure booting from SSD.

- Flashing to SSD
- Setting BOOT_ORDER

Flashing to SSD

ED-HMI3020-070C supports optional SSD. If users need to boot the system from SSD, they need to flash the image to SSD before using it.
NOTE: If there is an SD card in ED-HMI3020-070C, the system will boot from the SD card by default.

Flashing through an SSD box

- You can flash to SSD through an SSD box on a Windows PC. It is recommended to use the Raspberry Pi tool and the download path is as follows:
- **Raspberry Pi Imager:** https://downloads.raspberrypi.org/imager/imager_latest.exe.

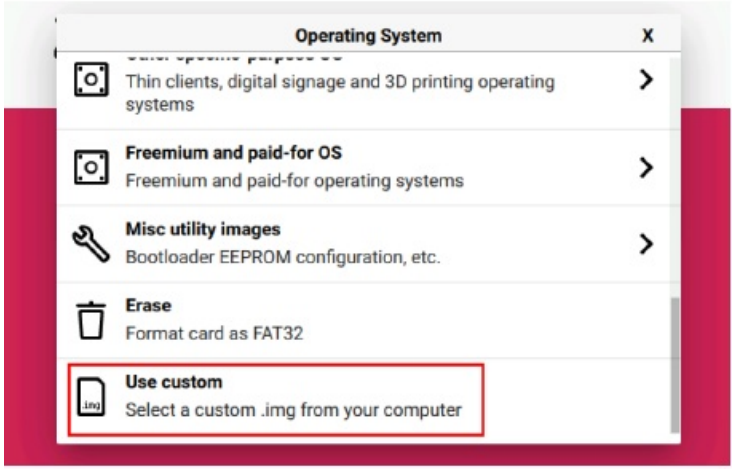
Preparation:

- An SSD box has been prepared.

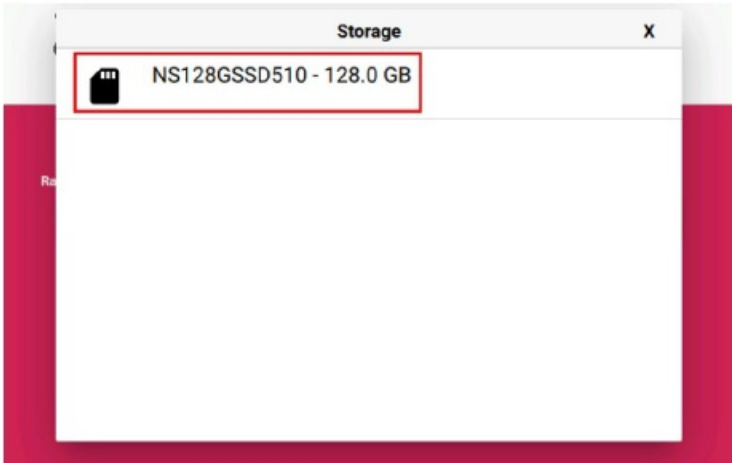
- The device case has been opened and the SSD has been removed. For detailed operations, please refer to Sections 2.3 and 2.4 of “ED-HMI3020-070C User Manual”.
- The download and installation of the Raspberry Pi Imager tool to the computer has been completed.
- The OS file has been obtained, and the download path is ED-HMI3020-070C/raspios.

Steps:
The steps are described using the Windows system as an example.

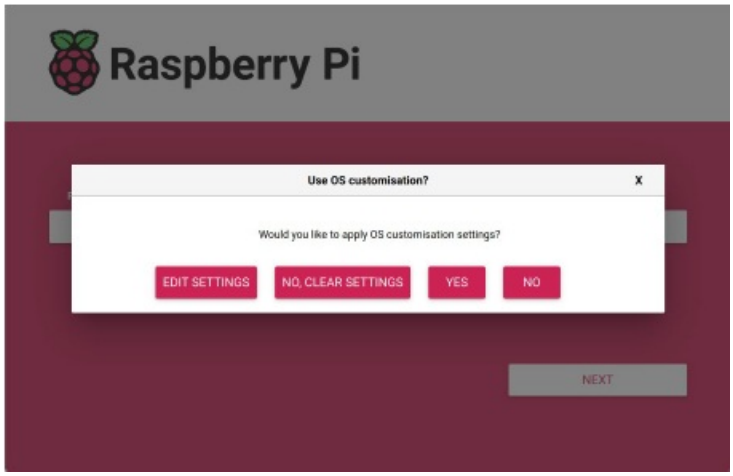
1. Install the SSD into the SSD box.
2. Connect the USB port of the SSD box to the PC, then make sure the SSD can be displayed on the PC.
    - **TIP:** If the SSD cannot be displayed on the PC, you can format the SSD first.
3. Open Raspberry Pi Imager, select “CHOOSE OS” and select “Use Custom ” in the pop-up pane.



4. According to the prompt, select the downloaded OS file under the user-defined path and return to the main page.
5. Click “CHOOSE STORAGE”, select the SSD of ED-HMI3020-070C in the “Storage” pane, and return to the main page.

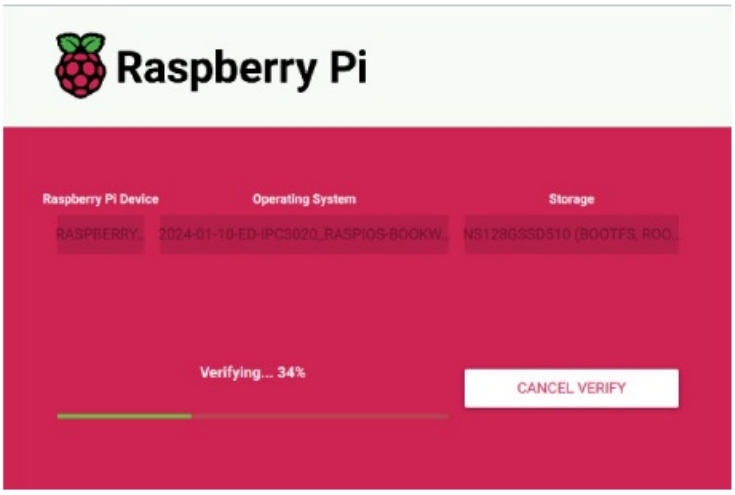


6. Click “NEXT”, and select “NO ” in the pop-up “Use OS customization?” pane.



7. Select “YES” in the pop-up “Warning” pane to start writing the image.

8. After the OS writing is completed, the file will be verified.



9. After the verification is completed, click “CONTINUE” in the pop-up “Write Successful” box.
10. Close the Raspberry Pi Imager and remove the SSD box.
11. Remove the SSD from the SSD box, install the SSD to PCBA and close the device case (For detailed operations, please refer to Sections 2.5 and 2.7 of “ED-HMI3020-070C User Manual”).

Flashing on ED-HMI3020-070C

Preparation:

- ED-HMI3020-070C has been booted from the SD card, and ED-HMI3020-070C contains an SSD.
- The OS file has been obtained, and the download path is ED-HMI3020-070C/raspios.

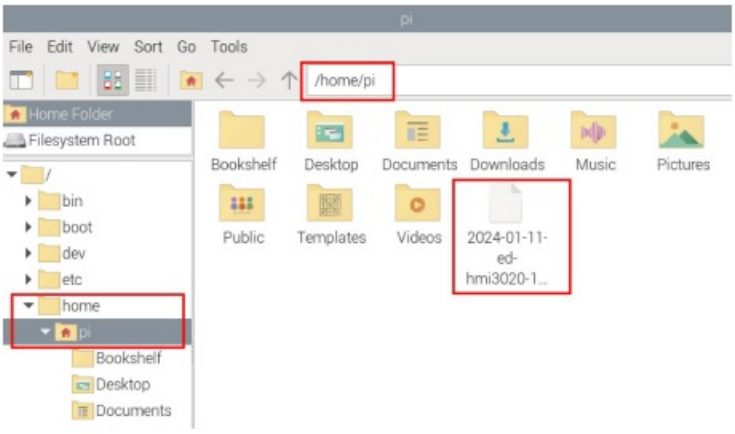
Steps:
The steps are described using the Windows system as an example.

1. Unzip the downloaded OS file (“.zip” file), obtain the “.img” file, and store it in a specified directory of local PC, such as Desktop.
2. Use the SCP command on a Windows PC to copy the OS file (.img) to ED-HMI3020-070C.
    - **a)** Enter Windows+R to open the run pane, enter cmd, and press Enter to open the command pane.
    - **b)** Execute the following command to copy the OS file (.img) to the pi directory of ED- HMI3020-070C.
    - scp “Desktop\2024-01-10-ed-HMI3020-070C_raspios-bookworm-arm64_stable.img” pi@192.168.168.155:~

```
C:\Users\gmei>scp "Desktop\2024-01-11-ed-hmi3020-101c_raspios-bookworm-arm64_stable.img" pi@192.168.168.155:~
```

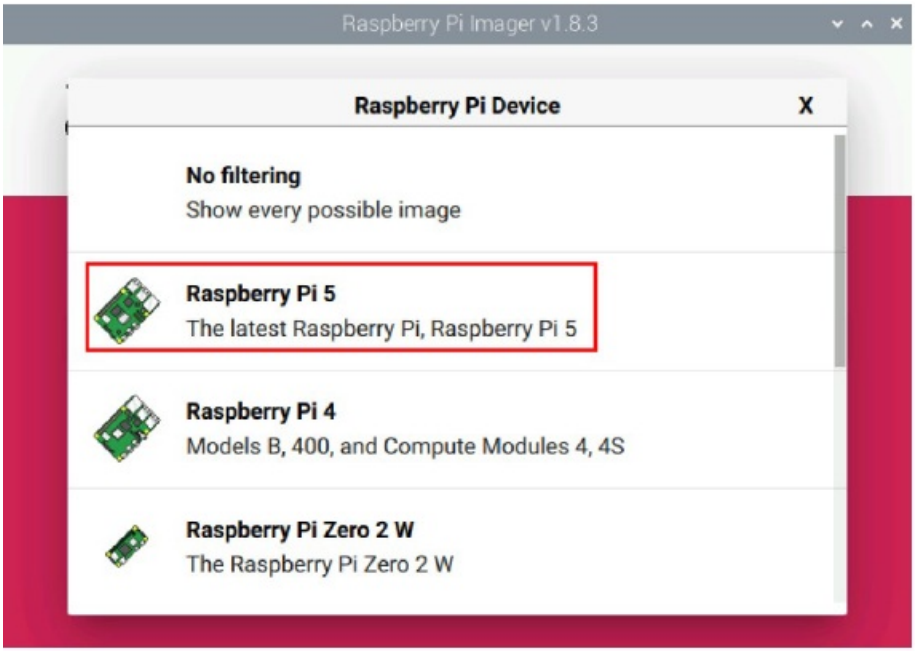
- **Desktop\2024-01-10-ed-HMI3020-070C_raspios-bookworm-arm64_stable.img:** Indicating the storage path of ".img" file on windows PC.
- **Pi:** Indicating the storage path of the ".img" file on ED-HMI3020-070C (the path where the ".img" file is stored after copying is completed).
- **192.168.168.155:** The IP address of ED-HMI3020-070C

3. After the copy is completed, view the ".img" file in the pi directory of ED-HMI3020-070C.

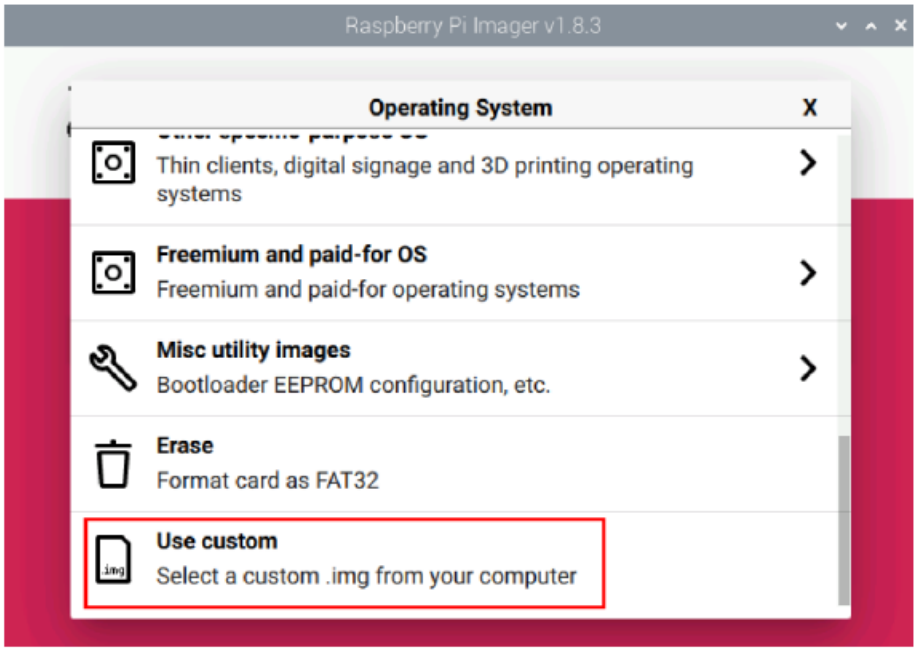


4. Click the icon  in the upper left corner of the desktop, select "Accessories→Imager" in the menu, and open the Raspberry Pi Imager tool.

