4.3inch DSI LCD for Raspberry Pi

4.3inch Capacitive Touch Display for Raspberry Pi, 800 × 480, IPS Wide Angle, MIPI DSI Interface.

Features

- 4.3inch IPS screen, 800 x 480 hardware resolution.

- Capacitive touch panel, support 5-point touch.

- Supports Pi 4B/3B+/3A+/3B/2B/B+/A+, another adapter board is required for CM3/3+/4.

- Tempered glass capacitive touch panel, hardness up to 6H.

- DSI interface, refresh rate up to 60Hz.

- When used with Raspberry Pi, supports Raspberry Pi OS / Ubuntu / Kali and Retropie, driver free.

- Supports software control of backlight brightness.

Work with RPI

Hardware connection

- Connect the DSI interface of 4.3inch DSI LCD to the DSI interface of Raspberry Pi.

- For easy use, you can fix the Raspberry Pi on the backside of the 4.3inch DSI LCD by screws

- ## Software setting

Supports Raspberry Pi OS / Ubuntu / Kali and Retropie systems for Raspberry Pi.

1) Download image from the Raspberry Pi website.

2) Download the compressed file to the PC, and unzip it to get the .img file.

3) Connect the TF card to the PC, use SDFormatter software to format the TF card.

4) Open the Win32DiskImager software, select the system image downloaded in step 2, and click 'Write' to write the system image.

5) After the image has finished writing, save, and quit the TF card safely.

6) Power on the Raspberry Pi and wait for a few seconds until the LCD displays normally. And the touch function can also work after the system starts.

【Note】

- On December 2, 2021, the Raspberry Pi OS was divided into two branches, the Buster branch and the Bullseye branch. The Buster branch is a continuation of the old system and is more stable. The Bullseye branch added some new features, using open source libraries and new interfaces. Since the current Bullseye branch has just been released shortly, it is not stable yet. If you are an industrial user, it is strongly recommended to use the Buster branch.

- If you are using the Buster branch system, the DSI LCD can work with Raspberry Pi directly after connecting and powering on. But if you are using the Bullseye branch system, you need to modify the config.txt as below:

Open the config.txt file in the root directory of the TF card(/boot), comment out the following lines:

```
#camera_auto_detect=1
#dtoverlay=vc4-kms-v3d
```

Add the following lines under [all]:

```
dtoverlay=vc4-fkms-v3d
start_x=1
```

Then save the file and reboot the system:

```
sudo reboot
```

- If you need to use the CSI camera under the Bullseye branch system. Since this branch uses the libcamera camera library by default, the library doesn't support FKMS drivers.

So in addition to the above modification, you also need to install the Raspicam camera library.

The installation method is as follows:

```
cd ~

sudo apt install cmake

git clone https://github.com/raspberrypi/userland

cd userland

./buildme

sudo cp build/bin/* /bin/
```

Then execute the following command to shut down the system:

```
poweroff
```

Connect the Raspberry Pi camera to the CSI interface of the Raspberry Pi, power on the Raspberry Pi again, and after the system boots, execute the following command:

Take a picture:

```
raspistill -o image.jpg
```

Take a video:

```
raspivid -o video.h264 -t 10000
```

- ## Backlight Controlling

  - Open a terminal and type the following command to adjust the brightness.

Note: If the command reports the 'Permission denied' error, please switch to the 'root' user mode and execute it again.

```
echo X > /sys/class/backlight/rpi_backlight/brightness
```

X can be value in range 0~255. The backlight is darkest if you set it to 0 and the backlight is set to lightest if you set it to 255

```
echo 100 > /sys/class/backlight/rpi_backlight/brightness
echo 0 > /sys/class/backlight/rpi_backlight/brightness
echo 255 > /sys/class/backlight/rpi_backlight/brightness
```

- We also provide a example for brightness adjusting, you can download and install it by following commands:

```
wget https://www.waveshare.net/w/upload/3/39/Brightness.tar.gz
tar -xzf Brightness.tar.gz
cd brightness
./install.sh
```

