How to Start

Please follow this tutorial to set up the screen. Or the screen may not work well.

Get Support

When there are packaging damage, quality problems, questions encountering in use, etc., just send us an email. We will reply to you within one working day and provide a solution.

support@freenove.com

About

Freenove provides open source electronic products and services. We are committed to helping customers learn programming and electronic knowledge, quickly implement product prototypes, realize their creativity and launch innovative products. Our services include:

- Kits for learning programming and electronics
- Kits compatible with Arduino®, Raspberry Pi®, micro:bit®, etc.
- Kits for robots, smart cars, drones, etc.
- Components, modules and tools
- Design and customization

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http://www.freenove.com

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Content

Setup Screen for Raspberry Pi

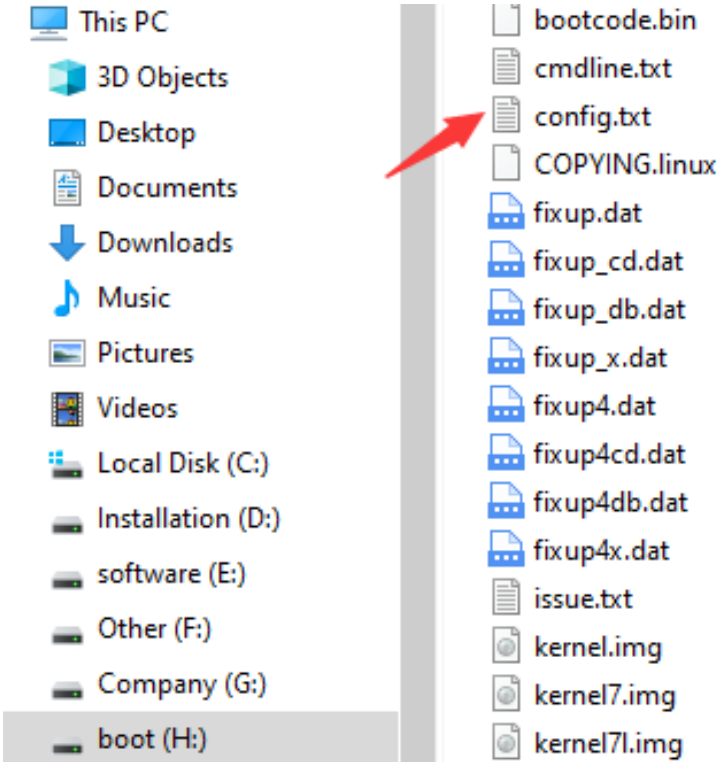
Raspberry Pi OS (previously called Raspbian)

If you have not setup raspberry Pi, please visit following website:
https://projects.raspberrypi.org/en/projects/raspberry-pi-setting-up

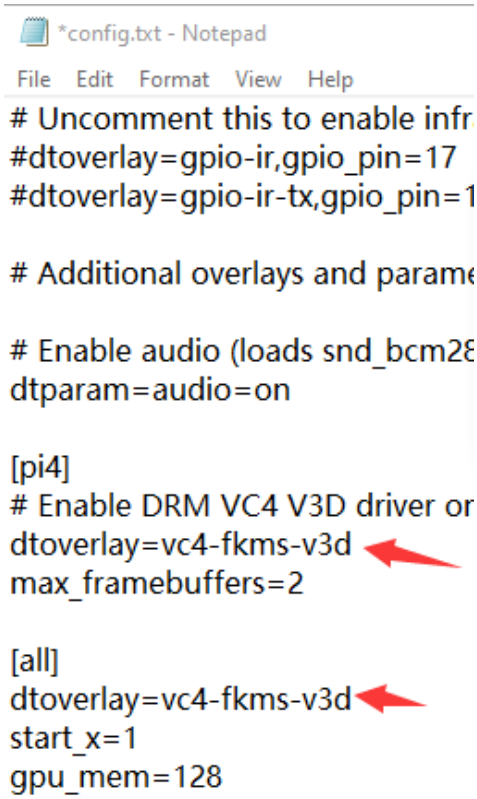
If you have any concerns, please contact us at email: **support@freenove.com**

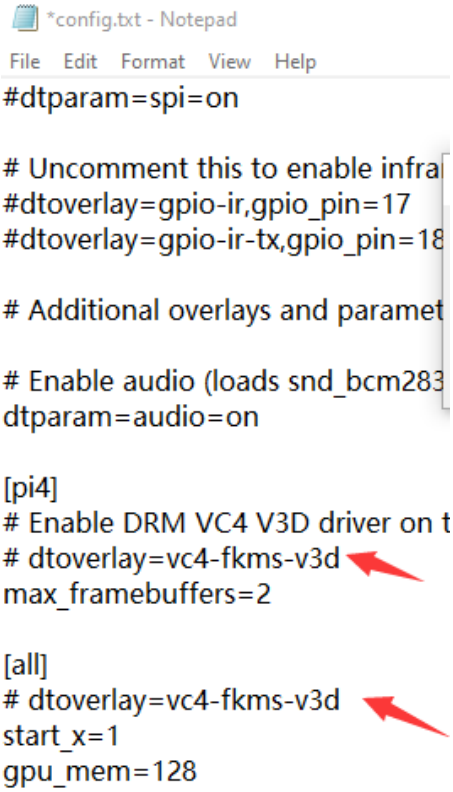
Setup SD card

1. After writing OS, keep Micro SD card connected to computer. If you have written system, pull out Micro SD card from Raspberry Pi and connect it to computer via card reader. Find and open config.txt under boot.



2. Add # at the beginning of all the statement “dtoverlay=vc4-fkms-V3D”.

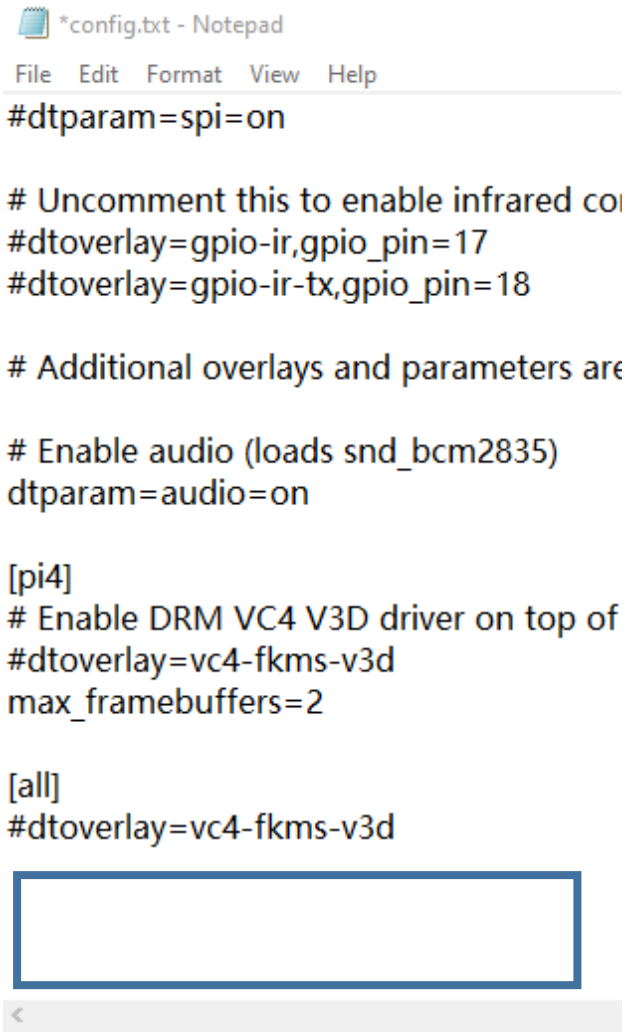


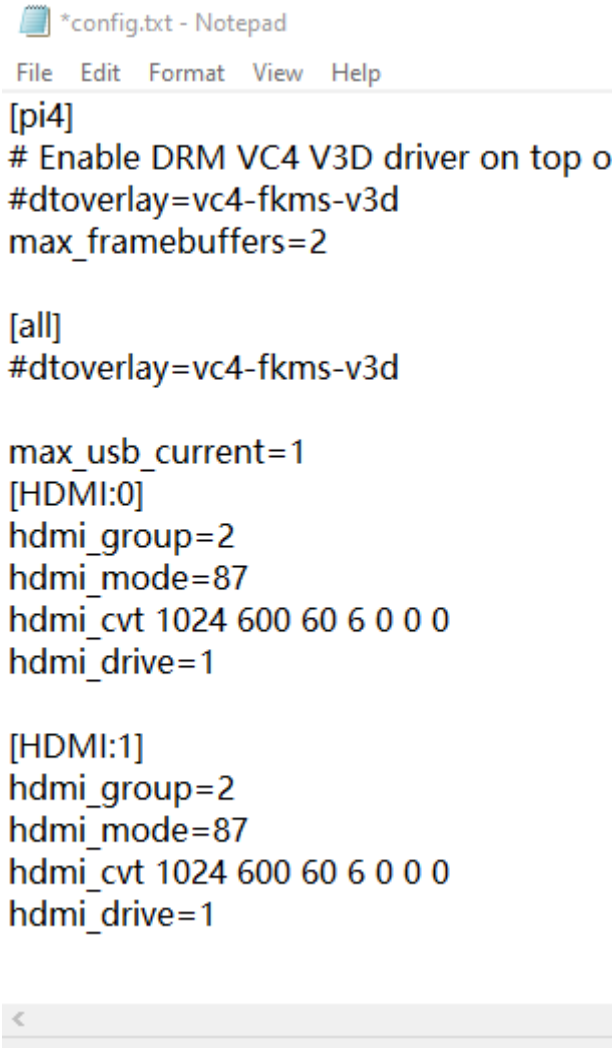


3. Add the following content at the end of the text cofnig.txt, and save all the modification, and then eject the card.

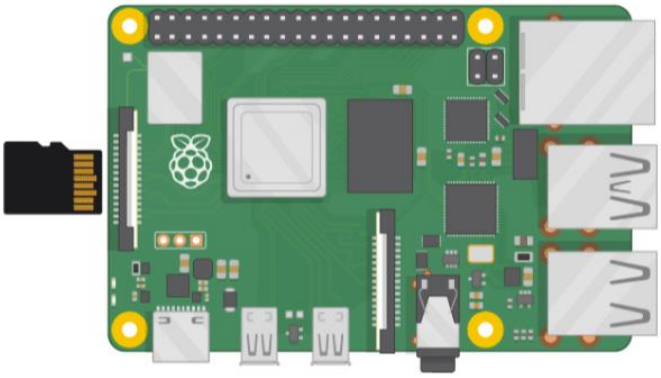
```
max_usb_current=1
[HDMI:0]
hdmi_group=2
hdmi_mode=87
hdmi_cvt 1024 600 60 6 0 0 0
hdmi_drive=1

[HDMI:1]
hdmi_group=2
hdmi_mode=87
hdmi_cvt 1024 600 60 6 0 0 0
hdmi_drive=1
```

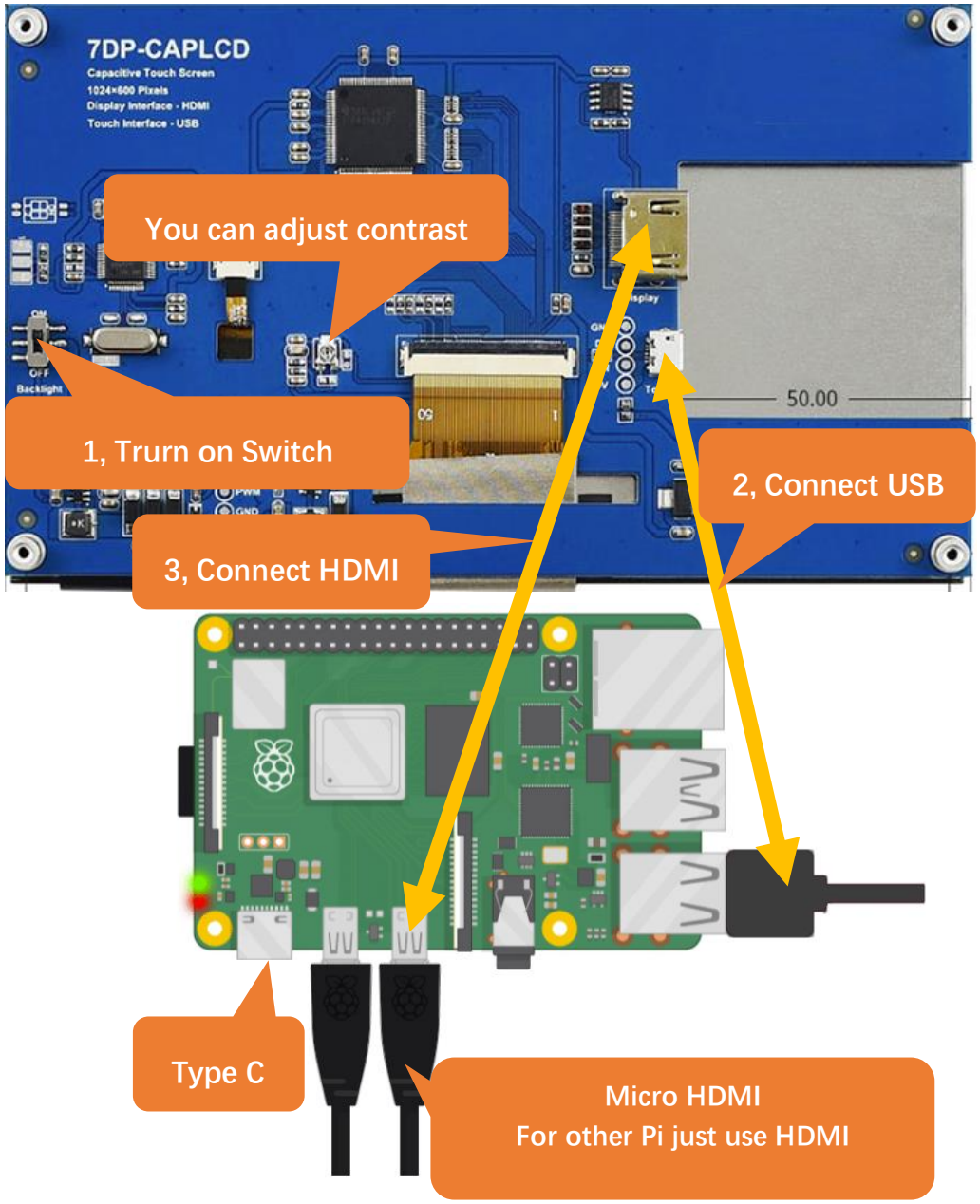




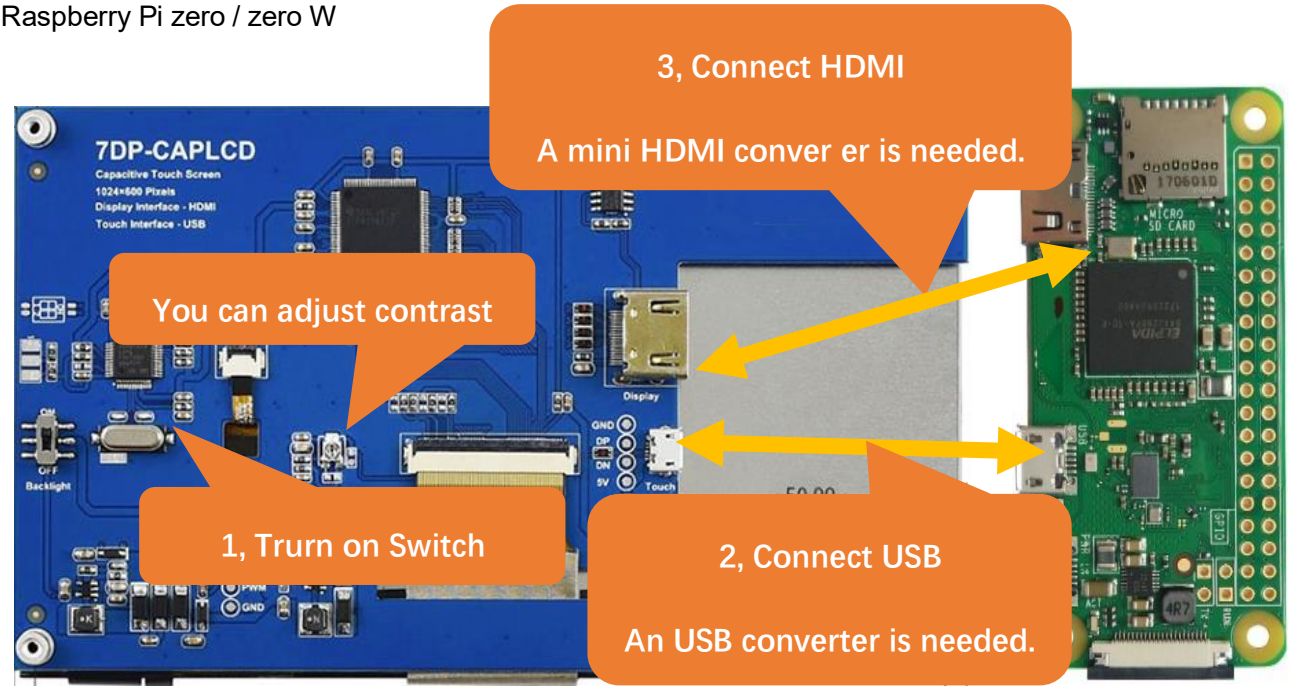
4. Insert the micro SD card to Raspberry Pi.

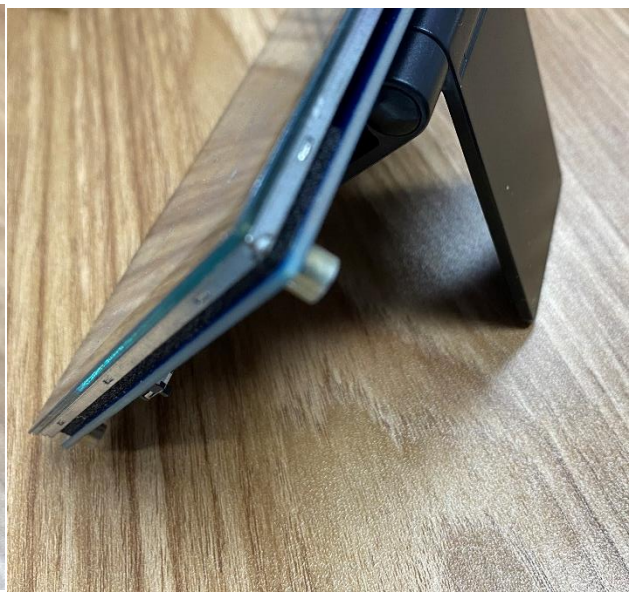


5. Connect the screen to Raspberry Pi with HDMI and Micro USB cable.



Raspberry Pi zero / zero W





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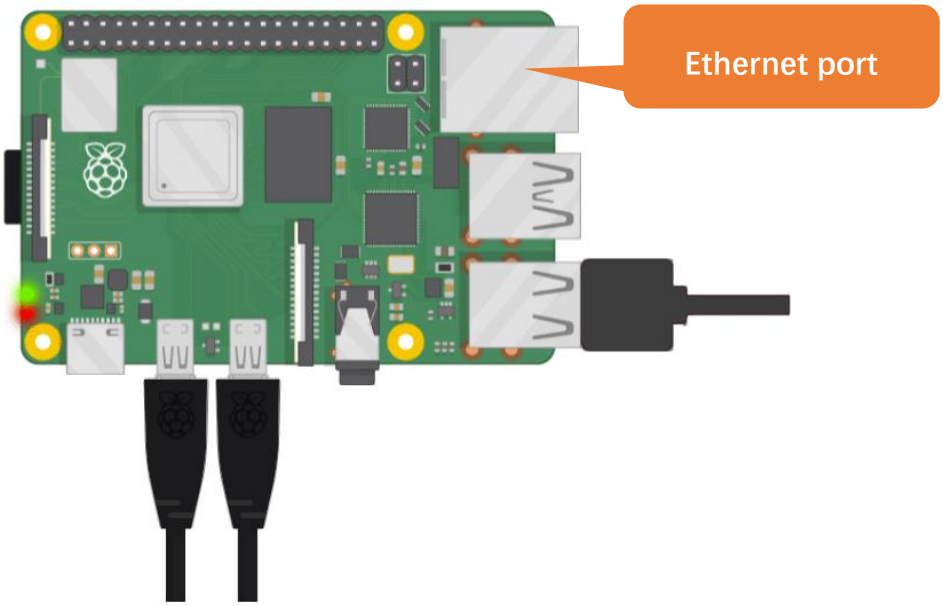
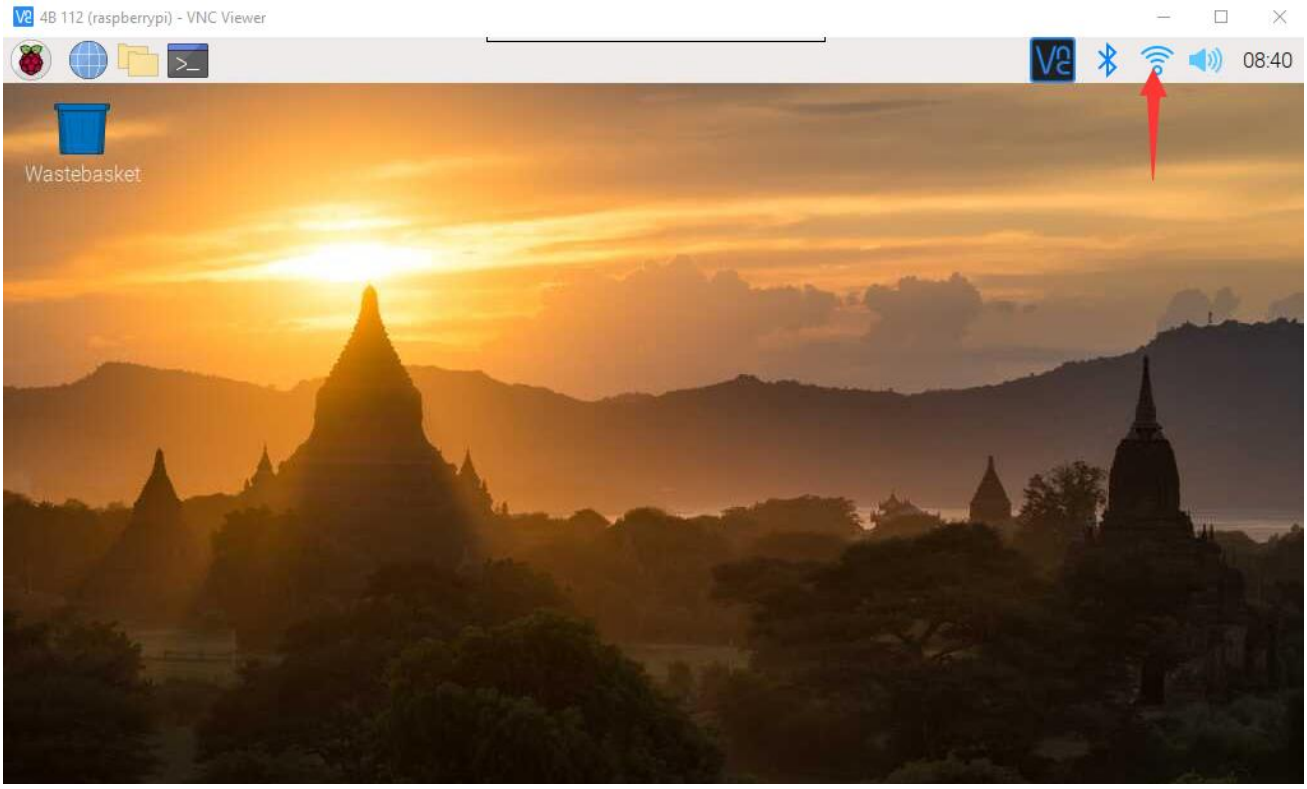
Use screen in Raspberry Pi OS

You can connect Raspberry Pi to internet with Ethernet cable.

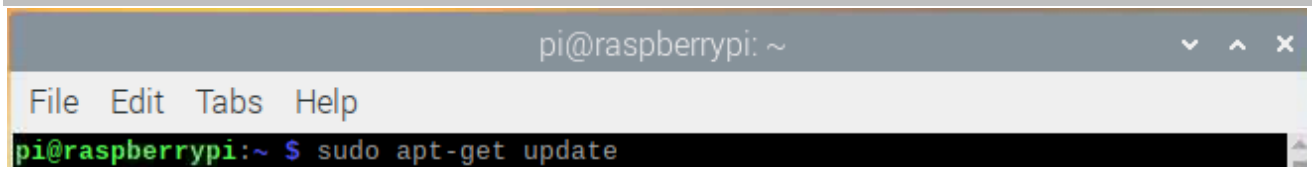


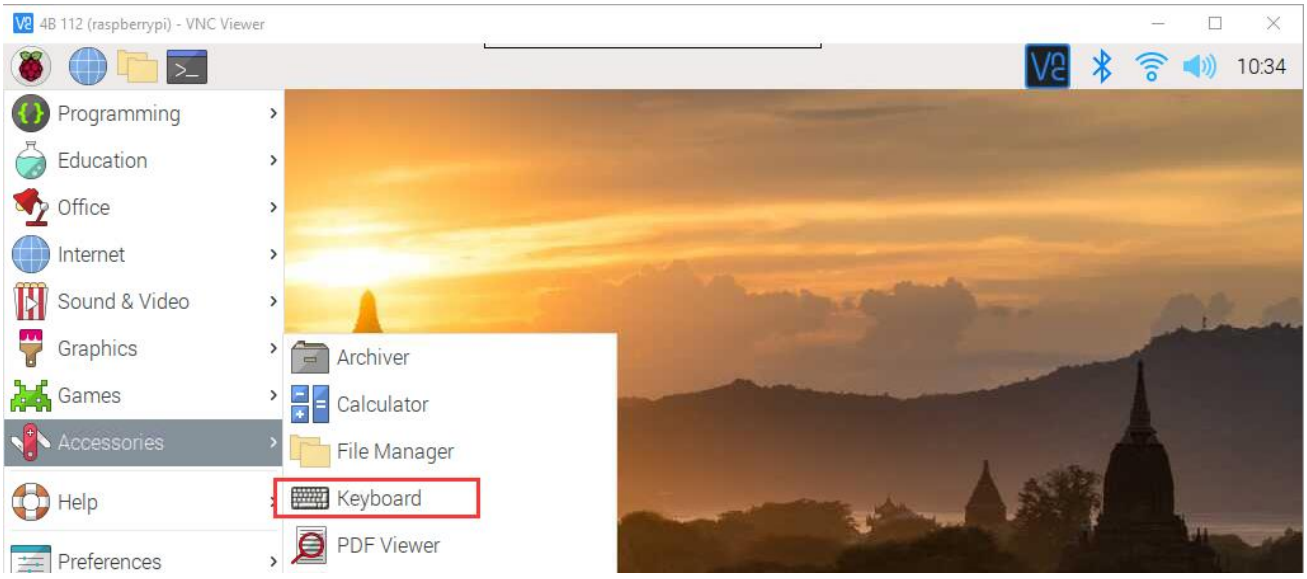
Or connect Raspberry Pi with a keypad, and connect Raspberry Pi to internet via WiFi.