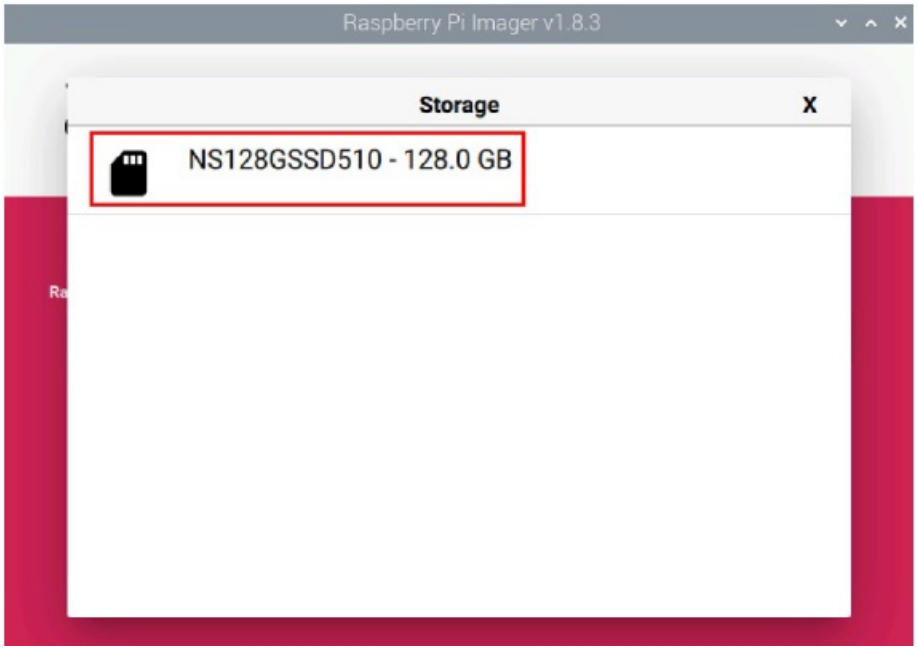
5. Click "CHOOSE DEVICE", and select "Raspberry Pi 5" in the pop-up "Raspberry Pi Device" pane.