After connecting, you can choose Menu -> Accessories -> Brightness to open the adjustment software
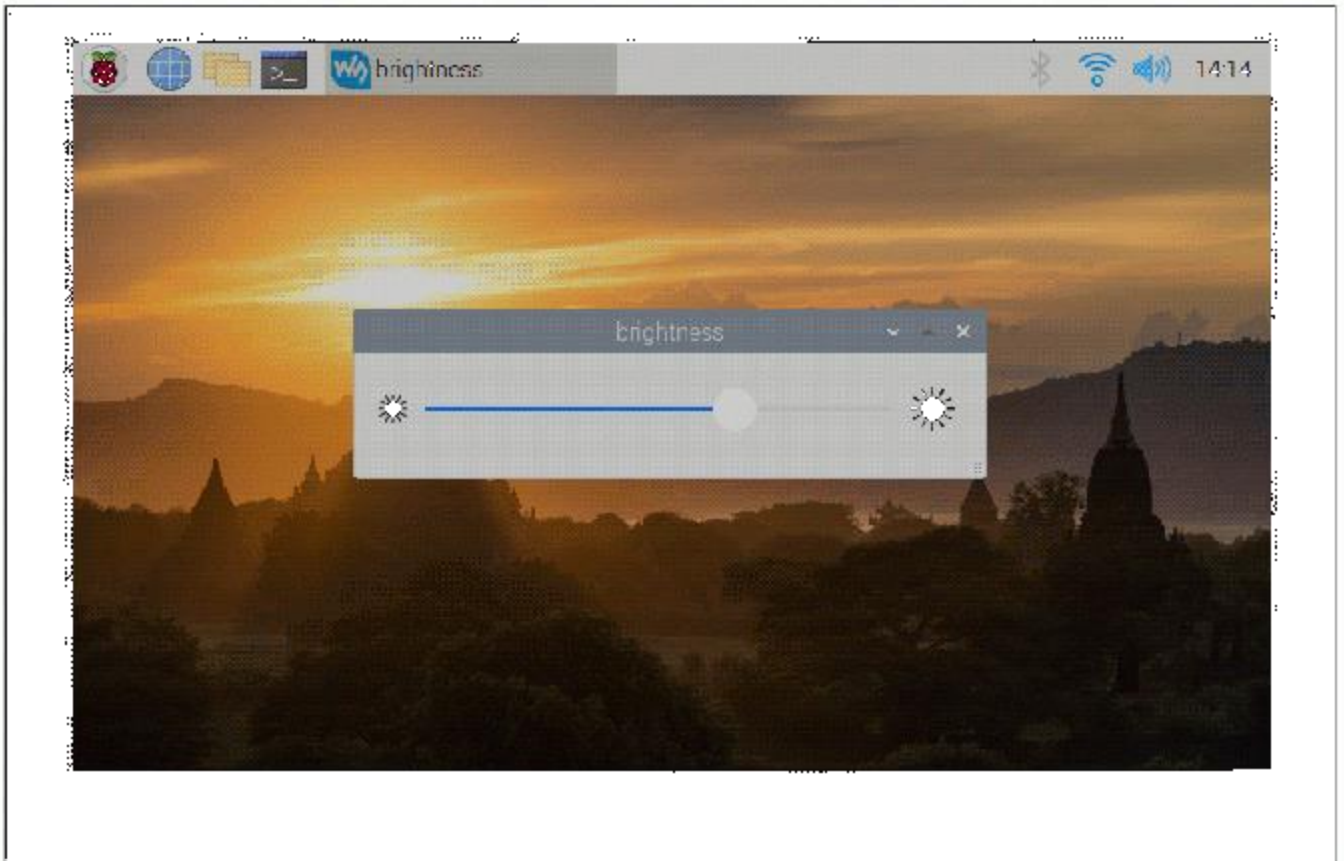
Note: If you use the 2021-10-30-raspios-bullseye-armhf image or the laster version, please add the line *dtoverlay=rpi-backlight* to the config.txt file and reboot.

- Disable touch

At the end of the config.txt file, add the following commands corresponding to disabling touch (the config file is located in the root directory of the TF card, and can also be accessed through the command: sudo nano /boot/config.txt):

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

Note: After adding the command, it needs to be restarted to take effect.

Resources

Software

- Panasonic SDFormatter

- Win32DiskImager
- PuTTY

- Drawing
  - 4.3inch DSI LCD 3D Drawing

FAQ

Question: Cameras cannot work when using the 2021-10-30-raspios-bullseye-armhf image.

