

3.5inch RPi LCD (A)

From Waveshare Wiki

Contents

- 1 Introduction
- 2 Getting Started
 - 2.1 Method 1. Driver installation
 - 2.2 Method 2. Using Ready-to-use image
- 3 Toggle between LCD and HDMI display
- 4 Screen orientation settings
- 5 Touch screen calibration
- 6 How to work with a camera
- 7 Resource
 - 7.1 Image
 - 7.2 Driver
 - 7.3 Software
- 8 FAQ
- 9 Anti-Piracy
- 10 Support

3.5inch RPi LCD (A)
320×480



3.5 inch Touch Screen TFT LCD Designed for Raspberry Pi

Primary Attribute

Category: OLEDs / LCDs, LCD, Raspberry Pi LCD

Brand: Waveshare

Introduction

3.5 inch Touch Screen TFT LCD Designed for Raspberry Pi

Chinese: 官方中文站点

Getting Started

The RPi LCD can be driven in two ways: Method 1. install driver to your Raspbian OS. Method 2. use the Ready-to-use image file of which LCD driver was pre-installed.

Onboard Interfaces

RPi I/Os

Method 1. Driver installation

Description: Supports the latest version of Raspbian and Ubuntu Mate.

- LCD-show-160811.tar.gz (<http://www.waveshare.com/w/upload/3/3d/LCD-show-160811.tar.gz>)

1. Configure your Pi:

```
sudo raspi-config
```

Set as:

- Select Expand Filesystem.
- Boot Option -> Desktop Autologin (may differ depending on Raspbian revision)

2. Copy the driver(choose the driver according to your OS)into your OS then Run the following commands:

```
tar xvf LCD-show-YYMMDD.tar.gz
cd LCD-show/
```

This toggles the mode to LCD display: ./LCD35-show 3. After system rebooting, the RPi LCD is ready to us

Method 2. Using Ready-to-use image

The image file with pre-installed driver is located in the IMAGE directory of the CD, or you can download it from #Image. Extract the .7z file and you will get an .img file. Write the image to your micro SD card (How to write an image to a micro SD card for your Pi? See RPi Image Installation Guides for more details). Then insert the card to your Pi, power up and enjoy it.

Toggle between LCD and HDMI display

Once this LCD is enabled, meanwhile the default settings for HDMI are changed. If you want to use another HDMI monitor, please run the following command:

```
cd LCD-show/
./LCD-hdmi
```

This toggles the mode to LCD display:

```
./LCD35-show
```

Screen orientation settings

After touch driver installed, the screen orientation can be set by these commands:

- 0 degree rotation

```
cd LCD-show/
./LCD35-show 0
```

- 90 degree rotation

```
cd LCD-show/
./LCD35-show 90
```

- 180 degree rotation

```
cd LCD-show/  
./LCD35-show 180
```

- 270 degree rotation

```
cd LCD-show/  
./LCD35-show 270
```

Touch screen calibration

This LCD can be calibrated using a program called `xinput_calibrator` which is pre-installed on the CD image. However, it was not pre-installed on original Raspbian OS. So in this case, you should get and install the program manually with

```
sudo apt-get install -y xinput-calibrator
```

Enter the following commands for touch screen calibration:

```
sudo DISPLAY=:0.0 xinput_calibrator
```

or select Menu -> Preferences -> Calibrate Touchscreen.

After running these commands, there will be a prompt for four-point calibration shown in the LCD screen. Click the points one by one to finish the touch calibration. Then, the new calibration data will be displayed in the terminal, as shown below. Please get these data for future use.

```
Doing dynamic recalibration:  
Setting new calibration data: 3919, 208, 236, 3913
```

Enter the following command to edit `99-calibration.conf`:

```
sudo nano /etc/X11/xorg.conf.d/99-calibration.conf
```

Then, the old calibration data will be displayed in the terminal:

```
Section "InputClass"  
Identifier      "calibration"  
MatchProduct   "ADS7846 Touchscreen"  
Option "Calibration" "160 3723 3896 181"  
Option "SwapAxes"   "1"  
EndSection
```

Modify the calibration data to the new calibration data displayed in the step 2):

```
Section "InputClass"  
Identifier      "calibration"  
MatchProduct   "ADS7846 Touchscreen"  
Option "Calibration" "3919 208 236 3913"  
Option "SwapAxes"   "1"  
EndSection
```

Press the keys Ctrl+X, and select the option Y to save the modification.