6. Click “CHOOSE OS”, and select “Use Custom ” in the pop-up “Operating System” pane.

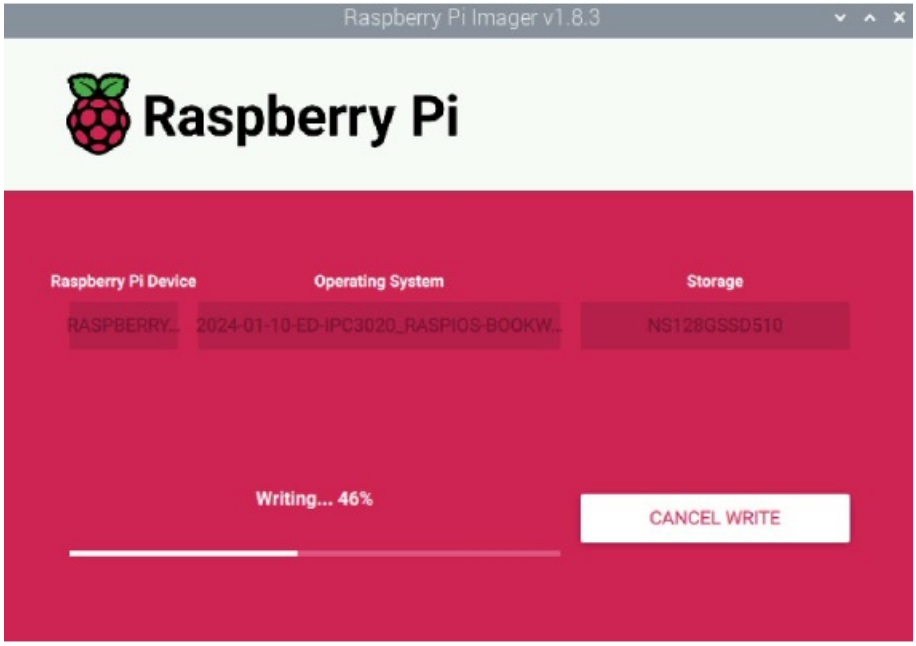


7. According to the prompt, select the downloaded OS file under the user-defined path and return to the main page.
8. Click “CHOOSE STORAGE”, select the SSD of ED-HMI3020-070C in the “Storage” pane, and return to the main page.

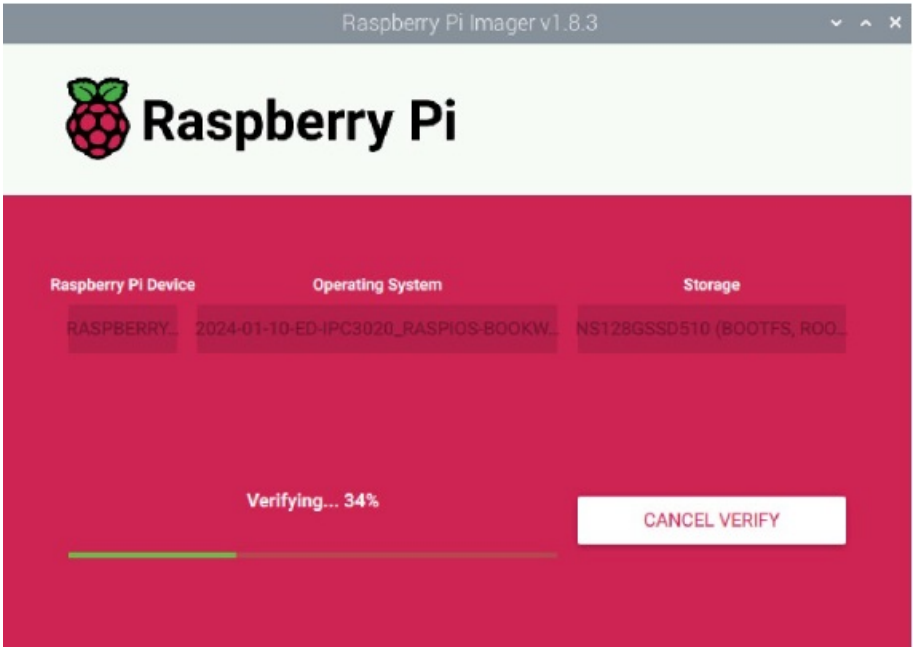


9. Click “NEXT” and select “NO” in the pop-up “Use OS customization?”.
10. Select “YES” in the pop-up “Warning”.

11. Enter password (raspberry) in the pop-up “Authenticate”, and then click “Authenticate” to start writing the OS.



12. After the OS writing is completed, the file will be verified.



13. After the verification is completed, input the password (raspberry) in the pop-up “Authenticate”, and then click “Authenticate”.
14. In the pop-up “Write Successful” prompt box, click “CONTINUE”, then close Raspberry Pi Imager.

Setting BOOT_ORDER

If ED-HMI3020-070C contains an SD card, the system will boot from the SD card by default. If you want to set booting from SSD, you need to configure the BOOT_ORDER property, which sets booting from SSD by default when no SD card is inserted). The parameters of the BOOT_ORDER property are stored in the “rpi-eeprom-config” file.

Preparation:

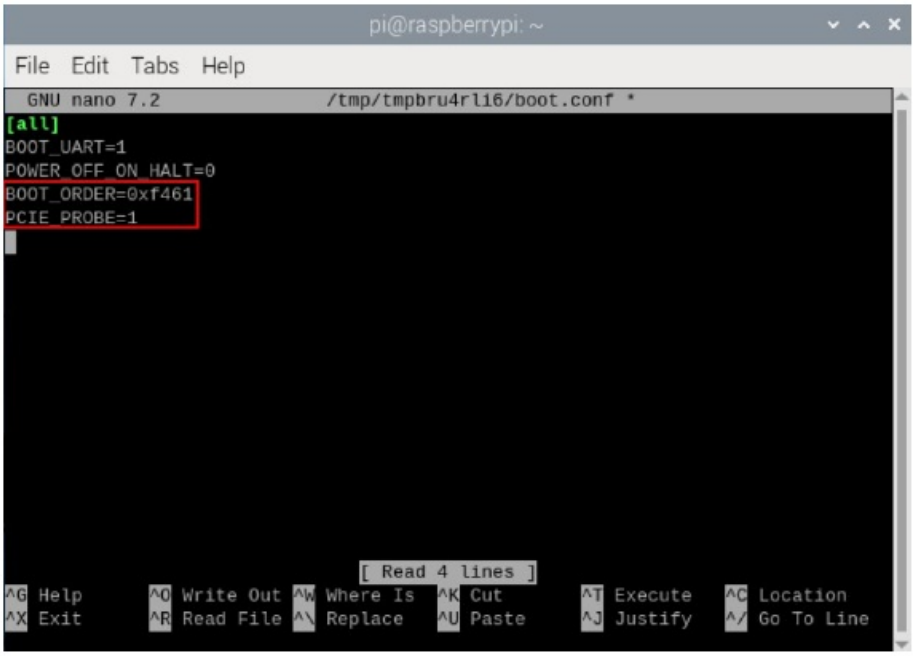
- It is confirmed that ED-HMI3020-070C contains SSD.
- ED-HMI3020-070C has been booted from the SD card and the desktop is displayed normally.

Steps:

1. Execute the following command in the command pane to view the BOOT_ORDER property in the “rpi-eeprom-config” file.

```
pi@raspberrypi:~ $ rpi-eeprom-config
[all]
BOOT_UART=1
POWER_OFF_ON_HALT=0
BOOT_ORDER=0xf41
```

   - “BOOT_ORDER” in the figure indicates the sequence parameter for booting, and setting the parameter value to 0xf41 indicates booting from the SD card.
2. Execute the following command to open the “rpi-eeprom-config” file, and set the value of “BOOT_ORDER” to 0xf461 (0xf461 means that if the SD card is not inserted, it will boot from SSD; if the SD card is inserted, it will boot from SD card.), then add the parameter “PCIE_PROBE=1”. sudo -E RPI-eeprom-config –edit
   - **NOTE:** If you want to boot from SSD, it is recommended to set the BOOT_ORDER to 0xf461.



3. Input Ctrl+X to exit editing mode.
4. Input Y to save the file, then press Enter to exit the main page of the command pane.
5. Power off ED-HMI3020-070C and pull out the SD card.
6. Power on ED-HMI3020-070C to restart the device.

EDA Technology Co., LTD March 2024

Contact Us

Thank you very much for purchasing and using our products, and we will serve you wholeheartedly. As one of the global design partners of Raspberry Pi, we are committed to providing hardware solutions for IOT, industrial control, automation, green energy and artificial intelligence based on the Raspberry Pi technology platform.

You can contact us in the following ways:

- EDA Technology Co., LTD
- **Address:** Building 29, No.1661 Jialuo Highway, Jiading District, Shanghai
- **Mail:** sales@edatec.cn.
- **Phone:** +86-18217351262
- **Website:** https://www.edatec.cn.

Technical Support:

- **Mail:** support@edatec.cn.
- **Phone:** +86-18627838895
- **Wechat:** zzw_1998-

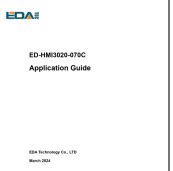
Copyright Statement

permission of EDA Technology Co., LTD, no part of this document may be modified, distributed or copied in any way or form.

Disclaimer

EDA Technology Co., LTD does not guarantee that the information in this manual is up to date, correct, complete or of high quality. EDA Technology Co., LTD also does not guarantee the further use of this information. If the material or non-material related losses are caused by using or not using the information in this manual, or by using incorrect or incomplete information, as long as it is not proved that it is the intention or negligence of EDA Technology Co., LTD, the liability claim for EDA Technology Co., LTD can be exempted. EDA Technology Co., LTD expressly reserves the right to modify or supplement the contents or part of this manual without special notice.

Documents / Resources

	EDA ED-HMI3020-070C Embedded Computers [pdf] User Guide ED-HMI3020-070C Embedded Computers, ED-HMI3020-070C, Embedded Computers, Computers

References

- downloads.raspberrypi.org/imager/imager_latest.exe
- ____
- User Manual