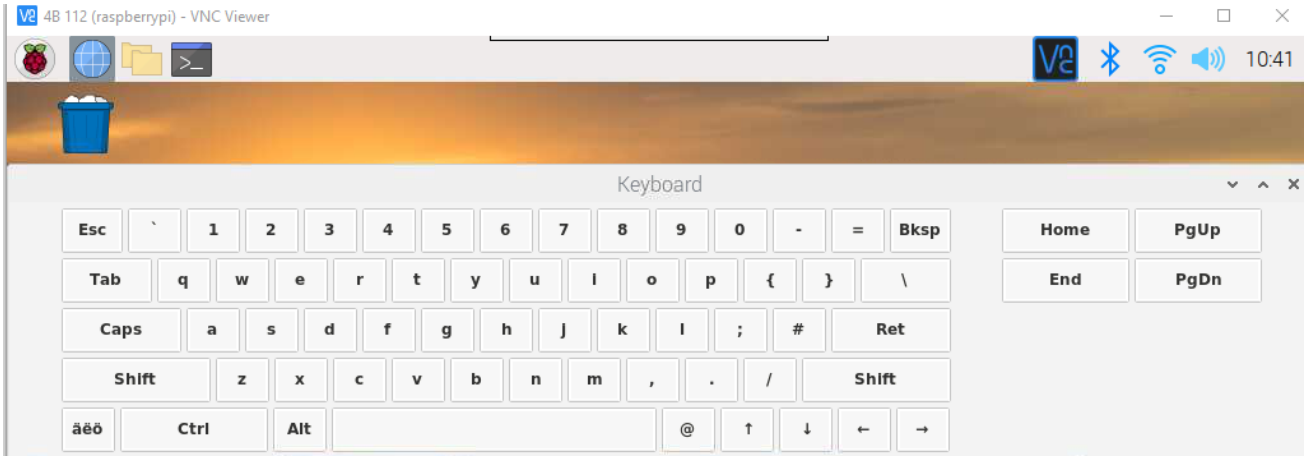


Execute the following commands in terminal to install a virtual keyboard.

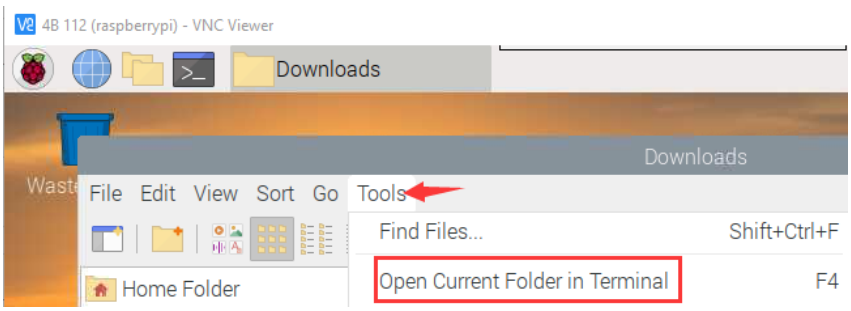
```
sudo apt-get update
sudo apt-get install matchbox-keyboard
sudo reboot
```







In Raspberry Pi, long press won't show the options, but it will in Windows system, which functions as right-clicking a mouse. You can also open a path in Terminal as follows:



Rotate screen and touch system

Rotate screen

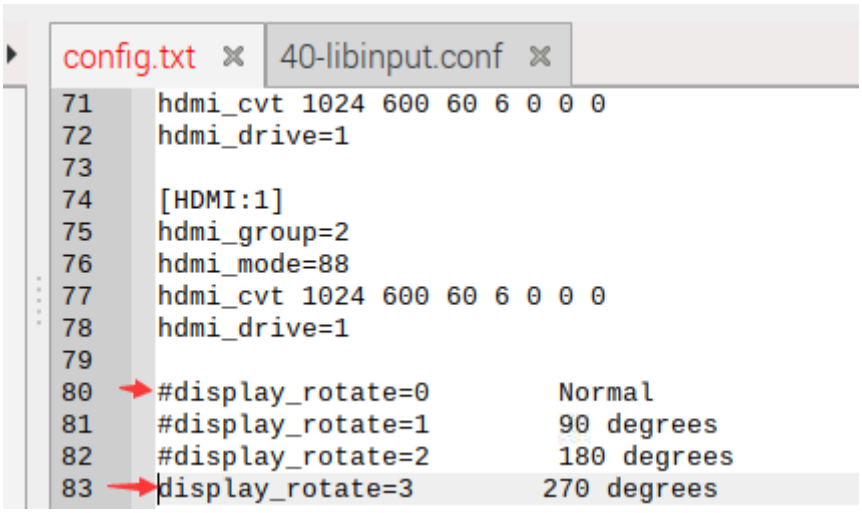
Open config.txt under /boot. You can also set on RaspberryPi directly. Execute following command in terminal. Open terminal with “Ctr+Alt+T”.

```
sudo geany /boot/config.txt
```

Add following contents, delete “#” in the angle you select. Add ”#” in front of other lines.

```
display_rotate=0        Normal
#display_rotate=1       90 degrees
#display_rotate=2       180 degrees
#display_rotate=3       270 degrees
```

For example, rotate 270 degrees. Then save modification.



If you don’t need rotate touch system, you can reboot now.

If you still need to use touch system, please follow steps below. Or touch system will work abnormal.

Rotate touch system

1, Install libinput.

On Raspberry Pi

```
sudo apt-get install xserver-xorg-input-libinput
```

2, Execute following command to creat xorg.conf.d under /etc/X11/. If it has existed, move on to step 3.

```
sudo mkdir /etc/X11/xorg.conf.d
```

3, Execute following command to copy a file.

```
sudo cp /usr/share/X11/xorg.conf.d/40-libinput.conf  /etc/X11/xorg.conf.d/
```

4, Open the file

```
sudo geany /etc/X11/xorg.conf.d/40-libinput.conf
```

5, Find following section and add Option like below. Here we select 270. **Touch system angle must be consistant with the one you select for screen**. **Then save modification.**

```
Section "InputClass"
        Identifier "libinput touchscreen catchall"
        MatchIsTouchscreen "on"
        Option "CalibrationMatrix" "0 -1 1 1 0 0 0 0 1"
        MatchDevicePath "/dev/input/event*"
        Driver "libinput"
```

Option "CalibrationMatrix" "0 1 0 -1 0 1 0 0 1" 90 degree
Option "CalibrationMatrix" "-1 0 1 0 -1 1 0 0 1" 180 degree
Option "CalibrationMatrix" "0 -1 1 1 0 0 0 0 1" 270 degree

If you want to rotate touch system to , add “#” in front or delect the line.

```
40  Section "InputClass"
41          Identifier "libinput touchscreen catchall"
42          MatchIsTouchscreen "on"
43  #Option "CalibrationMatrix" "0 -1 1 1 0 0 0 0 1"
44          MatchDevicePath "/dev/input/event*"
45          Driver "libinput"
46  EndSection
```

If you have any concerns, please contact us at email: **support@freenove.com**

Ubuntu

The boot screen may be abnormal, but everything works normally after the system is fully booted.

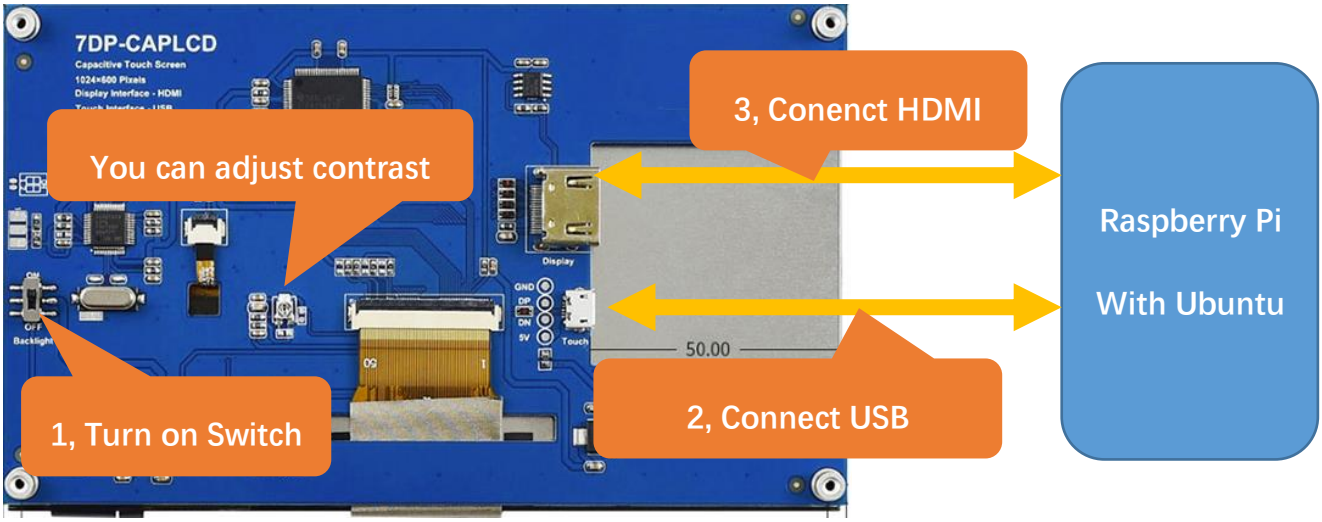
Set resolution to 1024*600.

```
cvt 1024 600
```

```
xrandr --newmode "1024x600_60.00" 49.00 1024 1072 1168 1312 600 603 613 624  -hsync +vsync
```

```
xrandr --addmode HDMI-1 "1024x600_60.00"
```

Setting->Display->Resolution 1024x600



Rotate screen

Open terminal with “Ctr+Alt+T”. Execute following command in terminal.

```
xrandr -o left
```

```
xrandr -o left # rotate 90 to left
xrandr -o right #rotate 90 to right
xrandr -o inverted # rotate upside down
xrandr -o normal #
```

Find **Control Center->Displays->Rotation->**select **Left. Save configuration.**

Rotate touch system

1, Install libinput.

If you are using **Ubuntu**, use following command.

```
sudo apt install xserver-xorg-input-synaptics
```

2, Execute following command to creat xorg.conf.d under /etc/X11/. If it has existed, move on to step 3.

```
sudo mkdir /etc/X11/xorg.conf.d
```

3, Execute following command to copy a file.

```
sudo cp /usr/share/X11/xorg.conf.d/40-libinput.conf  /etc/X11/xorg.conf.d/
```

4, Open the file

```
sudo pluma /etc/X11/xorg.conf.d/40-libinput.conf
```

5, Find following section and add Option like below. Here we select 270. **Touch system angle must be consistant with the one you select for screen**. **Then save modification.**

```
Section "InputClass"
        Identifier "libinput touchscreen catchall"
        MatchIsTouchscreen "on"
        Option "CalibrationMatrix" "0 -1 1 1 0 0 0 0 1"
        MatchDevicePath "/dev/input/event*"
        Driver "libinput"
```

```
Option "CalibrationMatrix" "0 1 0 -1 0 1 0 0 1"      90 degree
Option "CalibrationMatrix" "-1 0 1 0 -1 1 0 0 1"     180 degree
Option "CalibrationMatrix" "0 -1 1 1 0 0 0 0 1"      270 degree
```

If you want to rotate touch system to , add “#” in front or delect the line.

```
40  Section "InputClass"
41          Identifier "libinput touchscreen catchall"
42          MatchIsTouchscreen "on"
43  #Option "CalibrationMatrix" "0 -1 1 1 0 0 0 0 1"
44          MatchDevicePath "/dev/input/event*"
45          Driver "libinput"
46  EndSection
```

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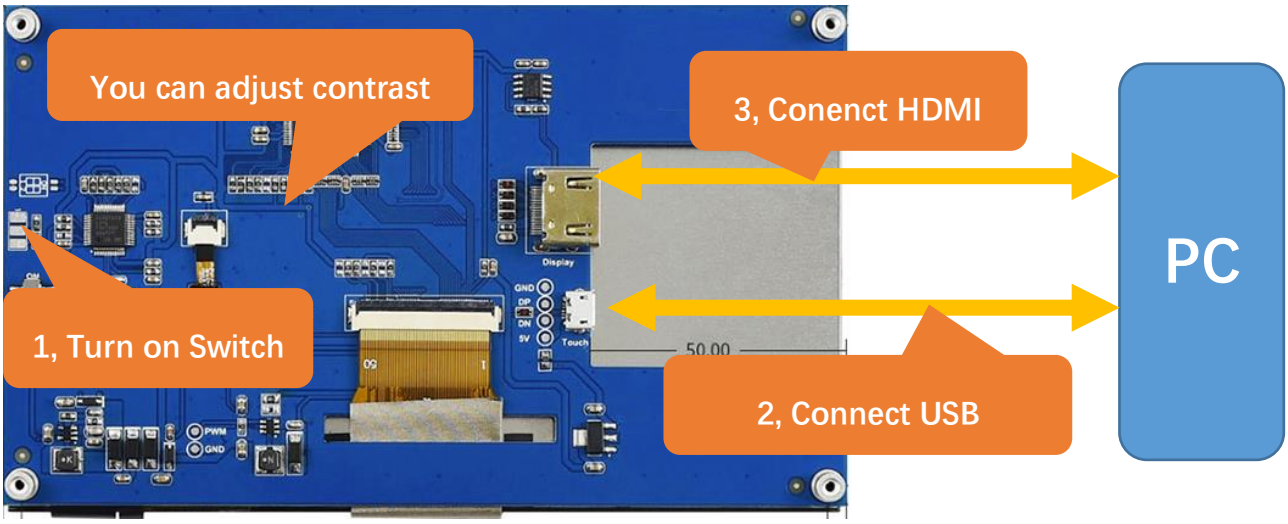
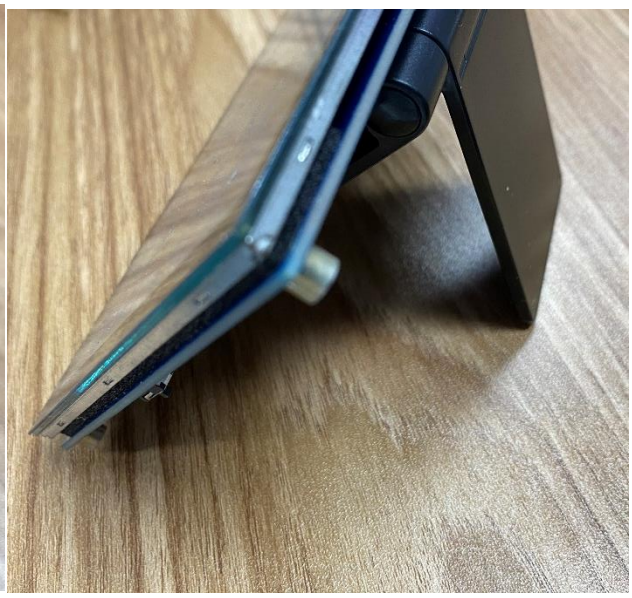
Connect Screen to Windows or other PC

The boot screen may be abnormal, but everything works normally after the system is fully booted. Select resolution 1024*600.





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