Answer:

Please configure as below and try to use the camera again.

```
sudo raspi-config
```

Choose Advanced Options -> Glamor -> Yes(Enabled) -> OK -> Finish -> Yes(Reboot)

Question: What is the maximum brightness of a 4.3inch DSI LCD？

Answer:

370cd/m²

Question: What is the overall thickness of the 4.3inch DSI LCD?

Answer:

14.05mm

Question: Will the 4.3inch DSI LCD automatically turn off the backlight when the system sleeps?

Answer:

No, it won't.

Question: What is the working current of 4.3inch DSI LCD?

Answer:

- The normal working current of raspberry PI 4B alone with 5V power supply is 450mA-500mA；

- Using 5V power supply raspberry PI 4B+4.3inch DSI LCD maximum brightness normal operating current is 700mA-750mA;

- Using 5V power supply raspberry PI 4B+4.3inch DSI LCD minimum brightness normal operating current is 550mA-580mA;

Question: How to adjust the backlight?
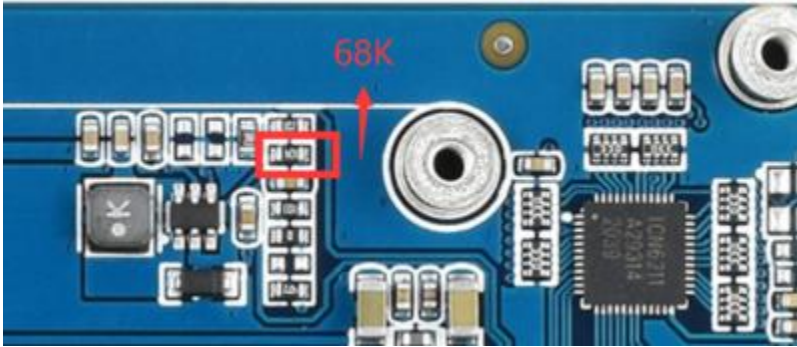
Answer:

You need to remove the resistor and wire the top pad to P1 of Raspberry Pi and control it by PWM.
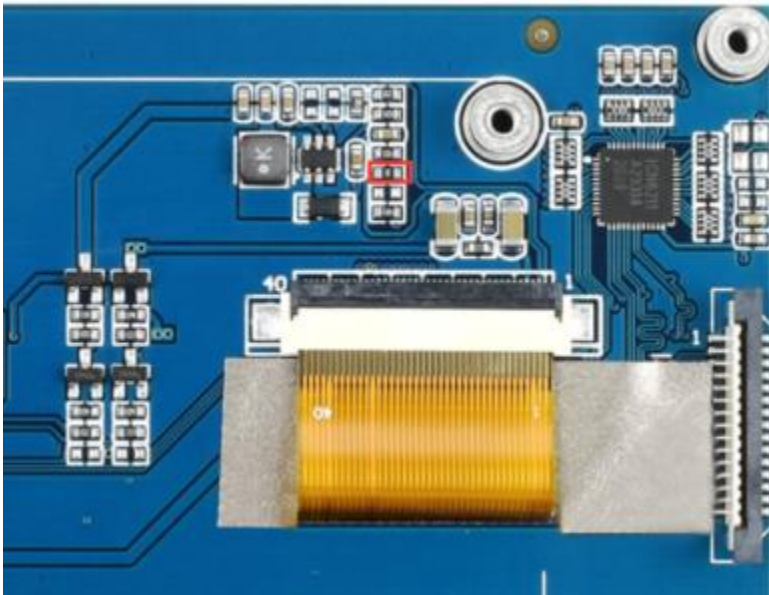

```
gpio -g pwm 18 0

gpio -g mode 18 pwm

gpio pwmc 1000

gpio -g pwm 18 X (X is in range 0~1024, 0: Darkest, 1024: brightest)
```

PS: In order to ensure a good customer experience, the default factory minimum brightness is the visible state. If you need to completely turn off the backlight to achieve a black screen effect, please manually change the 100K resistor in the picture below to a

68K resistor.

Question: How to control 4.3inch DSI LCD to enter sleep mode?

Answer:

Use **xset dpms force off** and **xset dpms force on** commands to control screen sleep and wake up