The modification will be valid after rebooting the system. Enter the following command for system reboot

```
sudo reboot
```

Notices: In case of inaccurate touch, please perform screen calibration again and reboot the system.

How to work with a camera

RPi LCD can also work with an external camera to take photos. In this operation, a Raspberry Pi camera is required, which should be purchased separately.

If you use the image provided from us, after camera attached, you can open the camera by command line

```
cd /home/pi/camera/  
Camera
```

Then, waiting several seconds, the camera application will be started automatically. Now, you can capture pictures by double clicking the screen.

If you use the image with clean installation, you can setup the camera driver with:

1. Select "Enable Camera" -> "<YES>"

```
sudo raspi-config
```

2. Copy the Camera driver to the OS of Pi then:

```
unzip camera.zip  
cd camera  
sudo chmod 777 Camera  
sudo cp update\ camera/95-stmpe.rules /etc/udev/rules.d/
```

3. Create a file called wheezy.list.

```
sudo nano /etc/apt/sources.list.d/wheezy.list
```

Append:

```
deb http://archive.raspbian.org/raspbian wheezy main
```

Exit with save.

4. Create a file called 10defaultRelease.

```
sudo nano /etc/apt/apt.conf.d/10defaultRelease
```

Append:

```
APT::Default-release \"stable\";
```

Exit with save.

5. Create a file called libsd1.

```
sudo nano /etc/apt/preferences.d/libsd1
```

Append:

```
Package: libsd1.2debian  
Pin: release n=jessie  
Pin-Priority: -10  
Package: libsd1.2debian  
Pin: release n=wheezy  
Pin-Priority: 900
```

Exit with save.

6. Last, execute the commands:

```
sudo apt-get update  
sudo apt-get -y --force-yes install libsd1.2debian/wheezy  
sudo apt-get install evtest tslib libts-bin xinput  
sudo apt-get install python-pip  
sudo apt-get install python2.7-dev  
sudo pip install picamera==1.10  
sudo reboot  
sudo TSLIB_FBDEVICE=/dev/fb1 TSLIB_TSDEVICE=/dev/input/touchscreen ts_calibrate
```

Camera will be enabled by the steps above.

Resource

- User manual (<http://www.waveshare.com/w/upload/3/3e/RPi-LCD-User-Manual.pdf>)

Image

Description: if you felt hard to install driver, try the image with driver pre-installed.

- RPi-35inch-LCD-Raspbian-160728.7z (<https://docs.google.com/uc?id=0B-Z1UZhyKaZ0YXhZMnpaLU5COGs&export=download>)

Driver

Supports the latest version of Raspbian and Ubuntu Mate.

- LCD-show-160811.tar.gz (<http://www.waveshare.com/w/upload/3/3d/LCD-show-160811.tar.gz>)

Software

- Panasonic SDFormatter (http://www.waveshare.com/w/upload/d/d7/Panasonic_SDFormatter.zip)
- Win32DiskImager (<http://www.waveshare.com/w/upload/7/76/Win32DiskImager.zip>)
- PuTTY (<http://www.waveshare.com/w/upload/5/56/Putty.zip>)

FAQ

Question:

Why does the touchscreen not work well?

Answer:

[Collapse]

Now, we only provide touch screen drivers for Raspbian and Ubuntu Mate. How to install the driver?
See:#Method_1_Driver_installation

Question:

Why does the image in the CD not work on my Pi?

Answer:

[Collapse]

- The image in the CD may differ depending on batches, however, some Images are just available for Pi 2 (or before, but not for Pi 3). In such cases you can download the latest version from Raspberry Pi website (<https://www.raspberrypi.org/downloads/raspbian/>) and install the driver. See:#Method_1_Driver_installation
- Make sure the hardware connection is correct and connects fine.
- Make sure you've written the image to your SD card using the software [Win32DiskImager.zip](#) rather than just copy and paste.
- It is strongly recommended to use a stand-alone 5V/2A power adapter, because the USB port of PC might not have enough power to support the Pi and LCD.

Question:

What are the power requirements?

Answer:

[Collapse]

When working with 5V input, the current is about 115mA.

Anti-Piracy

Since the first-generation Raspberry Pi released, Waveshare has been working on designing, developing, and producing various fantastic touch LCDs for the Pi. Unfortunately, there are quite a few pirated/knock-off products in the market. They're usually some poor copies of our early hardware revisions, and comes with none support service.

To avoid becoming a victim of pirated products, please pay attention to the following features when purchasing:

